Rynarzewska, Ania Izabela

Nomination for the Excellence in Scholarship and Creative Endeavors Award

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Academic Affairs Excellence Awards

Application Form

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Name: Ania Izabela Rynarzewska

Rank: Assistant Professor

Department: Marketing

Award applying for:
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☐	Excellence in Online Teaching Award*
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Ania Izabela Rynarzewska

Assistant Professor in Marketing

Georgia College and State University

Nomination for the Excellence in Scholarship and Creative Endeavors Award

To whom it may concern,

Please consider this letter as a self-nomination for the Excellence in Scholarship and Creative Endeavors Award.

I am a researcher and educator at heart. In my world, there is no separation between teaching, service, and research. My research supports my teaching and vice versa. My research is also my service.

Given my accomplishments while at Georgia College and State University, I would like to humbly self-nominate for the Excellence in Scholarship and Creative Endeavors Award.

Briefly, I would like to summarize my research achievements. I started working at GCSU in the fall of 2021, with seven business publications. At the time I applied for tenure (Fall 2025), I had 17 business publications, including 10 I authored as GCSU faculty within the past 3 years. However, since then, I have had two more acceptances in A-level journals: the Journal of Services Marketing (October 2025) and the Journal of Product and Brand Management (October 2025), bringing my total at GCSU to 12 business publications in less than 3.5 years. Most of my research involves the impact of institutions on consumers through a social media lens. I also research societally relevant issues like loneliness, polarizations, and social media dependency/addictions. Additionally, I have three more acceptances in medical journals, bringing my total to 16 medical publications, above and beyond research in business. This activity is my service contribution as I work on research with the Hospital System in Georgia, which focuses on barriers to healthcare, patient vulnerability, and cancer research. I believe my medical research collaborations should be highlighted, given that this is a university-level award; these contributions might be relevant to the award determination. My service to health care systems and the rural population of Georgia eventually became a personal learning experience and a contribution to marketing, coming full circle. My coauthors' and my paper on service interaction vulnerabilities, which focuses on patient-provider interactions in the emergency department, is in the second round of review in the Journal of Service Research.

While the number of my publications may imply otherwise, I focus on quality, not quantity. My passion for research is responsible for the quantity of my publications. My business publications are predominantly A-level, but I have also published in an A* journal, based on ABDC criteria, which are often used as indicators of quality. The Journal of Interactive Marketing, where I published, has an acceptance rate of only 3.8%. While I am focused on publishing predominantly at A and A* level, I am willing to submit to lower-tier journals if I believe the outlet is ideal for maximizing impact. For example, I have a B-level and one C-level publication, as my work on

curriculum innovation was published in Marketing Education Review, which, like other education journals, tends to have lower citation scores. Despite a seemingly lower impact, the MER publication is a great example of how intricately connected my teacher/research identities are. One other indicator of the quality of my research is the growing number of invitations to speak about research and the research process at the national and global levels. For example, I was invited to participate in a panel with global reach on reviewing netnographic research. In this panel, three esteemed scholars participated: Dr. Robert Kozinets (over 50,000 citations), Dr. Markus Gielser (7000 citations, Editor of Journal of Consumer Research), Dr. Rachel Ashman (1777 citations, Associate Editor for Marketing Theory), and me. I was also invited to participate in a solo session at the Association for Netnographic Research, where I will provide insights from my recent publication on review manipulation. Finally, I was an invited panelist to discuss research methods and process at the Northeast Georgia Health System research day. Additionally, as a final indicator of research quality, my work was recognized by the Society for Marketing Advances as the best paper in the digital marketing track and the best paper in the entire conference (November 2025).

Reflection on the research impact on teaching

I teach research. By definition, my extensive research is inseparable from what I teach. As I previously stated, there is no separation between teaching, service, and research for me. They are intricately connected. I dedicate countless hours to expanding my knowledge in research and methodology, ensuring I stay current and can teach our students the most up-to-date approaches to research and analysis. I develop new ways to apply research methods and analysis in a constantly changing social media landscape. While I always publish, I also bring my findings and new methods into the classroom. This is not only knowledge I can, and I do, teach students, but the topics I study are some that impact students directly. These include analyses of influencer personalities and their misbehavior; excessive exposure to AI personas; social media dependency; and the adverse effects of loneliness on well-being, all within a larger algorithmically curated social media environment. These topics are highly relevant to students of today and their work tomorrow.

My publications, some of which directly relate to student experiences, are ones students can discuss because they have seen the effects following the fallout from influencer transgressions. These discussions inspire them to engage with their own research ideas and apply them in class research projects. At the end of the semester, students share their experiences and fully developed research with their classmates. Given my vast experience researching diverse topics and institutions, I can share with students how the methods they learn in class can be applied to other fields and to for-profit and not-for-profit institutions. I would not be able to engage in such discussions without my experience.

Finally, I teach scientific process because I believe in science. I teach students that decisions must be made based on scientific evidence to avoid major crises and boycotts. Beyond studying current topics, I apply research methods and scientific rigor to evaluate the quality and effectiveness of my instructional design. Every time I change something in my courses, I conduct research following the scientific process. I then intend not only to publish the findings to reach a

broader educational community but also to further curate my courses. The evidence of this approach can be found in my publications.

I believe that my research record, associated awards, and panel participation speak not only for the quantity but also the quality of my research. For those reasons, I hope to earn the right to walk along many of GCSU's greats for a chance to earn this award.

I would appreciate the opportunity to be considered.

Thank you,

Ania

Ania (Anna) Izabela Rynarzewska, Ph.D.
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ania.rynarzewska@gmail.com

Research since 2020.

JOURNAL PUBLICATIONS:

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Rynarzewska, A.I., Tanner, E., Tanner, J., Ruch, A. Underutilization of Contraceptive Counseling in the Emergency Department as a Service Failure for Victims of Intimate Partner Violence, Marketing and Public Policy Conference, Washington, D.C. (June 2025).

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Rynarzewska, A. I. , McClung, S. (Nov, 2022), Athletes' Wellbeing and Negative News Media; Anxiety, Anger and Coping Mechanisms. Presented at the Society for Marketing Advances, Charlotte, NC.

Rynarzewska, A.I., Giunipero, L. Denslow, D. (2022). Applying Transactive Memory to Supply Chains: A Conceptual View. Presented at *Atlantic Marketing Association*, Savannah, Ga.

Jones, J, Rynarzewska, A.I. (2022) Not all Emotions are created equal in social media marketing: A Case of Savannah Bananas. Presented at Atlantic Marketing Association, Savannah, Ga.

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Sam Fullerton, Ania Izabela Rynarzewska, Tammy McCullough, (2021), An Assessment of the Relationship between Anti-Consumption Behavior and One's Political Inclination, Society for Marketing Advances, Orlando, FL

Ania Izabela Rynarzewska. (Nov, 2021), Reliance on Social Media Influencers to improve small new beauty brand metrics during Covid 19, evidence for ROI, Society for Marketing Advanced, Orlando, FL

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DEPARTMENT OF MANAGEMENT,
MARKETING & LOGISTICS
GEORGIA COLLEGE & STATE UNIVERSITY

November 12, 2025

Awards Selection Committee
Excellence in Scholarship & Creative Endeavors Award
Center for Teaching and Learning
Georgia College & State University
Milledgeville, GA 31061

Dear Esteemed Selection Committee:

It is my pleasure to recommend Dr. Ania Izabela Rynarzewska for the Excellence in Scholarly and Creative Activity Award. Dr. Rynarzewska has demonstrated a steadfast commitment to advancing knowledge, exploring timely issues, and elevating our institution's research profile.

In just the last two calendar years (2025 & 2025), Dr. Rynarzewska has either had accepted or published not less than twenty two publications… but the year's not over yet! Obviously, this emphasizes the depth of her scholarly activity. Of those publications, one is with an A* journal and seven are with A journals (journal rankings based upon the Australian Business Deans Council (ABDC) Journal Quality List). Exactly half of her articles (eleven) are medical publications, which reflects the breadth of her research. Indeed, Dr. Rynarzewska has built an incredibly impressive interdisciplinary and highly collaborative research team that perfectly meshes with the liberal arts mission of Georgia College & State University.

Across these publications, Dr. Rynarzewska exhibits methodological rigor, interdisciplinary curiosity, and relevance to both academic and practitioner audiences. Her contributions align perfectly with the values of this award: innovation, impact, and scholarly excellence. Beyond publications, she continually seeks to involve students in her research, thereby enriching our learning environment. In fact, she has prior service as co-director of Georgia College's Mentored Undergraduate Research and Creative Endeavors (MURACE) program.

I am confident that there is no candidate more highly deserving than Dr. Rynarzewska for this honor, and I wholeheartedly and enthusiastically support her nomination.

Sincerely,

Dr. Scott C. Manley
Chair, Department of Management, Marketing & Logistics

GEORGIA COLLEGE
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November 12, 2025

Dear Award Selection Committee,

It is my pleasure to enthusiastically support Dr. Ania Rynarzewska for the University Excellence in Scholarship and Creative Endeavors Award. As a colleague, fellow researcher, and co-author on one manuscript in progress, I can personally attest to her high level of drive, determination, and intellectual curiosity in the scholarship of written publications. Beyond these admirable qualities, she is also a highly respected and frequent publisher in her field.

I can honestly say I have never known anyone who has published so many manuscripts at such a high level over so short a time span. Just in this year alone, Dr. Rynarzewska has five peer reviewed publications accepted at journals rated A and one at an A* journal as rated by the Australian Business Deans Council (ABDC) list of journals. The ABDC list has been established as the acceptable level of quality for publication in the College of Business and Technology. The ABDC list of journals requires substantive reviews of all journals listed to become acceptable. Further, the list is sub-divided into A, B, and C levels of quality with an A* to denote the very highest quality. Given that a C level journal meets the high standards of the College in terms of double blind, peer reviewed publication, Ania has far exceeded the expectations for even a seasoned author. The A* publication represents the top 7% of all journals worldwide accepted on the ABDC list of quality journals. This is an astounding level of accomplishment, extremely rare among her colleagues, and an exceedingly high recognition by her peers.

The publications in which Ania has published are international in scope and she is the first author of many of them. The breadth of dissemination of her research can also be easily seen in the acceptance of her peer reviewed papers. She has presented her findings at conferences all over the nation and the significance of her research is shown by the high impact factors of the journals that have published her research. She has even won the best paper in track and the best overall paper at the Society for Marketing Advances, the premier marketing association in the US.

Dr. Rynarzewska's research has been highly significant not only within her marketing discipline, but also in the medical community as exemplified by her work with the Hospital System of Georgia. Not only has she had six more publications in the medical field this year, but her work has been devoted to providing access to better healthcare to rural Georgians, a particularly unique need.

In summary, I cannot overestimate how remarkable Dr. Rynarzewska's research and scholarship has been and I recommend her with my highest level of support for the University Excellence in Scholarship and Creative Endeavors Award.

Sincerely,

Robert J. Duesing

Robert J. Duesing, Ph.D.
Professor of Management
Department of Management, Marketing and Logistics

Netnography: a research method to study supply chain members' interactions in online communities

Ania Izabela Rynarzewska
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Larry Giunipero
College of Business, Florida State University, Tallahassee, Florida, USA

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Abstract

Purpose – The objective of this paper is to further the understanding of netnography as a research method for supply chain academics. Netnography is a method for gathering and gaining insight from industry-specific online communities. We prescribe that viewing netnography through the lens of the supply chain will permit researchers to explore, discover, understand, describe or report concepts or phenomena that have previously been studied via survey research or quantitative modeling.

Design/methodology/approach – To introduce netnography to supply chain research, we propose a framework to guide how netnography can be adopted and used. Definitions and directions are provided, highlighting some of the practices within netnographic research.

Findings – Netnography provides the researcher with another avenue to pursue answers to research questions, either alone or in conjunction with the dominant methods of survey research and quantitative modeling. It provides another tool in the researchers' toolbox to engage practitioners in the field.

Originality/value – The development of netnography as a research method is associated with Robert Kozinets. He developed the method to study online communities in consumer behavior. We justify why this method can be applied to supply chain research, how to collect data and provide research examples of its use. This technique has room to grow as a supply chain research method.

Keywords Supply chain management, Netnography, Qualitative research, Online communities, Digital supply chain, Virtual community, Social media networks

Paper type Research paper

Introduction

Netnography is a qualitative research technique that studies online communities, networks and social media platforms. This research method seeks to understand online behavior and culture by analyzing digital conversations, interactions and content. Netnography, as a research method, was developed by Robert Kozinets. He developed the method to study online communities (Kozinets, 2020). While Kozinets developed Netnography to study consumer behavior, this research method offers promise for supply chain research.

Many changes have impacted supply chains in the past 3–5 years. One of the more prominent issues due to offshoring to the Far East is managing risk. This risk developed from COVID-19 shutdowns in China that restricted supply and created massive shortages (Panwar *et al.*, 2022). Another is the increasing digitalization of supply led by Industry 4.0 and the sudden emergence of artificial intelligence (Tao *et al.*, 2019). Finally, the organizational structure and human skills needed to manage in this rapidly changing environment become very important. The new workforce does not rely on the same tools to manage these business issues and is more likely to be influenced by social media and other internet-based tools in making critical decisions on how organizations position their supply chains. Similarly,

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researchers studying the supply chain phenomenon need to explore newer methods that are relevant in capturing data that these newer workers use, especially in online communities.

One recent study of sourcing showed that while over 120 different theories were used to explain the phenomena, only three research methods were used to explain 78% of the sourcing practices (Giunipero *et al.*, 2019). The three methods were surveys, quantitative modeling and case studies. Yet, quantitative and positivist qualitative studies falling under the positivist paradigm often miss, by design, the contextual, managerially relevant inner workings of an outcome or theory (Darby *et al.*, 2019). Given the rapidly changing supply chain management (SCM) field and the need to utilize other research methods, we highlight one newer method called netnography, which is interpretive in nature.

Studies using netnography within a supply chain are beginning to emerge, but the method is still not widely understood within the supply chain literature. Thus, this paper seeks to (1) explain netnography as a research method, (2) provide a framework to understand how the researcher can use netnography and (3) provide examples of how researchers have implemented the method in the supply chain. By doing so, this paper contributes to the supply chain literature and advances researchers' understanding of the method. This study can help supply chain researchers determine if this method can be used to answer their research questions. The technique can be applied as a stand-alone method or as part of a multimethod analysis combined with surveys, data mining, case studies and positivist qualitative approaches.

Netnography as a research method

Netnography is a qualitative method of inquiry that focuses on online communities from a holistic, humanistic perspective (Kozinets, 2023). It is a similar method to ethnography, with its anthropological roots, which studies individuals or groups and their behaviors within contexts of communities and culture (Draper, 2015). Netnography can be defined as a "broad-based study of online social interaction and experience from a human perspective" (Kozinets, 2015, p. 3). Due to its online nature, netnography is geographically unbound. This means that the community does not necessarily gather in the physical geographical location. Instead, the community meets online, forming online communities.

Since the emergence of internet-based social media platforms, individuals have begun forming online communities, which can be viewed as computer-mediated social gatherings. The communities are similar to face-to-face encounters that scholars have studied for years. These social media platforms allow individuals to gather in one place to discuss their values, passions and interests and share their behaviors. Members form bonds and develop shared values, language and unique cultures (Bowler, 2010; Kozinets, 2006). The major benefit of netnography is that it collects information from community members who willingly post to online forums, groups, blogs and other online public spaces. These posts become a record of publicly accessible interactions between community members that are self-transcribed and archived. This is a major benefit of netnography because, in ethnography, researchers would have to record and then transcribe data from interviews and observations. Meanwhile, in netnographic research, community members type up their comments and react with emotion-laden graphics or memes. The members of the community do this in real time, making it available and easily accessible to researchers, either in real time or retrospectively. These actions by community members increase data accessibility and usability. It also reduces tensions between the obvious presence of a researcher and community members' freedoms.

To provide a more complete understanding of the method, a chart highlighting the major steps used when applying netnography was developed which is applicable to both consumer and supply chain research. In summary, once the research scope and questions are developed, online communities that fit the research agenda are located. Next, the researchers join the community and immerse themselves within it. This immersion can be covert or overt,

allowing the researcher to identify themes that address and answer research questions from an emic or etic perspective. Finally, the researcher must also decide on the type of data collection, code and analyze the data. This provides a summary of the major activities observed. Then, a summary description of these findings can be reported on a stand-alone basis or extended through a multimethod approach to provide further analyses.

The remainder of the paper first highlights the emphasis of netnography on online communities. Next is a justification of its applicability to supply chains and a literature review of netnography in supply chains. Lastly, we trace the process steps summarized above and then provide an example of how one supply chain study used netnography.

Netnography the focus on online communities

Using netnography provides researchers with an interpretive method of inquiry that focuses on online community interactions. This leads to building narratives in the context of the members' experiences within a larger culture. The findings can address research questions previously set for the research study. These key questions serve as the basis for developing research hypotheses for future studies by extracting meanings and mapping out potential patterns, as witnessed in the comments. This means that netnography offers an opportunity to uncover information and insights previously difficult to access. Additionally, it can determine the presence of phenomena that have not been previously studied in a particular context.

With context and understanding in mind, netnography follows predominantly a naturalistic, interpretive paradigm with three underlying assumptions, which include the ontological, axiological and epistemological assumptions. Ontological assumption is linked to the nature of reality; axiological assumption deals with overriding research goals such as explanation, prediction or understanding, while epistemological assumption deals with knowledge generation (Hudson and Ozanne, 1988). In netnographic research, an ontological assumption is holistic, socially constructed and contextual; an axiological assumption focuses on understanding; and an epistemological assumption is idiographic, time-bound and simultaneously interactive. At the same time, netnography may allow for a blended approach without losing its interpretive qualities. In netnography, the interpretive aspect of online communities is the key characteristic.

Entering a community with a naive state of mind may be desirable to capture comments and posts relying on inductive reasoning while limiting unnecessary bias. Another practice is for the researcher to enter the community with a specific research purpose, such as understanding the interactions of a specific community. The research purpose and associated research questions that netnography may attempt to address should aim to discover, understand, explore, describe, or report a concept or phenomenon (Kozinets, 1998).

Depending on the project's scope, the research purpose can be broadly or narrowly defined. For example, one might focus on the general culture within a particular industry and observe industry dynamics. Interactions can broadly cover supply chain members or focal (buying) firms. A narrowly focused study with a particular group of suppliers responding to changes in relationships. Narrowly focused studies depend on a rich online debate over a particular issue. For example, crisis scenarios, such as COVID-19 or a string of supplier failures and their effects on buyers, also offer a unique, narrow focus. Alternatively, one may start broad and then narrow down the purpose of the research as the findings emerge in the process of constant comparison (Kozinets *et al.*, 2010). While online communities are the focal point of netnographic research, their origins are related to ethnography. To enhance the researcher's understanding of netnography's development, a brief explanation of ethnography follows.

Ethnography, the older sibling of netnography

"Netnography remains rooted to core ethnographic principles of participant-observations while also seeking to selectively and systematically incorporate digital approaches such as

social network analysis, data science and analytics, visualization methods, social media research presence and videography" (Kozinets, 2006, p. 3). Ethnography as a method is "intellectually legitimate," systematic, yet evolving and emphasizes reflexivity, representation and realism (Brewer, 2000).

Ethnography needs to be conducted in a place where the community gathers. It is primarily a field-work-based observational and participatory technique that tends to be geographically bound (Brewer, 2000). Thus, the researcher must travel to a place where the community gathers to gain insights into that community and engage in prolonged exposure.

Conducting ethnographic studies poses challenges for the researcher. It "usually involves the researcher participating, overtly or covertly, in people's daily lives for an extended period. It requires watching what happens, listening to what is said, and/or asking questions through informal and formal interviews. Research participants must be willing to share documents and artefacts – in fact, gathering whatever data are available to throw light on the issues that are the emerging focus of inquiry" (Hammersley and Atkinson, 2007, p. 3). There are overt and covert forms of observation. The overt form means the observer is known to those being investigated. The covert form implies that participants are unaware that they are being studied.

Why netnography is applicable to supply chain

While netnography was developed to study consumer behavior, it has applications in the supply chain. An analogy in buyer behavior research is Sheth's work on developing a model of organizational buying behavior. The model was taken from previous models of consumer buying behavior (Sheth, 1973). Thus, there is precedent for bridging from the consumer to the more business-to-business realm. Secondly, supply chains are complex systems that cover many different functional areas, from logistics to purchasing to inventory and have a broad range of responsibilities (Monczka *et al.*, 2021). Thus, they are ideal for online communities and, as mentioned previously, have numerous groups within social media platforms such as LinkedIn or Facebook. Thirdly, SCM is changing rapidly and is affected by environmental trends externally, such as the COVID-19 pandemic and internally by technology trends that will foster cultural changes that netnographers can identify. Lastly, the field is rich in data. While specific data from online communities may not be reported, researchers can use netnography to uncover major shifts or cultural changes. For years, researchers have posited that the supply chains have their own culture. Mentzer *et al.* (2001) proposed that the supply chain's cultural orientation espouses the management of intra- and inter-firm supply chain flows in a synchronized way to create customer value. Mello and Stank (2005) describe supply chain culture as shared values and beliefs that generate norms of behavior within the supply chain and across the entire organization.

This supply culture extends to online communities. First, community members have their own language and use acronyms, which have implicit meanings. Second, their behaviors are focused on key activities within the supply chain, including purchasing, operations planning and logistics issues. As mentioned above, organizational buying decisions have been studied for at least 50 years. Sheth's model of organizational buying highlighted the involvement of different functional groups within the organization, which assume various roles in the buying process, such as gatekeepers, decision makers and the formal purchasing department. Finally, the global economy, with its diverse cultural values and beliefs, affects supply chains. The most recent example of this was the supply restrictions from China during the COVID-19 pandemic.

Specific data for using netnography in the supply chain can be obtained through databases, professional associations such as institute for supply management (ISM) and council of supply chain management professionals (CSCMP), or through developing

relationships with a specific company and scraping social media platforms to collect qualitative text and quantitative data representing engagement such as a number of comments and likes. To highlight the field's readiness for the formal introduction of netnography to supply chains, a literature review of research using netnography in the supply chain is summarized. This is followed by in-depth examples of research studies using netnography in the supply chain. This should provide a roadmap for future researchers who wish to use this method either alone or in combination with more traditional methods.

Previous research using netnography in supply chain research

Despite the dominance of netnography in business-to-consumer (B2C) research, opportunities exist in the supply chain, as evidenced by emerging research. Table 1 highlights the major research articles in the supply chain that utilized netnography as a research method, either alone or in conjunction with another tool. Yet, the preponderance of research applying netnography to business applications is found in the B2C literature. Heinonen and Medberg (2018) performed an extensive search of the marketing literature for a 20-year period (1997–2017). They netted 321 research-based articles that used netnography. They categorized these articles into four major areas: (1) consumer research, (2) general marketing, (3) branding and (4) tourism. The authors found a growth in the number of articles using netnography. They concluded that it implied that netnography had established itself as a recognized qualitative methodology among marketing researchers. A rosy future was predicted for netnography, given societal trends, social media and the continuous expansion of the Internet's reach. However, they did not report one study applying netnography to business-to-business (B2B) marketing. They felt consumers were much more prone to sharing consumption stories online than employees or managers and cited the difficulties with gaining access to corporate sites.

Our review of the supply chain literature largely supports their findings. One exception was in green fashion. Cervellon and Wernerfelt (2012) used netnography to study two green online fashion forums (Treehugger and Care2). Their goal was to assess consumers' knowledge of green fashion issues and the evolution of this knowledge from infancy (2007) to youth (2011). The study was longitudinal. Two separate periods and samples were used: 2007–2008 ($n = 196$) and 2010–2011 ($n = 282$). More activity was found in the later period, as posts per respondent increased from 1.1 in the 2007–2008 period to 1.5 in the 2010–2011 period. The discussions within the communities had to be non-commercial and focus on green fashion. Content analysis was conducted by coding data and classifying themes utilizing QSR Nvivo9 software. Researchers also immersed themselves in both forums. They found that in the latter period, consumers commented more on specifics of the sustainable supply chain, such as fabric, materials, manufacturing processes, etc. Further, member roles evolved to educating new members and continually striving to sustain the development of green fashion.

Since 2017, we have identified four additional studies in the supply chain that utilized the netnography method. Hunter-Jones *et al.* (2018) studied multispecialty community providers (MCPs) in the healthcare sector in a service supply chain. They found that MCP alliances performed strongly in improving patient access and, to a lesser extent, in sharing skills.

In a B2B supply chain study, Conde *et al.* (2021) studied two inside sales community of practice forums (CoPs). They observed 192 inside sales agents from afar without any interactions over a 12-month period. The study generated 67,161 words and 496 pages. Summaries were reviewed multiple times and analyzed using Nvivo software. Six inside salespeople confirmed the results from an outside perspective. They found CoPs can provide increased knowledge, serve as a source for supplemental training and provide inside sales personnel with knowledge outside their organizational boundaries.

Table 1. Summary of supply chain research using netnography

Author	Sample and purpose	Data collection	Analysis	Major findings
Rynarzewska *et al.* (2024)	Small business owners and how they dealt with supply chain disruption	Social media Facebook groups with up to 150 k members per group and observations of daily interactions	Thematic and observational with heavy reliance on the immersive journal	1. Buyers perceived certain suppliers as deceptive. 2. They responded by supply chain base expansion and materials hoarding, 3. Ultimately resulting in product variety reduction, price increase and size decrease
Castillo *et al.* (2022)	Crowdsourced drivers and how they respond to their operational environments on technology platforms	Technology platforms, e.g. Grubhub, Ubereats etc. Driver interactions studied on reddit.com	Driver behavior on reddit.com yielded 1,430 posts and 21,539 comments. NVivo used with apriori categories until saturation	1. Tipping as a technology design mitigates driver uncertainty, lead times and costs. 2. A critical part of the delivery driver's experience is total remuneration. 3. The impact of tipping is more detrimental in high density population regions vs. low density areas
Lusiantoro and Pradiptyo (2022)	Self-organized social group's (SOSG) ability to enhance supply chain resiliency during COVID-19	223 members of Indonesian online SOSG named SONJO. Emerged during COVID-19 and supply problems with PPE and Food	223 SONJO WhatsApp Group (WAG) members and 237,010 words were analyzed using template analysis	SOSG's facilitated supply chain (SC) knowledge sharing, networking, bridging, mapping, and mindfulness. This in turn fostered collaboration and the ability to be resilient in the face of COVID-19 shortages
Conde *et al.* (2021)	Inside Sales agents and how their online Communities of Purpose (CoPs) facilitate sales knowledge outcomes	Two inside sales professional discussion forums Observed 192 inside sales agents from afar without any interactions over a 12 month period	Generated 67,161 words and 496 pages. Summaries reviewed. Analyzed using software Nvivo. Six inside salespeople confirmed	CoPs were used to: 1. Gain knowledge to improve sales activities. 2. Engage in continual learning 3. Develop a source of supplemental training. And 4. Provide knowledge outside the boundaries of their organization
Hunter-Jones *et al.* (2018)	If a multispecialty community provider (MCP) healthcare model can deliver improved efficiency and quality at 2 MCPs	Multimethod study with direct researcher involvement. Studied a professional services supply chain	Used netnography >4000; participant observation (MCP board meetings); and in-depth interviews	Both MCP alliances performed strongly in improving patient access and to a lesser extent in sharing skills and expertise and developing a shared identity. Higher risk activities, e.g. developing economies of scale or pooling back-office, or front office resources etc. Were less adopted

(*continued*)

Author	Sample and purpose	Data collection	Analysis	Major findings
Heinonen and Medberg (2018)	Database search of marketing journals based on AMA's definition and keyword netnography from 1997–2017	Categorized the 321 articles into major areas of: Consumer research, general marketing, branding, and tourism	Netnography can assist service firms in areas of service innovation, advertising and environmental scanning	Netnography can offer service researchers unprecedented opportunities to access naturalistic online data about customers. Not one netnographic study was identified in the context of business-to-business (B2B) marketing
Cervellon and Wernerfelt (2012)	Study of two green online fashion forums to assess consumers views of sustainable supply chains	Respondent posts were collected in two green fashion forums over two periods (2007–08 n = 196 and 2010–11 n = 282). Posts per participant increased from 1.1 to 1.5	QSR Nvivo9 software used Data were coded and classified by themes. Researchers immersed themselves in both forums	There was a switch in knowledge content over the two periods, from a focus on sustainability to a focus on fashion. With maturity, members commented more on specifics of the sustainable supply chain, such as fabric, materials, manufacturing processes, transportation, distribution, and recycling or re-use of fashion items
Langer and Beckman (2005)	Internet message board "Plastic Surgery" was studied Applying netnography covertly to study the sensitive research topic of cosmetic surgery	Studied 896 posts from Jan 2001–May 2002.	All 896 posts were printed, coded, and categorized by an experienced coder. The dominant themes were related to asking or offering advice on cosmetic surgery	Studying consumers in an unobtrusive and covert way can uncover insights. The opportunity to cover their identities allows participants to express attitudes, opinions, and experiences freely. This allowed researchers to gain deeper insights into their consumption motives, concerns, and experiences

Note(s): Sample, data collection, analysis, and findings of the research

Table 1.

In 2022, Lusiantoro and Pradiptyo found that self-organized social groups (SOSGs) fostered resiliency in supply chains during COVID-19. Two hundred and twenty-three (n = 223) members of the Indonesian online SOSG named SONJO were studied. Chat log activity over a two-month period corresponding to the Indonesian COVID-19 national state of emergency was studied after securing approvals from the group initiator and administrator. Supply problems with personal protective equipment (PPE) and food emerged during COVID-19. This resiliency was driven by knowledge sharing, networking, bridging, mapping and mindfulness.

Castillo *et al.* (2022) utilized netnography to study crowdsourced driver behaviors through their interactions on reddit.com. They found that including a tipping mechanism in the technology design was critical since a major part of the delivery driver's experience is total remuneration. They scraped "CouriersOfReddit" using Python 3.8.3. Focusing on driver conversations as to why they accepted or rejected delivery offers and the role customer tips played in the decision process. Using keywords, the searches yielded 1,430 unique postings with 21,539 comments. Data reduction by maintaining only the title and body of the original posting resulted in 8,808 total comments. The objective of the netnography in this study was to empirically ground the simulation model using *a priori* content categories. NVivo 12 was utilized for these categories until theoretical saturation was reached through the redundancy of the same themes.

Finally, in a 2024 publication, researchers conducted a two-year-long netnography study and discovered suppliers' deceptive and opportunistic behaviors. They evaluated the impact of these behaviors on the buying firms and the resulting coping mechanisms. Buying firms hoarded supplies, expanded supply bases and reduced end consumer product value (variety and price) (Rynarzewska *et al.*, 2024). This study was participatory and predominantly observational, heavily relying on immersive journals. They used a thematic analysis and reported key quotes to represent each theme. Their approach was like that described in progressive data collection, with greater emphasis on the immersive journal.

Using netnography in supply chain research

As previously mentioned, netnography builds on rich traditions of ethnography but is a relatively new method, dating to the late 1990s. Its origins are as a method of studying consumer culture. However, with the increasing magnitude of online interactions among both individual and business consumers, there is a good reason that this method should emerge in supply chain literature as a way to uncover meanings, contexts, motivations, experiences and behaviors among supply chain members (Rynarzewska *et al.*, 2024). Another recent study of carriers within the supply chain suggested expanding methods of inquiry to include netnography to gain a deeper understanding of industry member interactions (Giunipero *et al.*, 2022). Given its interpretative and participatory nature, netnography offers an opportunity to uncover previously unknown or study phenomena previously analyzed using different approaches.

Understanding the opportunities to expand the existing knowledge within supply chain literature, netnography is a viable and rich method of studying the culture and interactions from a supply chain perspective.

The geographically unbound nature of netnography enables the researcher to engage in prolonged observation, limiting potential temporal effects such as observing behaviors and interactions that may be "one time" or atypical and not particularly relevant to the industry as a whole. Further, online communities have become prevalent and far easier to access than communities in their traditional format. They can be found on any social platform in groups such as those on Facebook or LinkedIn, Reddit communities or by using a common hashtag on other platforms, as well as company blogs and other forms of social engagement.

Additionally, communities can form as part of a business page or a company's organized group. For example, in the transportation sector, groups such as "Freight and Logistics Professionals" consist of 198,000 members. The "International Freight Forwarding Group" has 145,000 members, and the "Transportation Network for Freight Brokers, Logistics, Supply Chain, Carrier Trucking" has 62,000 members.

An individual carrier organization may create a LinkedIn page followed by potential customers who can interact, comment, share the posts, or otherwise react to the company's posts, e.g. suppliers' or logistics firms' post on their pages. This can become a source of rich information for the company itself and the competition, which is or might be watching a competitor's page and seeing the interactions among its customers or other relevant community members.

The community interactions and discussions become a source of valuable information that may uncover trends in what the supply chain members are doing well, along with data that might be useful for benchmarking. Negative reactions also express the challenges and frustrations members are experiencing. These reactions are often founded on members' actual experiences.

Defining locating and accessing online communities

Online communities are defined as "persistent computer-mediated forums where groups of people communicate" (Kozinets *et al.*, 2011, p. 204). The notion of community can be further expanded by understanding that the interactions can be "consocial," which can be defined as a form of copresence in a virtual (or physical) space within a larger network that enables interaction (Perren and Kozinets, 2018). Consociality "eschews notions of inside-outside boundaries in favor of an emphasis on what is shared between people." This further amplifies that "online cultural and community identities are adopted by people, sometimes temporarily, and often to varying extents," on an as-needed basis (Kozinets, 2006, p. 13). It also allows researchers to study sensitive topics. For example, Langer and Beckman (2005) studied an Internet message board on cosmetic surgery. Through a year-long analysis of 896 posts, they found that the opportunity to masquerade their identities allowed participants to freely express their opinions on this sensitive topic.

As previously noted, communities can also be narrowly defined. For example, people or organizations who are members of unique groups. Those can typically be found on Facebook, LinkedIn and blogs. Often, a company or person must request access to become part of a group. These groups may have self-imposed rules that one must agree to follow, as well as being moderated by group administrators (cf. Rynarzewska, 2019). This suggests there are norms that govern the group and punishment for violations can include sanctions. Often, a set of questions needs to be answered by administrators and moderators to determine whether one meets the criteria for membership. These criteria may include an agreement with group norms. A group moderator may ensure that community standards are upheld, warn people about misconduct, remind them of rules, or even expel members for violating group standards. A narrowly defined community could be one company's stakeholders, with its customers comprising the majority of members who engage in discussions on a topic or industry.

However, the definition of an online community may also be broader and easier to access by following a particular hashtag, news media coverage or industry-specific news on LinkedIn, YouTube or any other online platform. For example, in transportation-related news, content creators focus on a specific topic or one company's online presence. The broader online communities tend to be easier to access as pages, news outlets, industry-specific content creators, or following hashtags. They are public and offer open access, but they are challenging to define cleanly. Kozinets (2006) argues that the connection as to

whether potential posts induce accidental comments or are evidence of true community should come through research, reflection and interpretation rather than mere assumption.

Accessing a community is a form of purposeful sampling. This requires the researcher to select a community most representative of the research objective of the study. The community selected should also be relevant and heterogeneous, which adds richness to interactions. Arguments can be made for homogenous groups when pursuing a narrower research focus. Further, when choosing a community to investigate, the researcher needs to ensure that the community is sufficiently engaged and has different participants, meaning that the community, through its interaction with each other, creates narratives that can be analyzed. Without engagement, understanding of the community, its culture and language will be limited. This deep engagement leads to what has been termed the immersive approach to netnographic research (Kozinets, 2023).

Online community immersion

Netnography is an immersive technique that requires researchers to be fully engaged in the community to understand its context and dynamics. The researcher must interpret and understand the language and reactions to various situational posts in that community. While netnography may incorporate various data types and analytical approaches, the method itself differs from textual data mining, content analysis, or any other form of quantitative text analysis. It goes beyond mere counts, the magnitude of emotion, or the presence or absence of phenomena within any text. Instead, it focuses on interpreting the narrative within a larger context, which is made possible by its immersive nature. Researchers are encouraged to document their thoughts and experiences through an immersive journal, which may also include their contemporary thoughts and descriptions, capture exemplar quotes or threads or screenshots of those and even highlight potential bias, researcher's feelings, etc.

Netnography is different from quantitative text analysis because, in a large data mining procedure, one may scrape the Internet or a specific social media platform for comments on a particular topic and then use the data mining method to assign emotion, the magnitude of emotion, the balance of emotion, the most frequently used words and associated valence and so on. Textual data mining procedures are great for quantifying the content, which can later be analyzed using statistical methods. However, as discussed later, a netnography can provide a context for large data mining studies. Nonetheless, since interactions on social media platforms are dynamic, big data textual mining approaches can miss the cultural or community-specific context (Kozinets, 2015). Using computers or software to analyze data under the umbrella of netnography only contributes to a partial understanding of the method while missing the critical component, since the critical component of interpretive analysis in the online community discourse, along with all its artifacts, would be missing.

In data-mining scenarios, it is often assumed that the context is the main post, such as the company's post about its new service launch. For example, for a logistics company, it may be the introduction of new environmentally friendly trucks to cover a particular geographic area. So, the initial response tends to be associated with that particular post. Still, it may only take one commenter to derail the direction of the conversation and interaction among commenters, which, in turn, might completely change the context. So, while the overarching context might be the post itself, there can be co-contexts within that post that might change the meaning of narratives altogether.

The people behind these narratives and the entirety of human, environmental and cultural factors that affect them are at the heart of netnography because "humanism, attention to the details and contexts of human stories and human understandings, of people using technologies, is the hallmark of genuine netnography, just as attention to human detail distinguished all ethnographies from all non-ethnographies" (Kozinets, 2015, p. 4).

While there are benefits to the above-described, software-driven methods, netnography offers a completely different set of benefits. It allows the researcher to capture and interpret the ever-evolving and dynamic nature of social media interactions and context-driven narratives with a humanistic element.

Researcher's role in immersive engagement

There are two distinct approaches to the immersive role of a researcher. The researchers can immerse themselves by taking on an emic or etic approach. Taking the emic approach, the researcher analyzes the role of culture on an individual or group from an *insider* perspective. In the etic approach, the researcher seeks to understand the role of culture and its dynamics from an *outsider*'s perspective.

In the emic model, the researcher takes on "the inside perspective of ethnographers, who strive to describe a particular culture in its own terms. In the etic model, the researcher takes an outside perspective of comparativist researchers, who attempt to describe differences across cultures in terms of a general, external standard" (Morris *et al.*, 1999, p. 781).

To summarize the two approaches to researchers' behavior, we can say that "the etically oriented researcher approaches the question of a cross-cultural psychology from a trans- or metacultural perspective, while emically oriented researchers attempt to view phenomena through the eyes of their subjects" (Helfrich, 1999, p. 32). Thus, the etic researcher is a strict observer and is separated from what is being observed. It is still fully immersive because the researcher spends an extended period fully consuming the posts, replies of the thread and reactions. In contrast, the emic method is far more participatory in nature, which means the researcher may interact with others as a member and become a true part of the community. This is particularly possible and likely when the researcher is both the practitioner and the researcher. In cases where the researcher has a dual role (practitioner and researcher), to reduce bias within this interpretive technique, a researcher might consider moving between emic and etic approaches where the researcher can be both a participatory member and a rigorous observant separated from the community. For example, Rynarzewska (2019) studied the morality of biased online reviewers, took on a covert, participatory, immersive approach and moved in and out of the emic and etic roles to ensure bias as it related to the participatory nature of the study was minimized.

Harris (1976) quoted Pike's (1967) analysis of etic and emic approaches by compiling a set of Pike's statements that distinctly support the need for flexibility of movement between emic and etic approaches (p. 38): "etic data provide access into the system-the starting point of analysis" ... "the initial etic description gradually is refined and is ultimately-in principle, but probably never in practice-replaced by one which is totally emic" (p. 39). As noted before, active participatory roles might be quite prevalent for practitioners, whose roles as researchers and practitioners are intricately connected. In this case, constant movement from one role to another via emic to etic approaches might be desirable to capture the bigger picture while having a deep understanding of the context that active participation offers.

From a research ethics perspective, it would not be recommended to ask questions in a separate thread or post and encourage participants to participate without disclosing the role of a researcher. To maintain ethical considerations, any data collected for the research should not stem from posts prompted by the researcher unless the research and the researcher's role are explicitly disclosed. However, in a brand community scenario where the interaction takes place on a brand page, an assumption is that individuals commenting on the page are doing so knowing that the company is observing them. In fact, one may argue that they are doing so to be seen by the company.

Researcher's role in the community-steps to implementation

The appropriate community selected for a study can include multiple platforms and/or multiple groups. Next, the researcher needs to take on the role of an observer who lurks in the background. As previously described, that role can take on etic or emic approaches. Whether the approach is from inside (emic approach) or outside (etic approach) may depend on the researchers' familiarity and prior exposure to the community. For example, a researcher-practitioner in a particular field may immediately assume an insider role due to their subject matter expertise (emic approach). A researcher who is unfamiliar with the community, language and customs might take on an outsider role, at least initially (etic approach). The researcher should first attempt to understand the community, its customs, the common language and any rules of engagement. These activities can include both written and unwritten protocols (see Figure 1).

Additionally, the researcher must decide whether the observation will be overt or covert, where overt means that the study participants are aware of being observed, whereas, in the covert approach, participants are unaware of being observed for the purpose of research. Emic/etic approaches can be either covert or overt. The emic vs. etic approach deals with how the researchers study the culture: from an insider or external observer perspective. The overt or covert approach deals with the participants' knowledge about the researcher's intent, whether it is known that participants are being observed for the purpose of the research or are unaware. In other words, in the covert approach, the researchers' research intentions are hidden from participants, whereas in the overt approach, participants know that they are being studied. Figure 2 provides a summary of the immersion alternatives available to the researcher.

Finally, the researchers need to allow themselves time for prolonged engagement. The less familiarity the researcher has with the community, the longer the engagement should be before actively analyzing the data. In the early stages of netnography, researchers need to capture the essence of discussions through an immersive journal. These notes capture personal thoughts on the community and describe community interactions and any artifacts that may have led to communities' intense responses. It is important that the researchers keep detailed descriptions. The immersive journal is equivalent to ethnographers' field notes (Kozinets and Gretzel, 2022).

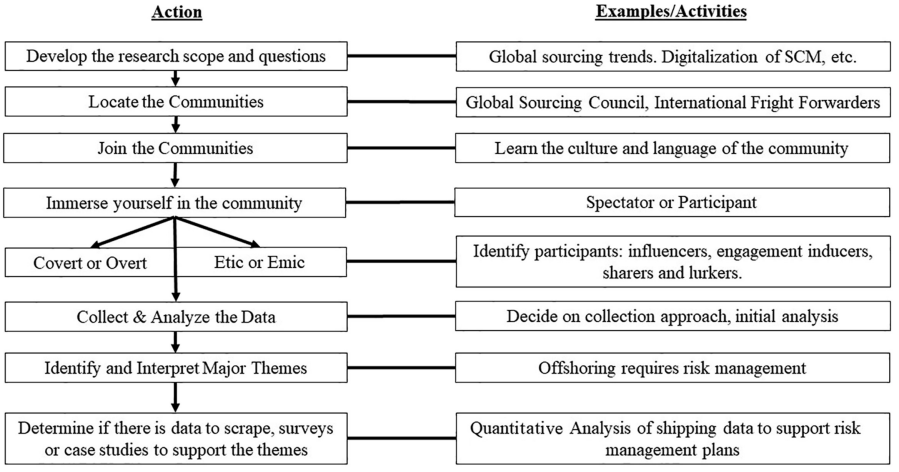
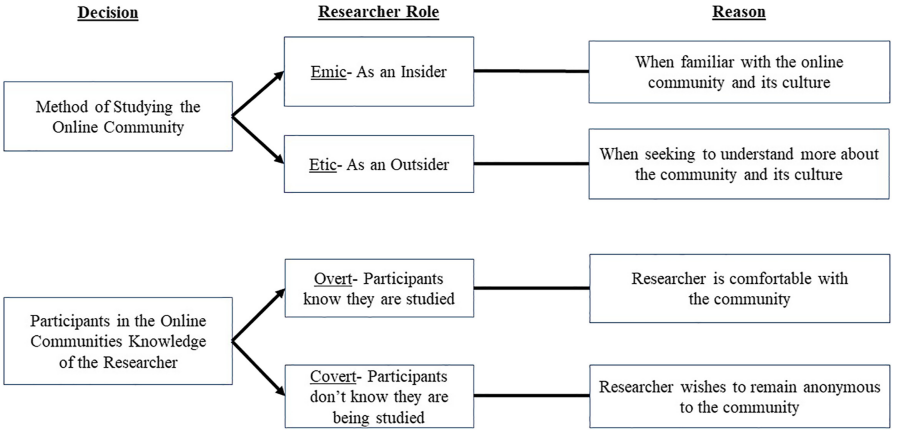


Figure 1.
Netnography research method process in SCM

Source(s): Created by author



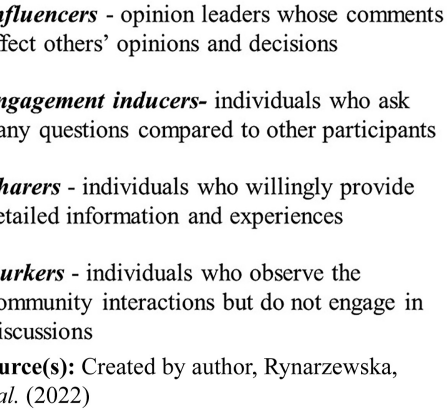
Source(s): Created by author

Figure 2.
Researcher online community immersion techniques

The immersive role of netnography allows the researcher to capture the essence of community discussions through the researcher's reflections. The role of a netnographer is to determine the trustworthiness of their findings rather than searching for measurement validity, which tends to be a part of quantitative research (Kozinets, 2002). The goal is to uncover or model potential behavior patterns, attitudes, thoughts and interests. The researcher must be careful of accidental findings that carry no potential for generalizability or do they carry merit over time. However, there might be a time when such time-related findings may be of particular interest. For example, Rynarzewska *et al.* (2024) used netnography to analyze how small business owners respond and adapt to COVID-19 pandemic-induced shortages and supplier misbehaviors. While the event may be relatively short term, the effects may be prolonged from the initial set of incidents, so extended engagement is encouraged to capture these potential effects, spillovers and behavioral changes.

The researcher must be mindful that "netnography is based primarily upon the observation of textual discourse" (Kozinets, 2002, p. 7). The immersive journal can also be supplemented with elements of narrative communication selected by the researcher. The amount of reliance on the immersive journal as either data or as a supplement to analysis varies depending on the research purpose and data collection approach. Further, the researcher may also incorporate screenshots or quotes, because in netnography, the researcher can selectively choose which data is useful based on the research question. The immersive journal is like field notes in any other qualitative field-based approach and can be used as data or supplement the data, but it is not the data itself. The data, which can be comprised of screenshots, direct quotes and the entire communication threads become data is separate yet intricately tied to an immersive journal, which is where the researcher reflects on the data, artifacts like images, videos, etc. and the entire context. Removing the posters' or commenters' names is recommended to ensure their anonymity and ethical engagement in research practices.

With prolonged engagement in the community, the researcher may also begin to notice that some commenters take on different roles within a community, and these can be classified (Rynarzewska *et al.*, 2023) (Figure 3). In online communities, there are four major groups, namely (1) influencers, (2) engagement inducers, (3) sharers and (4) lurkers. Influencers are individuals who have a great deal of influence on others' decision-making through their



Source(s): Created by author, Rynarzewska, *et al.* (2022)

Figure 3.
Participants roles in online communities

online word of mouth. Engagement inducers are individuals who ask more questions than others. Sharers are individuals who share all the information and experiences, often responding to engagement inducers. Lurkers are individuals who just watch the community interactions but do not engage themselves (Rynarzewska *et al.*, 2023).

Once the researcher is sufficiently familiar with the community, its rules, language, culture, artifacts and types of interactions in which they engage, they should begin to notice that the findings start to emerge from the data. These findings are a product of the data collection methodology and the immersive journal.

Data collection approaches

Data for netnography can include various formats but is likely to be predominantly textual in the form of comments posted by community members and any artifacts such as videos, photos, memes, etc. that may affect the community and induce discussion. These artifacts may become a context to the conversation among the members and need to be interpreted to understand the interactions among the members. Common artifacts include *emojis*, which are digital symbols in computer-mediated communication, memes, which are digital objects with visual, auditory or text forms, and gifs, which are animated memes. Gifs, memes and emojis express emotion and communicate a certain degree of judgment, irony, humor and subversion (Dean, 2019; Fischer and Herbert, 2021). They also affect those observing, similar to facial expressions and body language during in-person communication. Once the researcher(s) gain a broad understanding and feel of the community, a more specific data collection step of the process can take place.

As shown in Figure 4, it is proposed that the data collection method can be categorized from progressive and real time to *static and retrospective*. These two approaches differ in terms of how data are collected, which data are relied on to a greater extent and the types of data in which it results, as well as the analysis it renders. While the approaches are distinct, they can be placed on a continuum depending on the purpose of the research, community size and involvement, etc. For example, a researcher may use the progressive approach for 80% of the study and the static approach for 20%.

Progressive approach to data collection

The progressive approach specifically involves ongoing community engagement; data are collected in real-time, and heavy weight is placed on artifacts and community responses to

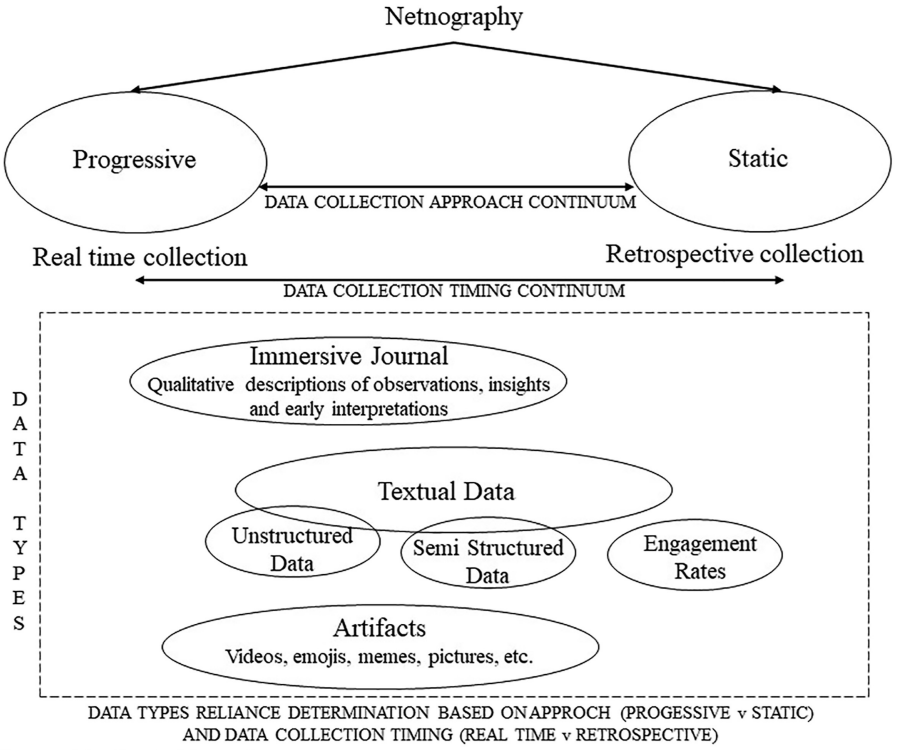


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Figure 4.
Data collection and data types netnography

those artifacts as well as the data from the immersive journal. This approach makes the netnography purely interpretive. The data collection approach can be decided prior to immersive engagement, particularly if the researchers are familiar with the community, especially in the emic approach or after the initial immersive engagement. In the decision, the research purpose also matters, so if the holistic view of socially constructed context and understanding of member interaction are the focus, this approach is ideal. During the initial immersive engagement, the data in this step of the process involves predominantly a field journal, previously defined as the immersive journal. An immersive journal is a form of description of researchers' observations parallel to qualitative researchers' field notes. More specifically, these notes can be used as rich observational data in progressive data collection or as supporting data in static data analysis. Limited-to-date supply chain studies that used netnography, grounded theory (cf. Goulding, 2005) and thematic analysis (cf. Clarke *et al.*, 2015) were used, but researchers in the supply chain should not feel limited to the two.

When using the progressive data collection approach, the collection and analysis may occur in near real time during the ongoing process of constant immersion, and analysis occurs by constant comparison via the hermeneutic circle. This approach can be viewed as an interpretive spiral "because it connotes interpretation as an open-ended process that iteratively moves closer and closer to meaning as interpretations are refined and challenged" (Darby *et al.*, 2019, p. 402). It also involves constant movement between elements such as text in the form of online comments and artifacts like pictures, videos, emojis, memes, gifs and context. This method can be particularly useful in active situations or events that rapidly

affect group dynamics. For example, in crisis-laden scenarios where changes occur dynamically, it may give the managers the ability to act and respond to mitigate the crisis as it happens. The approach allows flexibility and may be affected by algorithms that push the most relevant content to the top. It allows the researchers to understand discussions that are the most engaging at the time they occur, as those are often more visible even within a group. Conversations, as they happen during exposure to other commenters, memes, emojis, videos and other artifacts, allow for analysis in real-time. We define *progressive netnographic data collection* "as a method that focuses on studying online communities by collecting data in real-time, which enables near-simultaneous analysis with a potential for data interpretation to evolve and deepen as the inclusion of social media reactions and the presence of artifacts adds to the complexity of findings."

Static approach to data collection

The static approach focuses more on content analysis than the positivist qualitative approach mentioned earlier. However, despite its focus, it still requires interpretation. We define the *static netnographic data collection approach* as "a technique that is retrospective in nature and relies on semi-structured data, with lesser emphasis on ongoing engagement." The static approach is more of a nonparticipatory netnography similar to the positivist qualitative approach that focuses on objectivity and explanation yet retains interpretation and a focus on context and understanding. Further, this approach gives access to more raw data, which leads to less reliance on field notes. In the static approach, semi-structured datasets are often saved and analyzed in Excel. Text comments are linked to users, with dates of postings, the number of likes, comments, etc. becoming the basis of analysis. For example, when studying a crisis situation, the static approach takes a retrospective view of the crisis situation. In this case, the study was started after the crisis had subsided. The analysis focuses on how the crisis evolved and whether it was resolved or still persists. Less dynamic topics or general slow-evolving cultures are also candidates for study using the static approach. However, there is still a desire to retain the focus on understanding the context and community culture affected by the crisis through exploring potential interaction patterns. In the static approach, a more linear approach seeks to extract construct-like themes and potential linkages between these contracts. They become the basis for testable propositions. These "propositions (. . .) will likely be applicable to a wide range of supply chains" (Pagell and Wu, p. 42).

Finally, the static approach may blend the qualitative interpretive approach with quantitative approaches (Rynarzewska *et al.*, 2023), where understanding of communities takes place before sentiment and linguistic analysis for quantitative testing occurs. However, without an immersive approach to communities, linguistic or content analysis alone should not be viewed as a netnography, as it may miss the interpretative and qualitative understanding of communities.

Using both progressive and static data collection methods

The data collection and analysis can also blend progressive and static approaches, using a two-step process. For example, to understand a particular community, the researchers may first use the progressive approach in a smaller community forum. Then, once they gain a better understanding of this community, the researchers may wish to expand their understanding into a larger community and perform a static network search where members figure out looser connections between each other as the members of interest groups. Therefore, these datasets are ideal for a blended method, varying the percentage of progressive or static analysis.

Regardless of the approach to data collection, the data can be manually saved by the researcher in the form of screenshots (Rynarzewska, 2019). This data runs parallel to the

immersive journal. It can also be manually copied into Excel, which results in unstructured data. This data can also be extracted into a CSV or Excel file either by web scraping, application programming interfaces (APIs) or by using commercial comment extraction methods. Such data are often purchased for a fee or accessed via a subscription-based platform for a semi-structured dataset. Web extraction is more common on the static side of the continuum. Web scraping, an increasingly popular method to access data shared on the Internet, is also known as web extraction or harvesting, which is "a technique to extract data from the world wide web (WWW) and save it to a file system or database for later retrieval or analysis (Zhao, 2017, p. 1)."

Typically, Internet data extraction, regardless of method, allows researchers and businesses to gain access to market intelligence. However, web scraping can come with a host of potential ethical and legal implications that ought to be considered. For example, web scraping may violate terms of service, local regulations, (Thomsen *et al.*, 2012) etc. Data extraction using APIs lowers the likelihood of legal implications (Boegershausen *et al.*, 2022). The decision on how the data will be extracted, particularly in the static approach, as it may involve larger, semi-structured datasets, ultimately belongs to the researchers. Researchers are encouraged to familiarize themselves with regulations and the terms of services associated with the Internet site or social media platform from which they want to harvest data. Further, Boegershausen and colleagues (2022) also offer recommendations for using web scraping techniques or API, while considering ethical aspects and project needs.

While discussing data harvesting and a static approach, it is worth once again reiterating that researchers often misuse and misunderstand the term netnography, particularly in that context, where they lack engagement, participation and knowledge co-creation (Costello *et al.*, 2017). When using the static approach, the researcher must still utilize immersive engagement prior to or concurrently with the static approach and data harvest. Therefore, caution must be taken when data scraping, data mining and linguistic analysis not to remove the holistic and context-laden angle. Otherwise, researchers will miss the heart of netnography as it is, ultimately, human-driven, interpretive and qualitative in nature.

The progressive to static continuum data collection along the different approaches to analysis and research outcomes highlights the flexibility of netnography in terms of data collection, analyses and insights. Ultimately, "netnography, like an older sibling, ethnography, is promiscuous. It attaches itself to and incorporates a vast variety of different research techniques and approaches" (Kozinets, p. 42).

Analysis of data

The interpretive nature of netnography permits a wide assortment of analytical choices. The actual analysis of data is comparable to other qualitative methods as it belongs to the naturalistic paradigm. It focuses primarily on symbolic interactionism in social acts as part of the lens through which the researcher better understands the raw data (Kozinets, 2015). The analysis may involve a myriad of analytical and qualitative approaches. For example, researchers may use the grounded theory (cf. Goulding, 2005) or the phronetic iterative approach (Tracy, 2018). The phronetic approach incorporates inductive and deductive coding, moving from etic to emic approaches, whereas the grounded theory is an inductive approach.

The inductive approach in grounded theory allows the findings to emerge from the data, thus allowing for in vivo coding, which helps to generate new theories through the process of open analysis. In vivo coding enables focus on specific and actual words used. This can help the researcher better understand the language and words used within a community (Manning, 2017). The phronetic iterative approach, by combining both inductive and

deductive approaches to analysis, can be used for extending specific theories or narrowing focus on a particular issue or concern of interest.

Upon deciding on the overall approach, a decision needs to be made on the type of coding. Coding is "a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (Saldaña, 2014, p. 5). The purpose of coding is to "expose the meaning, idea and thoughts" from text data (Khandkar, 2009). Coding also allows the researcher to organize, extract meaning and interpret the qualitative data for others to consume and use. Researchers can engage in open coding, axial coding, or selective coding. Open coding is the initial coding that allows for the codes to emerge from data, as opposed to *apriori,* template-like coding, which applies pre-defined codes to a text (Blair, 2015). Axial coding allows for connecting the initial codes into categories (Corbin and Strauss, 1990). Similarly, codes can become building blocks for larger themes and even larger patterns, as is the case in thematic analysis (Clarke and Braun, 2017). Finally, selective coding allows for connecting categories to each other and integrating them into theoretical contributions (Kendall, 1999). The choice of coding approach depends on the research objectives and the researcher's choice.

Additionally, qualitative data analysis provides a selection of possible approaches that are driven by two broad determinants: (a) the research purpose and questions and (b) the data types or sources. Qualitative research can be divided into orientations based on purpose. For example, phenomenology, which focuses on understanding the essence of phenomena through an individual's direct experience. Ethnography, as previously mentioned, is a systematic study of people and cultures through observation and interaction with participants. Meanwhile, the case study method seeks to provide a detailed understanding in a real-life context. The focus is on exploring how and why questions to understand complex issues.

Interpretive analysis is a researcher-driven interpretation of reality within a specific context. The goal is to interpret the subjective experiences, social processes and cultural meanings of participants. In this context, the researcher plays a key role in understanding data and findings while keeping the research purpose in mind. For example, the investigator may conduct interpretative phenomenology focused on interpreting subjects' lived experiences.

As discussed, the focus of netnography has ethnographic roots. Netnography aims to understand culture, language and relationships between participants within online communities. The researcher must first determine the purpose of the research beyond the broad study of culture because netnography is a flexible method that allows for different levels of focus. For example, similar to phenomenological ethnography (Katz and Csordas, 2003), researchers may also employ phenomenological netnography that centers on understanding community members' experiences. A case study of netnography could include community responses to an event, complex organizational actions, etc. As illustrated above, researchers become familiar with several approaches to analysis.

Data types and sources also affect the analysis. For example, a spoken interview must be transcribed. While it ultimately becomes textual data, it is in a different format, utilizing linguistic fillers rather than typed social media comments. Conversely, social media comments may be rich in abbreviations, memes and emojis intended to emphasize expressions. Therefore, it can be argued that social media comments with all the artifacts, such as memes and emojis, may require a high degree of analytical flexibility, including several types of analyses to capture both the meaning of the text and the meaning and impact of artifacts. Finally, while netnography combines various analysis methods, it is predominantly an observational methodology. Field notes via an immersive journal need to be included in the analysis either as data or in a broader context through comparison to other data. As noted earlier, in progressive data collection, more weight is suggested to be

given to the immersive journal and the artifacts included in the comment section of a post. Conversely, in static data analysis, more emphasis is given to chronological shifts in conversations, which are likely to be useful in a case study-based netnography of how a unique event may have affected the community, which takes into account historical and environmental data. These case studies can address the questions of what happened, when it happened and how did it affect the community. An argument can be made for using all of these data sources as part of netnography, as multiple data sources allow for representation and legitimation, which refer to the ability to extract adequate meaning with trustworthiness and credibility (Onwuegbuzie *et al.*, 2012).

The analysis can include several data types such as text, talk, document, video, image, etc. Analysis techniques include but are not limited to qualitative comparative analysis, theme analysis, keywords-in-context and constant comparison analysis, to name a few (sf. Onwuegbuzie *et al.*, 2012). Initial types of analyses, such as word count or data mining, are not considered the primary method because they tend to lack the immersive nature required in netnography. Instead, they could be used as a supporting analysis.

The actual analysis can be conducted in almost any software and manually. For example, one can highlight text elements in an Excel or Word document and assign them a code in a column (in Excel) or as a comment (in Word). Researchers can also manually code using small note cards and arrange/rearrange them on a board or a large table. However, this method makes collaboration between researchers working on the same tasks simultaneously inherently difficult. Finally, specialized software exists to help with data analysis. For example, NVivo software (though others exist) is dedicated to qualitative data analysis. The software can help users organize, analyze and visualize qualitative data from several sources. The user can manually or automatically code data, connect different codes and nodes to suggest relationships, visualize data and enable collaboration between researchers. Researchers should avoid the temptation to use automatic codes and visualization techniques without the immersive elements, which would strip the approach of the humanistic, interpretive aspect of netnography.

Detailed examples of netnography applications in supply chains

Giunipero *et al.* (2022) used nonnetnographic methods in their initial study. They identified power shifts between small carriers and brokers during the early stages of the COVID-19 pandemic. This led them to call for netnographic research to better understand the culture, behaviors and dynamics of the relationship between freight brokers and motor carriers to further their findings. In this case, netnography would be an excellent choice to deepen knowledge of what was found in prior research.

In a follow-up to this study, netnography could help answer research questions such as: (1) at what point did the power in the supply chain shift from brokers back to independent drivers; (2) what market conditions contributed to this shift; and (3) will trust and cooperation between these two critical parties in the transportation supply chain be repaired over time? These insights might be difficult to capture by other traditional methods, yet communities can be used to provide deep insight into turbulent markets and their effect on relationships over time.

Netnography can also be the method used to bridge qualitative and quantitative paradigms by developing testable propositions for future research or as a means for supporting early theory development. For example, Rynarzewska *et al.* (2023) used netnography to support the introduction of transactive memory systems (TMS) for more efficient and agile supply chain relationships. Netnography was used to support and provide rich qualitative evidence for aspects of the TMS system, its development among supply chain members and knowledge sharing among competitors who engaged in coopetition.

Thus, researchers can use qualitative research findings from netnography to propose testable propositions as a means of bridging interpretive research with pragmatic research (Gioia *et al.*, 2013).

Netnography can also be used in mixed-methods studies to uncover how interactions between supply chain members may have shifted due to environmental factors such as regulatory changes or extreme conditions (such as COVID-19, wars and environmental change-linked disasters). These results were then used to develop research hypotheses that were tested using quantitative modeling.

For example, a 2-year-long netnography supply chain study was conducted by Rynarzewska *et al.* (2024) mid-pandemic. They first selectively chose groups of small business owners in the natural skincare and candle industries. They chose this industry because businesses offering body care products also often offer candles. This applies to small and large businesses (like Bath and Body Works, Mrs. Myers, etc.). Upon selecting the community and entering multiple Facebook groups where these small business owners were active, they began their immersive, fully participatory (emic), covert approach to data collection. The approach there was emic because one of the researchers was familiar with the community because of their prior engagement within the community.

They found that the community became suspicious of the suppliers and their behaviors' during the pandemic. The shortage of inputs greatly affected the community members' ability to ship and deliver products to their customers. As a result, community members began overordering to ensure sufficient inventory. Further, the netnographic findings suggested that suppliers engaged in opportunistic behaviors on both price and quantity. This type of behavior created a spillover that led to the buying firms having negative perceptions of their suppliers. Taken as a whole, the supplier's predatory behavior during this supply-constrained period led to a serious deterioration in buyer–supplier relationships.

Based on the netnography findings, a model was developed, and a set of hypotheses were proposed based on emerging themes and connections between potential variables observed. A quantitative survey to test the hypotheses via a structural equation model was administered to small business purchasers. This study demonstrates the use of netnography in a mixed-methods investigation in the supply chain.

These example studies indicate considerable promise for using netnography in supply chain research. Netnography provides researchers with another tool that can be used as a stand-alone or supplementary research method.

Summary and future research directions

Supply chains continue to experience significant change, led by the COVID-19 pandemic and political events. Relationships with China have hardened, and global events, including wars in Ukraine and the Middle East, have triggered corporate discussions on reconfiguring supply chains. These events are coupled with the increasing digitalization of communications channels within and among supply chain actors. These actors compose a workforce that has increased their presence on social media. All of this ties directly to the strengths of netnography as a research method. It can provide supply chain researchers with a new avenue to test their research questions and embellish results. This qualitative research technique is based on studying online communities, networks and social media platforms.

The directions and trends in the supply chain support the increased use of studies observing online communities. Since netnography is not geographically bound, as is traditional ethnography, it fits well as a research method for future studies. For example, the group Logistics and Supply Chain Professionals has 626,000 members. Access to such communities provides researchers with access to rich sources of data to further answer research questions and further academic knowledge in SCM.

In this paper, we have examined netnography as a research method, provided a framework for the supply chain researcher to understand how to use this tool, laid out a roadmap by proposing a data collection continuum and illustrated data analysis techniques used in previous supply chain research. We also provide a decision guide for researchers to help deepen their understanding of communities. These include, but are not limited to, *developing* the research scope and questions; *selecting* the online communities; *immersing* oneself into the community either overtly or covertly; *answering* the research questions from an emic or etic perspective and *using* an immersive journal as a stand-alone approach or in combination with software to analyze and aggregate the data into key themes.

Following a model we developed from existing research, we described how the researcher can implement this method based on their research purpose and their prior understanding of communities. Once the research direction or research questions are developed, the next step is to locate the right online community to study and then join this community. To be successful, the researchers must immerse themselves in the community for a period of time, study and seek to interpret the various communication messages. Identifying key actors such as influencers and engagement inducers can provide structure for the analysis. The collection of important communications with notes akin to those in field notes is recorded in an immersive journal. This journal is key in helping researchers with interpretation. The journal may also help the researcher extract major themes and meanings from the data.

The identified themes can be used alone as a major part of qualitative research findings. In certain cases, researchers may choose to advance testable propositions from the construct-like themes they extracted in a more linear analysis. Finally, researchers studying particularly large communities may find a path of access to quantifiable data that can provide an opportunity to scrape databases, run additional surveys or build on case studies. This will provide a multimethod qualitative approach that is both interpretive and positivist qualitative. Alternatively, the researcher may use a more classic approach to mixed-methods studies, relying on a combination of qualitative and quantitative studies. The quantitative study tests the initial qualitative findings. Finally, evidence is provided showing examples from research that utilized netnography in supply chain research to guide future SCM researchers.

Future research opportunities

Future supply chain researchers can apply this method to several areas. One is exploring views on sustainability and the extent to which there are serious efforts to promote more sustainable practices in buying, moving and disposing of various products. Netnographers would locate sites that address sustainability in the supply chain and immerse themselves in these sites, identifying the dominant themes, practices and roadblocks.

Another area of interest is supply chain culture. Organizational culture is a pattern of shared values and beliefs that help individuals understand how the organization functions and provides norms for behavior (Desphande and Webster, 1989). Mello and Stank (2005), building on past research, identified a set of cultures associated with supply chain-oriented firms. These included trust, commitment, cooperative norms and top management support. Researchers could test these shared values by studying participant comments on supply chain sites to gain a deeper understanding of their values. Such detailed analysis could lead to what Goulding (2005) termed a thick description of experiences. This is similar to ethnography, where thick descriptions are based on informant data and case studies. Online communities also share deep dives through detailed respondent posts about their experiences. Interpreting and learning from these lived experiences can be accomplished using the netnography framework presented in this paper.

Additionally, each industry may have its own specific supply chain culture. For example, they may develop their own norms, beliefs, language and often unspoken but generally

understood shared values. Suppliers can learn about customer knowledge and needs by studying industry-specific online discussions in which their customers are engaged. Specific discussion topics can uncover customers' shared values and the problems they face. The process can lead suppliers to discover unmet needs, leading to innovative customer solutions and more value. Finally, an analysis of end consumers' discussion topics can portend future demands. For example, child labor and sustainable supply chains are often important topics for customers. These end consumers ultimately might demand their products be child-labor-free or made with raw materials that are sustainably produced.

Trends indicate more people communicate and share information online. Netnography provides a tool for the researcher to explore supply chain challenges by studying online communities. This tool is a useful research method to help us better understand supply chain participants' behaviors, activities and philosophies. Sharing this knowledge with practitioners will assist them in crafting more effective strategies and processes, leading to stronger, more resilient supply chains.

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BREAKING THE SPIRAL OF SILENCE: ENHANCING MARKETING EDUCATION WITH DEI CERTIFICATION FOR GREATER CLASSROOM AND SOCIETAL IMPACT

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ABSTRACT

This study examines the impact of incorporating Diversity, Equity, and Inclusion (DEI) certification programs into higher education marketing curricula on students' acceptance, competency in DEI topics, and perceived employment success. Against a societal backdrop marked by divisiveness and silencing of minority voices, known as the Spiral of Silence, this research aims to determine whether DEI certifications in marketing curricula can influence students' perceptions and attitudes toward DEI discussions in the classroom, as facilitated by their instructors. It assesses the role of instructors' perceived credibility in DEI discussions and how DEI certification affects students' willingness to engage in DEI discourse both within the classroom and in broader community contexts, including social media. The findings indicate a significant increase in students' willingness to participate in DEI classroom discussions, suggesting that certifications can enhance classroom dynamics and acceptance of DEI messages. Further, it empowers them to engage in meaningful DEI discussions on social media post-certification. This research underscores the potential of integrating DEI certifications into marketing curricula to improve student engagement with DEI issues, contributing to a more inclusive and equitable societal discourse while creating responsible marketing professionals and engaged citizens.

Introduction

Diversity, Equity, and Inclusion (DEI) in higher education are essential for creating equitable environments where all students, regardless of background, can succeed and thrive. DEI initiatives aim to foster a learning environment where students feel a sense of belonging, which in turn improves their academic, health, and engagement outcomes (Hurtado, 2005; Livezey, 2021; Rubenzer & Pierce, 2023). To achieve this, colleges and universities must place a stronger emphasis on inclusion and belonging and integrate relevant DEI topics into the curriculum.

Business schools, in particular, play a pivotal role in shaping future professionals and leaders (Humphrey et al., 2020). By embedding DEI principles into their curricula, business schools can mirror the diverse realities of the global marketplace and contribute to a more inclusive environment. The importance of this integration is highlighted by the AACSB's recent amendment to its core values, which now include the vision to "transform business education globally for positive societal impact" (AACSB Business Accreditation Standards | AACSB, n.d.).

Despite these efforts, studies show that institutional DEI initiatives often remain superficial, limited to mission statements and strategic goals rather than translating into tangible improvements in student outcomes (Cumming et al., 2023). Institutions struggle to meet their DEI targets despite establishing DEI offices, monitoring diversity ratios, and attracting a diverse range of individuals (Cumming et al., 2023; Nunes, 2021). Additionally, faculty members, who are crucial for implementing DEI initiatives in the classroom, often lack the necessary resources, training, and best practices for effectively addressing DEI topics (Doehler & Barker, 2022). This issue is compounded by societal polarization, which may lead faculty to avoid DEI discussions due to fear of backlash or lack of confidence (Chun & Evans, 2023; Mintz, 2021). Nonetheless, engaging in these discussions is critical for a comprehensive education.

The gaps in academic and practitioner literature should be explored to determine how DEI initiatives can be more effectively integrated into higher education. This study focuses on the marketing classroom,

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a key environment for preparing future business professionals who will navigate diverse markets. Integrating DEI topics into marketing education aligns with the ethical responsibilities of business education and equips students with the skills needed to promote inclusivity in their careers. By addressing these gaps and exploring strategies for incorporating DEI into marketing curricula, this study aims to contribute to creating more equitable and inclusive learning environments.

Consequently, it is essential to examine the role of instructors in enhancing inclusiveness in higher education with societal impact. This study builds on the spiral of silence theory, which explains how majority public opinion can silence minority voices (Noëlle-Neumann, 1974), and the emerging DEI literature in marketing education (Matthes et al., 2017; Poulakidakos et al., 2018). It aims to illuminate the impact of instructors' perceived credibility on students' DEI acceptance, competency, and willingness to engage in DEI discourse both within and outside the classroom. This exploration is particularly relevant given recent legislative changes that restrict DEI initiatives in some states and university systems, for example, The Idaho Senate Bill No. 1274, 67th Leg., 2nd Sess. (2024), The Indiana Senate Bill No. 202, 123rd Gen. Assemb., 2nd Reg. Sess. (2024), The Kansas House Bill No. 2105, 125th Leg., 2nd Sess. (2024) among others.

To achieve this, a 3-phase within- and between-subject design study was conducted to assess the effect of DEI certification on key variables, considering political ideology and the impact on uncoiling the societal spiral of silence.

This study makes significant contributions to marketing education theory and practice. First, it provides empirical evidence on the effectiveness of DEI certification in marketing programs. Results suggest that DEI certification makes students more receptive to DEI topics introduced by instructors and more willing to discuss these topics inside the classroom. Second, the study proposes that DEI certification can help break the societal spiral of silence by fostering a more open environment. It enhances students' feelings of competence and future success and encourages DEI discussions on social media, promoting broader community engagement. This extends prior research on the effects of microcredentials in marketing education on improving classroom outcomes and student success (Humphrey et al., 2020). Lastly, for practical application, the study offers strategies to enhance inclusiveness in higher education marketing curricula, such as introducing DEI certification to promote open dialogue on DEI topics and develop responsible marketing professionals and engaged citizens.

Literature Review

To build on prior knowledge and explore the gap in the existing literature we review previous work on the challenges and opportunities in integrating DEI in marketing education by introducing the various forces within higher education that influence macro-level DEI policies and society-wide issues. We then discuss classroom-level issues and challenges, focusing on the role of the instructor's perceived credibility, DEI certifications (badges), and their impact on student competency and future success. Finally, we discuss the spiral of silence and social media. For an overview of our theoretical model, refer to Figure 1.

Challenges and Opportunities in Integrating DEI into Marketing Education

Research emphasizes the importance of structured interaction among diverse student groups to foster inclusivity in marketing education (Hurtado, 2005). Adaptive approaches to changing societal norms are essential for enhancing learning outcomes (Komarraju et al., 2010; Livezey, 2021). Although inclusion is challenging to quantify, its significance is clear: students who feel included are more successful (Kurfist, 2022). Often, institutions focus on diversity statistics and closing equity gaps but struggle with practical inclusion strategies. Understanding how to make students from historically underrepresented groups feel included is crucial. For marketing education, integrating DEI into curricula can bridge gaps between diversity efforts and practical inclusion. Mandatory DEI training is increasingly recognized as vital for preparing business students to navigate and lead in diverse environments, promoting ethical behavior, and leveraging diversity for business success (Bell et al., 2009). However, the impact of DEI initiatives on broader societal issues remains underexplored.

With global challenges addressed through the United Nations' Sustainable Development Goals (SDGs), educational institutions play a key role in raising awareness and fostering sustainable behaviors (Elder & Olsen, 2019; Kleespies & Dierkes, 2022; Westerman et al., 2020, 2021). Business schools, in particular, are scrutinized for embedding DEI principles into their curricula (AACSB Business Accreditation Standards | AACSB, n. d.). They have a responsibility to shape future leaders and contribute to achieving the SDGs through research

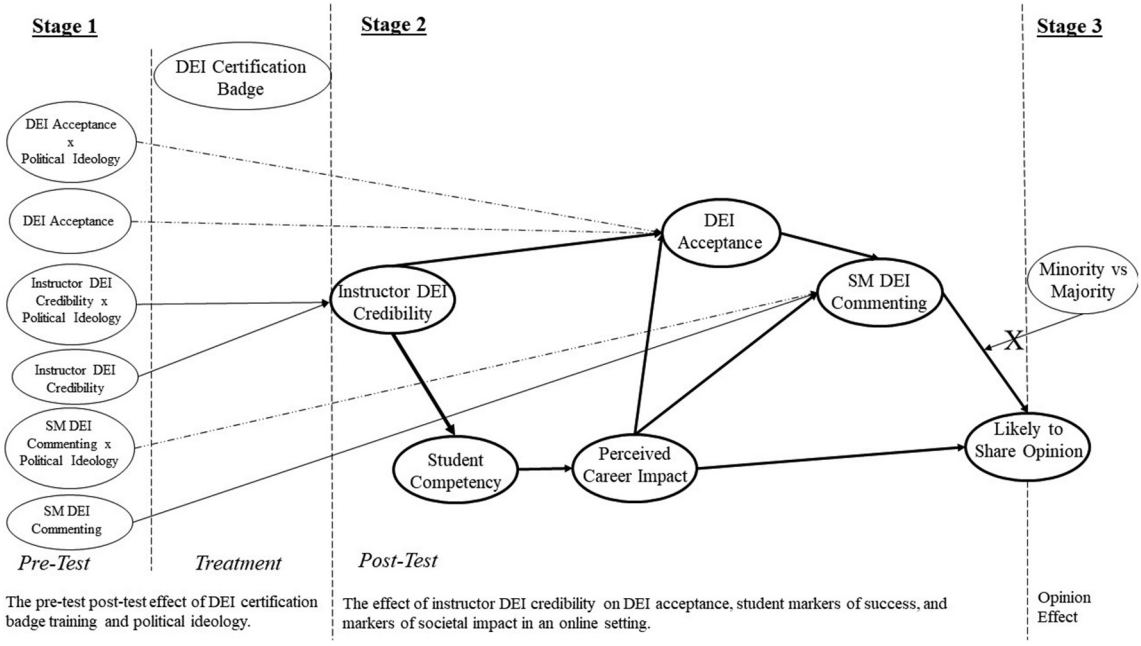

Figure 1. Conceptual model.

and education (Howard-Grenville et al., 2019; Kestin et al., 2017; Kioupi & Voulvoulis, 2020; Yuriev & Sierra-Barón, 2020). Such initiatives aim to influence decision-makers in government and industry and have an amplification effect in reaching a broad audience in the general population (Alshuwaikhat & Abubakar, 2008; Kioupi & Voulvoulis, 2020; Lozano et al., 2013; Stephens et al., 2008). As a result, there has been a substantial increase in sustainability programs at universities, with a particular focus on student outcomes (Rodríguez-García et al., 2019).

Students' interaction with diverse peers during college enhances cognitive, social, and democratic outcomes, underscoring the value of multicultural learning environments (Hurtado, 2005). DEI-focused pedagogical techniques, such as themed case studies and group work, have improved student outcomes in marketing courses (Livezey, 2021). Faculty practices are critical in this process, influencing student engagement and learning outcomes through active and collaborative learning techniques (Tinto, 1997; Umbach & Wawrzynski, 2005). Actively engaging in DEI efforts, instructors can enhance students' academic self-concept, motivation, and achievement, underscoring the vital role of student-faculty interactions in the educational process (Komarraju et al., 2010). Despite these benefits, obstacles remain. Limited exposure to diverse groups and a lack of confidence among educators in addressing DEI topics can hinder DEI training effectiveness (Norman & Hyland, 2003; Rubenzer & Pierce, 2023). Structural barriers and shifting political climates also challenge DEI initiatives, affecting the role of higher education in promoting social change (Gretzinger et al., 2024; Zeichner, 1992).

For instance, the University System of Florida is banned from the use of any public funding for diversity, equity, and inclusion (DEI) initiatives in higher education as a result of a 2023 state law (n.d.); such initiatives can severely curtail the role and influence of higher education institutions for promoting social change via DEI (Reddick, 2023). Addressing these barriers is essential for advancing DEI in marketing education and preparing students to thrive in a diverse and dynamic business landscape. Building on the importance of effective DEI integration in marketing education, it is crucial to recognize the significant role that instructor credibility plays in shaping classroom dynamics, student and, indirectly, societal outcomes. Instructors, as key sources of information, carry the potential to influence the effectiveness of DEI discussions and student engagement through their perceived credibility. We expect that instructor credibility will impact students' motivation, learning, and openness to DEI topics in the classroom and on social media. While openness to new ideas and learning are key classroom outcomes often tied to instructor credibility (Martin et al., 1997; Myers & Martin, 2018), self-expression and participation in social discourse by sharing opinions on social media is a less studied phenomenon. The notion of social media sharing is important because perceived communication competence positively affects political expression on social media (Velasquez & Rojas, 2017). Social media

expression contributes to economic, cultural and political components of human development (Welzel et al., 2003). At the same time, expression on social media can be attenuated by fear of negative consequences which may be social or professional in nature (Weeks et al., 2024) preventing individuals from speaking up and actively participating in cultural, social and political change (Glynn et al., 2014; Welzel et al., 2003). This fear to speak up can also continue to spiral into a workplace which, in a self-preservation effort, reduces participation negatively affecting teamwork and organizational outcomes (Kish-Gephart et al., 2009). Instructor relationships with students can alleviate student apprehension to in-classroom participation and increase participation (Frisby et al., 2014) but it is not yet known how it may affect participation in external communication. Therefore, understanding how instructor credibility contributes to these educational and societal processes and what interventions can improve students' perceptions of instructor credibility is essential. Support for these relationships can be found in prior studies outside of the DEI context (sf. Martin et al., 1997; Myers & Martin, 2018), but highly polarizing legal, political and ideological views do not guarantee that the effects will hold in the DEI context.

The Role of Instructors' Perceived Credibility in Facilitating DEI Discussions and Student Engagement

Instructors, as a source of information, play an essential role in education. For that reason, instructor credibility is one of the most important factors affecting instructor-student interaction, as it plays a critical role in the dynamics of the classroom (Myers & Martin, 2018; Semlak & Pearson, 2008). The basis for this importance of the source credibility in persuasion. Pornpitakpan (2004), in her review of five decades of research on the persuasiveness of source credibility, concluded that a high-credibility source is superior to a low-credibility source as it affects key behavioral and attitudinal outcomes. Those outcomes include compliance and message acceptance, among others. Instructor's *perceived* credibility is the degree to which students view their instructor to be competent, to have character, and to be caring (McCroskey & Teven, 1999), and is based on students' impressions of instructors' verbal and nonverbal communication behaviors (Hendrix, 1997; Myers & Brann, 2009). Students' perceptions of their instructors' credibility profoundly influence student learning and classroom communication. Thweatt and McCroskey (1998) contend that teacher credibility is critical to the learning process, suggesting "the higher the credibility, the higher the learning" (p. 349). Instructors perceived as having high credibility can increase students' motivation, drive to succeed, and overall academic performance (Cooper & Simonds, 1995; Kougl, 1996; Teven & McCroskey, 1997). High instructor credibility has been linked to favorable teaching evaluations, positive course ratings, the desire to take another course from the same instructor (Kearney et al., 1985), and student satisfaction ratings (Teven & Herring, 2005). Instructors with high credibility are also seen as more persuasive (Stiff, 1986) and more effective communicators (Infante, 1985) than instructors with low credibility. Instructors can also empower students to learn, increase self-esteem and reduce participation and communication apprehension (Frisby et al., 2014; Frymier et al., 1996). Overall, the instructor's behavior and credibility can result in positive classroom outcomes. Given prior findings, we propose that instructor credibility is likely to affect acceptance of DEI discussions in a classroom setting (DEI acceptance) and openness to engaging in DEI discourse on social media sites (SM DEI commenting) because instructors can be key catalysts that motivate students to achieve the cognitive and self-esteem goals associated with an academic environment.

In this context, DEI certification badges can significantly enhance students' perceptions of instructors' DEI credibility. They can serve as a visible indicator of an instructor's commitment and expertise in DEI topics, which can positively influence students' views of their instructors' competence and dedication. This parallels how marketers signal product attributes and quality using established brands or credible sources, particularly when attributes are unobservable before interaction (Jain & Posavac, 2001). By incorporating DEI certification badges from a credible source such as Salesforce, instructors not only signal their proficiency in handling DEI discussions but also demonstrate a tangible commitment to fostering an inclusive classroom environment. The initial signal, a badge certification, enhances instructor credibility (subsequent signal of instructor commitment DEI), which we expect to lead to increased DEI acceptance among students, as they are more likely to engage with and value DEI discussions when they perceive their instructors as credible and well-qualified. Consequently, we argue that students are more inclined and empowered to participate in DEI discourse on social media when they see their instructors actively supporting and validating DEI efforts through certification. Thus, DEI certification badges have the potential to play a crucial role in amplifying the impact of instructor credibility on both classroom dynamics and broader social media engagement with DEI topics. Incorporation of digital badge

certifications on marketing technology into marketing courses was found to have a significant impact on student competency and job readiness (Humphrey et al., 2020) but the effects of similar certifications with DEI focus were not addressed.

To test the assertions within DEI context, we build on prior literature and hypothesize the following:

Stage 1

Hypothesis 1: A DEI certification badge improves student perceptions of the Instructor's DEI credibility (a), classroom DEI acceptance (b), and DEI commenting on social media (c) from prior to treatment.

Stage 2

Hypothesis 2: Students' perceptions of the instructor's DEI credibility affect classroom DEI acceptance.

Hypothesis 3: Students' perceptions of the instructor's DEI credibility positively affect their feeling of competency when completing the DEI certification badge.

The Role of Digital Badges and Certifications in Enhancing Student Engagement and DEI Outcomes

The effects of student certifications and digital badges on educational outcomes have been widely studied, revealing various impacts on student behavior, engagement, and learning. For instance, achievement badges in university-level courses, such as computer science, have been shown to positively influence students' engagement and study practices, including the time spent and number of sessions devoted to course material (Hakulinen et al., 2015). Students often report increased motivation from these badges, indicating that certification programs can effectively enhance student engagement (Hakulinen et al., 2015). In marketing education, industry-specific badges, like those from Salesforce Trailhead, are incorporated into curricula to boost learning outcomes and perceived career preparedness (Cowley et al., 2020; Humphrey et al., 2020). In contrast, digital badges in undergraduate composition courses have varied effects based on learner types. At the same time, they generally increase intrinsic motivation for high expectancy-value learners, they might not have the same effect on those with lower expectancy values, highlighting the need for tailored approaches (Reid et al., 2015). Integrating digital badges with learning analytics has improved student retention by motivating students and recognizing their achievements (Mah, 2016). Additionally, skills-based certifications have been found helpful in underscoring skill development, enhancing understanding of learning tasks, and increasing motivation and satisfaction among students (Hill et al., 2020). Gamification elements, such as badges, have shown a small to medium positive effect on student learning outcomes (Huang et al., 2020).

However, research specifically focusing on DEI certifications remains limited. Current studies highlight the general benefits of digital badges and micro-credentialing but do not address DEI credentialing explicitly. Digital badges are recognized for their ability to certify specific skills and competencies, thereby enhancing learner motivation and engagement. For example, digital badges in staff training programs help in skill development beyond academic settings (Copenhaver & Pritchard, 2017), and similar badge systems have been proposed for evaluating evaluators, providing detailed evidence of knowledge and skill (Davies et al., 2015). The broader approach to developing open badges emphasizes their role in motivating learners and supporting a participatory learning process (Devedžić & Jovanović, 2015). These insights suggest that DEI certification badges could play a significant role in recognizing and motivating skill acquisition within college settings, offering evidence of development beyond traditional academic credentials. Thus, we hypothesize that:

Hypothesis 4: Students' sense of competency after completion of DEI certification badges positively affects their perception of future career impact.

Hypothesis 5: Perceived career impact after completion of DEI certification positively affects students' acceptance of DEI topics covered in the classroom.

Given the potential of DEI certification badges to enhance perceived competence and encourage engagement with DEI topics, it is crucial to explore how these badges might interact with social media dynamics and the spiral of silence theory, influencing openness and participation in DEI-related discussions online.

The Spiral of Silence, Social Media, and DEI: Implications for Certification and Engagement

The goal of incorporating DEI-based marketing curricula is to shape future leaders who are prepared to

engage in DEI initiatives, advocate against injustice, and promote inclusion as responsible marketing professionals. However, in a polarized environment, advocating for DEI initiatives can be risky and may trigger a "spiral of silence." The spiral of silence theory, proposed by Noëlle-Neumann (1974), explains why individuals may choose to remain silent on crucial issues due to the fear of negative consequences and social isolation. This theory, rooted in political science and mass media studies, posits that the dominant "voice of the majority" in media can push dissenting views into the background, resulting in a homogeneity of opinions rather than a diversity of perspectives.

Social media networks can accelerate and magnify this dynamic, as engagement with content – such as comments and reposts – is driven by algorithms that may create echo chambers. These platforms can amplify both support for and opposition to DEI initiatives, leading to consumer boycotts or buycotts (Rynarzewska et al., 2024a; Rynarzewska et al., 2024b). The size and diversity of an individual's social media network impact the information they encounter, potentially creating digital information inequalities and social media news deserts. When exposed to minority opinions, individuals might feel threatened and choose to remain silent, reinforcing the spiral of silence (Barnidge & Xenos, 2021; Swart, 2021).

Despite social media's role in creating echo chambers, it also provides spaces for marginalized voices (Mwangi et al., 2018; Russell, 2022). For example, Perera et al. (2021) studied the use of Instagram as a counter-space by Western women of South Asian descent to create and share gendered ethnic identity expressions. Anderson et al. (2023) found that consumers use social media to build peer-to-peer (P2P) communities for social verification and interaction. Yet, Pew Research found that people were less willing to discuss difficult issues and, therefore, self-censored on social media platforms. This effect was attributed to the spiral of silence and the fear of repercussions, including isolation (Pew Research Center, 2020). Thus, even in these spaces, the prevailing opinions can still reflect a homogenous view. Studies show that while social media can foster grassroots movements and empower marginalized communities (Bright, 2018), it can also exacerbate polarization and spread extremist ideologies (Kubin & Von Sikorski, 2021). Political ideology further complicates this landscape, as a person's moral foundations affect ideological positions and influence consumer preferences and brand perceptions (Haidt & Joseph, 2004).

In this complex environment, individuals and businesses may hesitate to take a stand. However, social media can also weaken the spiral of silence by empowering the "avant-garde" and "hard-core" individuals – those who are either highly educated or not afraid of social isolation (Chaudhry & Gruzd, 2019; Noëlle-Neumann, 1974). Given that the more educated, the avant-garde, are more willing to speak up against the majority, we expect that educational efforts that support DEI will encourage individuals to voice their opinions and contribute to the broader discourse, helping to counteract the spiral of silence. Certification badges that enhance perceived competence might boost openness to DEI-related communication online (Moy et al., 2001).

Given the literature on online badges and their impact on credibility and engagement, we propose the following hypotheses:

Hypothesis 6: DEI acceptance positively affects the openness to commenting about DEI topics online.

Hypothesis 7: Openness to discuss DEI topics on social media positively affects the likelihood of sharing opinions about DEI messages online.

Hypothesis 8: Perceived likelihood of success positivity affects the likelihood of social media re-sharing of stories about DEI.

While social media can foster collective action and activism (Milan, 2015), discussions often occur within like-minded communities, reinforcing existing views (Barnidge & Xenos, 2021). Therefore, while openness to communication is essential, it alone may not suffice to disrupt the spiral of silence. For meaningful change, the influence of majority versus minority opinions must be addressed.

Based on the reviewed literature, we propose the following:

Stage 3

Hypothesis 9: No significant difference in the likelihood of sharing opinions about DEI articles will be found between minority and majority opinions after badge certification.

Hypothesis 9, therefore, indicates an expectation of no opinion effect after certification, thereby breaking the spiral of silence where the opinion effect (majority vs minority) is significant.

Refer to Figure 1 for our conceptual model.

Methods

A within and between-subjects study was designed to address the hypotheses set forth for this research. Data was collected across two universities, one a Northeast public university and the other a public southern university. Over 200 participants were recruited into the study from marketing classes taught by the author, with 156 completing the pretest, training, and posttest. The activity was incorporated into a course as an assignment. The study was approved by two Institutional Review Boards (IRB: H2205108 and #18917 exempt). Per the IRB recommendations, students could refuse participation in the study and engage in an alternative assignment instead. No student chose an alternative assignment. All participants reviewed a consent form prior to their participation.

In a pretest, participants were asked to respond to a question about their perceived instructor's DEI credibility (adopted from Lyakurwa & Tungaraza, 2013), which was measured as perceived knowledge, training, and expertise about DEI topics, students' acceptance of discussing DEI topics in the classroom (measure based on Lyakurwa & Tungaraza, 2013), willingness to discuss DEI in an online setting (developed and validated for the purpose of this research) and their demographic background and political ideology based on four items (Jung & Mittal, 2020) were also collected. After participating in the pretest survey, they completed the DEI certification badge in which topics of equity, diversity, and inclusion in marketing and organizations were discussed. The topics included creating inclusive marketing content and operating in diverse, equitable business environments. The training was provided by a trailhead initiative from Salesforce, a standard corporate certification program previously adopted by others in marketing coursework (Humphrey et al., 2020). Upon completion of certification, students received badges they could display on their professional social media platforms (such as LinkedIn or X, formerly known as Twitter). Students received credit for participating in the pretest, badge certification program, and posttest. After the badge certification program, students received a link to participate in a posttest. The posttest included the same questions as the pretest as well as the measures of perceptions of their competency when completing the certification badge and perceived likelihood of success (developed based on qualitative findings of Stahl et al. (2002) and validated) after completing the certification badge were also assessed.

Further, in addition to the posttest measures, students were exposed to a slightly adjusted article by MIT Sloan at the end of the survey. The prompt was specifically chosen because of its focus on diversity and organizational culture, directly challenging the spiral of silence by advocating for environments where diverse opinions are valued and integrated into decision-making processes, ultimately leading to more inclusive and effective business practices. For marketing students, this means recognizing the value of diverse perspectives in creating effective marketing strategies and campaigns. Finally, given the potentially divisive nature of DEI, and the topic's relevance to graduating students, the prompt was considered appropriate to test the opinion effect from the Spiral of Silence perspective (Farjam & Loxbo, 2024).

> Imagine that you are reading the following statement on your preferred social media site. The statement comes from a popular business publication.
>
> History warns us that mastering digital technology won't determine which companies become corporate winners. Instead, making the necessary organizational and leadership changes will. Because companies employ or partner with more diverse people today, they need to maximize diversity, be open to different points of view (even if it means disagreement), and be willing to no longer embody "home country" cultural values but also give up apparent profits to benefit society and give people an equal chance for success.

After reading the article, students were randomly assigned to a condition of being in the minority or majority opinion and were asked about their likelihood to share their opinion about the article on their social media (*Knowing that very few/most people agree with you, please answer the following questions*). This question aligned with the spiral of silence theory, which aims to prime perceptions of being in minority or majority opinion. The opinion effect of the majority ($M = 3.37$) and minority ($M = 2.52$) was first pre-tested on an unrelated sample of students ($N = 64$) and found significantly different ($p < .05$) with respect to the likelihood of sharing opinions about the article (based on Algesheimer et al., 2005) and Ajzen and Fishbein (1980) suggesting the

opinion effect under the Spiral of Silence Theory. Thus, a non-significant posttest result, despite a previously significant pretest on an unrelated sample, would suggest a diminished and non-significant opinion effect. A non-significant opinion effect would indicate that participation in the DEI badge training has the potential to break the spiral.

Results

Sample Equivalency and Measurement Model

To ensure that the sample from the northern and southern parts of the U.S. could be combined into one dataset, we tested whether school affiliation affected the key pretest variables. We conducted a between-sample test on all pretest variables and political ideology to determine whether the samples were equivalent. Given the relevance of political ideology, it was included as a covariate, and the school effect was not significant for both DEI acceptance ($F = 2.293$, $p > .05$) and SM DEI commenting ($F = 0.195$, $p > .05$), deeming the samples equivalent. All other variables were not significant, regardless of political ideology.

Measurements used for the study were validated whether they were previously established, developed, or adopted in terms of face, convergent, and discriminant validity following test theory (McDonald, 1999). Confirmatory factor analysis (CFA) was conducted using MPlus to confirm the measurement model. Items that did not meet the quality criteria (loadings below 0.707) were removed. All remaining item loadings exceeded 0.707, which satisfied the Average Variance Extracted (AVE) criteria of 0.5 (Fornell & Larcker, 1981). See Table 1 for factor loadings, AVE, and composite reliability. The results suggest an acceptable model fit based on the following fit indices: CFI = 0.943, TLI = 0.934, RMSEA = 0.08, SRMR = 0.051 (Hu & Bentler, 1999; Kline, 2015).

Stage 1

The Effect of DEI Certification Badge

To determine the effects of treatment on the variables of interest, repeated-measures multivariate analysis of covariance (MANCOVA) was conducted with political ideology as a covariate using SPSS 28. Repeated measures MANCOVA on instructor DEI credibility suggested both the direct effect of treatment ($\lambda = 0.964$, $F = 5.804$, $p < .05$)

Table 1. Factor Loadings, AVE and Composite Reliability of Items Measuring Key Factors.

Instructors DEI Credibility	Factor Loading	Composite Reliability	AVE
University professors have sufficient training to teach students about topics of diversity within business organizations.	0.892	0.928	0.765
University professors possess a great deal of the expertise necessary to teach students about topics of equity, diversity, and inclusion.	0.882		
University professors are knowledgeable in conveying the impact of diversity on organizations.	0.890		
University professors are competent to teach students about the impact of the inclusion of diverse people within business organizations.	0.832		
DEI Acceptance			
The presence of diversity, inclusion, and equity related topics in classroom discussions will promote acceptance of differences in business environment.	0.965	0.68	0.51
University professors' classroom education on topic of diversity, inclusion and and equity will make individuals more accepting of diversity in the workplace.	0.863		
SM DEI Commenting			
When discussion is taking place, I share my own opinion about diversity and inclusion on my social network sites.	0.940	0.937	0.832
When there is a social media post on increasing diversity, I openly post my opinion with my friends on social media.	0.946		
Whenever active discussions are taking place on inclusion of diverse populations, I do not hesitate to participate.	0.846		
Likelihood to Share Opinion			
If you were to see a post like this, what is the possibility that you would share your opinion about this post on your social media? – Definitely Would Not: Definitely Would	0.930	0.966	0.852
Unlikely: Likely	0.917		
Nonexistent: Existent	0.917		
Impossible: Possible	0.885		
No Chance: Certain	0.965		
Student Competency			
When engaged in course assignments created by the industry where I can display a badge on my professional profile, I feel. . . - capable to do my future job well	0.854	0.934	0.825
achieving	0.951		
competent	0.918		
Career Impact			
Class assignments that allow me to display a completion badge or certificate – increase my professional profile visibility to job recruiters	0.845	0.927	0.718
create career opportunities	0.910		
are essential to help me differentiate myself from other job candidates	0.852		
increase my chances for securing a job	0.875		
add value to my education	0.745		

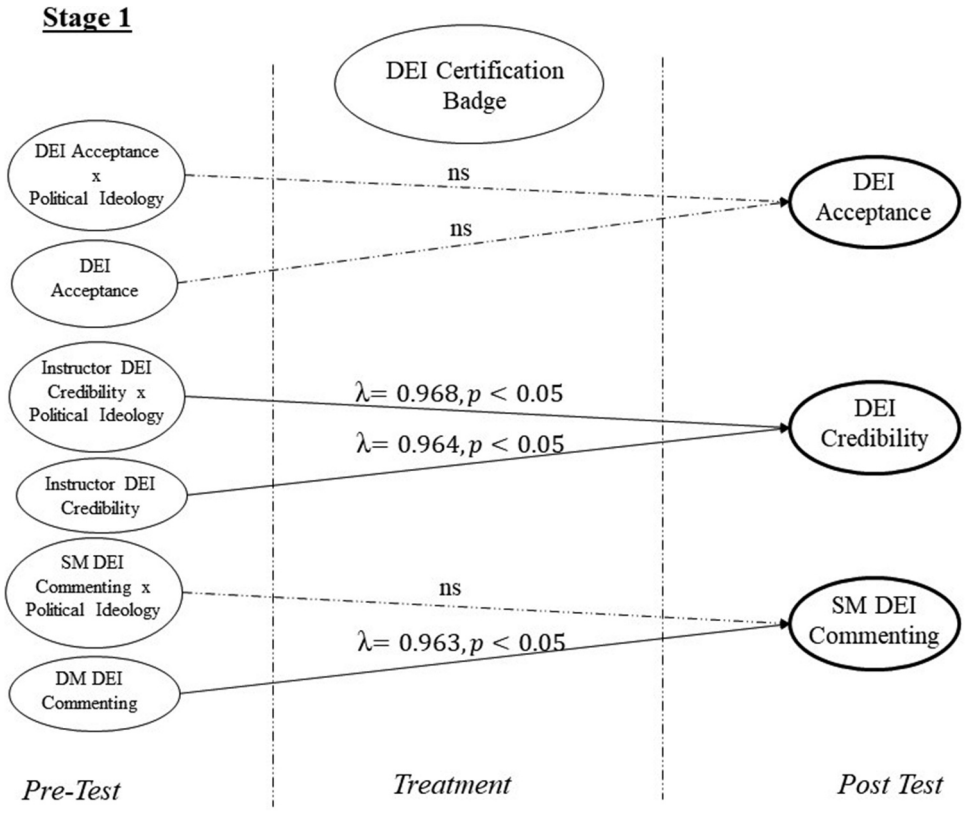

Figure 2. The effect of DEI certification badge.

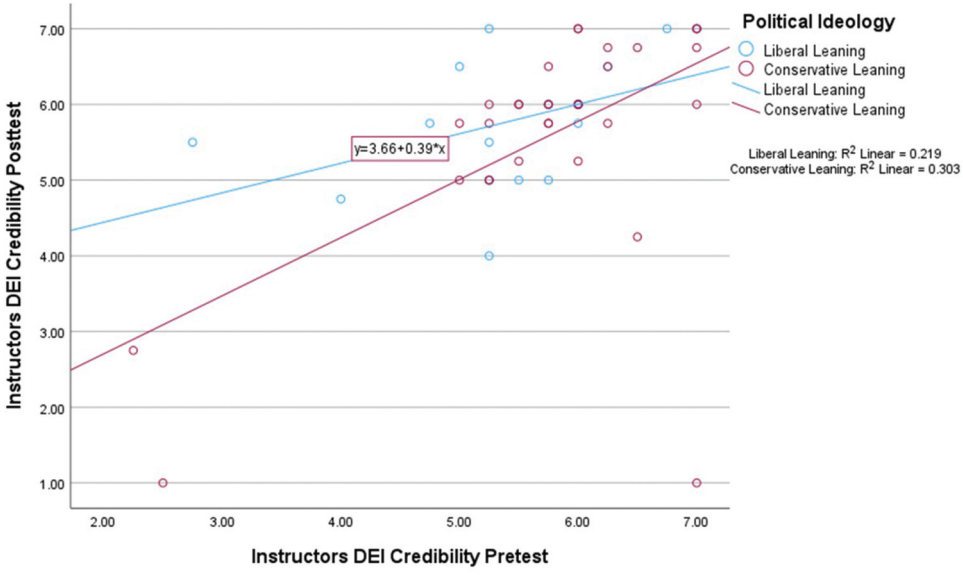

Figure 3. Instructor DEI credibility X political ideology.

and the interaction effect of ideology ($\lambda = 0.968$, $F = 5.049$, $p < .05$). The increase in the grand mean was significant despite not being substantial and increased from 5.41 to 5.47. With respect to the DEI acceptance, there was no direct effect of treatment, even when controlling for ideology. However, the previous effect on an instructor's DEI credibility plays a role in acceptance, as it will be confirmed using the structural model.

The factor representing how open one is about DEI commenting on social media had a significant treatment

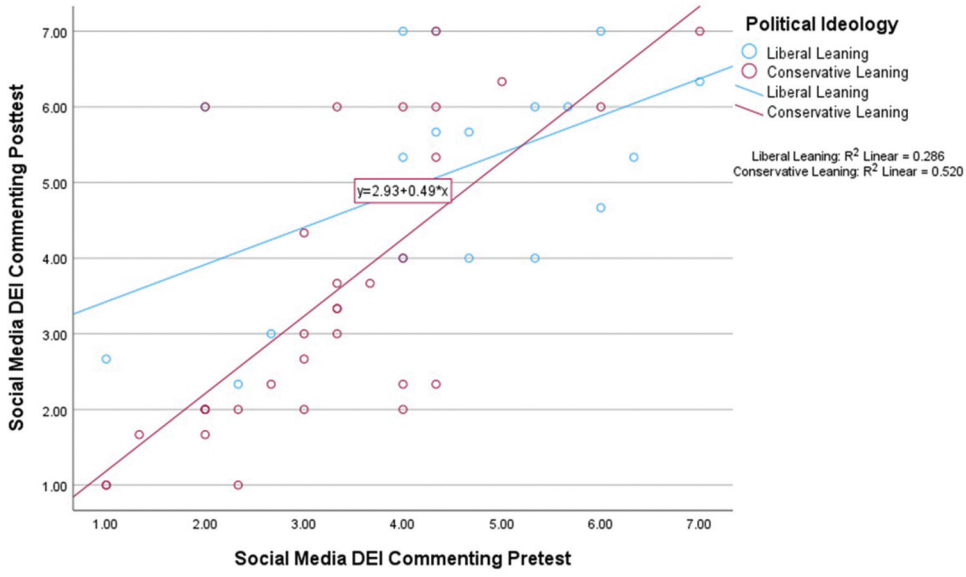

Figure 4. SM DEI commenting X political ideology.

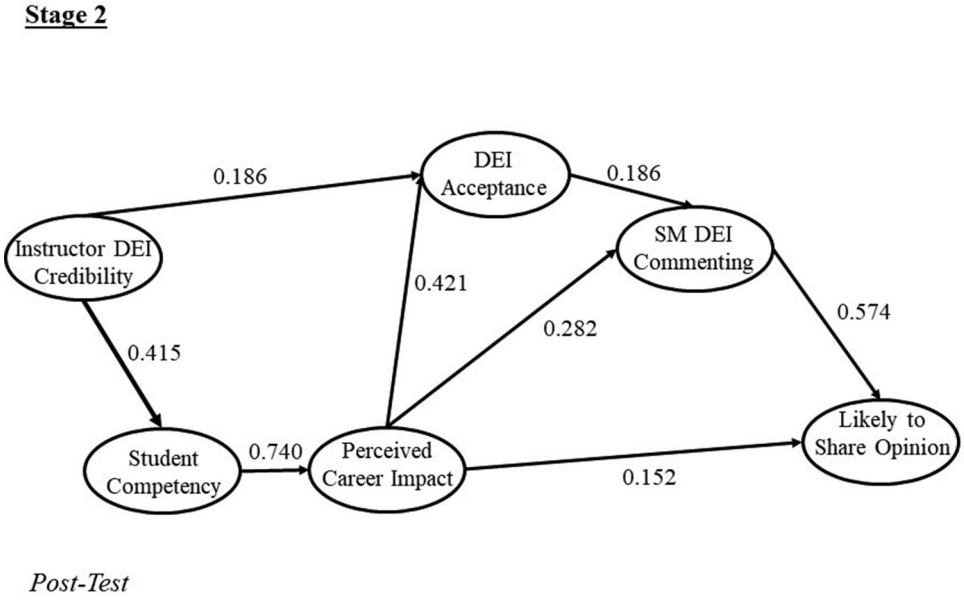

Figure 5. Model testing.

effect ($\lambda = 0.963$, F = 5.914, $p < .05$) while controlling for political ideology (not a significant interaction effect of ideology), which improved from a grand mean of 3.55 to 3.92. That supported hypotheses 1a and 1c, while hypothesis 1b was not supported. See Figure 2.

While in MANCOVA, all variables were continuous, political ideology was dichotomized to visually demonstrate the interaction effect, relying on the "spotlight," which involved dichotomizing the variable using one standard deviation from the mean (Fitzsimons, 2008) to create liberal and conservative-leaning political ideology groups. See Figures 3 and 4 below.

In terms of DEI commenting on social media, there was no interaction when a continuous ideology variable was used. Still, there was an interaction with a dichotomized ideology, which removed observations within one standard deviation around the mean. Given that continuous variable interactions are considered superior over dichotomized variables (Fitzsimons, 2008), the results of continuous variables are retained.

However, the dichotomized solution is used for visualization purposes.

Stage 2

Model Testing. The proposed model was tested using covariance-based structural equation modeling with Mplus software. Based on the results of SEM, research hypotheses 2–8 were confirmed. The findings demonstrated in Figure 5 suggest that students' perceptions of the instructor's DEI credibility positively affected classroom DEI acceptance ($\lambda = 0.186$, S.E. = 0.083, $p < .05$) and students' feeling of competency when completing the DEI certification badge ($\lambda = 0.415$, S.E. = 0.072, $p < .001$), which then positively affected their perception of future career impact ($\lambda = 0.740$, S.E. = 0.042, $p < .001$). Further, the perceived career impact increased the likelihood of classroom DEI topic coverage acceptance ($\lambda = 0.421$, S.E. = 0.077, p.< .001). The DEI acceptance positively affects the openness to comment about DEI topics online ($\lambda = 0.186$, S.E. = 0.092, $p < .05$), whereas the openness to comment on DEI topics online positively affects the likelihood of sharing opinions about DEI messages on social media.

Finally, perceived career impact positivity affected the likelihood of sharing opinions about DEI ($\lambda = 0.152$, S.E. = 0.071, $p < .05$).

Stage 3

Opinion Effect. Between subject design was used where students read an article on the benefits of diversity in business, after which they were assigned at random to a minority or majority opinion. General linear model analysis was used to determine the effect of the social media DEI commenting, the opinion effect (majority vs minority), and the potential effect of political ideology. The results suggest a direct effect of social media DEI commenting on the likelihood of sharing their opinion about the article ($F = 74.20$, $p < .001$), but no direct effect of minority or majority opinion. Political ideology also had no direct effect.

Conclusions and Discussion

The findings of this study highlight the significant positive impact of incorporating DEI badge certification programs into marketing education, resulting in classroom and societal benefits. First, the training enhanced students' perceptions of instructors' DEI credibility, which, supported by the source credibility and acceptance model (Hovland & Weiss, 1951), improved their acceptance of DEI-related content within the marketing curriculum. The findings contribute to the existing literature on the importance of credible instruction in fostering effective learning environments (Martin et al., 1997; Myers & Martin, 2018).

Furthermore, the DEI certification program positively influenced students' willingness to engage in discussion on DEI topics on social media. Although political ideology affected perceptions of instructor credibility, it did not impact students' engagement with DEI topics online. This aligns with research on social media's role in public opinion formation, where engagement can challenge the dominance of majority views and address the spiral of silence (Laor, 2023).

The spiral of silence theory posits that individuals are less likely to voice minority opinions due to fear of social isolation, while majority opinions become more dominant (Noëlle-Neumann, 1974). The fear of negative consequences associated with speaking up can have societal, cultural, political, and business repercussions as it suppresses participation (Glynn et al., 2014; Weeks et al., 2024; Welzel et al., 2003). The study's findings suggest that DEI certification can counteract this effect by promoting more diverse and inclusive discussions both in the classroom and on social media. As a result, all participants who earned the badge were equally likely to engage in DEI discussions on social media. This is a significant finding because, as the between-subject test revealed, the impact of minority versus majority status on opinion sharing was no longer significant after students completed the DEI certification. This indicates that the DEI certification badge and instructors' credibility in marketing education help disrupt the spiral, empowering students to disregard the influence of majority and minority opinions and effectively addressing the spiral of silence by minimizing the marginalization of minority voices and the amplification of majority voices. This is a major contribution of the study, as the effects of curricular innovation provide evidence for societal impact by improving the classroom environment and addressing the broader implications of DEI curricular changes on societal discourse.

Moreover, the study provides practical guidance on how a relatively minor yet innovative curricular change that incorporates elements of DEI within microcredentials, such as the Salesforce Trailhead, can positively affect student success. Student success is undoubtedly one of business education's key goals (Humphrey et al., 2020). Ultimately, we demonstrated that students' completion of DEI certifications had a positive impact on their assessment of their own competence and likelihood of career success. The findings align with and expand prior studies on the incorporation of badges in marketing education on students' job readiness and competence (Humphrey et al., 2020). In the current study, the enhanced sense of competence not only

increased their acceptance of DEI topics within marketing courses but also encouraged their online engagement with these topics. Students' perceived likelihood of professional success facilitated acceptance of DEI in the classroom and breaking the pervasive opinion effect when discussing DEI. For those reasons, we recommend highlighting the benefits of badge certifications to students' potential career advancement as it may signal employers students' commitment to professional development. Although it may seem counterintuitive that personal career benefits could be linked to societal impact, integrating DEI education aligns with AACSB's emphasis on a business school's commitment to strategic management, learner success, thought leadership, and societal impact (Business Accreditation | AACSB, n.d.).

Overall, the DEI certification badge improved the marketing education environment and societal outcomes through two key pathways: enhancing instructor credibility and boosting students' feelings of competence and career readiness. These findings suggest that incorporating DEI certification into marketing curricula can break the societal spiral of silence by fostering more open and diverse discussions from individuals who hold the majority but also those with minority opinions while directly benefiting students. This approach enhances classroom inclusivity and prepares students to become responsible marketing professionals who can effectively navigate and influence diverse markets while being contributing members of society.

Limitations and Directions for Future Research

While this study provides valuable insights into the impact of DEI certification programs on marketing education, several limitations should be acknowledged, and future research directions should be considered to deepen the understanding of this complex issue. The study was conducted with a limited sample size and within specific educational contexts, which may not fully represent the broader student population across diverse institutions and geographical locations. The findings may, therefore, the lack generalizability to other settings and demographic groups. Despite these limitations, marketing instructors should feel encouraged about the positive effects established in the study. The research primarily focused on immediate outcomes of DEI certification, such as changes in classroom dynamics and social media engagement. Long-term effects on students' career trajectories and sustained societal impact were not explored, which limits understanding of the enduring influence of DEI training. The study relied on self-reported measures for assessing student engagement and perceptions, which may introduce biases. Self-reported data can be influenced by individual perceptions and social desirability, potentially affecting the accuracy of the findings (Burke & Carman, 2017; Bernardi et al., 2011). While the study considered the impact of political ideology on instructor credibility and social media engagement in DEI discussions, the analysis was predominantly focused on controlling these effects. Further exploration is needed to understand these dynamics more comprehensively. The research did not extensively address the influence of external factors such as institutional policies, societal events, and media coverage on students' engagement with DEI topics. We acknowledge that these factors could significantly affect the outcomes and should be considered in future studies.

Future research should delve deeper into understanding the mechanisms behind these outcomes. Specifically, it would be insightful to explore the nuanced ways the DEI certification badge enhances instructors' perceived credibility and its subsequent effect on student acceptance of DEI principles. Alternatively, given consumer polarization, researchers might consider studying approaches to minimizing resistance to DEI. Investigating the interaction between source credibility, acceptance models, and DEI certification could uncover specific pedagogical strategies that maximize educational outcomes. Furthermore, considering the role of political ideology in shaping perceptions of DEI credibility, future studies could examine the intersection of political beliefs with educational interventions to better tailor DEI initiatives in diverse classroom settings. This research could extend to various educational contexts, comparing the impact of DEI certification across different disciplines and cultural settings to generalize findings and recommend best practices.

Additionally, the increased student openness and engagement on social media regarding DEI topics suggests a broader societal impact worth exploring. Future research should investigate how DEI training influences social media behavior and the potential for such engagement to disrupt the spiral of silence in online spaces. As social media is an increasingly polarizing environment, the impact of DEI certifications in this context warrants a separate research effort. This could involve longitudinal studies tracking students' online engagement before, during, and after DEI training, analyzing the content and tone of discussions to assess shifts in public discourse. Understanding the relationship between educational interventions and social media engagement could inform strategies to leverage digital platforms for societal change.

Moreover, the link between DEI training and perceived career success offers an intriguing avenue for research, examining how DEI competencies are valued in the job market and their effect on students' career trajectories. This research could provide valuable insights into the personal and societal benefits of integrating DEI principles into education, guiding future curriculum development and accreditation standards.

Ethical Approval

Ethical approval was obtained from the Institutional Review Board at Mercer University [H2205108] and exempt at Georgia College and State University [#18917].

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Theory and analysis of disruptive deception: SME responses to B2B supply chain opportunism

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Abstract

Purpose – This study aims to examine small-firm shifts in behavior during major supply chain disruptions that change supply chains permanently. The study focuses on small to mid-sized enterprise (SME) responses to suppliers' opportunistic behaviors within a larger disruptive environment. The study addresses two broad research questions: how do small businesses adapt to supply chain disruptions, and under what conditions are such adoptions warranted?

Design/methodology/approach – This study used mixed methods, a qualitative netnography and a quantitative analysis of survey data. It tested a model based on responses from members of an online business-to-business community. The model development was driven by the findings from netnography and two theoretical lenses.

Findings – The responses suggested a strong relationship between the two theoretical approaches. The conditions described by the resource-based view (RBV) of the firm led to many real options. Supply chain disruptions and deceptive suppliers triggered rapid adaptation through traditional marketing tactics and strategies. Changes in the supply chain, and place, led to responses in price, promotion and product. Respondents hoarded, developed relationships with new, nonopportunistic suppliers and changed prices, products and product mixes. They developed cooperative relationships – coopetition – to deal with shared problems.

Originality/value – This study interprets supply chain disruptions through the lens of marketing in SMEs; it combines qualitative and quantitative methods to better understand supply chain disruptions in a marketing context; it applies the real options theory and the RBV of the firm to marketing in the context of supply chain disruptions, and it reflects real-time small-firm behavior in a crisis.

Keywords SMEs, Supply chain disruption, Real options theory, The resource-based view of the firm, Netnography, Supply chain opportunism, Supply chain deception

Paper type Research paper

Introduction

Supply chain disruptions can affect supply chain partners and even spill over to customers and other industries. Managing such crises works best when partners work together (Boin *et al.*, 2018). As crises linked to the COVID-19 pandemic erupted, supply chain disruptions wreaked havoc across industries and supply chains. Many people supported one another in business and as individuals. Some businesses changed operations entirely to support the public and the health-care system. Others acted opportunistically during a pandemic and massive supply chain disruptions. They violated preexisting trust and magnified preexisting problems (Giunipero *et al.*, 2022).

These supply chain disruptions have driven many changes to the role of marketing in organizations. They underscore the relationships among the 4Ps of marketing and the importance of relational trust in business. They also stress the need to respond to changes in one element with actions in the others. The marketing mix allowed the small firms in this research to demonstrate their resilience during major supply chain disruptions.

Smaller disruptions preceded the widespread disruptions, but the major global disruptions persist, so responses to them persist. These major disruptions aggravated and magnified what our subjects viewed as deceptive and unethical supplier behavior. Small firms are more vulnerable to disruptions but also more readily adaptable (Bak *et al.*, 2020). Small to mid-sized enterprises (SMEs) differ from large corporations and may respond to crises differently (Murphy, 2016; Klyver and Nielsen, 2021). This research focuses on small firms in the bath/body/candle industry. These firms serve business-to-

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business (B2B) and business-to-consumer markets (B2C). Statista (2022) reports a market value for natural and organic beauty products of $37bn worldwide in 2022, with growth to $59bn by 2031. Our subjects are in that industry, primarily as owner-operators, so they are SMEs.

This research uses a mixed-method approach combining a two-year-long netnography in SME Facebook groups and a quantitative questionnaire based on the results of the netnography. We tested the survey data with a structural equation model (SEM) of buyers' responses to supply chain disruption and deception. Only the buyers were subjects in this research. They were the focus of the netnography and respondents to the survey. We define buyers as those who purchase raw materials to manufacture products to sell to end consumers or retailers. Buyers perceived suppliers as catalysts for several negative outcomes that affect buyers and end consumers. End consumers comprise a major part of the buyers' market in this study.

This research contributes to theory and practice in several ways. First, it responds to the call for further research on supply chain disruptions for smaller firms (Lopez-Jauregui *et al.*, 2022). We stress buyers' perceptions of opportunistic suppliers because they may motivate engaging in resilience strategies. Self-serving opportunism may negatively affect trust in business relationships. Second, it identifies collaboration strategies that differ from those discussed in the literature (Bak *et al.*, 2020). It includes collaboration among competitors who share information and scarce supplies. Third, it examines resilience strategies based on the 4Ps of marketing, findings that benefit theory and practice. Fourth, it demonstrates the relationship between the resource-based view of the firm (RBV) and real options theory (RO) in analyzing small firm supply chain resilience. Bak and colleagues (2020) called for further research to help understand resilience in small firms.

In practical terms, this research helps managers better understand their environment and avoid future pitfalls by major actors. It is important because these pitfalls can spill over broadly, with negative effects on businesses and consumers.

Literature review

Small to mid-sized enterprises and buyer-supplier relationships

Buyer-supplier relationships (BSRs) become personal for one-person firms like our buyers. SMEs change suppliers based on sensitivity to promotions and lower satisfaction with current suppliers, but future research should study the reasons for this behavior (Lopez-Jauregui *et al.*, 2022). As this research shows, our buyers lost trust in suppliers because they viewed opportunistic suppliers as acting against them.

BSRs rely on reciprocity. SME marketing must include developing relationships, especially with large partners, even if relationships may change (Mainardes *et al.*, 2021). The recent disruptions underscore this point. Broad supply chain disruptions constrain SMEs, especially small ones like our buyers (Lopez-Jauregui *et al.*, 2022).

Tangpong and colleagues (2015) categorized BSR typologies based on relationism, buyer and supplier dependence. In their terms, our subjects are captive buyer/dominant. In this category, suppliers prevent disruptions by leveraging their expertise and securing critical components. They may also exploit their customers and reduce supply chain performance, leading to a poor supplier reputation and discouraging future purchases.

SME B2B relationships can be recovered but not restored (Fleming *et al.*, 2016). Owner-managers dissolve relationships dynamically (Fleming *et al.*, 2016), considering past and future interactions in context (Fleming *et al.*, 2016). We found that small buyers express this effect more strongly. Mishra (2011) found that trust, cooperation and information sharing were key to building BSRs in SMEs, although the study was limited in time and scope. His literature review found no previous studies on BSR in SMEs. Lopez-Jauregui *et al.* (2022) started filling this gap.

Most studies emphasized customers, but Verghese *et al.* (2019) analyzed customer benevolence and supplier resilience from a supplier's perspective. They found a supplier's affective commitment to BSR probably creates a benevolent customer. They argued that marketing literature often overlooks BSRs from the supplier perspective, rarely classifying them as a marketing capability, yet it is one. Customers often blame first-tier suppliers for supply chain disruptions (Christopher and Peck, 2004), but most disruptions result from globalization (Sheffi and Rice, 2005).

Sarasvathy (2009) argues that owner-managers often approach decisions through effectuation, including affordability, flexibility and experimentation. He contrasts effectuation with causation through metaphors, seeing the pieces fit together in a comprehensible picture. The pieces are put together as they become available and appear useful. Effectuation has its critics (Arend *et al.*, 2016), but it appears to fit the environment of this research.

Trust

Trust plays an important role in turning BSRs into competitive advantages (Kwon and Suh, 2004; Wagner *et al.*, 2011; Whipple and Frankel, 2000). BSRs tend toward trust violations, failures of one party to meet the expectations of the other (Anderson and Jap, 2005; Kaufmann et *al.*, 2018; Villena *et al.*, 2011). Such violations harm buyers more than suppliers, fostering negative repercussions downstream.

Trust has two bases in literature: competence and integrity (Connelly *et al.*, 2018; Das and Teng, 2001). Competence-based trust relies on the trustee's ability to perform required duties (Kim *et al.*, 2004). Integrity-based trust relies on the trustee to adhere to an acceptable standard of behavior (Mayer *et al.*, 1995). Recent supply chain literature rarely addresses this dimensionality (Ireland and Webb, 2007; Pulles *et al.*, 2014; Wang *et al.*, 2014; Kaufmann *et al.*, 2018; Ta *et al.*, 2018).

This is a crucial oversight. Trust's facets develop over time; they evolve throughout a relationship (Janowicz-Panjaitan and Krishnan, 2009; Kim *et al.*, 2004; Long and Sitkin, 2006). The dimensionality extends to trust violations, which can be competence- or integrity-based (Lewicki and Brinsfield, 2017). Spillover effects mean a violation in one category can affect trust in other categories (Hora and Klassen, 2013; Nichols *et al.*, 2019; Ried *et al.*, 2021). If an organization misunderstands these trust dimensions, it is less likely to recover. Specific trust violations require specific remedies (Dirks *et al.*, 2011; Ferrin *et al.*, 2007; Kim *et al.*, 2006). This underscores the need to understand the breach of the trust dimension and its damage to BSRs. Spillover effects can be

unexpected because the event seems unrelated to the outcome (Hora and Klassen, 2013; Nichols *et al.*, 2019; Ried *et al.*, 2021).

Context matters. Governance structures should protect against trust violations, including contracts that codify agreements (Klein *et al.*, 1978; Williamson, 1985). Relational governance stresses flexibility, information exchange and collaboration (Dyer and Singh, 1998; Heide and John, 1992; Ring and Van de Ven, 1994). These structures minimize opportunism or trust violations (Handley and Angst, 2015; Liu *et al.*, 2009; Wang *et al.*, 2016).

Relationship duration changes the impact of trust violations. Preexisting conditions affect how parties view violations by others (Koza and Dant, 2007; Lount *et al.*, 2008). Existing governance structures shape perceptions of violations, attributions of root causes and deployment of remedies (Weber, 2017). Tacit and explicit violations affect trust differently (Eckerd *et al.*, 2022).

Supplier deceptions

Deception has been accepted in negotiations for some time (Lewicki and Robinson, 1998; Koning *et al.*, 2010), but it needs further study in supply chain management and BSRs (Rottenburger and Kaufmann, 2020). Fahimnia *et al.* (2019) identified 385 relevant articles in the top behavioral operations and supply chain management (*BOSCM*) journals from 1981 through the middle of 2018. Many articles deal with BSRs, focusing on trust, power and information sharing. Some articles consider fairness. Only one article focuses explicitly on deception.

Kaufmann *et al.* (2018) found that perceived bluffing or deception changes buyers, opinions of suppliers. They consider bluffing normal in negotiations, but deception crosses ethical lines. Lying and bluffing differ conceptually and in their effects on the organization. The purchasing environment often rewards deceptive practices. While bluffing is a skill, organizations curb lying with rules and codes (Rottenburger *et al.*, 2019; Kaufmann *et al.*, 2018). Despite accepted theory, deception can harm satisfaction (Eckerd and Hill, 2012) and trust (Hill *et al.*, 2009). Skillful bluffing raises buyer satisfaction, but buyers can mitigate its effects (Florea *et al.*, 2022). Rottenburger and Kaufmann (2020) found that when a supplier was perceived as new, it was also perceived as more deceptive. In this research, they do not distinguish deception and bluffing. Firms may still stay with dissatisfying suppliers, even deceptive and untrustworthy ones. The literature has yet to explain this behavior (Lopez-Jauregui *et al.*, 2022).

Opportunism and deception

Opportunistic behavior refers to deception and exploitation in business relationships, which can harm trust, cooperation and relationship success. It is self-serving and driven by guile, unlike the economic assumption of self-interest (Wathne and Heide, 2000). It manifests as falsifying expense reports (Phillips, 1982), breaching contracts, bait-and-switch tactics (Wilkie *et al.*, 1998), violating promotion agreements (Murry and Heide, 1998), misrepresenting skills and resources and more. The opportunistic deceiver might exaggerate rival bids, withhold critical information or misrepresent it. A behavior may be opportunistic if it violates norms established between the parties (Heide and John, 1992). Our buyers rely on relational contracting based on established norms, not contractual documents.

The pandemic revealed opportunistic behaviors in many industries' supply chains. Some opportunism comes from unconscious coping mechanisms. It may also come from conscious self-serving behavior without regard for supply chain partners. For example, during the pandemic, health-care procurement experienced fear of corruption, fake products, predatory suppliers and unsuitable products (Harland *et al.*, 2021). The food and luxury fashion industries suffered from opportunism as well (Lyu *et al.*, 2023; Karaosman *et al.*, 2023).

Buyers may see opportunistic behavior as deceptive. Bait and switch tactics may reflect opportunism or deception (Wilkie *et al.*, 1998). Our buyers saw it as deceptive, even without pressure to buy alternatives. This also ties to lies and the deliberate misrepresentation of facts (Shell, 1991). Some suppliers misrepresent or falsify expenses. None of this is likely to be viewed as ethical (Carter, 2000). Unethical supplier behavior, including the opportunism studied here, negatively affects buyers' perceptions of performance and buyer satisfaction (Carter, 2000).

Resource-based view and small to mid-sized enterprises

RBV theory suggests that a firm's unique resources and capabilities drive its performance. A firm's success depends on its ability to identify and develop unique resources and capabilities (Penrose, 1959; Barney, 1991). Barney (1991) labels distinguishing resources as valuable, rare, imperfectly imitable and nonsubstitutable. By contrast, Maiti *et al.* (2022) classified resources as multipliable, rentable and expandable. They argue that few studies apply the RBV to SMEs. SMEs learn and redeploy their resources faster than larger firms (Maiti *et al.*, 2022), but despite their versatility, they cannot deploy what they do not have.

A firm's resources and capabilities can be tangible or intangible – physical assets or intellectual property, brand reputation and organizational culture (Jahanshahi *et al.*, 2015; Barney, 1991; Penrose, 1959). For the smallest firms, the most important resource is often the creativity and flexibility of the owner-manager (Balen *et al.*, 2023).

Competitive advantages arise when resources and capabilities align with the firm's strategic objectives. This helps provide a unique value proposition to customers. Misalignment of resources can create a competitive disadvantage, as can easy-to-imitate resources. Research on RBV and SMEs suggests a strong relationship between RBV and coopetition using Maiti *et al.* (2022) classifications of resources but not Barney's (1991).

In a structured literature review, Beckmann *et al.* (2021) found that small rural firms often cooperated to find locally scarce resources. These small firms often share resources with competitors, communicating resource availability through digital platforms. A key resource for family firms, usually SMEs, is the ability of owners to deal with family issues while also addressing marketing and supply chains (Mayr and Lixl, 2019).

Real options theory and small to mid-sized enterprises

RO started as a framework for evaluating and valuing opportunities in investment decision-making. Many business

decisions involve options – the right, but not the obligation, to take specific actions later (Trigeorgis and Tsekrekos, 2018). RO applies beyond financial markets. It can analyze new projects, expansions, contractions or responses to market changes. It recognizes that an option's value depends on the underlying investment, its uncertainty and the time available to decide (Trigeorgis and Tsekrekos, 2018). RO helps evaluate flexibility and opportunity in business decision-making. It can help managers make more informed decisions about strategic actions.

RO is often used for operations and supply chains, but real options reasoning (ROR) may be more relevant to the current study (Jahanshahi *et al.*, 2015). ROR relates to resource allocation, value creation and resource reconfiguration. It can also serve as a platform for organizational learning and help create value. It raises market orientation and influences how SMEs manage resources to create customer value (Jahanshahi *et al.*, 2015).

In their taxonomy of RO, Trigeorgis and Reuer (2017) list five real strategic options. First is the right to defer or stage market entry. Second is the right to grow. Third is the right to alter the scale. Fourth is the right to switch inputs, outputs, suppliers and so on. Fifth is the right to abandon by exiting a market or selling technology. These options become apparent as we navigate through this research's findings.

Methodology

Industry, subject and sample description

The subjects in this research consisted of owner-managed businesses that manufacture and sell personal items like soaps, body washes, bath bombs and candles. We refer to these firms as the buyers. Most are microfirms using only the owner. They rely on suppliers for fragrances, specialty oils, tools and other materials to produce products. From a supply chain perspective, buyers are product manufacturers engaged in both B2C and some B2B exchanges. Suppliers to buyers sell raw materials and tools. We use "deceptive supplier" to mean abusive, opportunistic, unethical suppliers.

This study used mixed methods. First, we conducted a two-year-long qualitative netnographic study that guided model development. Second, a quantitative questionnaire was used to test the model based on prior theory and qualitative findings.

Study 1

Netnography

Netnography is a qualitative research method focused on online communities (Kozinets, 2002). Like ethnography, it relies on personal, prolonged engagement and a high degree of intimate involvement in day-to-day activity (Kozinets, 2002).

One coauthor immersed themselves in Facebook groups where up to 100,000 buyers and occasional suppliers in the bath/body/candle industry interacted. The immersive experience allowed for a better understanding of the culture, language, behaviors and relationship dynamics among group members (Kozinets *et al.*, 2014). It also allowed for a better understanding of shifts in conversation topics and areas of concern from before, during and after the global disruption in supply availability and the global environment (Kozinets *et al.*, 2014).

Even though the research was immersive and participatory, all posts and comments were made voluntarily, without a prompt, and became part of the group archives (Rynarzewska, 2019). This method helped uncover how supply chain disruptions affected buyers and suppliers and how buyers dealt with uncertainty and supply chain disruptions.

Analysis and findings

Thematic analysis allowed major themes to emerge from the data. These were organized into major and minor themes that guided model development and provided rich contextual data. Below, we summarize netnographic findings with supporting quotes from small business owners/buyers. We retained original grammar, including errors, sentence structure and emojis. These selected quotes may be found in Table 1.

First, supply chain disruptions harmed small business owners during the pandemic. The buyers dealt with lengthy periods of out-of-stock raw materials and packaging. They dealt with raw material price increases as high as 4x or 5x the prepandemic prices at various points mid-disruption, as well as frequent shipping and delivery delays.

Second, buyers began to suspect some suppliers of using the pandemic to raise prices unnecessarily and unfairly on raw materials and shipping. The buyers felt these prices were based on exaggerated costs and opportunism to raise profits, which allowed the suppliers to engage in deceptive behavior.

Third, sales events became more common, particularly from suppliers who buyers perceived as deceptive and price gouging. This forced buyers to plan purchases around sales events as well as pandemic-related shortages and price fluctuations. Otherwise, they had to pay higher wholesale listing prices. Sales event prices were still higher than prepandemic regular prices. Some buyers put mock orders in their carts to compare prices from prior purchases to determine shipping cost and total order price. These sales events were seen as deliberate moves to create a needless sense of urgency among buyers.

Fourth, shortages and price increases caused community members to look for suppliers with prepandemic prices, lower and slower price increases or products in stock and suppliers they could trust. Buyers were forced to adapt, which included collaboration among competitors to cope with supply-chain-related shortages, delays and price increases. Community members helped each other find products in stock at lower than current prices. They also helped one another screen potentially unethical or deceptive suppliers. They highlighted the new but untested suppliers, hoping other buyers may have tested them. Buyers helped one another by screening potentially unethical or deceptive suppliers as well as highlighting those who were new but previously untested by most to increase their confidence in a purchase or seek another supplier.

Fifth, buyers responded to the negative effects of shortages, delays and price increases with actions readily described by the 4Ps. Buyers appeared to have stocked up on packaging and raw materials. Buyers changed their value propositions in three ways. They increased prices, reduced product size and changed the product mix and product composition. Buyers viewed these changes as negative and felt bad about raising the end consumer price and decreasing value.

Table 1 Themes and selected supporting quotes from netnography

Disruptions	
Price increase **Out-of-stock** **Shipping**	*I have done some research for other alternatives of where to purchase citric acid, which is either: a. OOS (Out of Stock), b. limited quantity, c. double or tripled in price, d. or the shipping is just as high as the citric acid*
Coopetition	
Asking for help	*If you don't mind, please share possible suppliers*
Offering solutions to disruptions	*I have done some research for other alternatives (. . .) At this moment (original post: August 12, 2021)** (Supplier Name) only has 5lbs or less available, (Supplier Name), citric acid link no longer works/no longer listed on the website (several suppliers have strict limitations) has one pound available (Supplier Name) oos/eta mid-August on non-gmo (Supplier names notes Out of Stock) (oos). *****Other Options for One pound-50lb bags (could change overnight)****
Perceived supplier behavior	
Deceptive pricing and shipping costs	*"I can't pay $50lb for fragrances. That is totally flipping crazy! Personally, I don't even like paying $30lb for fragrances. I'm definitely avoiding companies that have unrealistic prices on the fragrance oils." "IMO (*In My Opinion*) price gouging," "I'm hoping they realize how asinine it is to pay $42+ in shipping for a box that costs less than $9 to ship"*
Deceptive practices linked to performance evaluation	*They raised their prices, their packaging is inconsistent, and they take long time to ship. I'm ok with the long wait for shipping, but the other 2 things is ridiculous*
Sales events	*How often does (supplier name) has their 25% off sales? Reply: "They rotate weekly sales. Usually the 25% off bases is every 5-6 weeks or so"*
Buyer mitigating behaviors	
Supply base disruption	(Other buyers offer nonstandard solution) **Google: **winemaking, cheese making, bakery's, restaurant supply chains, chemical supply companies, feed store's
Stockpiling	*I broke down and bought it today too sigh need to make sure I have enough stock for little while. Reply: "yeah, no regrets here. Better safe than sorry!"*
Product size	*(. . .) I made my bar slightly smaller going from 5 oz. to 4.5 oz., which gave me an extra bar or two per loaf*
Product price	*With inflation & shipping prices rising, has anyone raised their wax melt prices? (. . .) I feel I need to raise it to make more of an appropriate profit*
Variety	*I need to switch waxes now, going up 3 times in 2 months. It went up from $80 to $103. Also, our itemized past purchases are gone. An almost $25 increase is ridiculous*

Source: Authors' own work

This two-year-long immersive study allowed us to better understand the concerns of SMEs within a larger economic, health care and supply chain crisis. Thus, with this understanding, we proposed a model based on the existing literature and findings from the netnography. It shows the relationships between key elements in the supply chain and the market.

Study 1 revealed that supply chain disruptions negatively affected our buyers, triggering suspicions of supplier price gouging and deception. These suspicions fostered perceptions of poor supplier performance and more careful evaluation of new and existing suppliers. These suspicions caused buyers to search for new suppliers because some existing suppliers appeared to perform poorly and deceive. Suppliers who avoided perceptions of deceptive practices improved their reputations and earned trust among buyers.

It is possible that deceptive suppliers violated the psychological contract as certain behaviors, which may include blatant or subtle acts that fail to protect others damage trust (Hill *et al.*, 2009). Table 2 represents examples of those perceived behaviors found in this study.

While in this research, we focused on buyers' perspective, the underlying mechanisms were likely to stand. Trust is critical in BSRs, contributing to performance improvement (Humphreys *et al.*, 2004). We expect perceptions of unethical, deceptive practices to negatively affect perceived supplier performance by violating trust.

Our qualitative results showed that buyers wanted to increase commitment to nonabusive suppliers and reduce commitment to opportunistic, deceptive suppliers. They wanted suppliers who avoided questionable behavior and could withstand disruptions without abusing power.

Study 2

Quantitative survey and model testing

Early in the pandemic, Giunipero *et al.* (2022) found abuse of supply chain power and opportunistic behavior in transportation, where small businesses were more vulnerable. Such opportunistic behaviors threatened small business' survival with the implication that businesses should reduce risk exposure through forward-looking actions. Study 1 in this research supports their findings (Giunipero *et al.*, 2022) and extends them into the industry in the current study. Our buyers pivoted and became more proactive to protect themselves. Tangpong *et al.* (2015) came to similar conclusions in their study of BSRs.

The netnography suggested several key effects. First, buyers hesitated to stockpile materials from deceptive suppliers.

Table 2 Examples of opportunistic behaviors evident from netnography

Type of opportunism	Example evident	Description
Falsification of expense reports (Phillips, 1982)	Suppliers raising cost	Suppliers linked the rise in prices to supply chain disruptions. The community felt some suppliers inflated the rise in their costs to enrich themselves in difficult times by extensively increasing prices to buyers
Bait-and-switch tactics (Wilkie *et al.*, 1998)	Sales events and out-of-stock	Some raised prices dramatically, and the suppliers started to offer "sales events" with the most economically beneficial sizes being limited. Buyers are not pressured to buy alternatives if what they wanted to buy during the sales event became out-of-stock during the event, but most would feel like it is resource-saving to get the raw material; they purchased a lower value product (based on price/size ratio). Alternatively, suppliers may have offered packaging on sale but no closures, which were overpriced, so buyers felt they needed to buy both in order that there is a match between packaging and associated closure
Violation of promotion agreements (Murry and Heide, 1998)	Back-orders, missing estimated delivery dates, requires overbuying	Suppliers were selling products during sales events and then notifying buyers the product was out-of-stock. Buyers had to buy somewhere else or wait while the opportunistic supplier was back-ordering. Ultimately, the buyer ends up buying twice (waiting on a back-order and purchasing what they needed from another supplier or had to wait for a long time or they had to cancel)
Missed deadlines, failed to meet weight and price objectives, and furnished parts that did not work (Walton, 1997)	Delayed delivery, inflated pricing, untested raw material did not perform in applications	Extended shipping times well past the promised delivery date despite adjustments related to COVID-19, increased prices more than others, selling untested raw materials expecting the buyer to do the testing and reduction in packaging material resulting in raw material loss
Purposely withheld critical information, failure to disclose its "true attributes" (Williamson, 1996)	Withholding safety usage documentation and raw material performance	Updated IFRA (skin safety levels) documentation on fragrances has not been provided for an extended period. Some still have not been listed. Fragrances did not perform up to specifications (as they were not tested by the supplier)

Note: IFRA- International Fragrance Association
Source: Authors' own work

Second, they were open to disrupting their supply base through supply base expansions and supplier switching. The supply base is "the portion of a supply network that is actively managed by a buying company" (Choi and Krause, 2006, p. 637). A smaller, more manageable supply base may benefit small buying firms (Choi and Krause, 2006). A smaller base can reduce transaction costs and increase responsiveness. They may carry a higher supply risk. So, expanding the supply base may reduce risk, particularly in a disruptive environment.

Further, the netnography also showed that buyers stockpiled to avoid stockouts. This behavior aligns with buyer-supplier literature. It suggests a direct relationship between unethical, deceitful supplier behaviors and relationship continuation (Kaynak *et al.*, 2015), negatively affecting buyers' perceptions of supplier performance and buyers' satisfaction (Carter, 2000). We developed *H1* to *H5* based on literature and netnographic findings.

Hypotheses

Based on the results of Study 1, we developed the following hypotheses:

H1. Supplier deceptive practices have a direct negative effect on the supplier's perceived performance.

H2. Suppliers' deceptive practices have a direct positive effect on supply base disruption.

H3. Suppliers' deceptive practices have a direct positive effect on buyer stockpiling behavior.

H4. Disruption to the supply base mediates the relationship between deceptive supplier practices and stockpiling.

H5. Supply base disruption positively affects stockpiling.

The pandemic caused cash-flow fluctuations for small businesses (Giunipero *et al.*, 2022). Not all buyers could stockpile. They could not forward buy to buffer price and supply shocks. The 4–5x materials price increases made profitability difficult, especially when combined with other supply chain disruptions. Before the pandemic, Trump administration tariffs increased industry prices sharply. Also, prior to the pandemic, buyers were informed that fragrance shortages arose from a fire that erupted in a major raw material supplier to fragrance manufacturers. With new disruptions and price increases, buyers felt forced to raise prices to stay in business.

These resource constraints for buyers guided additional hypotheses. Buyers wanted to expand their supply bases and

needed to stockpile raw materials but felt constrained by resource shortages such as a lack of space and cash flow. This may have pushed them to product mix adjustments with the potential to adversely affect consumers: smaller products, higher prices or fewer options.

This suggests a causal chain in a disrupted environment. Supplier opportunistic behavior induces buyers to change products and prices for survival. These changes negatively affect consumers who face higher prices and fewer choices. The netnography suggested that stockpiling indirectly encourages changes in the product mix that consumers may see as negative. By contrast, supplier performance could mitigate the negative effects on the product mix and the consumers. Thus, we predict that supplier performance inversely relates to product mix changes. We anticipated these effects based on the netnography. This led to *H6* and *H7*. *H6* and *H7* statistically test the impact of buyer stockpiling and supplier performance on the need to change product mix negatively:

H6. Stockpiling supplies has a direct positive effect on product mix changes.

H7. Supplier performance has a direct inverse effect on changes to product mix.

Methodology for quantitative modeling

To test the model, we collected data from owner-managed firms in the bath/body/candle industry using a quantitative questionnaire. We informed them that the study was anonymous and conducted for academic purposes.

Measurement

We adapted and amended measures of deceptive unethical practices and supplier performance from Carter (2000). The questions concerned a supplier that the respondent named. For example, "Exaggerates the seriousness of a problem to gain financial benefit." Supplier performance was measured using items such as "The supplier does its job properly." The measurement for supply base disruption was designed based on netnographic findings and included the following items: After COVID-19-related supplies shortages in my business, I –1) increased the number of suppliers; 2) searched for additional supply sources; 3) switched suppliers. Similarly, we measured the stockpiling factor with two items: After COVID-19-related supplies shortages, in my business, – 1) I stockpiled hard-to-get ingredients and 2) I purchased more supplies than I normally would.

Finally, we measured product mix changes by two-dimensional two-item scales. We measured decreased product value with two items. "In my business, – 1) I increased the product price and 2) I decreased product size to reduce cost." We measured decreased product variety with two items. "In my business, – 1) I reduced the number of products offered" and 2) "I stopped offering products that became too expensive to make." All questions were asked on a seven-point scale.

Analysis and results

Over 200 subjects attempted the study. Of those, 118 buyers/manufacturers of bath/body/candle products completed the survey, a 75% completion rate. For sample characteristics, please see Table 3.

To assess the measurement, we performed a confirmatory factor analysis. We removed items that did not perform. Based on confirmatory factor analysis, most parameter estimates had factor loadings (λ) above 0.707, and average variance extracted for the constructs was above 0.5. There were two exceptions. Two items for product value as it relates to price and product size and two items for unethical supplier behaviors (Fornell and Larcker, 1981). Two to four items measured all constructs. All but one scale had Cronbach's alpha reliability above 0.7. The exception was the scale for adverse changes to the product mix, which was above 0.6. While Cronbach's alpha was less than the preferred 0.7, Nunnally (1978) considers 0.6 acceptable for the early stages of research. The items on negative changes to the product mix accounted for approximately 61% of the variance. According to Cronbach (1951, p. 322), this is because "the variance in the equally weighted composite is due to the common factor among the tests." "[...] thus, items are intercorrelated enough" "that the general factor would cumulate in a preponderant way in their total." We found the measure acceptable because the research is in its early stages, and it is a newly developed scale. To assess convergent and discriminant validity, interitem correlations were inspected (McDonald, 1999). A high degree of convergent and discriminant validity were present for the measures used.

Once we confirmed the measurement performance, we built a SEM and tested it in Mplus 6.0 (Muthen and Muthen, 1998–2010). SEM allows for a simultaneous test of relationships within a model, including mediation (Iacobucci *et al.*, 2007). We used the Satorra–Bentler correction, known as the maximum likelihood parameter, because of the multivariate

Table 3 Sample characteristics

Key buyer characteristics	Frequency	Valid (%)
Number of suppliers		
1–2 suppliers	7	5.9
3–5 suppliers	45	38.1
6–10 suppliers	52	44.1
11–15 suppliers	8	6.8
16–20 suppliers	4	3.4
More than 20 suppliers	2	1.7
Primary purchasing entity		
Yourself	118	100
Your employee under your direction	0	0
Business as part of the total income		
Primary source of income	26	22
Secondary source of income	42	35.6
Not a significant source of income	48	40.7
Other	2	1.7
Predominantly sells to		
Individual (end) consumers	74	62.7
Retail shops	1	0.8
Individual consumers and retail shops	40	33.9
Other	2	1.7

Source: Authors' own work

lack of normality in the data. The Satorra–Bentler correction "estimates with standard errors and a mean-adjusted chi-square test statistic that are robust to non-normality" (Muthen and Muthen, 1998–2010, p. 533).

To determine model fit, we used fit indices (Table 4). All fell within appropriate to reasonable limits based on Hu and Bentler (1999) and Kline (2005). The preliminary results allowed for hypothesis testing with adequate confidence, particularly with a small sample. The analysis supported all seven hypotheses. See Table 4 for model fit results and hypotheses tests and Figure 1 for the visual representation of findings.

Taken together, the results suggest that the deceptive supplier contributed to the need to engage in supply base disruption manifested by switching from some suppliers and acquiring new ones, further resulting in stockpiling from new suppliers. The effects of deception spilled over onto the buyer, who had to find new suppliers and stockpile, but simultaneously, supplier deception negatively affected buyers' perception of supplier performance. Supplier deception became a double-edged sword with negative effects on buyers and suppliers. See Figure 1 for a visual representation of the tested relationships.

Mitigating disruption and deception

As the model suggests, unethical, deceptive supplier behaviors affected buyer behaviors. These behaviors were mitigating strategies to neutralize the effects of disruptions and deception. Upwards of 90% of buyers engaged in some of these mitigating behaviors, suggesting the magnitude of effects of buyers and their consumers. Even though buyer's mitigating behaviors mostly happened on the supply chain levels ranging from 60% to 90%, a substantial part of mitigating behaviors also occurred on the manufacturer to the consumer level. Approximately 20%–60% of those behaviors were operational in nature and directly affected end consumers' value (smaller product size, reduced variety and higher price). Table 5 represents the prevalence of mitigating behaviors.

Discussion and conclusions

Small to mid-sized enterprises and buyer-supplier relationships and supplier deceptions

Unsurprisingly, our results suggest that global disruptions affected everyone, from suppliers to buyers to end consumers. More interestingly, the longitudinal and cross-sectional two-study research design provided insight into how the disruptive environment may affect suppliers, buyers and consumers. The SEM model showed that supply base disruption mediated the likelihood of stockpiling. When established suppliers engaged in opportunistic or deceptive behavior, they encouraged buyers to seek new suppliers and expand their bases. Conscious supply base expansion affected raw materials stockpiling. When buyers dealt with deceptive suppliers, they were less prone to stockpile from deceptive suppliers, but they were more prone to stockpile after switching suppliers and expanding the supply base.

Sarasvathy's (2009) effectuation concept manifested in the netnography, particularly in buyers' descriptions of suppliers. Those descriptions included facts like new prices but mainly comprised clues about the negative, deceptive, ill-intended supplier behavior. Buyers effectuated by comparing and contrasting suppliers' past behaviors, other buyers' experiences and one supplier to others.

The netnography reflected a captive-buyer/dominant supplier relationship (Tangpong *et al.*, 2015). In this category of relationship, suppliers might exploit customers and harm supply chain performance. Buyers saw this as the case, based on comments in the netnography. A supplier may be able to recover some lost reputation (Fleming *et al.*, 2021), but buyers' comments made full restoration seem unlikely.

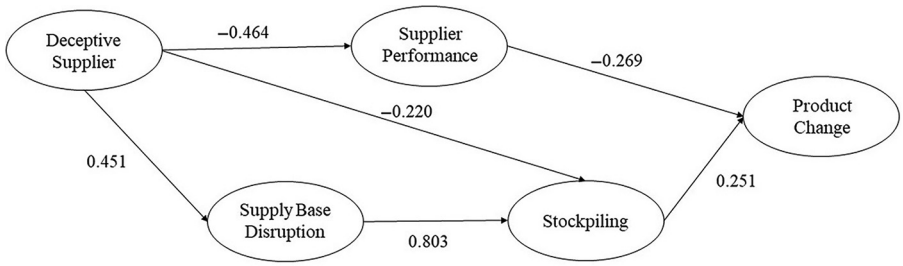
The buyers accused suppliers of taking advantage of the circumstances created by the pandemic, which fits existing literature (Sheffi and Rice, 2005), but in a nuanced way. They blamed suppliers for opportunism and ineffective approaches to BSRs but not for the pandemic. When suppliers approach BSRs effectively, they create benevolent customers (Verghese *et al.*, 2019). The suppliers' approaches reflected in these results clearly missed this mark. Buyers forgive bluffing but not deception (Kaufmann *et al.*, 2018). Our buyers saw much of the suppliers' behavior as deceptive, not normal bluffing in the course of negotiations. Opportunistic behaviors in this research were consistent with prior research (Williamson, 1996; Shell, 1991), including hiding true attributes, withholding critical information and lying about material facts. Some suppliers also manipulated rivals' bids, failed at agreed actions and exploited vulnerabilities and asymmetries in information (Walton, 1997). Opportunistic behavior violates relational contracting norms, although this industry does not rely on written contracts. However, buyers have shared expectations of the suppliers. If a supplier refuses to adapt to changing circumstances, buyers may see that as passive opportunism. Contrived cancellation strategies aim to force renegotiation and improve trade terms. Information asymmetry further enables opportunism. Addressing opportunism requires transparency, open communication and formal contracts when possible. Monitoring mechanisms, penalties for breaches and a culture of trust and accountability can mitigate opportunistic practices and preserve healthier business relationships (Crosno *et al.*, 2013; Huo *et al.*, 2016; Wathne and Heide, 2000).

Table 4 Hypotheses testing results

Hypotheses	Result	Hypotheses cont.	Result cont.
H1	$\beta = -0.464$, SE $= 0.073$, $p < 0.001$	*H2*	$\beta = 0.451$, SE $= 0.08$, $p < 0.001$
H3	$\beta = -0.220$, SE $= 0.103$, $p < 0.05$	*H4*	$\beta = 0.362$, SE $= 0.102$, $p < 0.001$*
H5	$\beta = 0.803$, SE $= 0.118$, $p < 0.001$		*Sobel $= 4.113$, $p < 0.001$
H7	$\beta = -0.269$, SE $= 0.130$, $p < 0.05$	*H6*	$\beta = 0.251$, SE $= 0.147$, $p < 0.05$

Notes: All directional hypotheses were tested at alpha 0.05 one tail; fit indices: comparative fit index = 0.944; Tucker-Lewis index = 0.932; root mean square error of approximation = 0.064; standardized root mean square residual = 0.067
Source: Authors' own work

Figure 1 Visual representation of results



Source: Authors' own work

Table 5 Summary of disruption mitigating behaviors

Buyer behaviors mitigating disruption	M	MD	SD	Percent of buying firms admitted to mitigating behavior (%)
Actions affecting supply chain relationships				
Increasing the number of suppliers	4.86	5	1.77	67.80
Switching suppliers	4.62	5	1.69	62.80
Searching for new suppliers	5.92	6	1.24	90.70
Actions actively mitigating internal disruption				
Stockpiling	5.18	6	1.76	72.80
Overbuying supplies	4.87	5	1.84	67.80
Actions affecting end-consumer relationships				
Increasing finished product prices	4.39	5	1.83	61.00
Reducing product size	2.73	2	1.74	18.60
Reduced the number of products offered	3.49	3	2.05	34.70
Stopped offering products that became too expensive to make	3.95	4	2.14	44.90

Source: Authors' own work

Resource-based view of the firm and real options theory

This research showed a strong relationship between RBV and RO. It demonstrated the continued viability of the 4Ps as analytical tools and RO. Maiti *et al.* (2022) view of resources as multipliable, rentable and expandable offered a good explanation for the behavior of our buyers. They expanded their resources through cooperation.

The buyers' behaviors suggest that their intermediate roles in B2B2C and B2B2B2C market structures changed their behavior. Coopetition implies that the firms saw themselves as competitors, not fellow participants in an industry facing extinction based on the actions of large firms in their industry. Together, they helped each other to find new suppliers, turning their back on opportunistic ones while remaining competitors. In a sense, supplier opportunism may have been short-sighted. Buyers saw disruptions as coming from outside themselves, either from global conditions or suppliers, not internal or family situations (Mayr and Lixl, 2019). They responded as business owners in making marketing decisions.

In this research, BSRs constituted strategic competitive advantages within the RBV of the firm. When the supply chain struggled, the buyers reacted with RO-based behaviors. The trigger for this chain was often unethical behavior by the supplier, with the intent of maximizing profit unjustly. Deceptive suppliers seemed to assume buyers would not recognize this behavior and continue to buy. This research indicates that buyers not only recognize the behavior, but they also chose to collaborate with their competitors to strengthen the buying side. Buyers block listed suppliers seen as taking advantage of the crisis.

The initial bad supplier behavior forced buyers to expend more resources to stay in business but also sent buyers to social media with negative word of mouth that may threaten the bad actor's business. The result is a triple loss. Suppliers and buyers make less because they carry more inventory and suffer from the uncertainty introduced into the system. Consumers are forced to pay more for less and are offered less variety. This raises the question of how to educate or police potential bad players to the folly of their ill-conceived and ethically challenged actions in the future.

The buyers demonstrated the continued viability of the 4Ps model in marketing. Borden (1957, 1964) and McCarthy (1960, 1978, 1981) built a theoretical model that manifests in practical terms. In this study, we estimated the driving force: deceptive suppliers who acted opportunistically during major disruptions negatively affected buyers who were forced to make changes to their product and price, ultimately reducing consumer value. While the media reported on decreased product variety, reduced product sizes and increased product prices, this study not only empirically estimated these changes but also determined one of the powerful sources for the negative effect on buyers and consumers.

Managerial implications

From this research, we can also draw practical conclusions. The global pandemic disrupted many supply chains. This disruption drew unprecedented media attention to supply chains and their operations. In theory, these disruptions upset the resource bases of the buyers in these studies. In this sense, RBV becomes a useful lens for examining buyers and suppliers. The resource disruptions motivated buyers to find RO, showing a strong relationship between RBV and RO.

In practice, buyers adapted to the supply chain disruption in several ways. They cooperated with competitors to find worthy suppliers. They stockpiled raw materials and supplies, even overstocking, but actively attempted to find new suppliers to do so to avoid the deceptive ones. This practical choice resulted from the mediating effects of the supply base disruption, which manifested itself by expanding the supply base to new, nonopportunistic suppliers and supplier switching. Finally, the resources needed to find new suppliers increased overall raw material prices, and the perceived need to stockpile raw materials resulted in the need to modify their products and product mixes. The netnography and the model make it clear that buyers avoid deceptive suppliers whenever they can – supplier reputation matters. The supplier's opportunistic behaviors had a clear impact on buyer trust in these suppliers. Ultimately, this reduced relational commitment between buyers and suppliers who acted opportunistically.

Small skincare/beauty/candle industry buyers experienced prior supply chain disruptions. As the expanded timeline of netnography suggested, a fire broke out in a fragrance factory belonging to a Tier 2 supplier, leading to price increases. The Trump administration imposed new tariffs, also leading to price increases. It is worth reemphasizing that despite the survival mode and pressures related to disruptions, delays and out-of-stock notices, business owners felt and acted as they all were in this disruptive and difficult environment together. Coopetition emerged and became part of the industry culture as it continues (as of June 2023).

Deceptive suppliers' initial revenue boost from over-priced raw materials and false sense of product availability ultimately damaged their relational trust with buyers. Ultimately, supplier opportunistic behavior spilled onto buyers and consumers. With coopetition, buyers found new suppliers, but at a cost. Buyers used limited resources to find suppliers and stockpile materials. Consumers suffered reduced variety and value. Opportunistic suppliers lost customers and saw perceived performance decline.

Ultimately, supplier opportunism spilled onto buyers and consumers. Buyers showed their resilience by abandoning opportunistic suppliers where possible. They chose alternatives, even when they cost more. Value and trust suffered. Suppliers' violations of trust had real short-term and long-term consequences for all concerned.

The results stressed the importance of trust in business relationships. Although it was not measured, our qualitative followed by quantitative findings suggest suppliers' opportunism violated trust, resulting in the expansion of buyers' supply bases, switching suppliers, stockpiling materials and adjusting the 4Ps. Suppliers should avoid opportunism and strengthen ties with buyers who need support during disruptions. When confronted with compromised trust, buyers collaborated with competitors to leave the opportunists behind.

Prior studies suggest that information sharing between the partners (Wang *et al.*, 2014), social norms, managerial ties and trust can facilitate collaboration and reduce opportunism between partners (Wang *et al.*, 2014; Lyu *et al.*, 2023). Coopetition can provide strength for SMEs and unique value to competing partners (Virtanen and Kock, 2022). In this study, information sharing and coopetition occurred among buyers who were technically competitors but proved to be a source of resilience necessary for survival, including protection from deceptive suppliers. Future research should further explore strategies to reduce opportunism within supply chains to prevent spillover effects resulting from self-serving suppliers.

Limitations

Despite its contributions, this study also has limitations. First, these data come from small firms in one industry, which limits its generalizability. Small businesses carry important implications for the economy, but their responses may not reflect all businesses or industries. Netnography may not apply in other industries, but the questionnaire can be customized to determine whether firms in other industries or of different sizes were similarly affected. Some resources and supply bases may lend themselves to different responses and RO. The visibility of supplier behavior may depend on industry structure. Second, this survey was a snapshot. However, the cross-sectional nature of the survey supported insights from the longitudinal netnography, which, despite limitations, increases our confidence in the findings. Certainly, the mixed method approach offered unique, triangulated insights. This research bears repetition to see if the effects of deception, opportunism and other unethical behavior lead to similar results.

Third, the newly developed scale for buying firms' 4Ps responses to deceptive suppliers had a Cronbach's alpha that was less than ideal. However, Cronbach suggests accepting reliability values that explain over 60% of a factor (Cronbach, 1951), so we believe that the benefits outweigh the limitations.

Finally, this study only focused on buying firms and their responses to perceived supplier behaviors. Future research should survey buyers, suppliers and consumers in the same market context. Such matched sample research during a global supply chain disruption would contribute greatly to our understanding of BSRs. Other worthy future research could explore coopetition and related tactics in crisis survival and innovation practices. The development of coopetition appeared to have been a survival skill or a coping mechanism that enabled many SMEs to deal with less-than-ideal business environments.

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Effects of empathy and egoism on CSR perceptions and consumer buycotts: Lessons learned during global crisis in support of equitable business practices

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Effects of empathy and egoism on CSR perceptions and consumer buycotts: Lessons learned during global crisis in support of equitable business practices

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ABSTRACT

Consumer polarization leading to buycotts and boycotts was magnified by the global crisis of 2020–2021 which changed consumer priorities and business practices: in-person shopping decreased, while social distancing, remote work, and media consumption increased. In this context, we examined the relationships among egoism, empathy, and consumer interest in social topics. These topics included employee treatment, social justice, and the environment. We highlighted aligning Corporate Social Responsibility (CSR) efforts with consumer values. Using a survey method and structural equation modeling, we found such efforts increased consumer buycott. In this research we addressed whether consumers were motivated by empathy or egoism to engage in buycotting during global crisis. Consumers reacted to a firm's adherence to health and safety guidelines, respect for human rights, and engaged in environmental protection. This study contributes to the literature on CSR and prosocial behavior. It examined the relationships among key consumer characteristics and corporate behavior in times of crisis and expands the existing literature on psychological factors that play a role in buycotting. The findings are applicable to policy makers, academic literature, and practice as it offers practical recommendations on how companies might consider realignment of CSR activities during crisis. It also suggests directions for future research.

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1. Introduction

In recent years consumer polarization has reached unprecedented heights (Neureiter & Bhattacharya, 2021). Consumers are willing to act on polarization by either engaging in a buycott, supporting and purchasing from businesses that align with their values, or boycott, avoiding and not purchasing from businesses that do not align with their values (McCullough et al., 2022; Neilson, 2010). The COVID-19 pandemic induced unprecedented social change (World Health Organization (World Health Organization)

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Emergency Committee, 2020), and became a source of crisis. Organizations willingly, or by a mandate, adopted practices intended to protect employees, clients, and customers, and many consumers associate these practices with corporate social responsibility (CSR) (Manuel & Herron, 2020).

A number of businesses continue to face business positive and negative effects from the pandemic (Koren et al., 2020). Regardless of how each industry was affected, a common theme is that consumers expected more CSR from businesses. Specifically, consumers expected employers and businesses to keep them safe (Manuel & Herron, 2020). It is unclear what motivated these consumer demands on businesses.

The literature suggests how empathy played a role in how people behaved during the pandemic. Both empathy and altruism were found to positively affect adherence to COVID-19 preventative measures (Pfattheicher et al., 2020; Rieger, 2020). People high in grandiose narcissism, a trait linked to aggression and dominance (Miller et al., 2011), were more likely to accept COVID-19 preventative measures to protect themselves rather than to protect vulnerable populations (Otterbring et al., 2021). These findings might offer a path to understanding what motivated consumers to seek businesses engaged in CSR behaviors linked to the crisis at hand and engage in buycotting behaviors, or consumers' active support of businesses with whose actions they align (Neilson, 2010).

This research examined the complex relationships between empathy, which reflects having tender, caring feelings for others, and egoism which is a motive driven by self-interest, along with buycott, and CSR, a business commitment to aligning strategies, decisions, and activities with societal values and expectations (Carroll, 2021; Schwartz & Carroll, 2008). Such values and expectations manifested during the crisis became the context for studying the interplay between consumers and CSR (Manuel & Herron, 2020; Schwartz & Kay, 2023) with the goal of understanding consumer buycott. This study seeks to further determine whether interest in crisis-linked topics and events played a role in how consumers perceived businesses' CSR efforts linked to social inequalities and how such efforts affected consumer buycott. Buycott is operationalized as the intentional purchase of a product from a company whose policies align with the buyer's values. This study further expands the limited body of knowledge on personality traits and consumer buycott. The study's added value is using concrete examples of CSR derived from the COVID-19 pandemic, which disproportionally affected vulnerable populations, identified by their in-person working conditions (Goldman et al., 2021), and examples of previously highlighted factors including healthcare maldistribution, as well as "poor and unequal living conditions (which) are the consequence of poor social policies and programmes, unfair economic arrangements, and bad politics" (Commission on Social Determinants of Health, 2008, p. 1).

Policymakers and business leaders should understand the relationship between consumer characteristics because polarized consumers often respond with buycott or boycott. Understanding the motivations for buycotting can aid policymakers and businesses to behave and develop policies that encourage consumer support while, we argue, being socially responsible. We argue that CSR is vital to businesses and society, especially in global crises. Further, CSR helps businesses achieve their commercial objectives as they promote social good. CSR can build trust and loyalty among consumers who are increasingly more aware of the social and environmental impacts of their purchases (Peifer & Newman, 2020).

1.1. The crisis context

Extensive research supports the relevance of CSR to businesses and their profitability (Yim et al., 2019). The link between CSR activities and increased brand value is well established and remains true during economic recession (Yim et al., 2019), but the importance of CSR warrants further research, especially during major crises including Covid-19.

CSR depends on context. For example, socio-cultural, political, and economic factors shape CSR on a local and global scale (Gurvitsh & Sidorova, 2012; Tilt, 2016). CRS can be global as well as local as the pandemic exacerbated political, social, and environmental issues (He & Harris, 2020). In the U.S., the presidential election politicized the pandemic (Halpern, 2020) as candidates' statements on handling the pandemic, equal rights, and the environment likely influenced votes (Baccini et al., 2021). George Floyd's death triggered protests and created a surge in the Black Lives Matter movement (Dave et al., 2020). All these events were under the constant view of social and traditional media.

Citizens faced food insecurity and were behind on rent payments even though U.S. personal savings reached a historical record of 34% of income in April 2020 (Bauer et al., 2020). Later when consumer insecurities caused spending to fall (Ren & Zheng, 2023), companies faced uncertainty from revenue and profitability effects of social distancing policies. COVID-19 created existential threats of death and long Covid, impacting the economic well-being of individuals and nations (Kaushik, 2021). At the same time, social media consumption affected attitudes and intentions, with the attribution of responsibility facilitating interactions between intentions and behaviors (Sun et al., 2022).

Understanding the implications of CSR during the global crisis is important for businesses to strengthen their relationship with consumers and support the societal good. Yet, some businesses have been doing more harm than good. Some 75% of workers in the U.S. could not remote work due to the nature of their jobs – including custodial work, public transportation, factories, and warehouses. These workers were more likely to be people of color and to receive lower wages (Krieger, 2020), thus increasing the gap created by racial and socioeconomic inequality. The meatpacking industry was identified as a workplace where employees' health was disregarded, making them more susceptible to contracting and spreading the virus at work (Treisman, 2021). In Kansas in July 2020, 14% of COVID-19 cases were linked directly to meatpacking facilities (Taylor et al., 2020).

1.2. Literature review

Consumer behavior is often driven by internal and external factors that result in either customer engagement or avoidance behavior. External factors may involve those present in an environment (such as economic, political, and social environments), and include, but not limited to, family and friends. Political consumerism which can take on various forms and include boycotting and the lesser-known buycotting have emerged on a greater scale in recent years (Fernandes, 2020). This rise is due to societal polarization and the prevalence of social media (Neureiter & Bhattacharya, 2021). Boycotting is often viewed as politically driven avoidance behavior, whereas buycotting is viewed as an active

approach behavior (Aung et al., 2021). Buycott is, without a doubt, a more desirable outcome for brands that are on the receiving end of this consumerism. Internal factors related to one's personality play a fundamental role in decision-making. Interestingly, the literature lags in understanding the personality drivers behind buycott (Ackermann & Gundelach, 2022) which is why this study attempts to fill this gap.

1.2.1. Empathy

The consumer behavior literature recognizes empathy as an aspect of prosocial behavior. Davis (1983, p. 167) defined empathy as feeling "warmth, compassion, and concern for others." White et al. (2020) named it a response to observing another person's situation or feelings.

Due to the emotional and moral nature of socially responsible consumption (Lee, 2016), this research chose to examine empathy and egoism. Afterall, empathy and justice likely play a role in response to social campaigns (Kim, 2014). Yet, evidence is conflicting in how these psychological factors drive consumer interest in others and affect their behavior in times of extreme uncertainty (Shoss et al., 2021).

People who display less empathy and more antisocial behavior are often callous and risk-taking. These characteristics help explain their lower compliance with restrictive measures, including social distancing and wearing masks (Miguel et al., 2021). Thus, inducing feelings of empathy for at-risk individuals is more motivating for people to follow health and safety guidelines than simply informing them about science-supporting preventative measures (Pfattheicher et al., 2020). If individuals who display higher empathy levels are more likely to follow COVID-19 preventative guidelines, it seems plausible that they would support businesses that actively adhered to COVID-19 safety measures.

1.2.2. Empathy, altruism, and egoism

Altruism is defined as "a motivational state with the ultimate goal of increasing another's welfare" (Batson & Shaw, 1991, p. 108.) and stems from wider social welfare. Egoism is driven by self-interest (Birch et al., 2018). As with empathy, researchers concluded that priming altruism may be a good strategy to encourage COVID-19 vaccinations (Rieger, 2020). Altruism moderates consumers' perceptions of CSR and raises feelings of gratitude and advocacy for companies through word of mouth (Romani et al., 2013). Further, altruism predicts buycotting and boycotting tendencies among consumers and consumers' responses to cause-related marketing (Paek & Nelson, 2009). Yet, self-interest-driven egoism and, surprisingly, empathy-driven altruism can threaten the common good (Batson et al., 1999).

An extant body of literature in social psychology exists that examines motivations for helping behaviors (see Batson, 1987). Buycott is more specific but contains elements of prosocial behavior (Hoffmann et al., 2018). However, consumer buycott goes beyond individual helping behavior as it motivates others to do the same with an underlying political or value-based driver which then turns into a powerful movement.

Cialdini (1991), summarizing extant literature on helping behavior, states "attention (especially empathic attention) to the plight of a needy other can result in the negative affective state of sadness and that, because the act of helping has acquired a gratifying mood elevating character in most normally socialized adults, help can be used to dispel

the sadness of the adult observer of suffering (p. 125)." From that perspective, sadness or sorrow-driven helping behavior is motivated by empathy but occurs because it is mediated (motivated) by altruism (Cialdini, 1991). This emerges from Batson and Shaw (1991) who conclude that motivational empathy is driven by the interest in others (altruism) rather than interest in self (egoism). Dovidio (1991) argues that if the helping behavior is motivated by a need to reduce sadness stemming from observing somebody's pain, then it is egoistic in nature. However, Maner and Gailliot (2007), in an attempt to untangle the effects of empathy-egoism-altruism on helping behavior, find that motivation for helping others may be context-specific, where helping those who are close to us may be more altruistically motivated, while helping others, not in close relationships, is egoistically motivated.

These findings suggest that consumers with higher levels of empathy would be more likely to support businesses actively adhering to COVID-19 safety measures, but the effects of egoism may play a role. A study on younger adolescents' prosocial behaviors during the pandemic found that helping others was inspired by the stories in the media (de Leeuw et al., 2023) which suggests empathetic linkages as well as the role of media on prosocial behaviors. Helping others leads to increased happiness, induced by a form of "moral beauty" which is a feeling of being moved by seeing love, strengths, and kindness in media and acting upon them (de Leeuw et al., 2023). Yet, helping others posed a moral dilemma which could potentially be linked to self-interest as well as social and economic costs (Jin et al., 2021). A meta-analysis found a negative effect of economic inequality and prosocial behavior (Yang & Konrath, 2023), which might further explain why in economic uncertainty individuals may be inclined to protect self-interest. Thus, egoism would have negative effects on support. This may be especially true when social evaluation in public behavior can impede the negative effects of egoism and empathy-induced altruism, where altruism may carry negative consequences to the common good (Batson et al., 1999).

Because of the complexity of the research on what motivates helping behaviors it is important to simultaneously measure empathy and egoism and test their effects on consumer pro-social behaviors, including buycott.

1.2.3. Interest

Well-established marketing research underscores the importance of involvement in fostering relationships with consumers (Varki & Wong, 2003). The term "involvement" encompasses much more than the thought put into a purchase. Involvement is a complex concept with many subcategories. It has often been explained as a consumer's level of interest, motivation, or drive (Michaelidou & Dibb, 2008). No matter the definition, interest is commonly identified as a key component of consumer involvement.

The pandemic highlighted several internal issues in the U.S. economic, social, and political problems as the nation balanced protecting human health and the economy (Tisdell, 2020). These events grabbed consumers' attention, and interest, and consequently changed their expectations of brands and corporations' behaviors at the height of crisis. The number of COVID-19 cases affected public attention to the virus which was measured by Google searches within countries (Aksoy et al., 2020). Involvement varies, including ego and situational involvement. Ego-involvement focuses on specific personal goals relevant to oneself. Situational involvement focuses temporary interest in things

triggered by something specific, like perceived risk (Michaelidou & Dibb, 2008). Public attention to Covid-19, potentially being situational in nature, increased in countries with higher rates of affected citizens while the media stories moved individuals to engage in prosocial behaviors (de Leeuw et al., 2023). Both empathetic and egoistic individuals may have heightened interest in current topics but for different reasons: those involving feeling for others, empathy, while the others involving self-concern, egoism.

Following the review of literature on the complex nature of empathy and egoism, for this research, we simultaneously test the effects of empathy and egoism in a larger nomological network. This allows us to identify the effects of each key variable on interest, CSR perceptions, and, ultimately, buycotting behavior. Based on the literature, we state hypotheses as they relate to the interplay between empathy, egoism, and situational interest, while acknowledging the high uncertainty and existential threat of the pandemic as these conditions might trigger egoistic motives but also empathy given media exposure. Therefore, we tested the following hypotheses.

H_1: Empathy has a direct, negative impact on egoism.

H_2: Empathy has a direct, positive impact on consumer interest.

H_3: Egoism has a direct, positive impact on consumer interest.

1.2.4. Corporate social responsibility

Because CSR is a business commitment to align its strategies, decisions, and activities with societal values and expectations, it often includes embracing policies that are employee-friendly, environmentally friendly, investor-friendly, mindful of ethics, and respectful of local communities (Bénabou & Tirole, 2010; Lai et al., 2010).

Covid-19 highlighted highly specific behaviors and policies including social distancing and other actions intended to prevent COVID-19 transmission (Masters et al., 2020; Wang et al., 2020) that affected both businesses and consumers. People became isolated from their social networks. Businesses followed health standards, such as customer limits and curbside pickup. Inequalities in social distancing became apparent. High-risk front-line workers, especially Latinos and Blacks, had less COVID-19 protection (Goldman et al., 2021) and service workers suffered mental distress (Tuzovic & Kabadayi, 2021).

Socially responsible consumption involves emotional and moral aspects (Lee, 2016). Compliance with social distancing varied across groups. People with health and economic weaknesses over-responded with fear. Xenophobia rose as some media blamed immigrants for the virus and downplayed its severity. People who believed these messages under-responded and did not socially distance (Taylor et al., 2020).

Media coverage during the pandemic raised consumer awareness of businesses that often ignored issues like inequality in workplace safety, environmental concerns, and social-justice concerns which typically relate to social marketing, a "part of a movement campaigning for social justice, environmental improvement, and health equality" (Wood, 2012, p. 101).

The pandemic and the social marketing movement worsened some concerns. Climate change is tied to negative health effects on vulnerable populations "in the United States

include communities of color, low-income groups, certain immigrant groups, and those with limited English proficiency" (Environmental Protection Agency, 2023). Differences linked to ethnicity and race affected workplace safety, making vulnerable populations more prone to catastrophic and health outcomes (Goldman et al., 2021). After George Floyd's death and restrictions to women's reproductive rights in the U.S. and Poland led to protests on local and global scales (Chełstowska & Ignaciuk, 2023; Weine et al., 2020). Women without reproductive rights have lower agency reducing their access to paid work, further increasing the wage gap, reducing women's empowerment and contributing to discrimination of women in society (Kabeer, 2005). Kabeer (2005) summarized threats to gender equality: "today's inequalities are translated into the inequalities of tomorrow as daughters inherit the same discriminatory structures that oppressed their mothers" (Kabeer, 2005, p. 16). Media coverage contributed to interest in these global issues during increased media consumption in global crisis.

Organizational responsibilities vary depending on the communities and the organization's values. Increased interest in social issues is not corporate activism but CSR, especially with respect to equal treatment of groups, workplace safety, and sustainability. These affect vulnerable populations, highlighting the need for businesses to engage in responsible behaviors. However, this may be risky and trigger consumer boycotts instead of intended buycotts.

In a polarized context, one person may view CSR as politically driven or self-serving. CSR has become a prerequisite for businesses to thrive in disruptive environments. Globalization has increased the demand for keeping businesses accountable for the ethical nature of their corporate actions (Sriramesh et al., 2007). When Colin Kaepernick protested police brutality, Nike included him in its advertising to support the social justice movement. It resulted in buycott of Nike by some but boycott by others (Fernandes, 2020). Consumers boycott organizations more for violating human rights and engaging in discrimination against certain demographics in hiring more than any other anti-social actions (McCullough et al., 2022). Consumers may support responsible organizations, but boycotts remain a threat. With the growing demand for ethical accountability, CSR has become a major concern among management, marketers, and public relations specialists (Capriotti & Moreno, 2007) and is projected to lead to a higher awareness, or perception, of corporate social responsibility (CSR) emphasized by businesses. The following hypotheses were set forth:

H_4: Empathy has a direct, positive impact on perceptions of CSR.

H_5: Interest has a direct, positive impact on perceptions of CSR.

H_6: Egoism has a direct, positive impact on the perceptions of CSR.

Demand has increased for business actions that serve society's best interests while also serving business stakeholders. Existing research associates CSR with profitability, brand performance, trust, shared values, retention, and brand loyalty (Eveland et al., 2018; Wang et al., 2015). This study proposes that consumers will be more likely to buycott a company engaging in CSR activities relevant to Covid-19.

1.2.5. Buycott and boycott

Political consumerism is activism based on consumer choice of producers and products (Stolle et al., 2005). Perceptions of organizational CSR may affect buycott because CSR enhances consumer trust and shared values with a company (Eveland et al., 2018). With the recent substantive increase in political consumerism, understanding what induces the negative boycott and positive buycott is likely to be critical to brands' well-being. Moral and political ideology may impact the propensity to buycott and boycott (Fernandes, 2020) as can personality traits. For example, two of the Big Five personality traits of openness and conscientiousness relate to both behaviors, while those higher in agreeableness are unlikely to engage in political consumerism, particularly in boycotts (Ackermann & Gundelach, 2022). Agreeableness is linked to empathy, which may deter boycotts but encourage buycotts, especially when a business supports the vulnerable. Motivations for buycott can be hedonistic and self-serving (Aung et al., 2021). More politically active consumers are likely to boycott or buycott. We propose that consumers interested in socially responsible topics are likely to buycott a company engaging in CSR activities like context specific social distancing, equal rights, and sustainability during Covid-19.

H_7: Perceptions of CSR has a positive, direct effect on buycott.

H_8: Empathy has a direct, positive effect on buycott.

H_9: Egoism has a direct, positive effect on buycott.

H_{10}: Interest has a direct, positive effect on the buycott of businesses that support social distancing and other COVID-19 prevention measures.

See Figure 1 for a representation of the proposed direct relationships.

Given the prediction that interest in and perception of CSR will positively affect buycott, we also predict at least partial mediation. It is also expected that interest mediates the relationship between empathy and buycott.

H_{11}: Perceptions of CSR mediate the relationship between consumer interest and buycott.

H_{12}: Interest mediates the relationship between empathy and buycott.

See Figure 2 a and b for a representation of the proposed mediated relationships.

2. Method

Relying on an online survey embedded in Qualtrics software, a snowball sampling was used for data collection. Students from a small, Southern private university in the U.S. were asked to complete a survey and forward the call for participation to their social

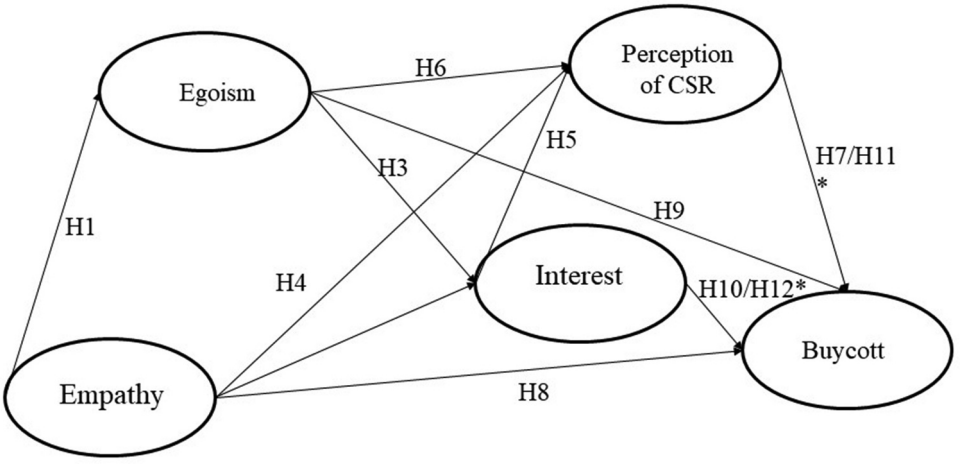

Figure 1. Visual representation of hypothesized direct effects in tested model *H11 and H12 represent mediation (See figure 2).

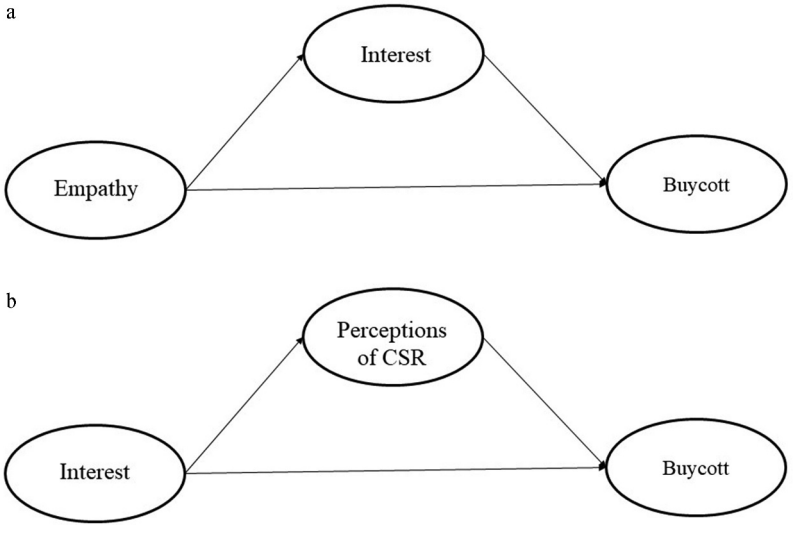

Figure 2. (a) Visual representation of the proposed mediation between empathy and buycott. (b) Visual representation of the proposed mediation between interest and buycott.

network. However, the sampling has the disadvantage of reaching respondents with similar sociodemographic characteristics (Biernacki & Waldorf, 1981). For measurement, we used adjusted scales from previous studies except for interest in Covid-linked socially responsible topics, which we developed as no prior studies examined this Covid-linked interest. For example: "During the course of the COVID-19 pandemic, I started to pay more attention to how companies treat their employees." This measure included items on the environment, social justice, and employee safety.

Measures of empathy and egoism were adopted from the *2002 General Social Survey* (Smith, 2006) while for buycott measure were based on Hoffmann et al. (2018). We

adapted CSR measures from Chaudary et al. (2016). To increase variation and decrease industry effects, we randomly asked respondents to name their favorite brand of clothing, personal care products, or groceries. The remaining questions were about their named brand.

2.1. Analysis

We analyzed demographic information from 326 participants and tested scale reliability with SPSS 23. Almost half were 18–24 years of age. The demographic composition was 68.7% white and 22.4% African American, and 8.9% other minorities with 58.3% of respondents identifying as female, 40.2% as male, and 1.5% chose not to identify their gender. Almost twenty percent of the sample, 19.1%, had at least a four-year degree.

To determine the quality of measures, particularly given scale adjustments and newly developed scales for interest, a confirmatory factor analysis (CFA) was conducted using Mplus 6.0. To reduce measurement error and preserve the scale without violating the two-indicator rule, we removed underperforming items. As shown in Table 1, all parameter estimates had substantive factor loadings, resulting in an average variance extracted for the construct (AVE) above 0.5 (Fornell & Larcker, 1981) which established

Table 1. Factor loadings, means, standard deviations and average variance extracted for key measures.

Measures	Factor Loadings	Alpha	M/S.D.	AVE
Interest in CSR topics (newly developed)				
During the COVID-19 pandemic, I started to pay more attention to how companies				
treat their employees.	0.689	0.752	5.25/1.30	0.544
choose to minimize their negative impacts on the environment.	0.763			
support the social justice movement/activism.	0.759			
Perceptions of organization's CSR efforts (adapted from Chaudary et al., 2016)				
helps solve social problems.	0.751	0.950	4.91/1.04	0.651
has a strong sense of corporate social responsibility.	0.843			
gives adequate contributions to local communities.	0.809			
allocates some of its resources to philanthropic activities.	0.792			
plays a role in society that goes beyond the mere generation of profits.	0.834			
encourages its employees to participate in voluntary activities.	0.766			
Egoism (Adopted from *2002 General Social Survey*, Smith, 2006)				
People should not have to help others who are less fortunate.	0.623	0.890	2.63/1.33	0.542
Personally assisting people in trouble is not important to me.	0.774			
These days people need to look after themselves and not worry about others.	0.8			
CSR induced Buycott (Adopted from Hoffmann et al., 2018).				
During the COVID-19 pandemic I could imagine following a public appeal to support a company by buying their products				
if they follow CDC guidelines and recommendations for COVID-19 safety.	0.913	0.940	5.64/1.36	0.873
if they emphasize social distancing.	0.946			
if they highly prioritize Covid prevention.	0.953			
if they provide opportunities to their employees to carry out their jobs in a Covid-safe work environment.	0.924			
Empathy (based on *2002 General Social Survey*, Smith, 2006)				
I often have tender, concerned feelings for people less fortunate than me	0.838	0.896	6.02/0.94	0.612
Sometimes I feel sorry for other people when they are having problems.	0.826			
When I see someone being taken advantage of, I feel kind of protective toward them.	0.673			

Fit indices: CFI = 0.95, TLI = 0.94, RMSEA = 0.067, and SRMR = 0.051.

Table 2. Calculated values for HTMT.

	Interest	Empathy	Egoism	CSR
Empathy	0.541			
Egoism	0.178	0.519		
CSR	0.341	0.242	0.061	
Buycott	0.479	0.509	0.209	0.347

convergent validity (Hair et al., 2017). The variance extracted ranged from 54.2% to 87.3%. All scales had Cronbach's alpha above desired 0.7 (0.752 to 0.95) (George & Mallery, 2003; Nunnally & Bernstein, 1994). See Table 1 for summary of values associated with factor loadings, means, Cronbach's Alphas, model fit, and average variance extracted for factors under investigation.

To address discriminant validity, heterotrait-monotrait (HTMT) ratio of correlations (Henseler et al., 2015) was calculated which resulted in the range of low values from .06 to the highest, yet still low value of 0.54 (See Table 2). Given the scores falling below threshold of 0.9 (Hair et al., 2017), it can be concluded the discriminant validity was established.

Covariance-based structural equation modeling was used to simultaneously test all hypotheses (Iacobucci et al., 2007). We evaluated the model fit based on CFI, TLI, RMSEA, and SRMR. The model fit was acceptable based on the results (Hu & Bentler, 1999; Kline, 2005) presented in Table 1.

The results supported 11 out of 12 hypotheses. Empathy had a direct negative impact on egoism (H1), and empathy had a direct positive impact on interest in social issues (H2). Egoism also had a direct positive effect on interest, but it was weak (H3). Empathy, egoism, and interest had a positive impact on perceptions of CSR (H4-H6). Perceptions of CSR had a positive impact on buycott (H7). Empathy and interest had a positive impact on buycott (H8 and H10). Egoism did not affect buycott (H9). See Figure 3 for a visual representation of direct effects and Table 3 for results.

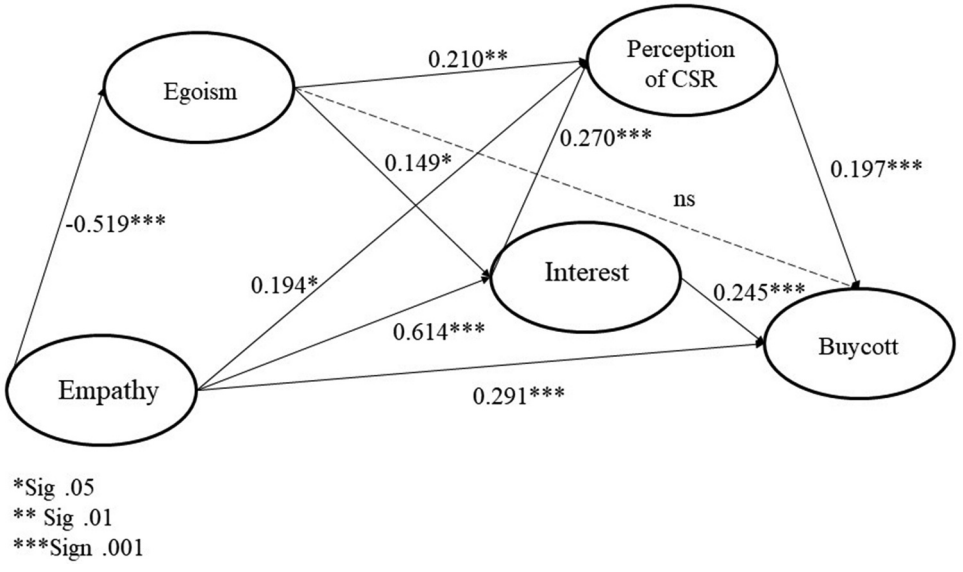

Figure 3. Visual representation of the direct effects in tested model.

Table 3. Summary of tested hypotheses.

H1: Empathy –> (-) egoism: supported. (β= –0.519, S.E. = 0.054, *p*. < .001).
H2: Empathy–> (+) interest: supported. (β = 0. 614 S.E. = 0.071, *p*. <.001).
H3: Egoism –> (+) interest: supported. (β = 0.149, S.E. = 0.080, *p*. < .05)
H4: Empathy–> (+) CSR perceptions: supported: (β = 0.194, S.E. = .095, *p*. < .05)
H5: Interest –> (+) CSR perceptions: supported. (β = 0.270, S.E. = .081, *p*. < .01)
H6: Egoism –> (+) CSR perceptions: supported, (β = 0.210, S.E. = .078, *p*. < .01).
H7: CSR perceptions –> (+) buycott: supported. (β = 0.197, S.E. = .054, *p*. < .01
H8: Empathy–> (+) buycott: supported. (β = 0.291, S.E. = .081, *p*. < .01)
H9: Egoism–> (+) buycott: Not supported.
H10: Interest —> (+) buycott: supported. (β = 0.245, S.E. = .070, *p*. < .01)
H11: Perceptions of CSR mediate interest and buycott: supported, (0.053, 0.021, *p* < .05)*
H12: Interest mediates empathy and buycott: supported. (0.150, 0,047, *p*. < .01)*

*Measures from the Delta model on mediation: indirect estimates, standard error, and p-values.

The results also supported hypotheses 11 and 12 for mediation effects. Perception of CSR mediated the effect of interest on buycott behavior (H11). Interest mediated the effect of empathy on buycott behavior (H12). The mediation results, based on the Delta model, were significant for both hypotheses. See Table 3 for the mediation estimates.

3. Discussion and implications

This research examined the simultaneous impact of empathy, egoism, current social issues interest, and CSR on buycott in a global crisis, using COVID-19 as the context. We found that empathy increased consumer interest in current social issues, and that interest positively influenced perceptions of CSR, and buycott. Egoism did not affect buycott directly but remained impactful on interest and perceptions of CSR. Consumer perception of CSR mediated the effect of interest on buycott, meaning consumers who were more empathetic and interested in social issues were more likely to support businesses supporting key social issues. The results suggest that managers and marketers should try to appeal to empathy rather than egoism when promoting CSR initiatives, with a goal to persuade consumer support. Relationship with media is also critical as exposure to media and the relevant topics also play a role.

This study contributes to the literature on consumer interests and motivations for buycott during a major crisis and offers insights into strategic alignment of CSR initiatives with factors affected by a crisis. We found evidence that consumers pay attention to and support businesses protecting vulnerable populations through political consumerism. By identifying the significant associations between CSR during Covid-19, we provided useful information for businesses to remain operational and responsible in future crises. We offered insights into the empathy-egoism debate (Batson, 1987, Batson & Shaw, 1991; Cialdini, 1991) in terms of which variables have an effect on prosocial behaviors. Empathy has a direct effect on buycott, but egoism continues to affect consumer interest in key initiatives and crisis-linked events.

These results have several implications for businesses. First, CSR matters even during extreme crises that threaten consumer well-being. Second, empathy drives consumer activism and consumption more than egoism. Third, CSR efforts should be critical and

timely as current topics drive consumer interests. Empathetic individuals expect specific and relevant CSR actions during a crisis.

The COVID-19 pandemic exposed many injustices, environmental issues, and economic inequalities. In turbulent times, consumer characteristics of empathy and egoism influence interests and behaviors, but they also interact with organizational actions. Businesses still mistreat their employees, discriminate based on race, religion, or origin, or ignore environmental protection. Findings suggest that businesses should engage in equity-supporting CSR efforts even during the greatest of crises and address social, economic, and environmental issues.

3.1. Limitations and areas for future research

This study has limitations because of snowball sampling which limited statistical generalizations. The findings are valid, particularly in crisis, but generalizability to other contexts may be limited. Our study showed a demographic range, but the respondents were mostly young white students earning less than $10,000 annually. Yet, we should not dismiss this population's attitudes and choices. They are relevant and influential in political matters (Igielnik et al., 2021).

Future research should examine psychological factors in various contexts. For example, as of 2023, the Russo-Ukrainian war still threatens food shortages, especially in the most disadvantaged regions. Consumer behavior with underlying political consumerism will likely continue in other contexts. From a theoretical perspective, it may be beneficial to study both boycott and buycott behaviors. They are related but distinct constructs that may respond to different factors within the same model. Brands may wish to encourage buycott but discourage boycotts. Not enough is known about these two critical constructs and how they occur simultaneously in different groups. Given the recent prevalence of buycotts and boycotts, they are worth exploring in future studies.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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An introduction to the "The role of inclusion, diversity, equity, & access (IDEA) in today's global marketing environment" special issue

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EDITORIAL

An introduction to the "The role of inclusion, diversity, equity, & access (IDEA) in today's global marketing environment" special issue

Despite the recent acceleration in business commitment to improve Diversity, Equity, and Inclusion (DEI), inequalities linked to diversity and inclusion continue to persist (Bernstein et al., 2020). DEI incorporates procedural and distributive justice within society including organizations and institutions. DEI represents three elements: diversity, equity, and inclusion. Diversity exemplifies real or perceived differences between individuals with respect to demographic and socio-cultural differences such as sex, religion, race, ethnicity, age, physical or mental abilities, sexual orientation, thought, or economic background. Equity is predominantly concerned with fairness and impartiality in terms of both opportunities and outcomes. Finally, inclusion refers to the presence, belongingness, and incorporation of diverse groups particularly in spaces that were traditionally underrepresented or marginalized (Arsel et al., 2022; Bell et al., 2009; Johnson & Chichirau, 2020; Park et al., 2023)

While elements of DEI are important to improving overall societal wellbeing through variety of attempts encompassing business practices, cultural shifts, or governmental policies, an important aspect is missing involving access. Unequal access is still prevalent and disproportionally affects those from diverse backgrounds. For example, access to healthcare, housing safe from immediate effects of climate change, education, or job opportunities are still unequal (Larkin & Staton, 2001; Sherman et al., 2021; Tan, 2019; World Health Organization, 2020). For these reasons, we propose expanding DEI to IDEA. Building on Arsel et al. (2022), we define IDEA as a set of values and practices emphasizing inclusion, diversity, equity, and access represented by an active presence of different physical and socio-cultural groups with fair access to opportunities and outcomes. The purpose of the expanded umbrella of efforts from DEI to IDEA rests on the goal to foster fair treatment of people whether consumers, employees or, in general, members of society to access opportunities previously plagued by barriers within organizational, governmental, and social culture. Beyond the benefits to society, embracing these efforts offers opportunities to businesses which include appeal to more diverse audiences, an increase in competitive advantage, and the potential for valuable collaborative partnerships (Ferraro et al., 2023).

Unfortunately, achieving Inclusion, Diversity, Equity, and Access (IDEA) is a challenge for many marketers. Attempts to be inclusive can result in boycotts like that of Bud Light, which is capable of killing brands (Bernstein, 2023). At the same time, the lack of (perceived) access can prevent individuals from thriving (Hamed et al., 2022). Further, consider the challenges of achieving diversity given all of the types of ways that individuals can identify blind, queer, intellectually disabled, and so forth. This special

issue was born from the recognition that too little marketing research has examined questions of IDEA.

Following a symposium on the topic of IDEA at the Society for Marketing Advances conference in 2022, an open call for papers was issued. Early forms of many, though not all, of the papers published here were first presented at the symposium. We were both surprised and encouraged by the diversity of topics that were submitted.

We begin with an assessment of the current state of inclusion, at least for the visually impaired. This first study is "Being Inclusive Means Being Accessible: Problems with Digital Media for Visually Impaired Consumers" by Mary Anne Raymond, Hillary Smith, and Les Carlson. In this descriptive study, they document the challenges in achieving accessibility. Their findings not only challenge the notion that regulations have "fixed the problem," but also how far off marketers can be even when it is in their best interests to do better.

The special issue continues with two studies that focus on equity and branding. The first, "From Racialized Brands to Authentic Brands: Dynamic Conceptual Blending," is by Carmina Cavazos, Esi Elliott, and Ai Chow. They examine the transformation of racialized brands into sustainable authentic brands, developing a fascinating framework. Racialized, to paraphrase, means to take on race issues directly as a brand. The questions they explore are whether a racialized brand is sustainable and how does authenticity support sustainability.

What happens, though, when a gendered brand takes on gender issues directly? That question is at the heart of the study presented by Laura Boman, Dolph Nelson, and Ganga Hewage, in their piece, "The Effect of Equity Initiatives by Gendered Brands." As they point out, brands begin with an identity that could be gender-based (or race-based) and that identity is, by itself, blameless. But can those brands then argue for a more equitable world without harming the position they (want to) hold in the minds of their consumers?

Gender was also studied by Robert Evans, Jr., Ismail Karabas, Yana Andonova, and Leiza Nochebuena-Evans. In this interesting study of film, "Let's Not Talk About Men: When Meaningful Female-to-Female Interaction and Dialogue Drive Higher Box Office Sales," the effects of gender-based content are examined. Applying the Bechdel test to popular movies, they find that market preference, in the form of box office revenue, supports gender equity. Taken in the context of the previous article, this study illustrates a direct impact regarding the portrayal of women.

Similar in the sense that they study consumer response is the study by Joanne Tran and Landon McFarland, "Antecedents and Consequences of the Disability Stigma for Frontline Employees: A Qualitative Study." Based on their qualitative study, they develop a framework for understanding how disabled employees are both perceived by consumers and integrated into firms. Like many of the studies in this issue, the framework is just the beginning, so much more work is needed but at least, there is now a place to start.

An additional study in this issue was "Effects of Empathy and Egoism on CSR Perceptions and Consumer Boycotts: Lessons Learned during Global Crisis in Support of Equitable Business Practices" by Ania Rynarzewska, Steve LeMay, Marilyn Helms, and Eliza Hetrick. This article examines the relationships among egoism, empathy, and consumer interest in social topics during a global crisis which disproportionally affected vulnerable populations, low-income and economically disadvantaged individuals. Specifically, consumer interest topics focused on employee safety, environmental

protection, and equality. They assessed how psychologically linked motivations and interest might affect consumer perceptions of corporate social responsibility and consumer boycott. With consumer boycotts threatening the economic wellbeing of organizations, their findings suggest that businesses that align with current social issues linked to equity are more likely to be supported by consumer boycott.

The issue wraps up with Somjit Barat's "A Micro-level Perspective to Fostering IDEAs in the Classroom and Beyond." This paper presents both a rich literature review and a framework for class projects to promote an appreciation for IDEA.

As we said at the outset, we were heartened by the diversity of work represented in the submissions. More importantly, we are excited because so many of these works represent the headwaters of research streams, important because of their contributions to IDEA. The guest editors want to thank both the Society for Marketing Advances and the *Journal of Global Scholars of Marketing Science* for their willingness to start the conversation regarding research on IDEA topics. We look forward to seeing future research on this important topic.

Disclosure statement

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PEER-REVIEWED JOURNAL ON THE INTERNET

Online dating adoption: Differences between lesbian/gay, bisexual, and straight adults

by Manuel C.F. Pontes, Ania Izabela Rynarzewska, Kristine Johnson, and Nancy M.H. Pontes

Abstract

The major purpose of this research is to investigate whether bisexual adults differ from lesbian/gay adults in their adoption of online dating. Bisexuality is becoming increasingly common; younger adults are very much more likely to identify as bisexual. There does not appear to be any research that investigated differences between lesbian/gay and bisexual adults on relationship search and online dating. Results show that 1) bisexual adults are significantly less likely than lesbian/gay adults to adopt online dating and 2) bisexual adults are significantly more likely than straight adults to adopt online dating. Online dating offers the promise of helping bisexual adults make better matches. Future research should investigate additional differences between bisexual, lesbian/gay, and straight adults on the use of technology for relationship search, formation, and establishment.

Contents

Introduction

Dating practices have been altered with the emergence of online and mobile dating (Clemens, *et al.*, 2015; Finkel, *et al.*, 2012; Rosenfeld and Thomas, 2012; Suh, 2013; Sumter, *et al.*, 2017). About a decade ago, researchers started investigating the association between sexual orientation and online dating and predicted that lesbian/gay and bisexual (LGB) adults would be more likely than straight adults to date online (Rosenfeld and Thomas, 2012). These researchers noted that the in-person dating pool for LGB adults is typically a “thin market” (fewer non-straight available adults with no easy way to identify which adult is LGB and available for a relationship). Therefore, they predicted that such adults would be more likely to use online dating, which allows for self-identification of sexual orientation and sexual/relationship interests and a straightforward search process to seek out those with like-minded sexual interests (Rosenfeld and Thomas, 2012).

Research confirmed this prediction, and multiple studies have shown that LGB adults are significantly more likely than straight adults to date online (Brown, 2020; Clemens, *et al.*, 2015; Johnson, *et al.*, 2017; Rosenfeld and Thomas, 2012; Suh, 2013; Sumter and Vandenbosch, 2019). To accommodate LGB adults, the traditional straight online dating service, Tinder, has become more inclusive towards non-straight adults (Timmermans and De Caluwé, 2017a, 2017b). Grindr was developed to cater to gay adults (Blackwell, *et al.*, 2015; Licoppe, *et al.*, 2016).

It should be noted that researchers have typically grouped lesbian/gay and bisexual adults and compared this group

with straight adults (Brown, 2020; Clemens, *et al.*, 2015; Johnson, *et al.*, 2017; Suh, 2013; Sumter and Vandenbosch, 2019). The small number of non-straight adults in samples used for previous research resulted in limited power to test for differences between lesbian/gay and bisexual adults. As an example, the nationally representative 2013 Pew online dating dataset had 2,040 straight adults, 36 lesbian/gay adults, and 42 bisexual adults in the sample (Johnson, *et al.*, 2017; Suh, 2013).

Thus far, differences in the use of online dating between lesbian/gay and bisexual persons have not been investigated, resulting in the need to better understand this group of consumers. The major goal of this research, therefore, is to examine differences between lesbian/gay and bisexual adults with a specific focus on the likelihood of the adoption of online dating. Results of our research show lesbian/gay adults are significantly more likely than bisexual adults to adopt online dating. These results should encourage researchers to investigate differences between lesbian/gay and bisexual adults on their relationship-seeking behaviors, and online dating Web site choices.

Bisexuality: Growing sexual orientation identity

Theories of sexuality predominantly focus on treating sexual identity as a dichotomy. Yet, the prevalence of bisexuality, a form of coexistence of lesbian/gay and straight interests and behaviors on a larger than previously considered scale (Paul, 1984), requires more nuanced approaches. Bisexuality as a sexual identity is becoming much more common among younger persons; a nationally representative Gallup poll conducted in the U.S. in 2020 showed that among adults born before 1946 (70 years or older), 0.3 percent identified as bisexual, and 0.5 percent identified as lesbian or gay (Jones, 2021). In contrast, among adults born between 1997 and 2002 (18–23 years), 11.5 percent identified as bisexual and 3.5 percent identified as lesbian or gay (Jones, 2021). Thus, the prevalence of LG orientation was seven times greater, and the prevalence of bisexual orientation was about 38 times greater among adults born between 1997 and 2002 compared to adults born before 1945! While bisexual self-identification is on the increase, a major concern regarding social identity reaches back to the 1980s as "bisexuals have no clear group membership roles: They are not fully integrated into any one group, and there is no group from which they are to some extent" unrepresentative [1]. To support this idea, more current evidence exists that bisexual individuals may experience a unique form of discrimination (*e.g.*, anti-bisexual prejudice) from lesbian/gay persons, including their partners, with bisexual males experiencing more hostility from both straight and lesbian/gay partners (Arriaga and Parent, 2019), all of which can result in internalized bi-negativity (Sarno, *et al.*, 2020). This indicates that sociologists and marketers would benefit from a better understanding of the differences between the groups, as persons identifying as lesbian/gay and bisexual might reject the idea that they belong to the same social group because their behaviors, experiences, and attitudes differ.

At the same time, magazine articles have been written about mixed orientation relationships, such as bisexual women in relationships with straight men (Mendelson, 2021; Wallace, 2021). Increasingly, television characters are portrayed as bisexual; in 2016, the majority (4 out of 6) of DC Comics' iconic female characters identified as bisexual (Wonder Woman, Catwoman), lesbian (Batwoman), or queer (Harley Quinn), further providing evidence for social relevance because media exposes individuals to ideas and issues they might not actively seek out, contributing to the construction of knowledge and reality (Tisdell and Thompson, 2007).

Dating sites and apps have become more bi-friendly, allowing users to specify a more finely differentiated non-straight orientation. Well-known apps like Bumble, Tinder, and Match now include bisexual as a sexual orientation option (Baxter, 2022; Gatter and Hodkinson, 2016; Silva, *et al.*, 2019). Bumble also expanded its number of user gender options with the help of internal research and assistance from GLAAD (Gay and Lesbian Alliance Against Defamation) (Bumble, 2022). Tinder increased its number of sexual orientation options and its list of available genders. Magazine articles now review dating apps and suggest those most suitable for bisexual adults (Kerr, 2017; Schumer, 2023; Shadel, 2019; Iovine, 2025).

Bisexuality has historically been ignored by researchers

Until recently, little research was available about the differences between bisexual and lesbian/gay adults and how these differences manifest themselves in behavior (Hayfield, 2020; Monro, *et al.*, 2017). Bisexuality has been ignored as a distinct sexual orientation by researchers who have examined the relationship between sexual orientation and online dating. Thus, researchers have grouped bisexual adults with lesbian/gay adults (LGB) into a non-straight adult group when they investigated the association between sexual orientation and adoption of online dating (Brown, 2020; Johnson, *et al.*, 2017; Suh, 2013).

Bisexual adults can benefit from online dating

The use of dating apps for queer individuals can foster a sense of community and belonging by enabling users to form networks of intimacy they may not have discovered in the public sphere (Petrych, *et al.*, 2020). Digital dating also provides a space for bisexual individuals to explore and affirm their sexual identity, which may ultimately challenge stereotypes when showcasing romantic connections beyond online means. Research suggests dating apps can help bisexual users decrease uneasiness by connecting with those who have positive views about their sexual identity (Filice, *et al.*, 2023). This is a change from a time when there was a lack of dedicated platforms and when bisexual women endured sexualized comments from straight men on dating apps such as Tinder (Pond and Farvid, 2017). One of the clear advantages of online dating for bisexual adults is that 1) it allows these adults to select and communicate their sexual identity, 2) indicates that they are open to dating either males or females or both, and 3) filters adults that have negative perceptions of non-straight adults (for those bisexual adults that are searching for opposite-sex partners and are open to straight partners).

Purpose

The major focus of our research is to investigate differences between bisexual and lesbian/gay adults in the adoption of online dating. The secondary focus of our research is to investigate differences between bisexual and straight adults in online dating. Next, we present our hypotheses and discuss prior research that supports our hypotheses.

Hypotheses

1. Lesbian/gay adults are more likely to adopt online dating than bisexual adults.
2. Bisexual adults are more likely to adopt online dating than straight adults.
3. Lesbian/gay adults are more likely to adopt online dating than straight adults.

Rationale for differences between bisexual and gay adults

Lesbian/gay adults are more likely to face “thin markets” (fewer and less easily identifiable potential partners) than straight adults (Rosenfeld and Thomas, 2012). Do bisexual adults as a group also face thin markets? As we discuss next, research has shown that most bisexual adults form relationships with straight adults of the opposite sex.

Previous research has shown that although bisexual adults are attracted to both sexes, the majority of them (84 percent) are in a relationship with a person of the opposite sex (Pew Research Center, 2013). Research performed with a nationally representative Australian female dataset showed that female bisexual orientation was more strongly associated with their sexual attraction than their sexual partnership behavior; they mostly selected opposite-sex partners (Perales, *et al.*, 2021). These research findings suggest that many respondents who self-identify as bisexual (identity) have partnership search behaviors that are more similar to straight adults than to lesbian/gay adults and are therefore likely to use online dating at about the same rate as straight adults. In contrast, bisexual adults who actively want sexual relations with both men and women concurrently or who are searching for partners of the same gender, or who wish to be in open relationships are likely to also be facing “thin markets,” and these adults are more likely to adopt and use online dating; their online dating use may be more similar to lesbian/gay adults. Thus, it is reasonable to investigate whether bisexual adults as a group will be less likely to adopt/use online dating than LG adults and more likely than straight adults. There has been no prior research that has tested these hypotheses and investigated differences between lesbian/gay and bisexual adults in their likelihood to use online dating.

Methodology

Dataset

The American Trends Panel is a nationally representative panel of randomly selected U.S. adults; the panel is sponsored by the Pew Research Center and is managed by Ipsos (Vogels and Anderson, 2020). The data used for this research were obtained from the American Trends Panel Wave 56 survey collected between 16 October–28 October 2019 (Pew Research Center, 2019). These data contained responses from 4,860 adults (2,351 male adults, 2,504 female adults, and 5 adults who did not disclose gender). Since the percentage of lesbian/gay or bisexual persons in the population is quite low, a large simple random sample is needed to have adequate power to test for differences between lesbian/gay and bisexual persons on outcome variables (Vaughan, 2017). Alternatively, the number of lesbian/gay and bisexual adults in a sample can be increased (and the power to detect differences between these two

groups can be increased) if researchers oversample lesbian/gay and bisexual persons from a larger panel for which the sexual orientation of panel members is already available (Vaughan, 2017). The American Trends Panel Wave 56 survey oversampled lesbian/gay and bisexual adults; 782 adults were lesbian/gay, and 628 adults were bisexual (Vogels and Anderson, 2020). The sample also included 3,303 straight adults, 120 other adults, and 23 adults who declined to answer the question about sexual orientation. Note: Other adults include respondents who indicated that their sexual orientation was either "something else" (60 respondents) or "I do not know the answer" (61 respondents). Because of the oversampling of gay and bisexual adults, sample percentages are very different from population percentages. Therefore, it is necessary to use specialized software for survey data analyses and correctly incorporate sampling weights to get population estimates, standard errors, and confidence intervals (Lumley, *et al.*, 2020). Because of the oversampling of gay and bisexual adults, there is greater power than most previous studies to test for differences between lesbian/gay and bisexual adults on the adoption of online dating.

Study variables

Outcome variables

The three outcome variables were 1) Ever used online dating, 2) Past year use of online dating, and 3) Recency of use of online dating. Ever used online dating was measured with the dichotomous (Yes/No) variable, "Have you ever used an online dating site or app?" Respondents who reported that they had ever used an online dating site or app were asked, "Are you currently using an online dating site or app?" The response options were:

1. Yes, I am currently using an online dating site or app.
2. No, but I have used one within the past year.
3. No, but I used one 1 to 5 years ago.
4. No, but I used one more than 5 years ago.

Past year use of online dating was coded as a dichotomous (Yes/No) variable.

Respondents who agreed with response options 1 or 2 (above) were coded as "Yes"; respondents who agreed with response options 3 or 4 or indicated that they had never used an online dating site or app were coded as "No." Recency of use of online dating was measured by a 4-level ordinal variable with levels of usage: 1=Never used, 2=Last used more than 5 years ago, 3=Last used 1 to 5 years ago, 4=Currently use or last used within the past year.

Predictor variables

The predictor variables for multivariate regression were sexual orientation, sex (gender), age groups, education, and race/ethnicity (Pew Research Center, 2019). Survey respondents were asked the question, "Do you think of yourself as":

1. Gay or lesbian.
2. Straight, that is, not gay or lesbian.
3. Bisexual.
4. Something else.
5. I don't know the answer.

A 4-level categorical variable was created for sexual orientation by grouping adults who responded either "something else" or "I don't know the answer" into a sexual orientation category, "other" and using the 3 other levels as recorded. Data about the other demographic variables used for this research were collected when adults were recruited into the panel and were used as follows. Race/ethnicity was coded into four categories: Hispanic, non-Hispanic White, non-Hispanic Black, and non-Hispanic Other (this includes all participants not included in the other three categories). Education was coded into three categories: high school diploma or less, some college (but no 4-year bachelor's degree), and bachelor's degree or more. Age was coded into three categories: 18 to 29 years, 30 to 49 years, and 50 years or older. Identification of sex at birth is coded as male or female as recorded. For analytic purposes, all independent variables were treated as categorical variables.

Analyses

R (version 4.0.3) and the R survey package (version 4.1.1) were used to incorporate sampling design variables and sampling weights and generate nationally representative weighted estimates from the Pew dataset (Lumley, *et al.*, 2020; R Core Team, 2020). The R package, "broom", was used with the R "survey" package function svyglm to

estimate odds ratios, confidence intervals, t-statistics, and probability levels as described (Lumley, *et al.*, 2020; Robinson, *et al.*, 2021). (Note: White = Non-Hispanic White, Black = Non-Hispanic Black, Other = Non-Hispanic Other).

For each of the dependent variables, two logistic regression models were estimated. For one regression model, the reference group for the sexual orientation variable was straight, for the other regression model, the reference group for the sexual orientation variable was lesbian/gay. These two models were run to test the hypotheses that 1.) lesbian/gay and bisexual adults were each significantly more likely to adopt online dating than straight adults and 2.) bisexual adults were significantly less likely to adopt online dating than lesbian/gay adults.

The R survey package function, "svypredmeans," was used to estimate the average marginal percentages of the criterion variable for each of the predictor variables, adjusted for the other predictor variables. as described (Bieler, *et al.*, 2010; Lumley, *et al.*, 2018). Thus, for example, we report the marginal percentages for "ever dated online" by sexual orientation, adjusted for sex, age, education, and race/ethnicity. Marginal percentages control for differences in age, sex, race-ethnicity, and education across sexual orientation groups (Bieler, *et al.*, 2010). Table 1 displays the percentage of U.S. adults in each age group who report each sexual orientation. These data show that younger adults are much more likely to report that they are bisexual than older adults (the percentage of adults who report that they are bisexual (18–29 years, 8.5 percent, 30–49 years, 4.1 percent, 50 years or older, 1.9 percent). Since younger adults are more likely to have adopted online dating (Vogels, 2020), it is necessary to report marginal percentages adjusted for age when reporting the adoption of online dating by sexual orientation. In addition, we also report the marginal percentage of U.S. adults who adopted online dating (adjusted for sex and race) by age and sexual orientation (Table 4).

Table 1: Adult sexual orientation in the U.S. by age groups.

	Percentage (SE)		
Sexual orientation	18–29 years old	30–49 years old	50 years old or older
Lesbian or gay	3.9% (0.67)	3.8% (0.39)	2.6% (0.21)
Bisexual	8.5% (0.89)	4.1% (0.42)	1.5% (0.19)
Other	6.6% (1.22)	3.1% (0.73)	1.9% (0.44)
Straight	81.0% (1.66)	89.0% (0.92)	94.0% (0.52)
Note: Percentage of adults who report their sexual orientation; SE = standard error of estimate.			

Findings

Multivariate ordinal regression: Recency of online dating participation

A 4-point ordinal scale was constructed for the recency of online dating participation, with greater numbers indicating more recent participation. Results of multivariate ordinal regression show that compared to gay/lesbian adults (reference group), straight adults, bisexual adults, and other adults were each significantly less likely to have recently participated in online dating (bisexual: OR = 0.60 [0.41, 0.87], t = -2.71, p = .007, straight: OR = 0.25 [0.19, 0.34], t = -9.50, $p < .001$, and other: OR = 0.31 [0.17, 0.58], t = -3.88, $p < .001$) (Table 2). Results also show that compared to straight adults (reference group), gay/lesbian adults: OR = 3.93 [2.96, 5.21], t = 9.50, $p < .001$, and bisexual adults: OR = 2.36 [1.77, 3.14], t = 5.86, $p < .001$, were each significantly more likely to have ever dated online; there was no

significant difference in online dating participation between other adults and straight adults, OR = 1.21 [0.70, 2.08], t = 0.68, p = .494 (Table 2). These results support Hypotheses 1 to 3.

Table 2: Multivariate ordinal regression: Recency of use of a dating Web site or app in the U.S. (4-level scale).

		OR [95% CI]	*t*	*p*
Sexual orientation	Other	0.31 [0.17, 0.58]	-3.88	<.001
	Straight	0.25 [0.19, 0.34]	-9.50	<.001
	Bisexual	0.60 [0.41, 0.87]	-2.71	.007
	Lesbian or gay	Reference		
	Other	1.21 [0.70, 2.08]	0.68	.494
	Bisexual	2.36 [1.77, 3.14]	5.86	<.001
	Lesbian or gay	3.93 [2.96, 5.21]	9.50	<.001
	Straight	Reference		
Gender	Male	1.30 [1.08, 1.58]	2.72	.007
	Female	Reference		
Age	18–29 years	5.31 [4.04, 6.97]	12.01	<.001
	30–49 years	2.80 [2.29, 3.42]	10.02	<.001
	50 years or older	Reference		
Education	College degree or more	1.85 [1.44, 2.37]	4.83	<.001
	Some college	1.80 [1.39, 2.35]	4.39	<.001
	High school or less	Reference		
Race/ethnicity	NH other	1.08 [0.75, 1.56]	0.41	.681

	NH Black	1.28 [0.93, 1.76]	1.52	.127
	Hispanic	0.77 [0.56, 1.06]	-1.62	.106
	NH white	Reference		
Note: OR = odds ratio; 95% CI = 95% confidence interval; *t* = *t* statistic; *p* = probability (significance level).				

Male adults participated significantly more recently in online dating, OR = 1.30 [1.08, 1.58], $t = 2.72$, $p = .007$ (Table 2). Relative to adults 50 years and older, younger adults participated significantly more recently in online dating, 18–29 years: OR = 5.31 [4.04, 6.97], $t = 12.01$, $p < .001$ and 30–49 years: OR = 2.80 [2.29, 3.42], $t = 10.02$, $p < .001$ (Table 1). Greater education was associated with significantly more recent participation in online dating, college degree or more: OR = 1.85 [1.44, 2.37], $t = 4.83$, $p < .001$ some college: OR = 1.80 [1.39, 2.35], $t = .4.35$, $p < .001$ (Table 2). There were no significant relationships between race/ethnicity and the recency of online dating participation (Table 2).

Multivariate logistic regression: Ever dated online

Results, displayed in Table 3 and Figure 1 show that relative to lesbian/gay adults 59.1 percent, (reference group), bisexual adults, 45.4 percent, OR = 0.54 [0.37, 0.79], $t = -3.16$, $p = .002$, straight adults, 29.6 percent, OR = 0.25 [0.19, 0.34], $t = -8.84$, $p < .001$ and other adults, 32.4 percent, OR = 0.29 [0.16, 0.52], $t = -4.19$, $p < .001$, were each significantly less likely to have ever dated online. Results also show that compared to straight adults (reference group), gay/lesbian adults and bisexual adults were each significantly more likely to have ever dated online: gay/lesbian, OR = 3.95 [2.91, 5.36], $t = 8.84$, $p < .001$, and bisexual, OR = 2.13 [1.60, 2.85], $t = 5.16$, $p < .001$; there was no significant difference between other adults and straight adults on the likelihood of ever having used a dating Web site or app, OR = 1.16 [0.69, 1.93], $t = 0.55$, $p = .584$ (Table 3). These results support Hypotheses 1 to 3.

Table 3: Multivariate logistic regression: U.S. adults who ever dated online.

		Percentage (SE)	**OR [95% CI]**	***t***	***p***
Sexual	Other	32.4 (5.07)	0.29 [0.16, 0.52]	-4.19	<.001
Orientation	Straight	29.6 (1.10)	0.25 [0.19, 0.34]	-8.84	<.001
	Bisexual	45.4 (2.95)	0.54 [0.37, 0.79]	-3.16	.002
	Lesbian or gay	59.1 (3.09)	Reference		
	Other	32.4 (5.07)	1.16 [0.69, 1.93]	0.55	.584
	Bisexual	45.4 (2.95)	2.13 [1.60,	5.16	<.001

			2.84]		
	Lesbian or gay	59.1 (3.09)	3.95 [2.91, 5.36]	8.84	<.001
	Straight	29.6 (1.10)	Reference		
Sex	Male	33.1 (1.49)	1.18 [0.97, 1.44]	1.68	.093
	Female	29.8 (1.28)	Reference		
Age	18 to 29 years	48.6 (2.83)	4.50 [3.40, 5.95]	10.52	<.001
	30 to 49 years	37.9 (1.80)	2.85 [2.31, 3.53]	9.69	<.001
	50 years or older	18.2 (1.07)	Reference		
Education	Bachelor's or more	36.1 (1.45)	1.86 [1.46, 2.41]	4.91	<.001
	Some college	34.5 (1.75)	1.74 [1.33, 2.27]	4.05	<.001
	High school or less	24.2 (1.80)	Reference		
Race	NH other	31.6 (3.43)	0.98 [0.68, 1.42]	-0.10	.918
	NH Black	34.7 (3.02)	1.15 [0.84, 1.58]	0.86	.390
	Hispanic	26.2 (2.60)	0.73 [0.53, 1.01]	-1.91	.056
	NH white	32.0 (1.23)	Reference		

Note: % = average marginal percentage; SE = standard error; OR = odds ratio; 95% CI = 95 percent confidence interval; t = t statistic, p = probability (significance level).

Results displayed in Table 3 show that male adults were more likely to have ever dated online than female adults, 33.1 percent versus 29.8 percent, OR = 1.18 [0.97, 1.44], t = 1.68, p = .093. Younger adults were much more likely to have dated online. Relative to adults 50 years or older (18.2 percent), adults 18 to 29 years were significantly more likely to

have dated online 48.6 percent, OR = 4.50 [3.40, 5.95], $t = 10.52$, $p < .001$, and adults 30-49 years were also significantly more likely to have dated online, 37.9 percent, OR = 2.85 [2.31, 3.53], $t = 9.69$, $p < .001$.

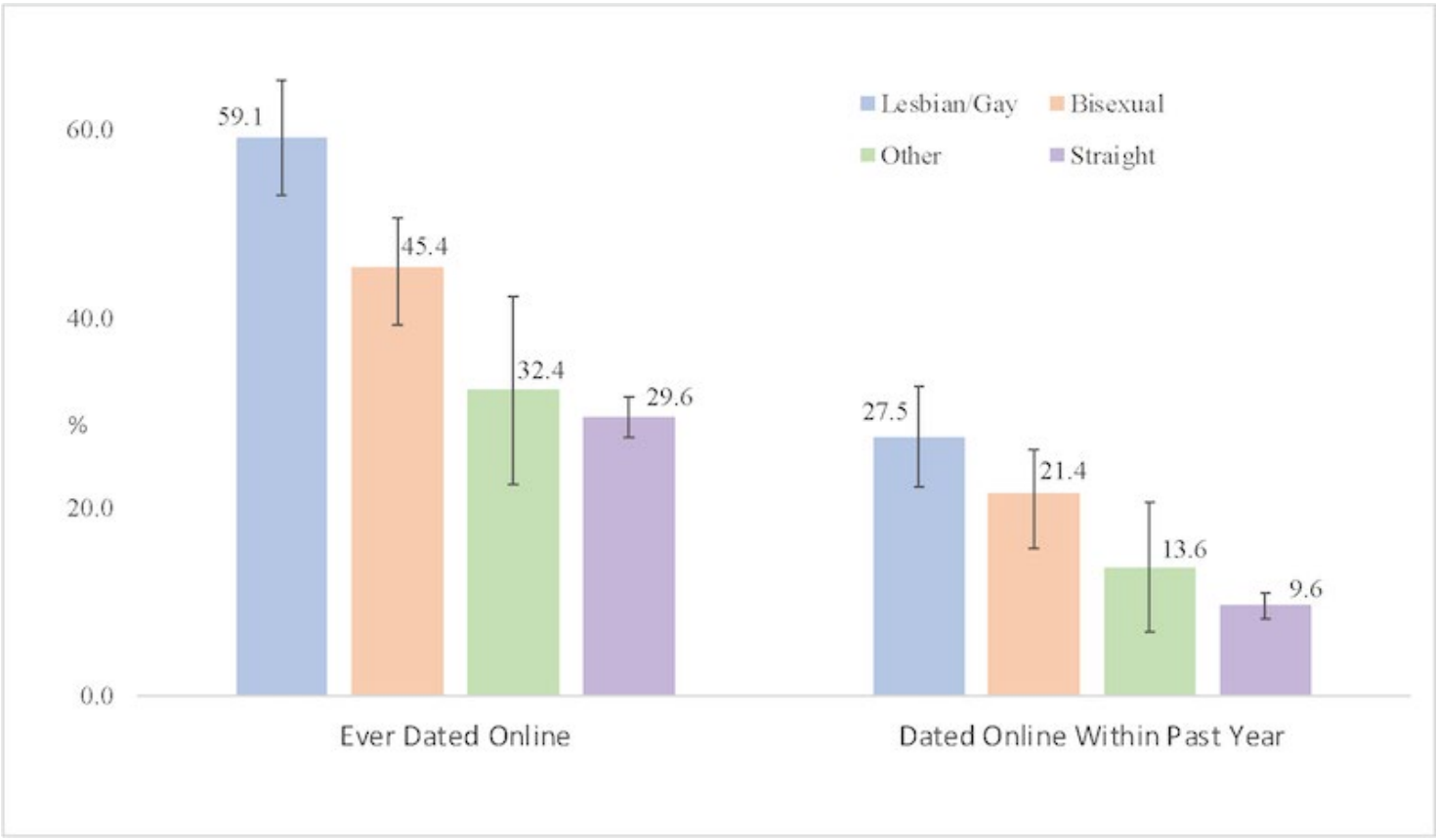

Figure 1: Average marginal percentage of adults who dated online by sexual orientation.

Results displayed in Table 3 show that college education was associated with a greater likelihood of ever dating online. Adults with a bachelor's degree or more education were significantly more likely to have ever dated online than adults with high school or less education, 36.1 percent versus 24.2 percent, OR = 1.86 [1.46, 2.41], $t = 4.91$, $p < .001$. Also, adults with some college education but not a bachelor's degree (34.5 percent) were significantly more likely to have ever dated online than adults with high school or less education, OR = 1.74 [1.33, 2.27], $t = 4.05$, $p < .001$. There was no significant relationship between race/ethnicity and ever-dated online (Table 3).

Multivariate logistic regression: Dated online within the past year

Results, displayed in Table 4 and Figure 1 show that relative to lesbian/gay adults (27.5 percent), straight adults, 9.6 percent, OR = 0.25 [0.18, 0.35], $t = 7.98$, $p < .001$, and other adults, 13.6%, OR = 0.38 [0.19, 0.76], $t = -2.71$, $p = .007$, were significantly less likely to have dated online within the past year. Bisexual adults (21.4 percent) were less likely than gay/lesbian adults (27.5 percent) to have dated online within the past year, OR = 0.69 [0.44, 1.07], $t = -1.66$, $p = .097$. Results also show that compared to straight adults (reference group), gay/lesbian adults and bisexual adults were each significantly more likely to have dated online in the past year: gay/lesbian, OR = 4.06 [2.88, 5.72], $t = 7.98$, $p < .001$, and bisexual, OR = 2.80 [1.96, 3.99], $t = 5.67$, $p < .001$; there was no significant difference between other students and straight students on the likelihood of having used a dating Web site or app within the past year, OR = 1.53 [0.80, 2.94], $t = 1.28$, $p = .200$ (Table 4). These results support Hypotheses 1 and 3.

Table 4: Multivariate logistic regression: U.S. adults who dated online within the past year.					
		Percentage (SE)	**OR [95% CI]**	***t***	***p***
Sexual orientation	Other	13.6 (3.48)	0.38 [0.19, 0.76]	-2.71	.007
	Straight	9.6 (0.69)	0.25 [0.18, 0.35]	-7.98	<.001
	Bisexual	21.4 (2.39)	0.69 [0.44, 1.07]	-1.66	.097
	Lesbian or gay	27.5 (2.69)	Reference		
	Other	13.6 (3.48)	1.53 [0.80, 2.94]	1.28	.200
	Bisexual	21.4 (2.39)	2.80 [1.96, 3.99]	5.67	<.001
	Lesbian or gay	27.5 (2.69)	4.06 [2.88, 5.72]	7.98	<.001
	Straight	9.6 (0.69)	Reference		
Sex	Male	13.7 (1.03)	1.80 [1.36, 2.37]	4.15	<.001
	Female	8.5 (0.73)	Reference		
Age	18 to 29 years	22.5 (2.09)	6.43 [4.50, 9.18]	10.21	<.001
	30 to 49 years	11.7 (1.11)	2.81 [2.03, 3.89]	6.23	<.001
	50 years or older	4.6 (0.52)	Reference		
Education	Bachelor's or more	11.7 (0.92)	1.37 [0.95, 1.96]	1.68	.093
	Some college	12.6 (1.16)	1.51 [1.05, 2.17]	2.23	.026
	High				

	school or less	9.0 (1.12)	Reference		
Race	NH other	12.0 (2.29)	1.24 [0.75, 2.03]	0.83	.407
	NH Black	15.8 (2.18)	1.77 [1.19, 2.64]	2.80	.005
	Hispanic	10.3 (1.54)	1.03 [0.68, 1.55]	0.13	.895
	NH white	10.1 (0.76)	Reference		

Note: %=average marginal percentage (adjusted for other predictor variables); SE = standard error; OR = odds ratio; 95% CI = 95 percent confidence interval; *t* = *t* statistic; *p* = probability (significance level).

Percentage of adults who adopted online dating by age and sexual orientation

Results, displayed in Table 5, show that across all age groups, LG adults were most likely to have ever used online dating (18 to 29 years: LG=74.8 percent, Bi=64.4 percent, Straight=47.4 percent, 30 to 49 years: LG=71.7 percent, Bi=55.9 percent, Straight=35.7 percent, 50 years or older: LG=41.4 percent, Bi=26.5 percent, Straight=16.8 percent). Also, as displayed in Table 5, LG adults were most likely to have used online dating in the past year (18 to 29 years: LG=40.8 percent, Bi=38.0 percent, Straight=21.6 percent, 30 to 49 years: LG=37.3 percent, Bi=27.0 percent, Straight=9.9 percent, 50 years or older: LG=12.9 percent, Bi=10.8 percent, Straight=3.9 percent). Since the number of adults with sexual orientation=Other is low, we did not report the percentages for Other.

Table 5: Average marginal percentage of adults who adopted online dating (wver and within the past year) by age and sexual orientation.

		Sexual orientation — Percentage (SE)		
		Lesbian or gay (LG)	Bisexual (Bi)	Straight (St)
	Age			
Ever Used	18 to 29 years	74.8 (7.93)	64.4 (4.76)	47.4 (3.24)
Online Dating	30 to 49 years	71.7 (4.55)	55.9 (4.78)	35.7 (1.96)
	50 years or older	41.4 (3.85)	26.5 (4.53)	16.8 (1.10)
Used online dating	18 to 29 years	40.8 (8.58)	38.0 (4.99)	21.6 (2.38)
Within past	30 to 49		27.0	9.8

year	years	37.3 (4.59)	(4.82)	(1.17)
	50 years or older	12.9 (1.90)	10.8 (3.37)	3.9 (0.51)
Note: % = average marginal percentage (adjusted for sex and race); SE = standard error.				

Discussion

Key findings

Bisexual adults are less likely than lesbian/gay adults to date online

Previous research has shown that LGB adults are significantly more likely than straight adults to have used online dating. Researchers have not previously examined whether there are significant differences between lesbian/gay and bisexual adults in their use of online dating (Brown, 2020; Johnson, *et al.*, 2017; Korchmaros, *et al.*, 2015; Suh, 2013). This research addresses this gap in the literature: results of multivariate ordinal regression (4-point ordinal scale) show that bisexual adults were significantly less likely than lesbian/gay adults to have recently participated in online dating (Table 2). Average marginal percentages and multivariate logistic regression show that bisexual adults, relative to lesbian/gay adults, were significantly less likely to have ever dated online and non-significantly less likely to have dated online within the past year (Tables 3 and 4, Figure 1). Also, consistent with Hypothesis 1, bisexual adults were less likely than gay adults to have ever dated online across all age groups (Table 4).

Bisexual adults are more likely than straight adults to date online

The results of multivariate ordinal regression show that bisexual adults were significantly more likely than straight adults to have participated more recently in online dating (Table 2). Average marginal percentages and multivariate logistic regression show that bisexual adults were significantly more likely than straight adults to have ever dated online or to have dated online within the past year (Tables 3 and 4). We are unable to locate any research that has compared the prevalence of online dating by lesbian/gay and bisexual adults. Also, bisexual adults were more likely than straight adults to have ever dated online across all age groups (Table 5). These results are consistent with Hypothesis 2. Also, consistent with Hypothesis 3, Lesbian/Gay adults are more likely than straight adults to date online (Tables 3–4, Figure 1). Also, consistent with Hypothesis 1, bisexual adults were less likely than gay adults to have ever dated online across all age groups (Table 5).

Conclusion

Previous research has shown that bisexual identity is much more common among younger adults; the number of bisexual adults is increasing, and they represent the largest segment of non-straight adults (Jones, 2021). As prior studies suggest, while bisexual persons can engage in partnership behaviors that overlap with lesbian/gay persons when in same-sex relationships and straight persons, when in opposite-sex relationships, they may identify with neither group (Sarno, *et al.*, 2020). Rostosky, *et al.* (2010), based on their research, suggested that positive aspects of bisexual identity exist, which include staying true to oneself, stronger connections to others within the community, and engaging in social justice activism are shared with lesbian and gay persons. At the same time, bisexual-identified persons contrast their experiences from lesbian or gay-identifying persons, often experiencing “in-between” social identity (Rostosky, *et al.*, 2010). The “in-between” social identity results in bisexual prejudice, a form of discrimination, from both straight and lesbian/gay identifying persons, which can contribute to bisexual persons experiencing internalized binegativity and internalized stigma associated with their identity (Sarno, *et al.*, 2020). One may be tempted to imply that, perhaps, the “in-between” social identity may be due, in part, to human development, particularly during what is termed as emerging adulthood when persons from late teens to mid-late 20s develop,

among others, relationships and preferences (Arnett, 2007). While it may be true to some, we fear that this view may delegitimize bisexual identity, further minimizing chances of identifying and belonging to any of the social groups. It should be noted that longitudinal data from the National Longitudinal Survey of Adolescent Health show that over time adolescents are more likely to change their identity from straight to non-straight; bisexual adolescents are not more likely to transition their identity (Savin-Williams, *et al.*, 2012). Beyond the lack of belonging to a well-defined social group, this weak social identity link to neither straight nor lesbian/gay-identifying persons could have adverse effects on well-being. Haslam, *et al.* (2021) found that life changes can have more positive than negative effects on health and well-being when individuals have strong social identity associations.

Further, experienced discrimination, which, as previously established, bisexual persons may experience from both straight and lesbian/gay persons, was linked to threatened social identity needs, which are associated with lower positive well-being and higher negative well-being (Bagci, *et al.*, 2020). Yet, despite this lack of perceived belonging, internalized stigma, and binegativity, bisexual-identifying persons continue to be segmented with lesbian/gay social groups for social and marketing purposes. Therefore, one needs to investigate the association between bisexuality and the measure of relationship search and partnership formation. As this study found, bisexual-identifying persons engage in different behavioral patterns compared to lesbian/gay and straight-identifying persons when it comes to online dating sites. Dating Web sites need to be more bi-friendly and welcoming to a more diverse group of potential customers. Because dating apps can help bisexual users connect with those who have positive views about their sexual identity (Filice, *et al.*, 2023), our study provides important evidence for increasing inclusiveness and access for bisexual-identifying persons to safe spaces for online dating. Dating Web sites need to think about how they can protect bisexual customers from being harassed and even persecuted online. Researchers should consider how marketing communications can signal that their organizations are inclusive and welcome persons of diverse sexual orientations. Firms and organizations should design, deliver, and promote services to be seen as more inclusive for persons of all sexual orientations at the same time acknowledging that bisexual persons may have their own distinct social group identity. This is likely to result in individuals feeling more included but also lead to greater support from the general public who, since the COVID-19 pandemic, became more interested in and supportive of organizations' diversity, inclusion, and access efforts (Rynarzewska, *et al.*, 2024). Therefore, instead of broadly segmenting all non-strickly-straight-identifying persons as one group, a more nuanced approach will likely carry positive individual, organizational, and societal outcomes, increasing inclusive practices, social group belonging, and well-being.

It should be noted that we were unable to identify specific dating Web sites that specifically cater to bisexual adults. In contrast, there are sites, such as Grindr, that cater specifically to gay men (Blackwell, *et al.*, 2015; Licoppe, *et al.*, 2016). Research has shown most bisexual adults enter into relationships with straight adults; few of them form relationships with other bisexual adults (Perales, *et al.*, 2021; Pew Research Center, 2013). This may be one reason why bisexual dating sites do not exist; bisexual adults prefer dating sites where they have access to all adults, regardless of their sexuality, who are open to having relationships with bisexual adults. Future research is needed on what dating Web sites bisexual adults prefer to join and what settings they choose to describe their preferred partner.

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Note

1. Paul, 1984, p. 45.

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Reviews in the dark: A netnographic exploration of reviewer networks and the dynamics of online review manipulation

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ABSTRACT

The aim of this study was to investigate the dynamics of online communities and networks used for recruitment and engagement in online review manipulation. We used netnography to examine how online communities on social media manipulate algorithmic processes, within the constraints of time and quality and despite the threat of censure, for monetary and psychological advantage. Drawing on immersive observations and in-depth interviews with group administrators, we explore how these reviewers constitute a form of passionate public: informal, self-organized actors who perceive their actions as advocacy on behalf of consumers and small businesses. These group administrators, themselves super contributors and opinion leaders in review manipulation networks, not only corroborated previous findings but also provided context for factors leading to covert review manipulation. Moreover, these interviews suggested that reviewers involved in manipulation perceived their actions, like other passionate publics, as beneficial to consumers and businesses. Findings suggest that they engaged in deceptive practices under the guise of contributing to the greater good.

1. Summary statement of contribution

The findings of this study point to a variety of dark behaviors that firms and reviewers use to manipulate product ratings and rankings. Our netnographic approach uncovered behaviors within organized review groups and active attempts by sellers to abuse consumer trust. It also revealed cultural norms and linguistic codes within these autonomous reviewer groups that shed light on the motivations behind review manipulation. The deceptive strategies used by reviewers, often for new product launches, appear to endorse an ethic consistent with "David vs. Goliath" stories.

2. Introduction

Online reviews help consumers make informed decisions by ostensibly providing first-hand accounts and insights from actual previous customers. In virtually every contemporary industry, curious consumers access these reviews on first-party sites or third-party review aggregator sites. According to a 2017 survey by Podium, 93 % of shoppers reported that online reviews influenced their purchasing decisions; 91 % of shoppers aged 18–34 claimed to trust online reviews as much as they would trust the advice of a friend (Podium, 2017, Garcia, 2021). Findings show that perceived credibility of an online review depends on content, style, degree, and valence (Filieri, 2015). However, technology has made human detection of fake online reviews more difficult (Salminen et al., 2022). Counterfeit and manipulated reviews do real and measurable harm to consumers, exerting an annual influence on global consumer spending amounting to approximately $152 billion (Marciano, 2021). When consumers perceive online reviews as deceptive, their skepticism increases, negatively affecting purchase intention and diminishing brand reputation (Román et al., 2023).

Most scholars have explored review manipulation through the eyes of consumers who detect fake, manipulated, or exaggerated reviews. However, numerous actors in online review manipulation go undetected. We found that many of these online reviews come from autonomous online communities, with content driven not by a central authority but by the pressure of the network itself and the opinion leaders in these communities. The aim of the current study was to explore this phenomenon through the perspective of the reviewers who interact within these networks. While scholars have examined networks advocating for social change or championing non-profit causes (Ihm, 2019; Yang & Taylor, 2021), autonomous review manipulation

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networks suggest a different kind of passion. For this reason, we shifted attention to recruitment methods, examining how firms and senior "champion" reviewers pressure new and novice reviewers to post disingenuous reviews. We also explored the psychological toll of this practice on the mental well-being and ethical considerations of the reviewers themselves. The goal was to understand these reviewers as a highly motivated, passionate public.

Most studies on review fraud are attempts to quantify review fraud or help spot it. However, quantitative studies cannot capture the cultural dynamics of the perpetrators of review fraud. Previous findings show that organized groups engage in online review manipulation (He et al., 2022; Rynarzewska, 2019). These organized groups are communities of individuals with their own language and acceptable in-group behaviors that, when violated, result in social sanctions. Gathering online in organized social media groups, these individuals are both consumers of products and producers of product reviews who actively engage in manipulative practices to alter product reviews. In our attempt to understand these communities, we posed the following research questions: What methods do sellers use to influence reviewers and manipulate online reviews? How are these manipulative techniques disseminated within online review communities? What impact do these methods have on the reviewers themselves?

Investigating how sellers manipulate review pools could help policymakers, consumers, and third-party reviewing sites expose disingenuous content. Identifying the drivers and tactics of review manipulation, our findings deepen knowledge about online review manipulation by addressing strategies of review manipulation and uncovering the inherently human, however dark or flawed, dynamics of the process. As a result, managers and policymakers can reduce deceptive behaviors among sellers, increase competitive fairness, and restore consumer trust.

3. Literature review

3.1. Online reviews, eWOM, and trust

Online product reviews are a unique version of word-of-mouth (WOM) marketing. One of the oldest forms of marketing, WOM is communication about the benefits and effectiveness of goods and services between individuals and their family, friends, and acquaintances (Brown & Reingen, 1987; Laczniak et al., 2001; Herr et al., 1991). WOM preserves the credibility of evaluation because the recommendations come from a person already trusted by others and because the evaluating individual, being known by others, wants to maintain a favorable reputation. Online product reviews are an electronic form of WOM (eWOM) that widens the circle of influence to include strangers. While WOM is generally not a marketing tactic per se, online review management remains a form of reputation management that calls for strategic attention (Perez-Aranda et al., 2019; Garrido-Moreno & Lockett, 2016).

Consumers are more likely to engage in WOM if they trust the company and its website and perceive the company as socially responsible (Eveland et al., 2018; Hong & Rim, 2010; Capriotti & Moreno, 2007). Violating that trust can lead to negative outcomes, including relationship dissolution. According to Ledigham and Bruning (1998), an "organization-public relationship centered around building trust, demonstrating involvement, investment, and commitment, and maintaining open, frank communication between the organization and its key public does have value in that it impacts the stay-leave decision in a competitive environment" (p. 61). Public relations has gone beyond message delivery to involve social media in two-way communication and feedback (Kent & Li, 2020; Kent, 2010). Online reviews and eWOM are inherently social, a form of social proof, signaling to other consumers support for or disapproval of the product, brand, or individual seller and offering feedback related to performance (Kim et al., 2023, Begho & Liu, 2024). Online product reviews decrease the uncertainty and transaction costs of online shopping (Hu et al., 2008), although a degree of self-selection bias also affects ratings (Li & Hitt, 2008).

3.2. Light and dark impact on publics

Online reviews benefit publics, firms, and consumers in numerous ways. Industry reports suggest that consumers read online reviews extensively and frequently, and the relevance of online reviews is likely to increase as shopping patterns continue to shift online (Statista, 2021). For example, consumers do not merely look at reviews to find products with 5-star ratings. When evaluating a business, consumers often scrutinize customer experience, product quality, consistency, relevancy, and diversity before deciding whether to spend their money (Filieri, 2015; Vázquez-Casielles, Suárez-Álvarez et al., 2013; Kusumasondjaja et al., 2012). Consumers also deeply consider reviewer quality, trustworthiness, and the frequency and quantity of product reviews (Banerjee et al., 2017; Cheng & Ho, 2015).

Increasing reliance on reviews for decision making elevates reliance on reviews for sales, opening the door to review manipulation (Hu et al., 2011). Previous findings suggest that the mere presence of online reviews implies seller transparency and builds trust (Cheng & Ho, 2015). The effect of online reviews on trust simplifies consumer decision making and enhances purchase confidence (Sparks & Browning, 2011; Kusumasondjaja et al., 2012). Numerous findings show that positive reviews increase purchase intention and revenue (Sparks & Browning, 2011; Ullal et al., 2021). Gössling et al. (2018) found that a 1 % increase in hotel review ratings increased sales per room by 2.6 %. Practitioners reported that only a 0.1 % increase in star ratings increased conversion by 25 % (Carter, 2022). Due to their power to build consumer trust and increase sales, favorable online reviews generate a competitive advantage (Dirsehan, 2015).

Accordingly, scholars and practitioners have sought to understand what makes online reviews more effective. Previous findings show that message factors (e.g., valence, length, and aesthetics), source factors (e.g., trustworthiness and credibility), and timing contribute to review effectiveness (Wang et al., 2015; Candi et al., 2017; Lin & Xu, 2017; Lu et al., 2018). On the other hand, given the power of online reviews, the ambiguous environment, and the prevalence of review manipulation, scholars have tried to detect and combat the more deceptive effects of online review systems (Hu et al., 2011; Jabr, 2022; Kumar et al., 2018, Hu, et al., 2012).

Online reviews go beyond consumer feedback to businesses about perceived quality of goods or services. They also target other consumers. Given that a business can offer multiple products, each having multiple consumer reviewers and even more consumers who might read these reviews, the communication and feedback that occurs constitute a multidirectional network of influence. Furthermore, online review fraud has a network structure (Akoglu et al., 2013) with nodes connecting entire communities. Beyond the need to uncover fraudulent activity in online review systems for reasons of accountability and policy, we answered the call to analyze the impact of networks on public relations. Zhou (2019) argued that the key focus of public relations is the relationship between an organization and its publics and that this relationship has a network structure that requires a network approach to assess. Zhou (2019) further argued that public relations scholars have examined network structures without adequate consideration of the human element in those structures. Reviewer communities, particularly those hired or incentivized by a firm, knowingly or unknowingly become an extension of the organization in their quest to build relationships and trust with consumers in an online network of influence. Yet actions taken to build that trust sometimes violate it.

3.3. Competitive and regulatory environment

Amazon is one of the biggest companies in the world, earning $321.8 billion in 2021, with a net income of $13.2 billion and a market cap of $1.6 trillion (Reiff, 2021). The COVID-19 pandemic, which began in

2020, led to in-person shopping avoidance, perhaps accounting for a 30 % increase in sales (Haverstock, 2021). In 2023, Amazon alone accounted for 40 % of the U.S. e-commerce market (Lebow, 2024). Its global review system has a profound impact on consumers (Statista, 2021).

Amazon's review system has evolved as managers have tried to keep it as fair and unbiased as possible (Masters, 2021). Early system manipulation due to fake reviews forced Amazon to adjust its Terms of Service (TOS) (Bishop, 2015; Perez, 2016). Frequent subsequent changes to TOS, for the same reason, created chaos and confusion among reviewers and sellers due to increasing ethical ambiguity (Rynarzewska, 2019). In October 2024, Amazon reiterated its zero-tolerance pledge and filed parallel lawsuits against fake review facilitator websites (Amazon, 2024). In the same year, the Federal Trade Commission (FTC) introduced bans on fake or false reviews. This ban prohibits businesses "from buying such reviews, procuring them from company insiders, or disseminating such testimonials, when the business knew or should have known that the reviews or testimonials were fake or false" (Federal Trade Commission, 2024). However, with limited resources, FTC struggles to monitor the expansive and rapidly evolving review industry, allowing review manipulation to continue.

In the current study, we investigated the development and maintenance of autonomous review networks for Amazon, which, despite increasing review restrictions, continues to suffer from widespread review manipulation. Nevertheless, Amazon remains the leading review system, the largest online retailer in many of the countries in which it operates, and a leading source of consumer influence on other review sites.

3.4. Network structure

Findings from computational and data mining research show that review networks feature greater density and closer nodes among manipulated reviews (Kaghazgaran et al., 2018; Fayazi et al., 2015; He et al., 2022). This pattern suggests that organized, crowdsourced manipulation is widespread, and because review networks rely on their members to engage in manipulation, scholars need to understand how and why individuals engage in manipulation despite its questionable ethics and clear prohibitions. One theory is socialization of knowledge and behavior. Individuals initiated into groups based on financial incentives later become *champions* (i.e., high-ranking, super-contributing reviewers on Amazon) in review manipulation and then initiate new reviewers. In the current study, we used netnography to understand how the network structure of manipulated reviews develops and how it persists. In addition, we interacted with key actors, engaging in reviewer communities and interviewing key informants. In this way, we investigated *who* participates, *how* they engage in manipulative review networks, and *what* motivates them to do so.

4. Method

Given the human aspects of autonomous review groups, including their culture and language, we relied on netnography (Kozinets, 2002). Netnography is also appropriate for studying consumer reviews, complex topics, and the dark side of social media networks (Baccarella et al., 2018; Langer & Beckman, 2005; Kozinets & Gretzel, 2024 Kozinets, 2016). This approach involves four stages, incorporating six iterative movements (Kozinets & Gretzel, 2024). The first stage, project focus, is initiation, when researchers narrow the topic and develop research questions. The second stage, data collection, includes immersion, investigation, and interaction. The third stage involves analysis and interpretation. The last stage is communication. In the current study, we engaged in the community and collected and analyzed all data, permitting both insider (i.e., participant) and outsider (i.e., researcher) perspectives. The second author maintained an outsider's view, crystallizing the concepts that emerged.

4.1. Initiation

When working on a larger, related project examining various aspects of online reviews, we narrowed our focus to review manipulation initiated in Facebook groups managed by administrators who can add new members or ban existing ones. Instead of focusing on the reviews and the impact of review content on consumers, we turned our attention to the individuals incentivized to review, the group dynamics, and the strategies used in posting biased reviews and manipulating the review system. Based on its successful use in uncovering biased reviewer communities in previous studies (Rynarzewska, 2019), netnography was deemed an appropriate method for addressing narrowly focused research questions.

4.2. Immersion

Immersion involves observation, engagement, reflection, and recording (Kozinets & Gretzel, 2024). In order to observe how members joined the groups and became willing to engage in manipulation, we engaged in some of the member activities, such as commenting and reviewing. Following Rynarzewska and Giunipero (2024), we moved between emic engagement inside the community and etic observation from outside. Emic engagement allowed us to gather insider information. Etic observation permitted immersion in observational data. The insider elicited no information directly from members, and the outside observer collected data generated by group members and administrators throughout the participatory engagement. Given the sensitivity of the topic, we followed the research ethics of Kozinets (2020). We anonymized the data by removing names from screenshots and described observed phenomena in rich detail without direct quotes that Facebook's new AI tool might link back to users. We also used an immersion journal, reflections from our in-group observations, and unsearchable screenshots.

To improve our standing in the online reviewer communities, we purchased multiple products on Amazon and reviewed them to establish a reviewer reputation. While admittance to many groups did not require ranking or reviewer reputation, both were necessary to qualify for more elite groups (i.e., invitation only) that allowed members to review higher-priced products. Once we had a sufficient number of Amazon reviews, we obtained permission to review as part of a community organized as a Facebook group. We attained a ranking of approximately 80,000th place (i.e., about 40,000 views) among millions of Amazon reviewers. In comparison, review champions in the community had rankings as high as the top 100, reaching billions of "views" by other consumers.

Finally, group administrators knew that we were researchers from our public reviewer profiles prior to granting access to the groups. The researchers continued emic engagement and reviewer activity for as long as the review activity remained within the scope of TOS and FTC regulations. After TOS and FTC changes, we continued our etic observation.

4.3. Investigation

To identify the engaged publics and understand the dynamics of a reviewing community, we joined a single group and became members of multiple groups within a larger review community. The overall review community had tens of individual groups created by administrators and previous reviewers who had established their own relationships with sellers. Often organized using Facebook groups, these online reviewer communities vary in size from several hundred to more than 10,000 members. Because netnography is prone to the effects of algorithms (Kozinets, 2020), our search for digital traces was subject to Facebook algorithms, which tend to recommend groups with interests similar to users. We accessed several reviewer groups that Facebook recommended. We were highly engaged in 10 groups, semi-active in 10

additional ones, and barely active in 10–15 more (as the groups were closing and reopening, this number is fluid). Membership in Facebook groups facilitated gathering textual content for analysis (i.e., posts and comments). We focused on content related to (a) strategies and consumer socialization used by group members, newly initiated members to review champions, (b) admin-member interactions, (c) demands, and (d) pressure and reward structures.

We used the progressive data collection approach (Rynarzewska & Giunipero, 2024), "a method that focuses on studying online communities by collecting data in real-time, which enables near-simultaneous analysis with a potential for data interpretation to evolve and deepen as the inclusion of social media reactions and the presence of artifacts adds to the complexity of findings" (p. #). This approach involves keeping an immersion journal and taking screenshots of relevant information. Therefore, our data predominantly consisted of observational field notes that were unstructured rather than semi-structured and were subject to algorithms that pushed the most engaging discussions to the top of the Facebook group timeline. Facebook data came from two in-group interaction sources: Facebook Groups and Facebook Messenger. The majority came from Facebook groups, which were highly interactive. An administrator would post a product to review, and members could "opt-in" if they were interested in the product and willing to satisfy the review requirements. Other data came from Facebook Messenger, where administrators would "pull in" members who were qualified to review a product and had opted in.

4.4. Interaction

We conducted two in-depth interviews with administrators of the Facebook reviewer groups. The goal was to understand underlying drivers and group-seller dynamics that might be unseen by members. Researchers conduct in-depth interviews with a small number of participants to "provide context to other data (such as outcome data), offering a more complete picture of what happened in the program and why" (Boyce & Neale, 2006, p. 3). The interviews also served as member checks, increasing the credibility of qualitative data (Singh et al., 2021). Finally, we incorporated the interviews into our netnographic approach to understand better the phenomenon we investigated (Kozinets & Gretzel, 2024).

We asked questions addressing the following ideas: (a) administrative role in online review groups, (b) strategies and tactics used to encourage reviewers to participate, (c) reasons why sellers relied on professional reviewers, (d) sellers costs associated with this reliance, (e) benefits of using online reviews in this format, and (f) changes to the review system. Each interview was a video call on Facebook Messenger lasting 30–45 minutes. Participants did not want to be recorded or to have the entire interview transcribed verbatim, but they did consent to note taking. Thus, the data we collected from the interviews was semi-structured.

4.5. Integration

In netnography, analysis is a "process in which a particular phenomenon is broken down into components" (Kozinets, 2020, p. 329), which then undergo reassembly into organized, interconnected structures. To understand review manipulation, we analyzed all of the data we gathered using a phronetic iterative approach (Tracy, 2018). While similar to thematic analysis, it "focuses on more narrow aspects of the data that have the potential to extend specific theories or address practical problems" (Tracy, 2018, p. 62). We used iterative and axial coding to reduce the data into categories and themes. Then we mapped out the more prevalent themes. The main themes had supporting nodes (i.e., sub-themes). We also organized the themes chronologically, primarily according to the TOS change that Amazon instituted in October 2016.

5. Results

The data we collected as members of the reviewer community fell into five key themes. The *financial incentive* theme was supported by nodes that included discount codes, free products, and commission. Free products were prevalent before 2016, while a combination of free/discounted products and commission became more common after 2016. The *pressure* theme reflected elements of time and review quality. The *algorithm manipulation* theme included nodes for mass discount codes, required star ratings, price drops, and keyword searches. The *psychological reward* theme highlighted developing incentives beyond the initial financial reward, resulting in an ongoing commitment to the community. Finally, the *channel* theme highlighted the distinction between direct and indirect review sharing and receipt of financial benefit.

5.1. Financial incentive

The primary supporting node for this incentive was a code for a free or deeply discounted product. This monetary reward clearly incentivized new members to join the review community and engage in review manipulation. Often, existing members, review champions, and those hoping to become champions would post their reviewed products on their personal Facebook pages and in the members-only Facebook reviewing community, highlighting the discount codes they received for 90–99 % off the retail price. The prospect of acquiring a substantially discounted or free product sparked the interest of Facebook connections, serving as a gateway for new member induction. It was also a reminder to existing in-group members of the considerable value of the products they could obtain.

Before October 2016, the primary financial incentive strategy was to provide discount codes for products on Amazon. High-ranking Amazon reviewers who were reviewer group administrators gave out multiple codes to multiple pre-qualified reviewers. Reviewers who opted-in to review the product and were chosen for a discount code were then invited to join a Facebook message chat providing required review components, a product description, the review submission deadline, and a discount code. Administrators gave out hundreds of codes each day per product. The outcome was mass purchases and numerous covertly incentivized reviews, all due within five to ten days of code issuance. Fig. 1 presents a Facebook chat initiated by the administrator after in-group member opt-in. It includes review requirements (e.g., promised media) and steps to follow. After completing the review, members filled out a Google Form linked to a Google Sheet tracking order numbers associated with individual members and their product reviews. Leaving

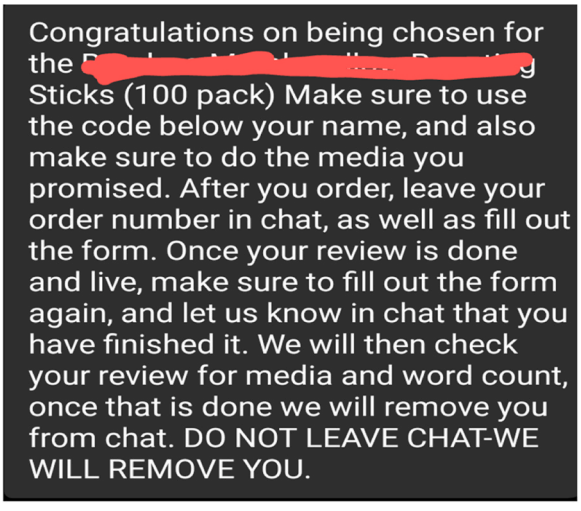

Fig. 1. Facebook chat screenshot showing administrator-initiated interaction with reviewer.

the chat before completing all review requirements or not following through with the promised review often resulted in sanctions and public shaming.

5.2. Pressure

Review requirements contributed to the *pressure* theme, which included pictures or video and minimum word count. Another subtheme was "time," referring to the timeframe for review submission. Falling short of these requirements resulted in the administrator tagging the reviewer in the group, leading to potential censure from champions or others in the community. These tags were a form of public shaming for administrators, as Facebook "friends" with all members could easily privately message members who did not follow the manipulation guidelines. After public tagging, other group members would exert social pressure by expressing disapproval or disdain, stating that late reviewers would "ruin it" (presumably referring to reviewer benefits) for all group members. Sanctions on late reviewers by administrators included temporary denial of codes/new products, demotion in objective and subjective reviewer status—a metric visible to others in the community, often affecting the reviewer's subjective opinion—and the possibility of a total ban from the group. After demotion, non-compliant reviewers who might have worked to receive higher monetary value products would have to start again at the bottom of the totem pole.

5.3. Algorithm manipulation

After October 2016, three key nodes emerged related to algorithm manipulation: price drop, keyword search, and social share. Keyword searches were prevalent prior to October 2016, but their frequency increased after October 2016. In Fig. 2, "search and buy" refers to this strategy. Administrators gave members a keyword to search and match with a product and its seller. Upon locating the correct product, members had to buy it within 12 hours of the initiation chat and share the order number in the chat.

The short purchase window added a time pressure element related to algorithm manipulation. Reviewers had to search immediately upon notification in the Facebook chat to benefit the seller and preserve their spot. If reviewers were too slow to report their immediate participation, the administrator would replace them with ready others. As illustrated by Fig. 3, reviewers had to remain alert, creating stress among reviewers who did not want to miss out. Moreover, products were often listed many pages down in the Amazon search results (e.g., page 15 at the start of the process); however, due to mass reviewer engagement, it would move up the list (e.g., page 12 as the process continued). The more

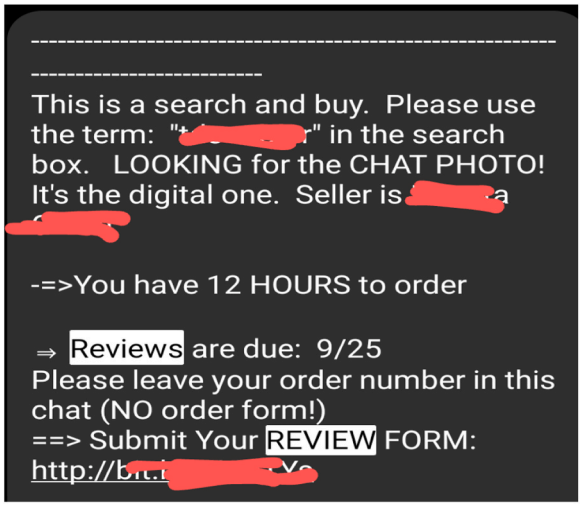

Fig. 2. Facebook chat screenshot showing keyword search process.

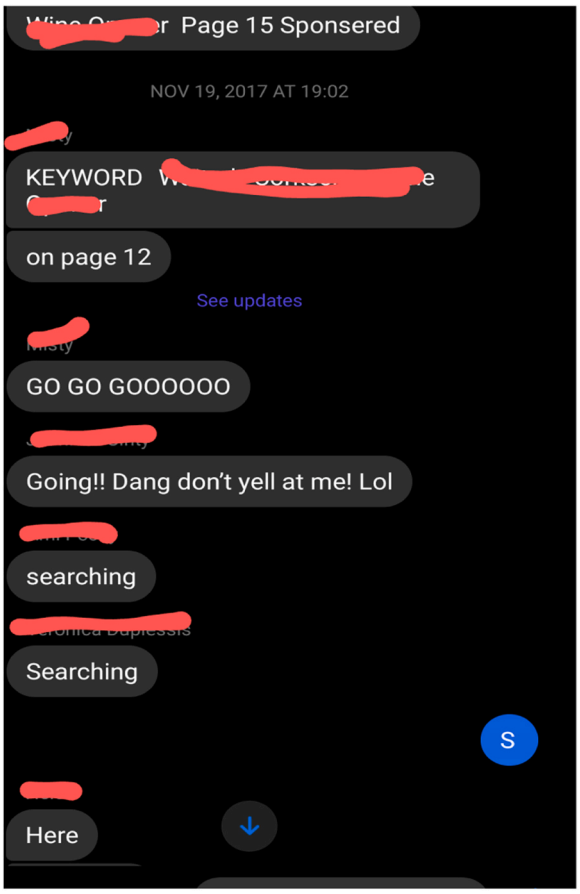

Fig. 3. Facebook chat screenshot showing time pressure and reviewer engagement impact on product location in search results.

reviewers searched using a keyword, clicked on the target product, purchased it, and reviewed it, the more likely it was to climb toward the top of the listings, ideally landing on page 1.

While not necessarily a driver of community-based online manipulation, "social share" emerged as a strategy primarily in response to alterations in Amazon TOS. Reviewers who had lost their ability to post reviews on Amazon due to manipulation patterns could now resume their activity. Although the main goal was to provide sellers increased visibility among potential buyers, administrators started requiring buyers to post reviews on their own social media platforms, circumventing security protocols instituted by Amazon to limit review manipulation. This strategy introduced products to a larger audience, mimicking traditional WOM among friends and family. Some reviewers were successful in social sharing, increasing their followers and ultimately making them Amazon Influencers. Fig. 4 shows some requirements for a social share. In addition to time requirements (5 days for most products and 10 days for beauty products), members had to share their product reviews on at least two different platforms (e.g., Facebook and Instagram). Each reviewer had to make their accounts public for greater network access. Content requirements included three product pictures or a product video, at least 100 words of text, and a hashtag matching the product type. Notably, these social share requirements followed FTC regulations, which required anyone sharing a review to indicate a relationship with the seller by making the hashtag #sponsored visible to other social media users. Social sharing parameters indicate that the review system had evolved into affiliate marketing or influencer marketing with the development of Amazon storefronts. However, the requirement to leave seller feedback on Amazon inflated perceived seller credibility. Because social media shares and seller feedback are on separate platforms, any connection between them was

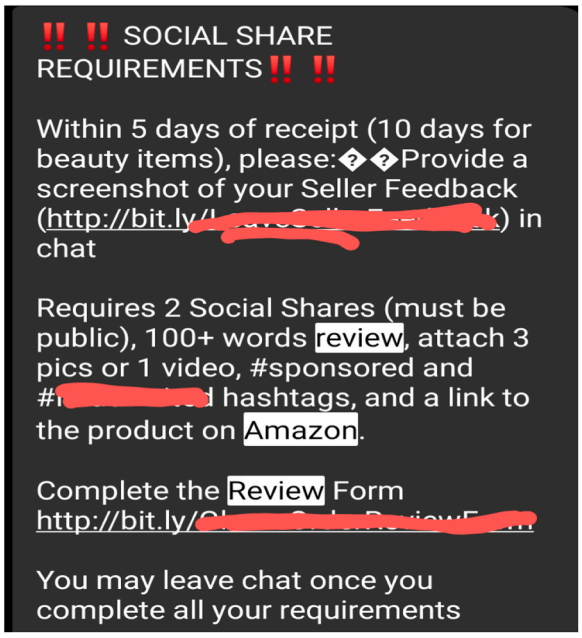

Fig. 4. Facebook chat screenshot showing social sharing requirements.

not explicit.

5.4. Psychological reward

While monetary benefit was usually a catalyst to join a reviewer group, psychological reward developed over time. Reviewers competed with each other for ranking and quality of product reviews based on perceived helpfulness, a metric reflecting Amazon customer feedback. Administrators rewarded highly ranked members with more discount codes. However, the true reward was the chance to review higher-end and higher-cost products. The elite status that came with this type of reward resulted in closer connections to administrators and further access to better rewards. Anyone could become elite by following administrator requirements, but gaining access to better products was difficult enough to make the environment competitive.

Administrators selected reviewers based on their social media influence and willingness to manipulate covert reviews, even at the risk of revoking Amazon review privileges or reducing Prime account benefits. Administrators expressed how valuable reviewers were to sellers, describing them as small-business owners who had put their life savings on the line to launch an enterprise on Amazon. By posting manipulated or fake reviews, bypassing Amazon's TOS, reviewers could view themselves as helping small-business owners in an environment where Amazon ostensibly had all the power. This rationale leveraged a "David vs. Goliath" ethic, embodying the underdog narrative described by Gladwell (2013). This moral lens can boost the ethical status of causes and movements meant to redistribute economic or social power (e.g., climate activism, breaking up large technology companies, civil rights protections, and union membership). Members and administrators seemed proud of the support they could offer.

5.5. Channel

The *channel* theme includes the mechanism of transfer and the means used to incentivize and post manipulated reviews. While Facebook groups facilitated communication and recruitment, the reviews themselves appeared on Amazon and other platforms such as Facebook, Instagram, and personal blogs. Reviews posted on Amazon directly influenced its review system, while external posts exerted an indirect influence, amplifying the impact of manipulated reviews.

Reviews on social media platforms had to be public (i.e., no privacy restrictions) and to contain a direct link to the post and hashtags suggested by administrators and were. The goal was to drive traffic to products listed on Amazon. Most of the time, reviewers received rewards before even purchasing the item to review, usually directly through the Amazon platform. As TOC and FTC regulations tightened, PayPal became a more common way to disperse rewards, usually as reimbursement after purchasing a product at full price but sometimes as payment after posting the review. While we did not directly participate in PayPal transactions, reviewers were actively recruited to participate in this reward system.

5.6. Member checks

Both interviewees were women who had started out as reviewers before working their way up to high-level administrators. Each had a top-100 Amazon reviewer ranking, and their reviews had reached "millions/billions" of views on the Amazon platform. They had reviewed a variety of products, rewarded with discount codes provided to their administrators by sellers. As administrators, they received products and drop-shipped them to their homes without having to purchase them through Amazon.

The administrators acted as intermediaries between the companies selling on Amazon and the reviewers seeking rewards in the Facebook group. These administrators pitched new sellers for codes that community members could use, maintained relationships with sellers, initiated new reviewers, distributed discount codes, tracked reviews, and held reviewers accountable. They also agreed to review the Amazon storefronts of sellers, provide feedback on product packaging and quality of packaging for shipping to ensure product safety in transit, and correct spelling errors on packaging and in Amazon product listings.

Both interviewees indicated that they slept little, often experienced high stress, and felt under scrutiny. The stress was two-fold. First, they needed to attract sellers who could offer products of high enough value to maintain interest in the review group. Second, they needed to manage reviewers, the quality of their reviews, reviewer complaints about products or rules, and review timelines. Scrutiny from reviewers also contributed. They emphasized that the stress was a high price to pay for the reward, which included free products and the satisfaction of helping others.

These interviews supported and contextualized the rest of our data, helping us answer research questions not fully addressed by the immersive and investigative stages of netnography. First, they described distribution of discount codes to reviewers, issuing a high number of codes per product, and the demand for quality reviews (i.e., *algorithm manipulation* theme). The administrators were responsible for distributing 5–30 codes per day per product (up to 1500 codes per product and up to 10,000 codes per day for extensive campaigns). They needed to ensure quality reviews with a minimum of 100 words, inclusion of pictures or videos, and rating of 4 or 5 stars, preferably the latter. If the product did not deserve a high rating, sellers directed administrators to ask reviewers to provide feedback on an external form (i.e., Google Forms) instead of posting the review on the Amazon review site or contacting the seller directly. Non-compliant reviewers risked being "kicked out" of the group (i.e., *pressure* theme).

When Amazon banned discount codes in October 2016, administrators began relying on temporary price drops to nearly zero. During these short windows, they directed buyers to purchase the product practically for free. The brief price reduction restricted deeply discounted product availability solely to incentivize reviewers. Accordingly, these opportunities were only available late at night, preventing non-reviewers, the general public, and individuals from other Facebook groups from catching these "price glitches." After TOC and FTC regulations tightened, keyword searches became more prevalent. The administrators provided reviewers with a keyword to search the Amazon site and a picture of the product for reference. The purpose was to

manipulate the product display algorithm. The interviewees mentioned the goal of making the seller's product appear on page 1 or 2 of the search results when an Amazon customer used certain generic keywords.

Confirming the *pressure* theme, both interviewees emphasized that their administrative work was unpaid, outside the reward of free products, but that other group administrators were paid, increasing stress and pressure. The interviewees spent considerable time managing reviewer groups but also stated that they genuinely wanted to help sellers succeed. They had both reached the point where their houses were full of products they received, either free or deeply discounted, in exchange for a positive review (e.g., furniture, printers, rugs, kitchen tools, and beauty products). Confirming the *psychological reward* theme, the interviewees noted that they and others in the Facebook community felt like part of a family. The ties between strangers grew closer and stronger, fostering a shared passion for helping sellers succeed. Their passion spread as network members more actively engaged and interacted, strengthening ties further. At the same time, the interviewees did not feel they had deceived customers because they felt their own reviews were genuine, and they never asked reviewers to lie. By not publishing negative reviews, they felt they were giving sellers an opportunity to improve. Despite detailing and describing intentional algorithm manipulation, they did not believe that they were engaging in harmful review manipulation. Despite the pressure from sellers to do so, they explained that they used product pictures and videos to show customers that they genuinely had the product in hand and knew how the product worked. They took pride in helping sellers while following Amazon TOS and FTC regulations. They both noted that they, and their most active reviewers, liked the thrill of trying products they never thought existed and could never otherwise afford to try. They also believed that buyers relied on their reviews to make wise purchase decisions.

Expanding on the *algorithm manipulation* theme, the interviewees explained why they used specific strategies and tools and what they meant to accomplish. Both interviewees showed a deep understanding of Amazon's algorithm and the intricacies of consumer decision making on the platform. For example, discount codes permitted a verified Amazon purchase, making the review appear to come from an actual customer rather than a professional reviewer. Both sellers and administrators knew that consumers trusted verified reviews more than unverified reviews. The low daily number of discount code reviews (5–30 rather than 1500) for certain products was meant to increase consumer purchase confidence, for "customers don't care how many reviews there were after a certain number of reviews." However, mass reviews involving up to 1500 codes a day were meant to influence product-ranking algorithms. According to the interviewees, "it takes 1000 purchases to move up a page" in the product search results. The newest products would start on page 35 and have little chance of purchase, setting the seller up for failure, in the opinion of the interviewees, as consumers were unwilling to click through 35 pages of products to keep looking at options. Because Amazon can push its own products, investing in reviewers was the only way for a small start-up seller to succeed. To the interviewees, this reason was an important justification for initial reviewing efforts and eventual administrative work. They framed their efforts as a "David vs. Goliath" battle against a powerful competitor.

Keyword searches also helped with page placement. As stated by one of the interviewees, "Amazon knew what products were clicked on and with what keywords." They also explained that short-term drop pricing achieved the same purpose as discount codes and became the only strategy for obtaining product reviews at a low price after October 2016, assuming adherence to Amazon's TOS. This timing is consistent with our immersion and investigation data. Both interviewees had stopped reviewing products because they grew tired of finding legal ways to post reviews, while other group administrators and Amazon sellers shifted to illegal methods. Other groups whose administrators were financially rewarded were more willing to bypass TOS. For example, they noted that after October 2016, many sellers began refunding buyers via PayPal after the Amazon purchase. Using this method, Amazon purchases could still be marked as verified. They also noted a rise in the same type of reviews on other platforms and retail locations such as Google, Yelp, Sears, and Walmart, as well as a rise in companies that would charge sellers for supplying them with professional reviewers, often under the guise of being research companies.

6. Discussion

Through a multi-year netnography of reviewer communities, we found multiple themes that shed light on review manipulation. Monetary incentives included discount codes, free products, and (more recently) commission; psychological rewards included the thrill of trying new products, improvement in personal reviewer ratings, and the "feel good" element of helping the seller. Review channels involved direct posting on Amazon or indirect traffic drivers on social media, and payment channels included Amazon discounts and PayPal reimbursement. Finally, reviewers felt pressured to review products within a certain period (typically 5–10 days) and to offer quality reviews that met a minimum word count and included pictures or videos, all under the threat of losing monetary rewards.

The psychological dimension of only reviewer communities is noteworthy. Facebook administrators had multiple responsibilities in managing reviewers for utilitarian (i.e., free products) and hedonic reasons. At the same time, they created stronger social ties as they spent more time in various groups. Initially passionate about reviewing for utilitarian reasons, their motivation shifted toward a passion for helping, a hedonic motivation. As they developed social ties with group members, they encouraged others to develop social ties by posting fun memes and sharing engaging posts. Members began feeling like family and friends, developing their social norms and sanctions for violating such norms. Members appeared to be driven by the same motivations as and a desire for reciprocity and help from their hard-working administrators.

The administrators we interviewed admitted that they knew a lot of personal information about reviewers. Still, as the groups grew to more than 2000 reviewers, the administrators admitted to only remembering the "good ones" and those who caused problems. While the administrators used sanctions in the form of bans and social shaming, group members fueled by a passion for "helping" would also apply social sanctions on in-group members using guilt tactics in the comment section, along with passionate outbursts and angry emojis. Both administrator-member and member-member sanctions signaled to newcomers what the norms were and how to be part of an elite group of champions. As their passion and time commitment grew, some members became more belligerent and began to threaten and sanction other more often, resulting in high-stress and toxic communities.

Online product reviews are a powerful marketing and online reputation management tool. They can help build trust between sellers and consumers, increase seller visibility, reduce decision-making time, and provide consumers with information (Gupta & Harris, 2010; Perez-Aranda et al., 2019). We discovered a complex network of reviewers engaged in sophisticated tactics to manipulate product display algorithms that influence visibility and sales. These organized, autonomous online communities engaged in professional review manipulation and recruited others to do the same. Group administrators used psychological pressure, shared passion, and rewards to maintain control of reviewer participation and product ratings.

Although previous findings show the positive impacts of autonomous online networks in contexts such as nonprofit organizations (Yang & Taylor, 2021) and groups advocating for social change (Ihm, 2019; Boatwright, 2022), the motivations driving these networks are far less complex than the online review manipulation networks we investigated. These Facebook groups are not individual firms orchestrating fake reviews; they are networks of autonomous people interacting to create self-sustaining ecosystems of manipulation. These online communities share a common playbook, and in the groups we studied, the culture

became obsessive, abusive, and potentially toxic, led by administrators who believed that their actions were inherently *good and helpful* to businesses and consumers. We detected suppression of doubt about whether their activity was as pure as the group wanted it to be. Previous findings about network paradigms show that opinion leaders within these ecosystems influence the flow of communication and shape ideas shared among participants (Boatwright, 2022). We observed the same, perhaps to a higher degree, as any questioning resulted in group responses suggesting a lack of appreciation for the rewards and a lack of understanding of the purity of the purpose. In fact, administrators occasionally sanctioned members who expressed doubt about the ethics of their activity.

Our findings also revealed algorithm manipulation: using keyword searches, price drops, and mass reviews to improve the placement and ranking of a listed product and the seller's online store. These strategies served a dual purpose: (a) to ensure that the items reached individuals predisposed to writing persuasive reviews likely to influence other consumers and (b) to recruit participants willing to perform algorithmic labor—investing time and effort to assist a business in manipulating the algorithmic system.

Algorithmic labor is an entanglement of humans and algorithms, with the latter having power over the former. Algorithms can determine work allocation, recommend employment to job seekers, and influence search recommendations (Rosenblat & Stark, 2016; Horton, 2017; Meisner et al., 2024). Furthermore, brands, individual sellers, and organizations engage in algorithmic branding, a complex process that has evolved into mass communication management using social media platforms and media channels (Kozinets, 2022). In the current study, sellers relied on the Amazon platform to sell their products and on autonomous reviewer communities to bolster communication about their products sold on Amazon. The goal was to make sellers more visible, build trust in their Amazon storefronts and their products, and reach consumers in a highly competitive environment where hundreds of similar products exist on the same platform across many different sellers. The commitment needed to shift power from machines and large businesses (e.g., Amazon) back to humans struggling to make a living exhausted both reviewers and administrators. Unfortunately for reviewers, the inability to keep up resulted in demotion and further missing out on reviewing opportunities. Keeping up with the community's demands became an obsessive pursuit of utilitarian and hedonic rewards.

While scholars tend to view passion as inherently positive, obsessive passion can be destructive. Obsessive passion "is characterized by an uncontrollable urge to engage in the passionate activity that one loves" (Lalande et al., 2017, p. 164). More specifically, it is "a strong inclination toward an activity that they like, find important, and in which they spend significant time, but also feel internal pressure to engage in" (Omorede et al., 2013). Obsessive passion can be driven by self-serving motives, which only intensify in leader-servant roles (Astakhova et al., 2023). Recent findings from management studies suggest that leaders with heightened obsessive passion experience exhaustion and are likely to engage in abusive leadership (Astakhova & Ho, 2023). These findings point to some reasons the passion for helping new businesses beat the power of algorithms resulted in gaming the system and engaging in system-wide review manipulation. In the review communities we observed, the desire to help led to threats, sanctions, and demands not to post negative reviews. In future studies, scholars should explore how obsessive passion might emerge from a passion to help and how a desire to serve can lead to deceptive practices.

Both administrators and sellers demanded 4-star or 5-star ratings, threatening removal from the community or non-refund of payment should reviewers post lower ones. These tactics are consistent with previous findings effective reviews are those posted soon after product launch and that provide ample detail, length, and depth (Mudambi & Schuff, 2010), while reviewer reputation and prior review quality also play a role (Banerjee et al., 2017; Cheng & Ho, 2015). The reviewers we observed were pressured to submit reviews within a short period and to write sufficiently long reviews with photos or a video to increase credibility. However, in this case, features designed to improve consumer decision making fulfilled a darker purpose: review manipulation to benefit the seller and reviewer. Our findings highlight the need for stricter regulations and sharper vigilance from regulatory agencies.

Our findings suggest that controlling reviewer manipulation will require cooperative effort among various entities, commercial and/or regulatory, especially because the activity seems to have shifted to autonomous, community-driven networks. While Amazon has been proactive in changing its TOS, initially allowing incentivized reviews, then asking for disclosures, and finally banning the entire system, the reviewers they have tried to regulate have simply retreated into the shadows. Congregating into online communities and encouraged by strong opinion leaders, these reviewers have moved from star rating and algorithm manipulation to potentially illegal refunds and commission payments via third-party providers (e.g., PayPal). As described by the interviewees, after October 2016, network champions began encouraging customers to review Amazon and Amazon-affiliate purchases on personal social media pages rather than attempting to post manipulated reviews on Amazon. This shift has inspired trends (e.g., "random Amazon finds") on content-driven, youth-focused platforms such as TikTok, YouTube, and Instagram. While the potential for manipulation remains, these reviewers can monetize their content and earn through exposure and affiliate links without secrecy.

Our findings also have theoretical implications. The transition from centralized entities that shape and share ideas to decentralized, autonomous online communities mirrors the rise of prominent opinion leaders as dominant forces within these networks (Ihm, 2019; Yang & Taylor, 2021; Boatwright, 2022). In the communities we studied, the review champions took the lead in driving ideas and shaping discourse, demonstrating that their influence can be seen and felt in networks invested in dishonest and unethical activities. Previous findings in this domain address nonprofit organizations and communities searching for social justice. A network of individuals engaged in review manipulation might seem more driven by greed, but we found that reviewers and administrators shared a sense of higher purpose and passion. One interesting finding was the motivation to help sellers. Administrators were not financially rewarded but worked many hours a day. They felt they were not manipulating or harming consumers. Instead, they "felt good" for helping sellers succeed. They also found joy in gifting products they received for reviews and offering products for reviews to other reviewers who, otherwise, would not be able to afford them. Even though it was stressful and exhausting, they found their engagement with sellers and other community members highly rewarding. In fact, both interviewees stated they missed it.

This combination of emotional investment, perceived support, informal coordination, and digital contributions reflects what scholars describe as passionate publics. These are autonomous, self-organized groups that form around a shared sense of purpose and identity, often in tension with institutional or regulatory systems. While the actions of these reviewer communities violate platform policies and blur ethical boundaries, they are motivated by a strong belief in helping small businesses, expanding access to products, and supporting community norms. These publics do more than consume or promote; they take on informal public relations roles, shaping perceptions and narratives from the margins. Their efforts reflect a blend of passion, advocacy, and resistance to platform structures, making them especially relevant to current conversations about emerging publics in digital spaces.

Perhaps the concept linking these autonomous network communities is the positive psychological reward known as Helper's High (Dossey, 2018). In other words, reviewers who received help, perhaps in the form of free products they usually could not afford, are also those who become helpers. After all, the administrators we interviewed started as reviewers. Helper's High increases trust in others and volunteerism and is a strong motivation among digital natives to write online reviews

(Corporation for National Community Service, 2007; Smith, 2023). The idea that Helper's High can increase trust might help explain why administrators and reviewers viewed their work, although explicitly in violation of Amazon TOS, as helpful, making them feel good rather than deceptive. In other words, they trusted that they benefited the sellers and assumed no negative consequences to other sellers and consumers.

The implications of our findings spill over to influencers and the content creator industry. First, changes in TOS and FTC regulations might have encouraged more transparent reviewing practices through incentive and affiliate link programs, but they have also given rise to illegal activity. Influencers and content creators might seem transparent in their reviewing practices. They often and successfully promote products. For those reasons, they became attractive to businesses who want to expand their reach and drive purchase decisions. However, growing consumer skepticism has dimmed initial excitement about product recommendations made by influencers and content creators. Influencers whose strength is developing and fostering parasocial relationships might abuse perceived intimacy to achieve commercial ends (Kozinets et al., 2010; Mardon et al., 2023). As consumers doubt the reviews and recommendations of content creators and influencers due to uncovered influencer deception (Rynarzewska et al., 2024), our findings offer perspective on why influencers and content creators engage in behaviors that might lead to promotional crisis, higher consumer skepticism, the formation of anti-fandom communities, and rejection of commercialized reviews. Influencers and content creators, like organized reviewers, face changing regulations and competitive environments that are fueled by algorithmic ambiguity and the pursuit of impact and visibility. In this way, an initial passion to help brands and consumers might turn into an obsessive, darker passion.

Declaration of Competing Interest

Authors have no conflict of interest.

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Schadenfreude and sympathy:

Observer reactions to malicious joy during social media service recovery

Abstract

Complex social dynamics occur when complaints are voiced on firms' social media channels. In combination, a complainer criticizes a firm, which may be responded to uncivilly by different online personas, i.e., Internet trolls or loyal customers, with virtually-present observers watching how a firm responds. This research examines customer-to-customer (C2C) uncivil commentary from troll persona and loyal customer persona comments perceived by observers to elicit schadenfreude: malicious joy due to another's adverse event. Three studies show how C2C schadenfreude targeting a complainer elicits sympathy from observers, which influences observers' future purchase intent. A preliminary study's online content analysis using field data shows the frequency of C2C schadenfreude during social media service recovery. Study 2 uncovers moderated mediation of C2C schadenfreude-sympathy-purchase intent, with loyal customer persona comments producing more observer sympathy than troll persona comments. Study 3 finds the harmful effect of observer sympathy on purchase intent varies based on how or if a firm addresses the C2C dialogue. Taken altogether, this research uses a novel cognition (perceived schadenfreude from another's comment), lesser-studied emotion in marketing (sympathy), and is the first marketing-related work to incorporate backlash theory from organizational management to exemplify how loyal customer comments produce a backlash effect in observers.

Keywords: schadenfreude, sympathy, service recovery, third-party observer reactions, social media, backlash theory, trolls, customer-to-customer interactions.

The following vignette is emblematic of some interactions on brands' social media channels:

One customer's post: "*Epic fail [brand name], order an XL hot coffee Mocha and get no mocha*"

Another customer responds: "*If you want to exaggerate while also sounding 12, sure it's an 'epic fail'... Is your life so shallow and empty that someone forgetting your sugary treat in your coffee is an "epic fail"? Have you considered coffee meaning anything to your day is kinda sad? So really, none of that matters because it boils down to this: you're crying on social media about a sugary drink not being sugary. We'll all pray you will be alright,"* followed by laughing emojis.

The opening vignette illustrates a sociotechnical trend of one person insulting or mocking others for amusement, also known as schadenfreude. Indeed, some say we are, "in the age of schadenfreude," (Smith 2018, p. 12) due to the malicious joy some experience online via social media. This is a societal issue, yet also a problem for marketers using social media to enable customer-to-customer (C2C) dialogue. One type of implementation where C2C dialogue occurs is when firms use social media for the provision of service. Unlike offline customer service, which typically lacks a large audience, social media customer service is much different: The complainer-service provider dyad expands with virtually-present others participating in or watching a service recovery (Hogreve, Bilstein, and Hoerner 2019; Javornik, Filieri, and Gumann 2020). For instance, a complaint on a brand's social channel is criticism about the brand that different online personas can respond to, such as other loyal customers or Internet trolls (Phillips 2015), making these service recovery situations ideal for C2C dialogue (Baer 2016).

Social media customer service research attests that this C2C dialogue often includes incivility (Bacile 2020; Bacile et al. 2020), leading to observers' negative views of a brand (Bacile et al. 2018). These works focus on cognitive reactions (e.g., accountability, justice, value) more than emotions. Two emotions, though, that consumers may elicit from C2C rude language is *sympathy* of observers when watching a rude perpetrator experience *schadenfreude*. Sympathy is compassion or concern for another's situation, which elicits when seeing a victim of

another's schadenfreude (Dasborough and Harvey 2017). Marketing studies of sympathy are few and have been limited to charitable giving, advertising, and sympathetic employees (Escalas and Stern 2003; Lou, Kang, and Tse 2022; Sudhir, Roy, and Cherian 2016). Likewise, marketing researchers have examined schadenfreude albeit in status consumption, sports marketing, and advertising (Dalakas and Melancon 2012; Sundie et al. 2009). To our knowledge, no digital customer service research focuses on observer perspectives of C2C schadenfreude and sympathy, despite anecdotal support for their elicitation in online exchanges (Smith 2018). In addition, observers use message cues to perceive a social media complaint versus trolling comments (Labrecque et al. 2022), yet there is limited understanding of observers' perceptions of comments made by different online *personas*. Moreover, how a response from a troll persona (i.e., an online user believed to be an Internet troll) versus a response from a loyal customer persona (i.e., a user believed to be a loyal customer) influences observers' reactions is lacking. Observers are a key stakeholder group because they outnumber participants, thereby having far reaching effects more so than a single victim or single perpetrator of rude language (Johnen and Schnittka 2019).

This work examines observers' sympathy for a customer who is victimized by another's schadenfreude during social media service recovery. These research questions guide our inquiry:

RQ1: Will observers of another customer responder's schadenfreude in a digital customer service environment elicit sympathy toward a targeted victim?

RQ2: Will this effect vary due to a responder's persona, i.e., if the malicious joyful comments arise from a persona observers believe to be a loyal customer or troll?

RQ3: Will observers' purchase intent for a brand be affected by C2C schadenfreude, and if so, how should a brand respond?

This research answers a call by Khamitov, Grégoire, and Suri (2020) to examine new contexts, moral issues, and negative events in multi-actor service recovery situations. A preliminary study's online content analysis shows C2C schadenfreude occurs often. Two experiments then show observers sympathize with a target of another's malicious joyful comments but the effect varies based on a responder's persona. Backlash theory, affective events theory, and the social-servicescapes framework support a stronger schadenfreude-sympathy linkage if a rude responder is a loyal customer versus a troll. Notably, Study 2 finds a moderated mediation effect of these constructs influencing observers' purchase intent. Study 3 then finds sympathy arising from C2C schadenfreude reduces observers' purchase intent, yet, the effect depends on if a firm's response denounces, agrees with, or passively ignores the schadenfreude.

Theoretical implications widen the impact of C2C schadenfreude and sympathy to digital customer service. A unique cognition (perceived schadenfreude from another's comment) and lesser-studied emotion in marketing (sympathy) influence purchase intent. We also expand incivility-related research by showing one customer's schadenfreude produces a sympathetic emotional response in an observing customer, who then penalizes a firm with lower purchase intent. The effect is more evident if a responder is a loyal customer, which suggests customers defending a brand on social media produce an unforeseen negative effect for brands. Third, we apply backlash theory in a marketing context of C2C exchanges, the appeal of which is due to an observer perspective that does not assume in-group membership. This is unlike in-group member comparisons that underlie social identity theory, the self-evaluation maintenance model, and similar psychological theories used in marketing. To our knowledge, marketers have not applied backlash theory previously, meaning this work shows the theory's relevance to marketing.

Managerially, the findings show how a loyal customer responder in support of a brand is harmful. This type of C2C engagement should be desired, yet the pitfall of sympathy on purchase intent is identified. Another managerial implication is illustrating different responses to C2C comments that include schadenfreude. Managers typically ignore such comments or may respond in a way that agrees with the critique of others because it is viewed as benign. The authors posit an optimal reply strategy is denouncing C2C schadenfreude, which can bolster purchase intent to a wide number of observers who are watching these public service recoveries.

Literature Review and Conceptual Development

Observers of Social Media Service Recovery

Traditional service recovery channels via telephone, e-mail, or in-person are often insulated from an observing audience. Yet, virtual observers viewing a recovery on social media creates new challenges. Front-stage service recovery in virtual channels introduce social media as a service environment (Schaefers and Schamari 2016), also known as a servicescape (Bitner 1992), which differs from online review platforms' primary usage for word-of-mouth (Grégoire, Salle, and Tripp 2015). Table 1 lists a growing research stream of observers' reactions to brand and complainer (B2C) exchanges and C2C exchanges during social media service recovery. These works demonstrate how newer media and business contexts create service recovery journeys with complex interactions from multiple actors (Van Vaerenbergh et al. 2019).

Complainer-focused constructs in offline service recovery are used as observer-focused constructs in social media service recovery. For instance, observers' perceived justice (Bacile et al. 2018), brand attitude and satisfaction (Schaefers and Schamari 2016), word-of-mouth and trust (Weitzl and Hutzinger 2017), perceived quality (Hogreve, Bilstein, and Hoerner 2019), and

purchase intent (Johnen and Schnittka 2019) are examined in an observer perspective in digital servicescapes. Nonetheless, social media as a unique service environment versus traditional channels introduces novel constructs such as observers' complaint language perceptions (Bacile 2024), complaint credibility (Hutzinger and Weitzl 2021), social risk (Armstrong, Kulczynski, and Brennan 2022), liking or sharing brand content (Dineva and Daunt 2023), and observers' appreciation for a brand's humorous replies (Béal and Grégoire 2022; Béal, Grégoire, and Carrillat 2023). The preponderance of online service recovery research that features observers in Table 1 investigates content and cues within messages. Less studied, though, is if different customer persona responders affect observer perceptions. In addition, to our knowledge, observers assessing C2C schadenfreude and related outcomes has not been studied yet.

=== Insert Table 1 about here ===

Schadenfreude and How it Differs from Trolling

Schadenfreude is defined as amusement and pleasure felt at another's misfortune (Smith et al. 2009) and is akin to malicious joy (Schumpe and Lafrenière 2016). Concepts counter to normative behavior such as narcissism, Machiavellianism, psychopathy, and sadism share links to schadenfreude (James et al. 2014). Focal studies of schadenfreude have been limited in marketing, but there are psychological explorations. People become amused at others' misfortune when something is to gain, the misfortune is deserved, or in relation to envy (Smith et al. 2009). Respective examples of each include fans' pleasure when their team defeats a rival (Leach et al. 2003), the satisfaction of hypocrisy deserving misfortune (Feather 2006; Kristjánsson 2006), and envious social comparison benefits (Powell, Smith, and Schurtz 2008; Van Dijk et al. 2006).

In the marketing literature, schadenfreude studies have been limited to areas such as sports marketing, status consumption, and comparative advertising. For instance, sports marketing research suggests fans who identify with their team can elicit schadenfreude toward opposing fans and wish harm to brand sponsors (Dalakas and Melancon 2012; Kim and Kim 2018). In status consumption, customers who observe others' dissatisfaction with status products produce schadenfreude, leading to negative word-of-mouth, negative affect, and weaker attitude toward a status brand (Pancer, McShane, and Poole 2017; Sundie et al. 2009). Relatedly, luxury product research finds envy is an antecedent of schadenfreude (Shimul, Sung, and Phau 2021). Associated with status is evoking schadenfreude when viewing ads of higher- versus lower-status products. Ads featuring low-status product inferiority elicits schadenfreude in observers who believe a customer's choice of an inferior product deserves misfortune (Yucel-Aybat and Kramer 2017).

Some other behaviors have links to schadenfreude. While schadenfreude refers to an emotion, trolling refers to malicious online behavior (e.g., posting comments) that is disrupting, aggravating, and/or fruitless argumentation (Coles and West 2016), with the online persona doing this action referred to as a troll. A troll is an online persona whose communications are referred to as trolling, defined as malicious online behavior that is disrupting, aggravating, and/or fruitless argumentation (Coles and West 2016). Researchers note a few types of trolling that fall under this broad definition. For example, moral trolling deceives targets with non-topical content, sadistic trolling threatens targets, flame trolling draws others into useless arguments, political trolling attempts to subvert democracies, kudos trolling entertains or amuses, and other types of trolling target various aspects (Bishop 2014; Mulcahy et al. 2023; Ortiz 2020; Phillips 2015). The many types is why trolling "may have multiple, inconsistent and incompatible

meanings, depending upon the context," (Coles and West 2016, p. 233). Thus, in some cases of trolling it is possible for the poster to experience the emotion of schadenfreude after sharing a message, but a troll as a user persona, trolling as a behavior[1], and schadenfreude as a post-behavior emotional reaction are not synonymous.

Sympathy

Sympathy is associated with morality and defined as feelings of concern or compassion for another's welfare (Decety and Michalska 2010). The morality association is why, "sympathy is viewed as an other-oriented moral emotion," (Eisenberg 2000, p. 672). It is often related to 'empathy' but, for clarity, empathy is understanding and reproducing another's emotions in a negative situation (Batson, Early, and Salvarani 1997). Sympathy is distinct because it does not reproduce, "emotion perceived in another but is, rather, a response of compassion or concern evoked by the plight of another," (Gruen and Mendelsohn 1986, p. 609). Thus, sympathy and empathy are unique emotional responses (Wispé 1986) that use distinct measures (Gruen and Mendelsohn 1986) and activate different parts of the brain (Decety and Michalska 2010).

Marketers examine empathy but know less about sympathy, especially in a C2C service context. Recovery research is limited to employee's sympathetic language boosting satisfaction and purchase intent in offline (Roschk and Kaiser 2013) and online venues (Lou, Kang, and Tse 2022). Béal, Grégoire, and Carrillat (2023) put forth that sympathy toward a company from online complainers is a control in a larger model, yet results were inconclusive. Non-services marketing areas studying sympathy are product lawsuits (Darden et al. 1991), sustainability (Ketron and Naletelich 2019), for-profit ads/spokespersons (Escalas and Stern 2003), and

[1] Possibly anyone – including non-trolls – may use disruptive or aggravating trolling messages depending on context specific situations and a message poster's state of mind. We thank an anonymous reviewer for noting this fact.

charitable-giving ads (Small and Verrochi 2009; Sudhir, Roy, and Cherian 2016). Most of these areas identify promotional message cues to elicit sympathy. Thus, to our knowledge a gap exists related to this research, as no digital service studies examine C2C schadenfreude and sympathy.

Hypotheses

The proposed influence of C2C schadenfreude and sympathy in social media service recovery is depicted in Figure 1's research model. Of relevance is the social-servicescapes model (Tombs and McColl-Kennedy 2003), which is partially grounded in affective events theory (Weiss and Cropanzano 1996). This organizational behavior theory posits work-related events are stimuli for employees who evoke positive (negative) emotional responses, which lead to beneficial (harmful) employee behaviors toward a firm. Marketers adapt this theory to environmental stimuli responses in a service environment (Russell-Bennett, Härtel, and Beatson 2011), and it is relevant to a servicescape's social dimension (Rosenbaum and Massiah 2011). Affective events in a social-servicescapes context suggest behavior such as C2C exchanges are environmental stimuli observers react to with emotional and/or cognitive responses.

=== Insert Figure 1 about here ===

The social-servicescapes model conceives environmental stimuli affect purchase intent (Tombs and McColl-Kennedy 2003), such as negative emotion leading to lower purchase intent (Bitner 1992). Sympathy, as an other-oriented moral emotion, creates a negative frame of mind in the sympathizer (Lou, Kang, and Tse 2022). We posit observers of C2C schadenfreude form a negative emotional state by sympathizing with a target; and this elicitation lowers purchase intent. Furthermore, affective events theory states interpersonal events flow through affective reactions to behavior (Judge, Scott, and Ilies 2006), and such mediation through emotion to intent is part of the social-servicescapes framework (Tombs and McColl-Kennedy 2003).

Therefore, a sequence of observers' perceptions of another customer responder's schadenfreude produces sympathy in the observer for the target, which reduces observers' future purchase intent. Likewise, sympathy mediates schadenfreude's effect on purchase intent.

H1: Observers' perceptions of C2C schadenfreude:
a) has a positive relationship with observers' sympathy for the target of schadenfreude;
b) this sympathy has a negative relationship with observers' purchase intent; and
c) sympathy mediates the effect of C2C schadenfreude on purchase intent.

Figure 1 depicts two moderation effects. The first is the perceived online persona of a responder based on stereotype impressions. Stereotype theory (Schneider 2004) posits that people form impressions with environmental cues. The present inquiry examines observers' impressions from stereotypes of virtual personas based on profile cues. Moreover, this study investigates how profile cues help form persona impressions (e.g., a troll persona versus a loyal customer persona) to affect observers' reactions, which builds on prior work using linguistic cues in trolling communications (Labrecque et al. 2022). Observers recognize a user as a troll based on cues such as a username, profile information, or the content of message posts (Coles and West 2016; Phillips 2015). Another impression example is cues of a user's given status, badge, or title in a brand's online community or social media (Bowden and Mirzaei 2021). Observers use these cues to identify a loyal customer who possesses brand knowledge (Kwon, Halavais, and Havener 2015). Based on such cues, loyal customers are viewed positively by brands and customers (Wilk, Soutar, and Harrigan 2021), yet trolls are viewed negatively (Golf-Papez and Veer 2022).

We posit observers who believe a responder's online persona is a loyal customer (versus a troll) affects reactions to C2C schadenfreude. Backlash theory (Rudman 1998) supports this position, but is also applicable by not requiring an evaluator to be a member in a specific group. This last point is key because there may not be evidence that an observer is an in- or out-group member of a publicly accessible social media channel. As such, theories within marketing that

use in-group member comparisons (e.g., social identity theory) are not entirely suitable in the present exploration. In addition, Table 1's third column lists seven different studies that have examined C2C interactions in online service recovery, all of which assess message content with theoretical support from social exchange, social learning, justice, etc. Yet, they do not compare multiple customer personas like our work, thereby necessitating different theoretical support.

Backlash theory emerged in workplace contexts, yet the underlying tenets are observers' reactions to counter-stereotypical behavior (Rudman et al. 2012). A social, economic, or mental backlash effect occurs if an observer's impression of behavior is inconsistent to beliefs of how a stereotyped persona should behave (Lee 2023; Rudman et al. 2012). Prior work states a backlash effect of the moral emotion of disgust can occur (Brescoll, Okimoto, and Vial 2018). We posit a loyal customer's malicious joyful comments cause observers to elicit sympathy for the targeted complainer because most people show compassion/concern for mistreatment of others (Gilbert 2015). A backlash effect of sympathy is possible if comments are believed to be for amusement of another's negative situation, which runs counter to expected behavior of a customer representing a brand on a digital channel (Hutzinger and Weitzl 2021; Smith et al. 2018).

Comparatively, observers elicit less sympathy when the responder is a troll experiencing schadenfreude for two reasons. First, a troll is behaving as expected without defying stereotype expectations, which would not produce a backlash effect of moral emotion. Second, the process of Clark's (1987) 'flow of sympathy' with varying 'sympathy margins' occurs after assessing the seriousness of a situation. It is common for observers to view troll replies as wrong, but ignore further mental elaboration (i.e., do not feed the trolls; Connolly 2022). Therefore, the flow toward sympathy is not reached when observing a troll. Yet, a loyal customer's reply is not dismissed as quickly by observers, which allows for the flow of sympathy to develop.

H2: The positive effect of observers' perceived C2C schadenfreude on observers' sympathy is moderated by the online persona's responder type. The effect is stronger when a responder type is perceived to be a loyal customer versus a troll.

A second proposed moderator is how a firm's reply alters the sympathy-purchase intent linkage. Observers in a service environment expect employees to address C2C mistreatment (Fullerton and Punj 2004). Deonance research shows observers respond favorably when an uncivil perpetrator is reprimanded by a firm (Pugh, Brady, and Hopkins 2018) but punish a firm with lower purchase intent if not reprimanded (Porath, MacInnis, and Folkes 2010). As such, one type of reply is to reprimand by denouncing C2C schadenfreude, which should offset sympathy's negative effect on purchase intent. This aligns with compatibility management (Pranter and Martin 1991) and recent research advocating firms should, "manage the socio-technical networks that allow and feed these misbehaviors," (Golf-Papez and Veer 2022, p. 105). Yet, academic and anecdotal accounts acknowledge other ways firms reply. A second is partially agreeing with C2C comments by supporting another customer's uncivil reply when defending a brand. This is due to human service agents who handle social media complaints having a natural defensive tendency when displeasure or dissatisfaction is voiced by a complainer (Baer 2016). This may be why some brands respond with humor or snarky replies on social media (Batista et al. 2022; Marks 2017). A third type of firm reply, or lack thereof, is to passively ignore the C2C exchange and is common when brands react to C2C incivility (Wolter, Bacile, and Xu 2023). The latter two types of firm responses lack an expected reprimand from a C2C moral violation in a service setting, which harms observers' sympathy-purchase intent effect more than a denouncing response.

H3: A firm's reply that a) denounces C2C schadenfreude will reduce the harmful effect of observers' sympathy on observers' purchase intent more than b) a reply that agrees with or c) a reply that passively ignores C2C schadenfreude.

Study 1: Preliminary Field Study

Data and Methodology

The phenomenon of study is under researched, thus the authors conducted an online content analysis similar to Labrecque et al. (2022). The purpose of this study was to assess the frequency of C2C schadenfreude in the chosen service recovery context. Two researchers collected four months of data from the Facebook brand pages of McDonald's, Wendy's, and Walmart, which were selected purposely for three reasons. First, per Kozinets (2002), such an analysis requires data that exhibits the chosen phenomenon of C2C schadenfreude, which was evident on these brands' social media. Second, restaurants and retailers receive low customer satisfaction scores (ACSI 2023; Statista 2022), which infers possible consumer complaints. Third, customer engagement on these brands' social media is strong (Richter 2018), which can amplify complaints and service recovery responses (Golmohammadi et al. 2021).

The Export Comments platform (https://exportcomments.com) captured 53,012 comments from 100 brand posts, with 2,209 (4%) being customer complaints. We categorized a customer comment as a complaint based on past research conceptualizations: an explicit (i.e., complains directly to a brand) or implicit (i.e., discusses their discontent on a brand's channel without directly complaining) expression of dissatisfaction about a product/service, failure, or company (mis)conduct (Grégoire, Salle, and Tripp 2015). To capture the expression of C2C schadenfreude, we used in an iterative process that: 1) drew from extant conceptualizations as a guiding framework (deduction); 2) noted data-driven linguistic attributes of the phenomenon (induction); and 3) combined the insights into a framework of C2C schadenfreude for the service

recovery context. Web Appendix WA-Table 1 captures the final conceptualization C2C schadenfreude, which guided our data collection, coding, and analysis procedures.

In the 2,209 consumer complaints, 24% received C2C schadenfreude replies from other consumers, resulting in a final dataset of 535 schadenfreude comments made to complainers. Brand replies to C2C schadenfreude were sought; however, all three brands passively ignored schadenfreude comments. To analyze the C2C schadenfreude excerpts, data-driven codes for 'intensity' were assigned to these iteratively at the semantic (surface) level (Braun and Clarke 2006). Two coders independently coded a subset of the data (n=100). After resolving differences, the proportional agreement metric (Rust and Cooil 1994) was strong (I_r=.91).

Findings

Web Appendix WA-Table 2 displays the categorization of C2C schadenfreude in response to consumer complaints on social media. Coding of schadenfreude was differentiated into two groups of intensity: strong versus mild. The strong C2C schadenfreude exchanges represented a larger proportion in the data (62%; n=334). These typically exhibited malicious joy with stronger derogatory language to mock the complainer. A common pattern was laughter expressed via multiple laughing face emojis and statements. In contrast, mild C2C schadenfreude expressions occurred less (38%; n=201). Mild expressions represented a lesser degree of derogatory comments and/or the suggestion of rationalizing a counterpoint to partly legitimize the mocking of a complaint. Emojis were also used in responses within the mild category, albeit not as confrontational compared to emojis used in the stronger category. Although not a focal point of the analysis, it was also apparent that some commenters were troll-like personas (29%) or customer-like personas (17%), with the remainder not providing enough cues to categorize a

persona. Trolls lacked profile pictures and used unrealistic or sarcastic names (e.g., Online Helper). Customers had profile pictures, realistic names, and seemed more familiar with a brand. Thus, schadenfreude was experienced by dysfunctional trolls and customers of the brands.

Discussion

The preliminary study uncovered the frequency of C2C schadenfreude during social media service recovery, with 24% of complaints on these brands' social media exhibiting C2C schadenfreude. This frequency of service recovery interjections aligns with other studies of other-customer behaviors. For instance, Bacile et al. (2018) found that 23% of social media complaints received uncivil replies from other customers. Also, Bitner, Booms, and Mohr (1994) found 22% of failures were caused by interjecting 'problem customers' in offline environments. Thus, the frequency of C2C schadenfreude is enough to merit the attention of academics and practitioners. The following two studies provide more understanding about this phenomenon.

Study 2

Pretests

Prior to Study 2, several pretests examined psychometric properties, verified the questions and stimuli were understood, assessed complaints in different industries, and considered constructs that could alter the proposed relationships. First, pretests used Amazon M-Turk subjects to assess the realism of the scenario, as well as if the reply produced perceived schadenfreude and sympathy. These pretests revealed that perceived failure severity based on the complaint text played a factor. A lesser severe failure did not produce strong perceptions of schadenfreude or sympathy but a more severe failure did produce these effects. Hence, the chosen complaint text was verified to be realistic and represent a severe failure. Pretests also

showed the stronger (versus milder) condition produced higher perceived schadenfreude; and the loyal customer (versus troll) condition had more credibility and likelihood to be a customer.

Khamitov, Grégoire, and Suri (2020) suggest assessing rival constructs that may alter proposed effects, therefore, three additional pretests using Prodege online panel data (U.S. subjects paid $2-$4 each) used retail, airline, and product failure contexts. Stimuli and results are in the Web Appendix WA-Tables 3, 4, 5a, 5b, and WA-Figures 1, 2, and 3. First, a complaint posted to a fictitious retailer's social media channel was met with a reply from another consumer: a reply perceived to exhibit stronger versus milder schadenfreude. The added constructs that could possibly alter the proposed effects were observers' perceptions of aspects related to the failure and how the firm addressed it such as blame attributed to the firm, failure severity, satisfaction with the recovery, anger, and organizational justice. Predictably, these constructs produced stronger sympathy (e.g., more blame attributed to the retailer led to more sympathy for the complainer) in the stronger schadenfreude condition. Yet, their presence as covariates had no effect on the significant schadenfreude–sympathy relationship. Notably, these added constructs did not assess aspects of our focus on C2C dialogue. To account for this, another pretest examined sympathy due to perceived C2C incivility versus perceived schadenfreude. Subjects viewed a scenario of a complaint posted on a fictitious airline's social media platform, followed by a reply from another customer who derived satisfaction from the complainer's issue. Results show that perceived schadenfreude significantly increased sympathy but adding perceived incivility as a covariate had no effect on sympathy. This aligned with prior work that showed the two constructs to be distinct (Brubaker, Montez, and Church 2021).

In the third pretest, a product failure scenario with a two-by-two design (stronger/milder schadenfreude x troll/loyal customer persona responder) assessed C2C rival constructs' impact

on observers' sympathy and to clarify if observers' sympathy affects behavioral outcomes. Possible rival constructs examined were C2C justice (observers' perspective the responder's comment is perceived as (un)justified), C2C blame (observers' attributions of blame given to the complainer), C2C betrayal (observers' belief the responder betrayed the complainer), and C2C severity of the dialogue. There was no significant effect on sympathy by C2C justice, C2C blame, or C2C severity; however, C2C betrayal did have a positive and significant effect ($p<.05$) on sympathy. Importantly, using these C2C constructs as covariates did not produce a discernible effect on the schadenfreude-sympathy relationship or schadenfreude-responder interaction, both of which remained statistically significant. This pretest also found behavioral responses (e.g., observers' intent to post a reply to the complainer or to the responder in the thread) result from sympathy. When observers perceive stronger schadenfreude, sympathy toward the complaining customer intensifies more when the responder is perceived as a loyal customer versus a troll, which subsequently increased observers' inclination to respond in the conversation.

Study 2 Method, Sample, and Manipulation Checks

An online experimental survey was fielded to assess H1-H2 with a between-subjects two-by-two (perceived schadenfreude reply to a complaint: strong/mild X online persona: responder is a loyal customer/troll) factorial design. The survey used a scenario of a hypothetical situation of a subject reading another customer's complaint posted to a fictitious restaurant's social media channel followed by another customer's reply. This scenario-based failure design using fictitious brands is often used to avoid ethical concerns and the threat of bias (McCollough, Berry, and Yadav 2000). All subjects observed the same complaint and one of the four stimuli.

A U.S. sample was purchased from Prodege's online panel (n=266; M Age=44, Female=56%; $4 per subject). Prodege insured all respondents passed four attention checks.

Manipulation checks with seven-point measures verified subjects understood the experimental conditions as intended. A single item adapted from a schadenfreude scale (Dasborough and Harvey 2017) indicated subjects viewed the strong schadenfreude condition to be significantly stronger ($F(1,264)=40.7$, M=5.2, SD=1.5, $p<.001$) than the mild condition (M=4.4, SD=1.6). Two items asked subjects if they believed the person who responded "was a loyal customer of the company" and "was nothing more than a social media troll". Even though other researchers (e.g., Wolter, Bacile, and Xu 2023) have assessed trolls or loyal customers on social media by accompanying stimuli with a description, a minimalistic approach was used. Subjects exposed to the loyal customer stimulus only viewed the user's profile image, username, a 'top fan' icon next to the username and response text, with no additional description. Subjects exposed to the troll stimulus only viewed the user's profile image silhouette icon representing no personal image, sarcastic username, and response text, with no additional description (see Figure 2). The use of a sarcastic name and lack of a profile image was consistent with the preliminary study's findings. These minimal cues with no added description showed subjects had a significantly higher belief the responder in the loyal customer condition was a loyal customer ($F(1,264)=16.6$, M=4.5, SD=1.7, $p=.016$) more than a troll (M=4.0, SD=1.6). These minimal cues also showed subjects had a marginally significant higher belief the responder in the troll condition was viewed as a troll ($F(1,264)=10.0$, M=5.0, SD=1.6, $p=.06$) more than a loyal customer (M=4.6, SD=1.8).

=== Insert Figure 2 about here ===

Measures

All measures were adapted from previously published works. Sympathy was measured with the items and protocol recommended by Gruen and Mendelsohn (1986). These researchers and others posit that sympathy is best measured by comparing mean differences between pre-

stimulus versus post-stimulus items. Thus, the same protocol and three sympathy items were used from Gruen and Mendelsohn (1986), two of which were asked before presenting stimuli and then all three were asked post-stimuli. The mean values of the pre- versus post-stimuli items were then compared per Gruen and Mendelsohn (1986). Purchase intent adapted three items from Sundar and Kalyanaraman (2004). All measures used seven-point Likert scales with extreme bi-polar anchors. Table 2 lists the items and descriptive statistics.

=== Insert Table 2 about Here ===

Preliminary Analysis: Validity, Reliability, and Common Method Bias

A confirmatory factor analysis (CFA) with AMOS (v.27) examined the fitness of the measures. Each item loaded on one factor and did not cross-load. Results show the measurement model fit the data well ($\chi2$=15.0, *df*=8, $\chi2/df$=1.88; CFI=.99; TLI=.99; SRMR=.052; RMSEA=.058). Convergent validity was met with each latent variable's average variance extracted (AVE) above .50 (Fornell and Larcker 1981) and all items loaded significantly (p<.001) to meet construct reliability (see Table 2 for item and scale descriptives). Discriminant validity was met with the square root of each construct's AVE exceeding the sympathy – purchase intent correlation (r=-.22; Fornell and Larcker 1981) and HTMT scores were below .75 (Voorhees et al. 2016). To address common method bias, an unrelated marker variable's two lowest correlations (r=.002 & .004) fell below the .20 threshold (Malhotra, Kim, and Patil 2006).

Results of Hypotheses Tests

Variance and regression analyses examined the main effect and interaction effect of the responder's online persona on the mediator (observers' sympathy), and the dependent variable (observers' purchase intent). Table 3 shows the results based on the Hayes (2018) PROCESS Macro (Model 7). First, direct and interactional effects were tested. Per the Gruen and

Mendelsohn (1986) method, observers' mean sympathy increased more (F (265, 3) = 8.31; p=.004) from pre- to post-sympathy in the stronger schadenfreude condition (pre-sympathy M=4.39, SD=1.7; post-sympathy M=4.84, Δ=+.45, SD=1.3) than the milder condition (pre-sympathy M=4.6, SD=1.7; post-sympathy M=4.6, Δ=.00, SD=1.4) to support H1a. Regression results also confirmed the positive effect of schadenfreude on sympathy change (β=.47; SE=.17, t=2.77 p=.01) and negative effect of sympathy change on purchase intent (β=-.29; SE=.07, t=-3.78, p<.001) to support H1b (see Table 3). Stronger schadenfreude produced more observers' sympathy for a complainer who was a target of a reply perceived to include schadenfreude, which lowered observers' purchase intent.

=== Insert Table 3 about here ===

In support of H1c's mediation, bootstrapping (Hayes 2018; Model 4) revealed an indirect pathway from schadenfreude to observers' purchase intention through observers' sympathy change was significant (β=-.14; Boot SE=.06 CI: -.28 to -.03). In support of H2, variance analyses showed the significant interaction of the schadenfreude condition and online persona of the responder on observers' sympathy (F(265, 3)=5.84; p=.02, see Figure 3's plots). Pair-wise comparisons of observers' sympathy difference between the two schadenfreude conditions was not significant in the troll condition (F(262, 1)=.114; p=.74) but was significant in the loyal customer condition (F(262, 1)=13.43; p<.001). A loyal customer responder in the stronger schadenfreude condition produced a stronger increase in observers' sympathy (β=.89; SE=.24, t=3.66; p<.001; pre-sympathy M=4.3, SD=1.9; post-sympathy M=5.0, Δ=+.70, SD=1.5) than the milder schadenfreude condition (β =.08; SE=.23, t=.34; p=.74; pre-sympathy M=5.0, SD=1.7; post-sympathy M =4.7, Δ=-.30, SD=1.6) to support H2. This moderation effect was also present in the moderated mediation pathway (Model 7; Table 3): the interaction of schadenfreude and

online persona of the responder to observers' purchase intention through observers' sympathy was significant (Moderated Mediation Index: -.24; Boot SE: .12; CI: -.49 to -.04).

=== Insert Figure 3 about here ===

Discussion

Study 2's results show the influential effect of C2C schadenfreude in digital customer service initiatives via social media. C2C schadenfreude is a strong enough environmental stimulus for observers to elicit sympathy for the target of such comments. Between the two online personas, observers elicit more sympathy for targets when malicious joyful replies are from loyal customers versus trolls, which fully mediated the effect of C2C schadenfreude on observers' purchase intent, consistent with backlash theory and the hypotheses. This finding that loyal customers have a more detrimental effect aligns with the need to inspect some type of relational component in service recovery work (Khamitov, Grégoire, and Suri 2020). The results shine a new light on how loyal customers who come to the defense of a brand with amusing, yet rude comments may actually be harming the company. Such comments may reduce purchase intent with the largest stakeholder group: observers who are virtually present.

Study 2 has some limitations. Perceived C2C schadenfreude was categorical (not a continuous measure) and the responder's online persona manipulation provided minimal cues (without cues such as follower counts and other informational cues). Additionally, something not assessed in Study 2 was a firm's response to the C2C dialogue. In relation to online service recovery, how a firm's reply affects purchase intent was not assessed in Study 2's design. Study 3 addresses many of these limitations.

Study 3

Method and Design

Study 3 assessed H1a-b and H2-H3 with a design similar to Study 2's but with a few changes. The mediation of sympathy between perceived schadenfreude and purchase intent suggested in H1c was not examined in Study 3, due to the more complex design of adding a firm's response to assessing purchase intent. A between-subjects factorial design used a two-by-three structure (online persona: customer responder is a loyal customer/troll X reply from firm: 'denouncing'/ 'agreeing with'/ 'passively ignoring' a responder's comment). Subjects completed pre-stimuli sympathy baseline measures before being asked to imagine viewing another customer's complaint on social media. A fictitious restaurant was used because this type of firm often receives online complaints with C2C mistreatment (Bacile et al. 2018) and a pretest of different fictitious companies (e.g., airline, retailer) revealed the restaurant complaint as the most realistic.

After all subjects viewed the same complaint, a response from one of two randomly selected persona responders (loyal customer or a troll) were shown. The degree of C2C schadenfreude was not manipulated, but rather held constant at a strong level since Study 2's effects were found to be in relation to a higher degree of schadenfreude. The persona stimuli were similar to Study 2, but used more cues: the number of followers, number of page posts, and a brief description about the responder being more or less familiar with the restaurant. In addition, next to each persona's username was an icon: the loyal customer condition included a 'top fan' icon and the troll condition included a 'new to page' icon. The same reply text from the randomly selected persona was followed by measures to verify the manipulation, observers' perceived schadenfreude, and observers' sympathy.

Subjects then viewed one of three randomly selected responses from the restaurant. All three responses apologized to the complainer and requested that they send a private message to

discuss the failure further. The passively ignore condition included no other text in the firm's reply (i.e., the firm passively ignored the schadenfreude reply). However, the denounce response included language asking everyone on the page to refrain from making fun of the complainer's situation. In contrast, the agreement response included language that partially agreed with the responder's comments. See Figure 4 to view the stimuli. Following the restaurant's response, measures were given to verify the manipulation, purchase intention, and demographics.

=== Insert Figure 4 about here ===

Sample and Manipulation Checks

A U.S. sample used Prodege's online panel (n=416; M Age=51, Female=53%; $3 per subject). Prodege insured all subjects passed four attention check items. Manipulation checks on seven-point scales supported that subjects understood the experiment's conditions as intended. Four perceived schadenfreude items (M=5.2, SD=1.4) showed the other commenter's response was perceived to include a strong degree of schadenfreude. Perceived schadenfreude was not significantly different between the loyal customer or troll condition. The same two items from Study 2 asked subjects the degree to which they perceived the responder to be a loyal customer or troll. Subjects had a significantly higher belief the responder in the troll condition was viewed as a troll ($F(1,414)=12.7$, M=4.4, SD=1.8, $p<.001$) than a loyal customer (M=3.8, SD=1.6). Subjects also had a significantly higher belief the responder in the loyal customer condition was a loyal customer ($F(1,414)=74.4$, M=4.5, SD=1.6, $p<.001$) rather than a troll (M=3.1, SD=1.7). Another item assessed perceived credibility of the persona. The loyal customer condition was more credible ($F(1,414)=48.7$, M=4.2, SD=1.5, $p<.001$) than the troll condition (M=3.0, SD=1.7). Additional manipulation checks verified each of the 'denounce', 'agree', or 'passive' firm reply conditions were understood by subjects as intended.

Measures

All measures were adapted from published works. Four items to assess observers' perceived schadenfreude were adapted from Dasborough and Harvey (2017). Observers' sympathy was again measured with the items and protocol from Gruen and Mendelsohn (1986). A different observers' purchase intent scale that better fit Study 3's scenario adapted three items from Voorhees, Brady, and Horowitz (2006). Items were pretested using M-Turk samples to verify they were understood. All measures used seven-point Likert scales with extreme bi-polar anchors. Table 2 lists Study 3's items with descriptive statistics in the right-most column.

Preliminary Analysis

A CFA (AMOS v.27) scrutinized observers' perceived schadenfreude, sympathy, and purchase intent. Each item loaded on one factor without cross-loading. The measurement model fit the data well ($\chi2$=110.7, *df*=32, $\chi2/df$=3.46; CFI=.97; TLI=.98; SRMR=.057; RMSEA=.077). Convergent validity was met with each latent variable's AVE > .50 (Fornell and Larcker 1981) and all items loaded significantly (p<.001) to meet construct reliability (see Table 2 for descriptives). Discriminant validity was met with the AVE's square root (Fornell and Larcker 1981) for each construct exceeding construct correlations and HTMT scores were below a threshold of .75 (Voorhees et al. 2016). Common method bias concern was alleviated with a marker variable's two lowest correlations (r=.002 and -.007).

Results of Hypotheses Tests

The main and interaction effects of observers' perceived schadenfreude and online persona on observers' sympathy used a stepwise regression model. The first step only included observers' perceived schadenfreude and online persona variables in the model. Results showed a

significant main effect of observers' perceived schadenfreude on observers' sympathy (β =.11, SE=.06, t= 2.32, *p*=.02) to support H1a. The path from observers' sympathy to observers' purchase intent was also significant (β=-.10, SE=.05, t=-2.00, *p*=.047) to support H1b.

The results showed no significant main effect of online persona on observers' sympathy (β=.06, SE=.16, t=1.20, *p*=.23), yet H2's significant interaction was present after the term was included in the model (β=.23, t= 17.51, *p*< .001). Hayes (2018) Model 1 probed the interaction. Based on the conditional effects, while the positive effect of observers' perceived schadenfreude on observers' sympathy was significant in the loyal customer condition (β=.25, SE=.08, t=3.09, *p*=.002) this effect was not significant in the troll condition (β=.02, SE=.08, t=.31, p=.77), which replicated the findings in Study 2. Therefore, observers' perceived schadenfreude increased observers' sympathy only if the commenter was a loyal customer. These results support H2 and are consistent with the authors' conceptualization using backlash theory.

H3 then assessed if a firm's reply attenuated the negative impact of observers' sympathy on purchase intent with moderation analyses of the Hayes (2018) PROCESS Macro (Model 1). Due to H3's multicategorical moderator (firm's reply) with three conditions (denouncing schadenfreude, agreeing with schadenfreude, or passively ignoring schadenfreude), two dummy variables were created per Hayes and Montoya (2017) to see which type of reply was more effective. In the 'denounce' condition, the reply was coded "1" and other conditions "0". In the 'agree' condition, the reply was coded "1" and other conditions "0". Results showed the path from observers' sympathy and the denounce reply interaction term to observers' purchase intention was significant and in the intended direction (β=.35, SE=.13, t=2.68, *p*=.008), which indicated, compared to other conditions, denouncing schadenfreude comments suppressed the negative effect of observers' sympathy on purchase intent. In contrast, the path from observers'

sympathy and the agree reply interaction on observers' purchase intention was not significant (β =-.12, SE=.13, t=-1.01, *p*=.31), which indicated the agree reply did not suppress the negative effect of observers' sympathy on purchase intent. Conditional effects also showed the negative effect of observers' sympathy on purchase intent was attenuated in the denounce condition (β=.06, SE=.09, t=.64, *p*=.52) to support H3a. Yet, the negative effect of observers' sympathy on purchase intent in the agree reply condition was marginally significant (β=-.17, SE=.09, t=-1.95, *p*<.10). The negative effect was barely attenuated and remained more negative compared to the denounce reply condition to support H3b. Lastly, the negative effect of observers' sympathy on purchase intent remained significant in the passively ignore reply condition (β=-.29, SE=.09, t=-3.19, *p*=.002) to support H3c. Figure 5 depicts the conditional paths.

=== Insert Figure 5 about here ===

Discussion

Study 3 differed from Study 2 by including firm replies to C2C dialogue. As hypothesized, observers expect a firm to reprimand comments that include schadenfreude from one customer to another. A denouncing reply completely nullified the negative effect of observers' sympathy on observers' purchase intent, but a reply failing to reprimand resulted in observers penalizing the company with lower purchase intent. The effect of observers' sympathy on observers' purchase intent was marginally significant and negative in the 'agree' reply condition, as well as significant and negative in the 'passively ignore' reply condition. The findings show how a firm responds to these C2C exchanges affects virtually-present observers. In addition to how a firm replies, the results were similar to Study 2 by showing the problematic effect of C2C schadenfreude on observers' sympathy and purchase intent. The backlash effect hypothesized for observers of a loyal customer's schadenfreude reply was present in Study 3

similar to Study 2. Observers elicited a stronger degree of the moral emotion of sympathy when viewing a loyal customer's schadenfreude reply, yet this sympathetic effect was less pronounced when viewing a troll's schadenfreude reply.

General Discussion

Complaints on firms' social media are a metaphorical perfect storm creating unintended consequences. A complainer criticizes a firm, another customer confronts a complainer, a mass of virtually-present observers watch the exchange, and this occurs in the presence of the firm, which may not know how to handle these elements. Our work provides empirical evidence addressing these sociotechnical aspects of online service recovery. The results show observers of C2C schadenfreude is influential. When a customer posts a complaint to a firm seeking assistance, the schadenfreude emerging from another's response is an environmental stimulus within a digital service environment. A victim of another's schadenfreude triggers sympathy in observers, in particular, when the malicious joy comes from a loyal customer rather than a troll. Observers' sympathy is an emotional conduit that affects their purchase intent. A firm's response can lessen sympathy's harmful effect on purchase intent if the response denounces the C2C commentary. The following implications are derived from the proposed conceptualization.

Theoretical Implications

The first theoretical implication introduces two unique C2C emotions to digital and service recovery research: C2C schadenfreude and C2C sympathy. We show how these emotions influence virtually-present observers on firms' social media. One customer's message responded to by another customer with comments perceived by observers to include schadenfreude is

highly relevant in today's digital landscape. To our knowledge, schadenfreude studies in marketing, psychology, and organizational management have not examined a third-party's perception of another's schadenfreude. This is an important implication for schadenfreude research and works examining third-party observer effects. Underlying theoretical support from workplace affective events theory and the social servicescapes framework propose C2C exchanges can operate as environmental stimuli affecting observers. Consistent with this, our findings illustrate another person's schadenfreude is an emotional cue that produces observers' emotional reactions, which can ultimately affect a firm.

Observers' sympathy is not a widely studied construct in marketing or service recovery, yet it is a common emotional reaction due to the amount of rude dialogue online. We call attention to observers' sympathetic reactions as a morality-related concept present in digital service recovery. Marketers have not studied this form of C2C sympathy despite examining morality-related concepts (e.g., ethical practices, organizational justice, dysfunctional behavior) and moral emotions (empathy, anger, gratitude). Therefore, an implication here is C2C sympathy is a morality-related concept that has a place in marketing research. In particular, within the timely and growing domains where virtually-present observers are watching C2C dialogue: online complaining research, digital service recovery research, and online incivility research.

Another theoretical implication is expanding online incivility theory from employee to customer emotional cues. Offline customer observers of an uncivil employee form negative emotional responses from employee incivility (Okan and Elmadag 2020; Porath, MacInnis, and Folkes 2010). In particular, Porath, MacInnis, and Folkes (2010) show customer observers form the negative emotion of anger, which reduces observers' future purchase intent. The findings expand on this theoretical area by showing an other-customer stimulus in online settings (i.e., a

third-party customer joining in with another customer's service experience). The other-customer, online stimulus provides emotional cues that affect observers' future actions with a firm. The unique emotion of customer sympathy arises from an other-customer stimulus in this research. Thus, the authors introduce a different actor as the stimulus and different emotional response by observers in an online venue to incivility theory. Online incivility research is growing (e.g., Batista et al. 2022; Béal, Grégoire, and Carrillat 2023; Golf-Papez and Veer 2022; Labrecque et al. 2022; Wolter, Bacile, and Xu 2023) and expanding incivility theory aids future explorations.

A final theoretical implication is extending backlash theory to marketing. Consistent with stereotype theory's grounds that people form impressions of others from environmental cues, our work links this premise to backlash theory's counter-stereotypical behavior principle. As far as we know, no prior offline or digital marketing research has adapted this theory. Relatedly, we apply the theory by using different persona cues rather than message cues (Labrecque et al. 2022) to show the impact of stereotype perceptions of trolls versus loyal customers. Backlash theory is thus extended by showing a backlash effect toward a firm due to customer stereotypes if observers' perceptions of customer behavior is inconsistent to how one should behave. The theory had not considered customer roles prior, yet our work shows it is viable in marketing. This is a useful theory to explain judgments and future actions of one consumer observing another consumer who can be stereotyped (i.e., placed in a category), which implies backlash theory is applicable to other areas, such brand communities, customer-company brand relationships, and public service environments shared by consumers with different status levels.

Managerial Implications

An important managerial implication is the negative effect of an online persona perceived to be a loyal customer. Firms know the benefits of loyal customer advocates defending a brand,

specifically, during social media service recovery (Hutzinger and Weitzl 2021). In contrast to the positive aspects, the findings reveal that loyal customers are more harmful than anonymous trolls in the context of C2C schadenfreude. To date, most studies examining social media advocacy by loyal customers have shown their positive influence. The belief is loyal customers with status on a platform, such as in branded social networks and communities, enhance consumer engagement, the co-creation of content and experiences, and have links to brand identification and loyalty (Bowden and Mirzaei 2021; Wilk, Soutar, and Harrigan 2021). The results show comments from a loyal customer intensifies observers' sympathy, which lowers observers' purchase intent. Thus, a key implication for managers is loyal customers also have a dark side that undermines their otherwise positive impact on brands' social media channels. Companies should be selective when giving badges or status titles that signal a customer is a brand ambassador. Managers can use human intelligence or artificial intelligence (AI) to monitor comments. For example, thousands of companies are using AI-based tools such as Audisense, Hootsuite, and Brandwatch for social listening, tracking what specific customers post, and tailoring responses. Our findings suggest that the use of AI with sentiment analysis and natural language processing would enable a firm to flag and/or respond to a loyal customer communicating in an adverse manner.

Relatedly, another managerial implication is an opportunity for academic research to lead industry practice. The present research compares different types of brand replies to C2C rude exchanges. In practice, many firms passively ignore C2C incivility and rarely denounce it. In some cases, firms may agree with one customer's snarky or sarcastic response to another customer. While such a response may align with the image of some brands, the findings suggest a denouncing response strategy is optimal for the largest stakeholder group: virtually-present observers. Service managers have been here before with offline customer compatibility

management strategies that require employees to interject and denounce C2C behavior when needed (Pranter and Martin 1991). This offline strategy has not transcended widely to online service environments. Based on the evidence, the authors recommend brands reevaluate social media practices of passively ignoring or agreeing with C2C comments that exhibit malicious joy.

Another managerial implication is the extended reach associated with commentary that includes schadenfreude. Many customers view such commentary as negative content. Consumers have a negativity bias (Herr, Kardes, and Kim 1991), and engage more with negative content. It is more important, then, to denounce such comments because reach is on a larger scale online. Therefore, companies should prioritize addressing C2C comments featuring schadenfreude, as the potential reach of such comments on brand perception and consumer behavior are substantial. As previously mentioned, Study 1's findings show most companies passively ignore C2C commentary, which means managers need to reconsider response strategies based on the results.

Lastly, the authors show observers have sympathetic reactions to social media service recovery dialogue, which implies it is possible for the firm to be the cause of observers' sympathy for a complainer. To explain, the fundamental basis of the proposed framework is observers eliciting sympathy for a complainer when an interlocutor responds in an unfavorable manner, with this effect strengthened when the responder is a representative of the brand. This fundamental basis implies a *company* (or its employee) as the respondent may cause observers to elicit sympathy if the company's response is sub-optimal. Not much is known about sympathy in service recovery, yet other negative emotions (e.g., customer anger) occur after a poor recovery. More works need to study sympathy, but this implies it is a negative emotion with broad reach.

Limitations and Future Research Opportunities

The first limitation is the use of hypothetical scenarios with fictitious companies. This is common in service failure and recovery works to avoid ethical risks for firms, yet future work can assess actual brands with loyal customers. Actual brands also allow for possible moderating effects such as corporate or brand image. To this point, future work can examine if brands with edgy reputations may benefit from a response strategy other than denouncing C2C interactions. Another limitation of experimental scenarios is the need to control several factors, such as using stimuli with only one social media conversation thread rather than reading multiple threads. Only one conversation may introduce under- or over-inflated relationships in the data. Another limitation is acknowledging that different social networks use different types of digital cues or badges to represent loyal customers or status, meaning different cues may produce different results. To this point, future work can study message text cues that signify a troll versus loyal customer, which would build off our work of persona cues. Different social networks tend to attract different types of users, such as older consumers using Facebook versus younger users using SnapChat. Observers with certain demographic or psychographic traits may have distinct reactions to C2C misbehavior on different social media platforms, thus the results may not generalize to all social networks or all consumers. Future work should also examine more industries for generalizability. Lastly, the scope is limited to C2C interactions on brands' social media channels, but not C2C interactions on review platforms (e.g., Yelp, TripAdvisor, etc.).

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Table 1. Observer-related research in social media serviced recovery

Authors	Summary of Observer-Related Findings	Observing B2C or C2C Interactions	Focal Theory	Assesses Message Content or Multiple Customer Personas	Key Variables Examined
Dineva and Daunt (2023)	Observers of C2C conflict form negative emotions from intra-, inter-, and outer-group C2C uncivil exchanges.	C2C	Social identity theory	Message	Emotional responses, online engagement, brand attitude, brand trust, WOM
Béal, Grégoire, and Carrillat (2023)	Observers' have favorable perceptions when a firm responds with humor to an uncivil complainer. Accommodative replies lead to favorable perceptions if the complainer is civil.	B2C	Benign violation theory	Message	Company humor, purchase intent, online engagement actions (e.g., likes, shares)
Béal and Grégoire (2022)	Observers' have favorable or unfavorable reactions depending on if a firm responds to a complainer with affiliative humor, aggressive humor, or an accommodative response. Effects vary based on brand personality (e.g., exciting versus sincere brand).	B2C	Benign violation theory	Message	Company humor, brand personality, humor appreciation, negative motives, purchase intent, online engagement
Armstrong, Kulczynski, and Brennan (2022)	Observers of supportive (non-supportive) comments made to a complainer by other customers can increase (decrease) observers' likelihood to complain on a public (private) social media channel. A firm intervening in a non-supportive C2C comment can improve observers' complaint likelihood.	B2C & C2C	Social exchange theory	Message	Customer comments, social risk, accommodativeness, non- and observable-complaint behavior
Bacile (2024)	Observers' perceptions of failure severity and recovery expectations are based on a complainer's linguistics used to communicate their complaint to a firm.	B2C	Social exchange theory	Message	Complaint linguistics, satisfaction, recovery expectation, failure severity
Huang and Ha (2022)	Observers' tone perceptions (e.g., civil/uncivil) of a customer's reply to a complainer triggers C2C justice evaluations, which	C2C	Justice theory	Message	Satisfaction with complaint handling

	intensify if an observer is closer in their perceived psychological distance to the failure experience.				
Labrecque et al. (2022)	Observers use message cues to assess if posts are likely to be trolling versus complaining messages. Depending on message type, perceived justification affects intent.	B2C	Justice theory	Message	Engagement intent
Golmohammadi et al. (2021)	Observers are prone to a complaint-publicizing effect of greater complaint exposure when a firm responds repeatedly in social media complaint threads.	B2C	Online primacy effect	Message	Perceived quality, firm value, future complaining behavior
Hutzinger and Weitzl (2021)	Observers with varying degrees of susceptibility to normative influences form different perceptions of doubting, trivializing, or vouching responses from other customers to a complainer.	B2C & C2C	Social impact theory	Message	Brand attitude, complaint credibility, problem severity
Ku, Shang, and Fu (2021)	Observers' complaint handling perceptions vary based on their independent or interdependent self-construal.	B2C	Social learning theory	Message	Perceived trust
Sharma, Jain, and Behl (2020)	Observers of another's failure are affected by unethical service transgressions by a service provider.	B2C	Moral identity theory	Message	Brand avoidance, distrust, negative WOM intent
Huang and Ha (2020)	Observers' reactions vary based on a firm's warmth-oriented defensive response (e.g., friendly) versus a competence-oriented defensive response (e.g., product knowledge). Observers' relationship orientation operates as a boundary condition.	B2C	Accessibility diagnosticity model	Message	Defensive response tone, C2C justice, relationship orientation, satisfaction with service recovery
Javornik, Filieri, and Gumann (2020)	Observers' complaint handling perceptions are based on cues within a firm's conversational human voice and length of reply.	B2C	Justice theory	Message	Satisfaction with complaint handling corporate image

Hogreve, Bilstein, and Hoerner (2019)	Observers who view successful transparent recovery produce favorable outcomes for firms, yet unsuccessful transparent recovery produces negative outcomes.	B2C	Signaling theory	Message	Recovery transparency, perceived quality, trust, WOM intent
Johnen and Schnittka (2019)	Observers assess accommodative versus defensive service provider responses to a complainer differently, depending on observers' hedonic versus utilitarian benefits sought. Boundary conditions also include complaint detail and brand communication style.	B2C	Signaling theory	Message	Firm's accommodative versus defensive response, communication style, observers' benefits sought, purchase intent
Herhausen et al. (2019)	Observers are vulnerable to negative WOM by reading other customers' complaints and brand responses. Regulation strategies by a brand can reduce the virality and susceptibility of negative emotions.	B2C	Cognitive appraisal theory	Message	Firm's empathetic response and explanatory response, brand reputation, arousal intensity, message virality
Bacile et al. (2018)	Observers assess organizational justice and C2C justice due to C2C incivility and a firm's response. Observers exhibit third-party justice effects when watching C2C and B2C interactions.	B2C & C2C	Fairness theory	Message	Organizational justice, C2C interactional justice
Weitzl and Hutzinger (2017)	Observers form (un)favorable perceptions based on response types (e.g., accommodative, defensive) coming from different credible sources (e.g., from a firm or customer advocate).	B2C & C2C	Social learning theory	Message	Response content, tone, attitude, trust, word-of-mouth, purchasing risk
Schaefers and Schamari (2016)	Observers are virtually-present others who watch/ participate in online service recovery. Other customers involved in recoveries may lead to more negative outcomes for a firm.	B2C & C2C	Social influence theory	Message	Brand attitude, satisfaction with complaint, purchase intent
This research	Observers of C2C messages that have stronger versus weaker schadenfreude elicit sympathy, which affects observer purchase intent. Key moderators: persona of the interjecting customer (i.e., troll versus loyal customer) and how a firm responds.	B2C & C2C	Backlash theory	Message and Personas	Perceived schadenfreude, sympathy, purchase intent

Note: The above referenced works relate to observer research in online service recovery contexts. There are other works that examine observers in non-service recovery contexts. Interested readers may want to consult Abell and Biswas (2023), Dineva et al. (2020), Penttinen et al. (2022), and Shmargad and Watts (2016).

Table 2. Descriptive statistics for items used in Study 2 and Study 3

Construct	Items	Study 2 Descriptives: Mean SD	Study 3 Descriptives: Mean SD
Observer sympathy (Gruen and Mendelsohn 1986)	Pre-stimuli sympathy items: 1: At this moment I feel sympathetic for someone else 2: At this moment I feel sorry for someone else	Item 1: 4.65 1.79 Item 2: 4.38 1.85 Scale: 4.51 1.70 AVE: .68 CR: .81	Item 1: 4.73 1.74 Item 2: 4.44 1.79 Scale: 4.58 1.65 AVE: .75 CR: .86
	Post-stimuli sympathy items: 1: At this moment I feel sympathetic for someone else 2: At this moment I feel sorry for someone else 3: How much sympathy did you feel toward the complaining customer to whom the reply was directed?	Item 1: 4.72 1.71 Item 2: 4.46 1.78 Item 3: 4.98 1.71 Scale: 4.72 1.40 AVE: .57 CR: .78	Item 1: 4.48 1.79 Item 2: 4.50 1.79 Item 3: 4.93 1.80 Scale: 4.64 1.59 AVE: .62 CR: .82
Observer purchase intent (Sundar and Kalyanaraman 2004)	Imagine this diner is similar to one near you that you have purchased food from before: 1: If you were to go to a diner in the future, how likely are you to try the Diner on the 5th? 2: If you want to get a cup of coffee, how likely are you to buy it from the Diner on the 5th? 3: How likely are you to go to the Diner on the 5th?	Item 1: 3.03 1.82 Item 2: 3.27 1.93 Item 3: 3.17 1.90 Scale: 3.15 1.78 AVE: .83 CR: .94	Scale not used in Study 3
Observer purchase intent (Voorhees, Brady, and Horowitz 2006)	Imagine this restaurant is similar to one near you that you have purchased food from before: 1: I would purchase food from this restaurant 2: I would buy a meal 3: I would likely visit this restaurant	Scale not used in Study 2	Item 1: 2.94 1.76 Item 2: 3.04 1.85 Item 3: 3.00 1.85 Scale: 2.99 1.75 AVE: .89 CR: .96
Observer perceived schadenfreude (Dasborough and Harvey 2017)	1: I think the person feels amused by their response 2: I think the person feels pleased by their response 3: When in private, I think they would not be able to resist a little smile based on their response 4: I think the person feels happy by their response	Scale not used in Study 2	Item 1: 5.36 1.65 Item 2: 5.28 1.60 Item 3: 5.08 1.65 Item 4: 5.10 1.68 Scale: 5.21 1.41 AVE: .66 CR: .88

Table 3. Model coefficients for Study 2

Main and Interaction Effects				
	Observers' Sympathy		**Observers' Purchase Intention**	
Predictors	***β* (SE)**	***t (p)***	***β* (SE)**	***t (p)***
Intercept	.21 (.08)	2.46 (.014)	3.22 (.11)	29.87 (< .001)
Schadenfreude (Low vs. High)	.47 (.17)	2.77 (.006)	.21 (.22)	.96 (= .338)
Online Persona (Troll vs. Loyal Customer)	-.01 (.17)	-.08 (.93)	-	-
Interaction	.82 (.34)	2.41 (.016)	-	-
Sympathy	-	-	-.29 (.07)	-3.78 (<.001)

Mediation Analysis (PROCESS Model 7)		
	Indirect Effect through Sympathy	
Online Persona	***β (SE)***	***Boot LLCI/ULCI***
Troll	-.023 (.07)	-.16/.09
Loyal Customer	-.261 (.10)	-.49/-.08
Index of Moderated Mediation	**-.24 (.12)**	**-.49/-.04**

Note: 5,000 bootstrapping samples

Presented here are the mean centered regression coefficients from the bootstrapping analysis and their associated standard errors (SE), t-statistics and lower and upper levels for the confidence interval (ULCI/LLCI).

Figure 1. Research model

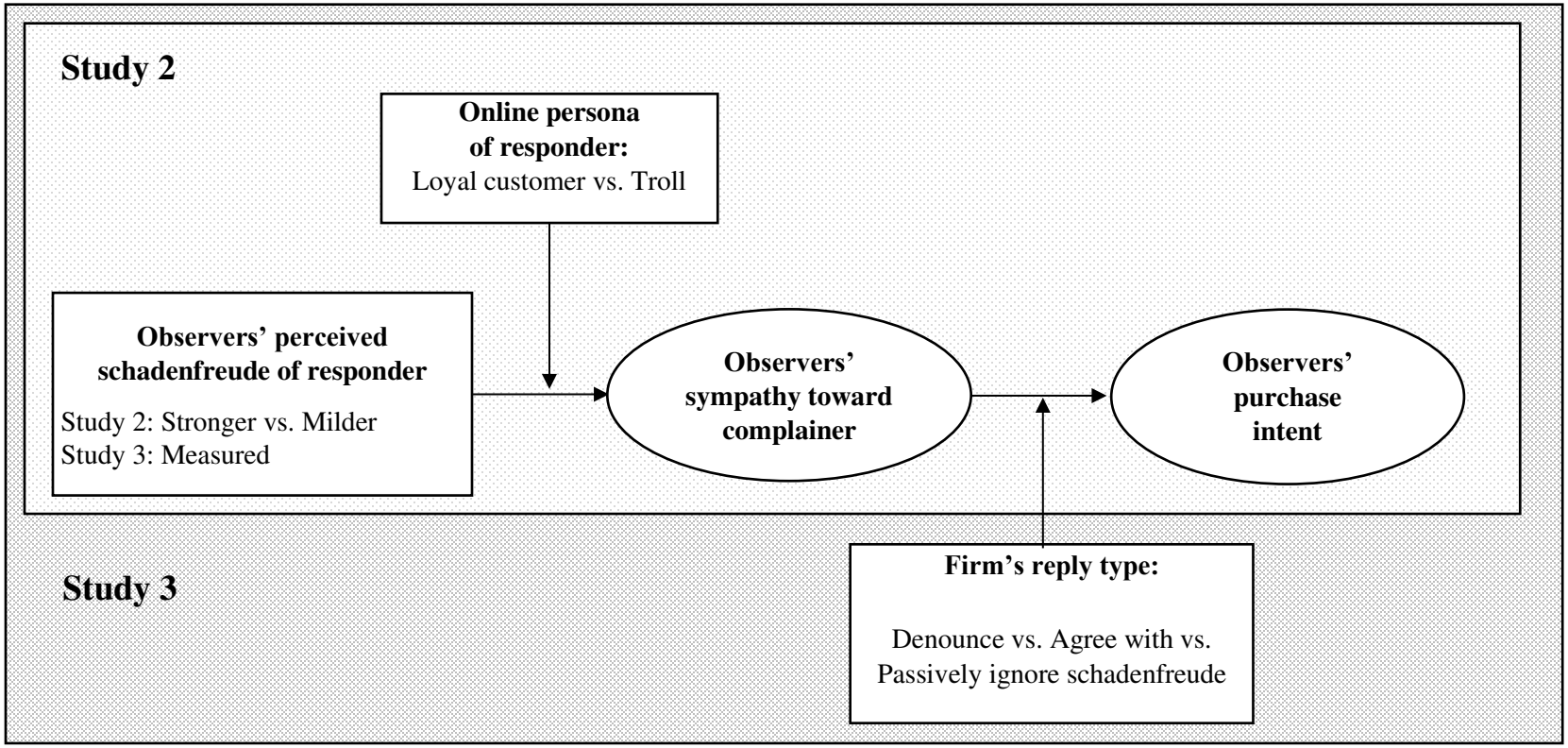
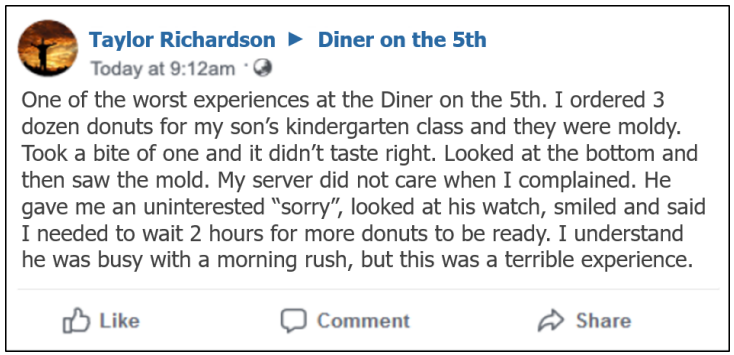


Figure 2. Study 2's stimuli

First, the complaint stimuli was viewed by all subjects:



Second, subjects were randomly shown one of these four responses from another person responding:

	Online persona: Loyal customer	Online persona: Troll
Stronger schadenfreude	Alex Wilson Top Brand Fan I sincerely enjoy writing this comment because you need some whiskey and a shrink! The server has a valid point. Everyone knows a diner is not at full service the minute it opens at 6:00 am. I want you to know that I am making fun of you here and laughing at your situation! I will run a crowdsource campaign to get you some mental help 🤣 Reply - Like	Your Feet Stink I sincerely enjoy writing this comment because you need some whiskey and a shrink! The server has a valid point. Everyone knows a diner is not at full service the minute it opens at 6:00 am. I want you to know that I am making fun of you here and laughing at your situation! I will run a crowdsource campaign to get you some mental help 🤣 Reply - Like
Milder schadenfreude	Alex Wilson Top Brand Fan I sincerely do not like saying this, but I think you are in the wrong here. The server has a valid point. Everyone knows a diner is busy in the morning and cannot operate perfectly. I say this with the intent to be informative, but not to make fun of you and not to laugh at your situation 😊 Reply - Like	Your Feet Stink I sincerely do not like saying this, but I think you are in the wrong here. The server has a valid point. Everyone knows a diner is busy in the morning and cannot operate perfectly. I say this with the intent to be informative, but not to make fun of you and not to laugh at your situation 😊 Reply - Like

Figure 3. Study 2's interaction plot

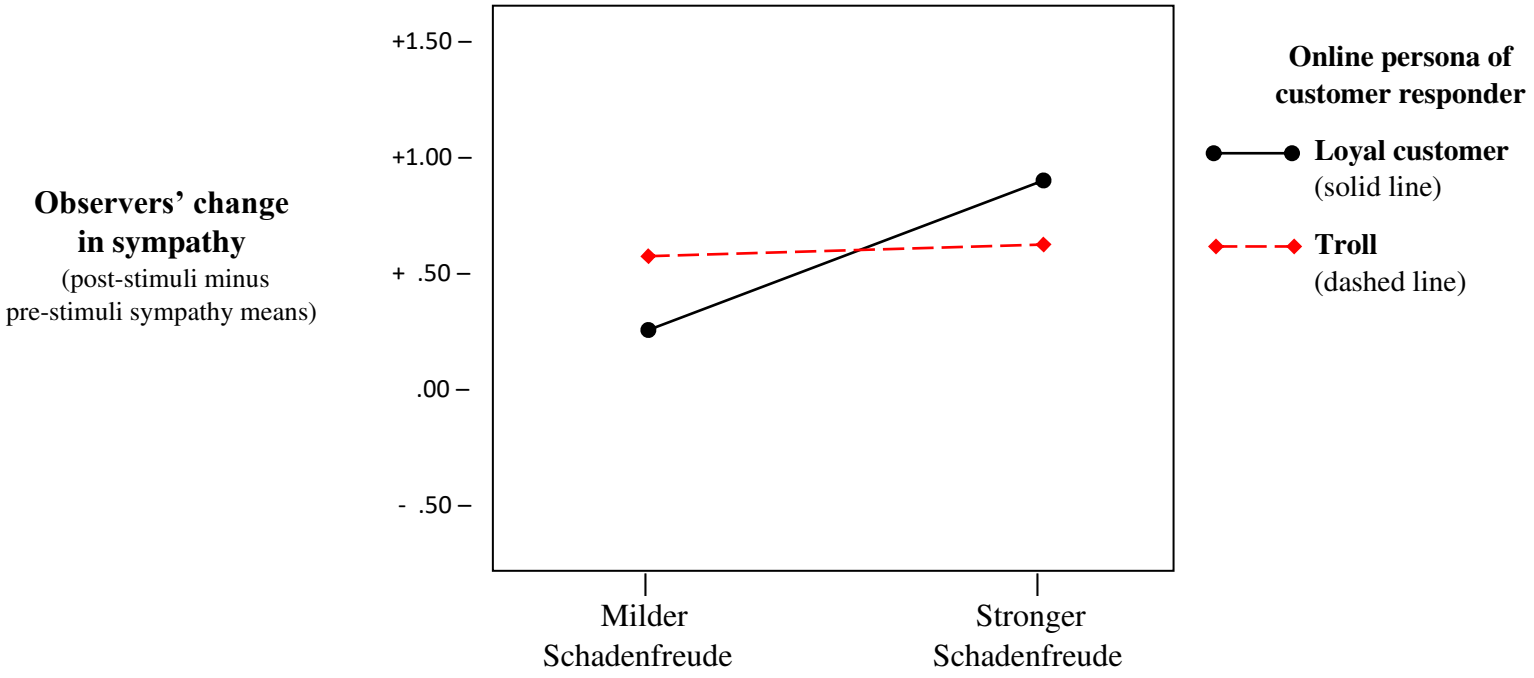
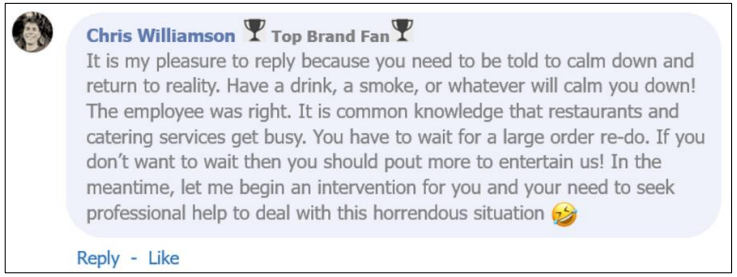


Figure 4. Stimuli used in Study 3

First, the complaint stimuli was viewed by all subjects:

Second, one of the persona responses was viewed. A reply from the troll persona (top) or loyal customer persona (bottom):



Third, one of the responses from the firm was viewed: denouncing (top), agreeing with (middle), or passively ignoring (bottom) the reply from the online persona.

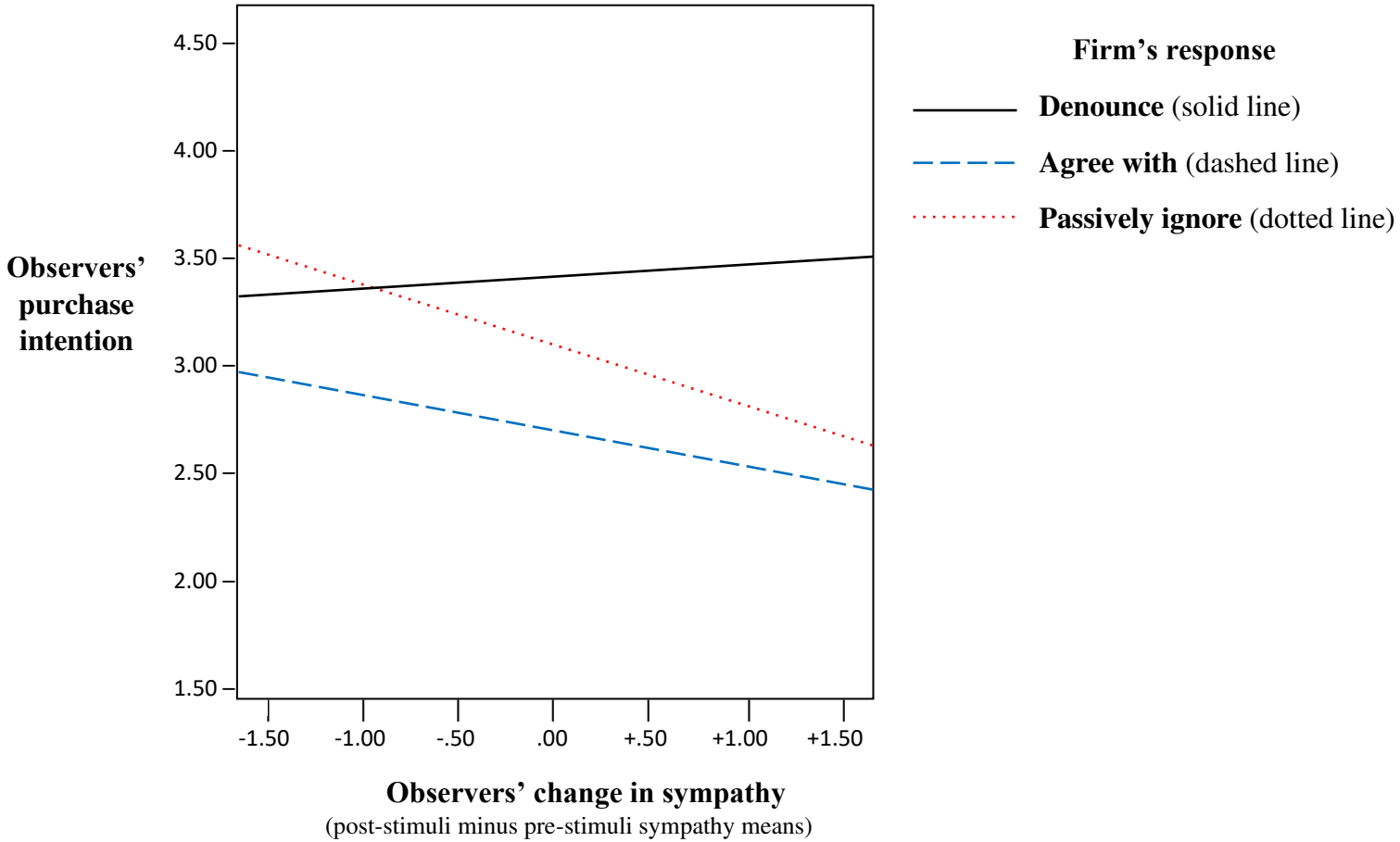
Denouncing:

Agreeing:

Passively ignoring:

Note: the font size on all stimuli was the same when viewed by subjects. Some images and text displayed here have been resized to fit within a single page for this figure.

Figure 5. Study 3's plot with linear fit lines of the firm's reply interacting with observers' sympathy



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Small business survival and COVID-19 - An exploratory analysis of carriers

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ABSTRACT

Small businesses are more susceptible to cash flow problems created by the COVID-19 pandemic putting them in jeopardy of survival. This research utilized a case study methodology that focused on small businesses in the trucking industry to assess the impact of this pandemic on the supply chain. Power imbalances can occur in the supply chain when certain parties act opportunistically. These imbalances are analyzed through theories of Resource Dependence, Resource Orchestration, and Entrepreneurial Orientation and embellished through the business failure and crisis management literature. Using actual data, the study shows the power shifts in the supply chain. Using qualitative data, the responses taken by these small businesses to survive the crisis were reviewed. The sales data of these small businesses were then compared to a national transportation index. The results of the comparison show more volatility among these businesses than the index. Both small businesses utilized their entrepreneurial orientation (EO) by taking forward-looking actions to reduce their risk exposure and avoid failure. They also utilized resource orchestration theory by restructuring their resource portfolio to lower their cost structures via selected layoffs. Finally, they took advantage of market opportunities by obtaining PPP loans and pursuing new customer opportunities.

1. Introduction/Overview

The COVID-19 pandemic has created survival problems for most businesses regardless of size. However, small businesses due to their financial limitations, customer base and dependence on a few key employees, face a much more critical situation. Small businesses often have limited access to public financial markets and are often more susceptible to cash flow crises created by revenue changes. Short term cash outflows exceed cash inflows creating survival problems.

Being able to navigate these short-term sudden business drops by managing short-term costs is often the difference between survival and bankruptcy. The federal government, realizing this situation, rushed to develop new programs to help contain the damage and assist small business by creating the CARES Act which was signed into law on March 27, 2020. Additionally, loan assistance was also available through the Small Business Administration's Paycheck Protection Program (PPP).

In this research we look at the impact of COVID-19 utilizing case studies with two small businesses in the trucking industry. The overall analysis of supply chains in crisis indicate they experience different degrees of power imbalances as certain parties act opportunistically. We analyze these behaviors through Resource Dependence, Resource Orchestration and Entrepreneurial Orientation (EO) theories. We show the changes in power in the supply chain using actual data and describe the management actions taken by these small businesses to survive under these depressed business conditions. Next, actions are highlighted that small businesses are taking to deal with this crisis and potential business failure through qualitative data gleaned from interviews. Finally, using actual sales data, we compare the volatility of small business sales to a national transportation index. Our data shows more volatility in our two carriers' revenue in these times, versus the broader index. We first provide an overview of the current pandemic situation and then proceed to discuss the theoretical portion before moving to analyze the conditions existing at the two carriers. We then summarize our analysis and provide recommendations.

2. Literature review-current situation

The following section discusses the impact of COVID-19 on business and the trucking industry. We analyzed government's response to assist businesses and assessed the economic impact on the trucking industry

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through a national survey.

2.1. Impact of COVID-19 on businesses

"Unlike natural disasters, technical disasters, malicious acts, or terrorist events, the impact of a pandemic is much more difficult to determine because of the unanticipated difference in scale and duration. The nature of the global economy virtually ensures that the effects of a pandemic event will be widespread and threaten not just a limited geographical region or area, but potentially every continent. In addition, while traditional disasters and disruptions normally have limited time durations, pandemics generally occur in multiple waves, each lasting two to three months." (Guide to Pandemic Planning, 2020).

The size and nature of this pandemic created chaos in many industries. The airline and lodging industry saw demand come to a halt as business travelers were quarantined at home. Meetings and conferences were held remotely, and some companies indicated this would not change. Facebook chief Mark Zuckerberg announced in May 2020 that within a decade as many as half of the company's more than 48,000 employees would work from home (Conger, 2020).

According to the Institute for Business and Home Safety, up to 25% of businesses don't reopen following a major disaster. FEMA has this number at nearly 40%. No one likes to think about disasters or losing key employees. However, when these events do happen, prepared businesses are better off (Rowe, 2020).

The effect of the COVID-19 pandemic has been extensive. In a recent study by Veem (a global payments network firm), eighty-one (81) percent of small U.S. companies surveyed expect the new coronavirus pandemic to affect their business over the next 12-16 months, and nearly 90% are bracing for an economic slowdown. While the prevailing outlook seems bleak, businesses that were deemed essential or those that switched to working online actually benefited. "When you look at the data, there's surprising resiliency with these small and mid-sized businesses," said Veem chief executive Marwan Forzley. "Despite all the uncertainty, they are trying to make changes in their businesses, to either benefit from the situation or repurpose their business so that they're not as badly impacted." (Shala, 2020). However, a major problem is SMEs that lack the ability and resources to cope with uncertainties are more vulnerable to risks like the COVID-19 pandemic, causing severe capital shortage (Zhu et al., 2020). Consequently, financial service providers may significantly change their attitude toward financing SMEs and make corresponding strategic adjustments that move their loan portfolios away from SMEs in response to the pandemic (Goodell, 2020).

2.2. Government's role in assisting business

The COVID-19 pandemic has caused businesses to stagnate and disrupted supply chains, forcing numerous enterprises, especially small and medium-sized enterprises (SMEs), and individuals facing great pressure in terms of capital shortage (Guo et al., 2020). Multiple stakeholders, such as public administrations and regulators, have taken different measures to support SMEs financially. Public administrations and regulators, for example, have issued a series of supporting policies (Song et al., 2020). Realizing the severity of the crisis, the government passed the CARES Act to establish several new temporary programs to address the COVID-19 outbreak. They include the following: Paycheck Protection Program; EIDL Loan Advance; SBA Express Bridge Loans; and SBA Debt Relief (SBA, 2020).

Additionally, the Small Business Development Centers have been active in developing and providing resources for small businesses to deal with the pandemic crisis including resiliency guides and guides to pandemic planning. Unfortunately, in their research, Granja, et al. did not find evidence that funds flowed to areas more adversely affected by the economic effects of the pandemic, as measured by declines in hours worked or business shutdowns. If anything, funds flowed to areas less hard hit. "According to an analysis by a group of University of Chicago and M.I.T. economists, the country's largest banks are often heavy lenders to small businesses, but during the first of the program's two rounds, community banks and regional institutions did most of the lending." (Granja et al., 2020). That contributed to a disproportionately large share of loans going to areas that were not as hard-hit by the virus.

The SBA's stimulus program was created to help businesses pay their workers through the Paycheck Protection Program. Applicants did not have to prove a sharp drop in sales or other specific harm. But many of the most devastated businesses had already laid off workers and were uncertain when their sales would return. Because the program's rules require companies to maintain their head count at pre-pandemic levels, those businesses have a much harder time taking advantage of the program than companies that still have their full work force intact (Russell & Cowley).

Existing efforts, however, have had less of an impact than expected. Some studies have shown that the cash flow pressure of SMEs has not been significantly relieved even after the implementations of self-help measures and external support (Bartik et al., 2020) while Zhu et al. (2020) found that of the SME's they surveyed, over 70% of cash flow pressure had not been relieved significantly despite support measures. (Song et al., 2020).

2.3. Impact of COVID-19 on the trucking industry

In this paper we focused on two small U.S. based trucking firms. However, these firms are impacted by what takes place internationally. According to the International Road Transport Union (IRU) in Geneva, which represents operators in 80 countries, new freight contracts have declined by 60%–90% since COVID-19 struck while empty runs have climbed by up to 40%. For truckers shipping products such as car parts, clothes, flowers and construction materials, operations have ground to an almost complete halt, the IRU said (Plume, 2020).

In the U.S., the Trucking Industry is being impacted significantly. In normal times, the U.S. trucking industry is the backbone of the nation's economy, leveraging its 3.5 million truck drivers to deliver more than 71 percent of all freight tonnage valued at $10.4 trillion, generating $796.7 billion in gross revenue (ATRIA, 2020).

IBISWorld updated its reports on both the Long-distance Freight Trucking Industry and the Local Freight Trucking Industry as to how these industries are likely to be impacted as a result of the global COVID-19 pandemic. Revenue for the Long-Distance Freight Trucking industry has been adjusted to decline 14.8% in 2020, due to reduced demand for industry services (Cook, 2020b). Revenue for the Local Freight Trucking industry has been adjusted to a decline of 13.5% in 2020 due to reduced demand for industry services. As overcapacity influences the industry, industry operators are anticipated to encounter revenue and profit declines (Cook, 2020a).

If the pain is prolonged, smaller U.S. carriers who are unable to spread their costs across a large fleet could shut their doors. According to industry groups, these actions will put many skilled drivers out of business and accelerate a longer-term shortage of truckers (Plume, 2020). The American Trucking Association (ATA) estimates that 97% of trucking companies in the United States operate fewer than 20 trucks, and 91% have six or fewer. Those workers rely more often on one-off jobs than long-term contracts. At the Mexico-U.S. border, some truckers are carrying just one full load south for every seven full northbound trips, well below the usual three-to-one ratio, according to data from freight forwarder Nuvocargo (Plume, 2020).

The ATA's Sean McNally says the trucking industry didn't push for specific government relief in the Federal CARES Act (Coronavirus Aid, Relief, and Economic Security), "but there are many, many trucking companies applying for the Small Business Administration's (SBA) PPP program or are preparing to access the Exchange Stabilization Fund or other tax credits. However, it may not be enough as we, eventually, prepare to start turning the key on re-starting the economy. We are already engaging with many champions in Congress to make sure as

these programs are expanded, truckers have access to liquidity and a bridge to the better times we know are coming." (Garsten, 2020).

2.4. An indicator of trucking activity - The Cass Index

The Cass Freight Index® is a measure of the North American freight market. The monthly data and the Cass Transportation Index Report provide valuable insight into freight trends as they relate to other economic and supply chain indicators and the overall economy. Data within the Index includes all domestic freight modes and is derived from approximately 36 million invoices and $28 billion in spend processed by Cass annually on behalf of its client base of hundreds of large shippers. These companies represent a broad sampling of industries including consumer packaged goods, food, automotive, chemical, medical, pharmaceutical, OEM, retail and heavy equipment. Annual freight volume per organization ranges from $40 million to over $2 billion. The diversity of shippers and aggregate volume provide a statistically valid representation of North American shipping activity (Cass, 2020). Later, we compare our two firms' monthly revenue over a thirty-month period to the Cass Index of freight expenditures.

3. Literature review-a theoretical perspective

We have previously reviewed the effect of the pandemic on the marketplace with a focus on small business and the trucking industry. We now turn to what applicable management theories can explain behavior of the parties in the supply chain. While our focus in this research is small business, these theories could apply to businesses of any size. We have split our analysis into external and internal compartments to better understand how theory can explain the activities that have occurred. We know that when market conditions change, actors in the supply chain gain or lose relative power over the scarce resources for which they are competing. We also can observe their actions in times of crisis as being benevolent or opportunistic. Internally, the management must be focused on surviving in a totally different marketplace. They must re-examine their entire business model and make changes that will give them the best chance to capture resources in a significantly different environment. We focus on power, resources (market driven and internal), behavior (opportunistic or benevolent), and entrepreneurial orientation.

3.1. Theories related to COVID-19 events in the supply chain

The role of power in the supply chain has been examined by researchers through different theoretical lenses. One stream of research has focused on the power imbalances and the different types of power. Maloni and Benton (2000) highlighted power imbalances that existed in the automotive industry. Five major automotive firms controlled 90% of the market, yet they each had thousands of suppliers. This power imbalance allowed them to transfer responsibility for cost reductions, product development and inventory management to their suppliers. Non-compliant suppliers faced the loss of business and replacement by a competing supplier (Maloni & Benton, 2000). In researching the different types of power, they found that referent and reward power were beneficial, but that coercive and legal power had harmful effects on relationships.

The identification of these types of power can be traced to French and Raven (1959). They defined referent power as the attractiveness of one party to another. Reward power relates to the perceived or actual power one party perceives the other possesses to influence the allocation of incentives. The ability to punish another party is termed coercive power and finally legal or legitimate is the extent to which one party believes the other has the lawful authority. French and Raven's typology of power extended Weber's (1947) definition that power is "the probability that a person can carry out his or her own will despite resistance."

Resource dependency theory (RDT) provides another lens to assess how power forms and how it is managed in interorganizational relations (Pfeffer, 1987). In RDT, firms are viewed as interdependent entities seeking to manage the uncertainty that is affecting them (Pfeffer, 1987). These interdependencies create various forms of dependency. A firm(s) that owns or controls valuable, scarce resources holds power over firms seeking those resources, creating an unbalanced dependency that is not mutual (Pfeffer & Salancik, 1978). Krajewski et al. (2005) found that this power or dependency in supply chains stems from multiple sources. Examples of these include: the number of major customers; total market share; the number of potential customers, and the amount of revenue generated from a single customer.

From the above discussion we can see that power in the supply chain can emanate from many sources and inter-organizationally power is a strong indicator of which firm(s) possess or control the scarce resource (s) in that specific chain. While the conditions for power vary, when these power imbalances occur one or more firms possessing that power may act opportunistically towards other firms in the supply chain. This opportunistic behavior is how actors in a supply chain use their power. The actions of these actors can be explained by transaction cost economics (TCE). TCE postulates that opportunism occurs when one party takes advantage of the other with guile (Williamson, 1975).

3.2. Theories related to internal management actions during COVID-19

The previously mentioned theories shed light on the impact COVID-19 has had on the external marketplace and the various actors in the supply chain. A second part of this analysis involves examining how effective small businesses are in meeting the challenges faced by a crisis. This can be examined through two additional theories. First is entrepreneurial orientation (EO) and the second is resource orchestration theory (ROT). In EO we specifically focus on risk taking.

Raush et al. (2009) in a review of the literature suggest that entrepreneurial orientation (EO) has been most consistently defined as being comprised of three dimensions. They include product innovation, proactiveness, and risk taking. Product innovation reflects a firm's propensity to engage in and support creativity and experimentation. Such actions help firms improve existing products or develop new ones. Meanwhile proactiveness is the forward-looking capacity that enables firms to capitalize on emerging opportunities. Taken together these actions help shape future markets and can influence the competitive landscape of these markets. Risk taking is characterized by behavior in which both the cost of failure and the potential returns are high (Lumpkin & Dess, 1996). We argue that risk taking in small business must be managed in concert with the external environment. Certainly, small businesses take on risks, but they must constantly monitor their external market environment and take proactive internal actions to properly manage the magnitude of these risks. However, the pandemic has created a sizable and more unanticipated risk for small business than normal. Since extreme risk created by the pandemic threatens the very survival of businesses, we examine the literature on business failure as part of the risk dimension in EO.

3.3. Business survival and risk under crisis conditions

As stated above, EO postulates that being an entrepreneur involves risk taking, but it doesn't specifically address how entrepreneurs address risk under crisis conditions. Thus, it is necessary to determine if business owner-managers handle all types of risks and crisis in the same manner. Gilmore et al. (2004), studied owner-managers/entrepreneurs' *perceptions* of risk, and further, to understand how they manage and cope with situations that they deem to be risky. They found that owner-managers of small firms operating in a wide spectrum of industry settings, it was shown that the key situations owner-managers deemed to be risky were those pertaining to cash flow, company size, entering new markets or new areas of business, and entrusting staff with responsibilities.

Furthermore, it was shown that the two key tools used to manage

these risky situations included managerial competencies and networking. This study showed that, while entrepreneurs recognize that they will encounter risky situations, they endeavor to manage these situations so that the risk is minimized. Having gone through and survived the difficult and uncertain start-up years, these owner-managers are reluctant to involve themselves in activities that may jeopardize the relative security that they worked so hard to attain (Gilmore et al., 2004). Doern et al.'s (2019) review of the literature on risky situations indicates that whether and how entrepreneurs respond to a crisis may depend on several factors including experience, stage of business development, the type or stage of the crisis impacting on the business, and resources, both in terms of how resources are utilized as well as the suitability of resources for the stage of the crisis (Doern et al., 2019).

However, a pandemic is not a situation of choice and depending on the level of exposure, a business could be operating at significantly reduced capacity for an extended period. Therefore, broader business strategies, rather than the usual business continuity strategies, will be required to make the operational changes necessary to effectively manage under these conditions. The usual business continuity strategies are unlikely to be sufficient (Guide to Pandemic Planning, 2020).

If normal business strategies to manage crisis risk are insufficient, there will be a higher number of business failures which magnify the risk dimension of EO. Two major factors contributing to business failure are cited in the literature. The first factor is related more to environmental events which are sudden, unpredictable and difficult to mitigate. The COVID-19 pandemic would fall into this category. The second factor is more internal or within the firm. This factor relates to the abilities of management, such as developing risk or crisis management plans. Amankwah-Amoah (2016) developed an integrated model of business failure. He described external factors and theorized they combine with firm level factors. The combination of these factors resulted in business decline and eventual failure. Other research describing the events leading to business failure were described as deterministic or voluntaristic. Deterministic is attributed to external factors, while voluntaristic view attributes of business failure to firm-specific factors such as lack of leadership, poor decision-making and misallocation of resources (Amankwah-Amoah, J., & Debrah, Y. A., 2010 & 2014; Zhang, H. et al., 2019).

More recent research on failure specifically addressed the current pandemic. This research hypothesized that events such as COVID-19 are exogenous or external to the firm (Amankwah-Amoah et al., 2021). However, the researchers stated that more work is needed to address the extent that COVID-19 contributed to business failure. In summary, the business failure literature provides support to our view that the risk dimension of EO is related to external environmental issues. Meanwhile the internal dimension of failure is more closely aligned Resource Orchestration Theory (ROT) which is addressed next.

As previously stated, EO provides a perspective on the key characteristics (e.g. risk taking, forward looking philosophy, etc.) of entrepreneurs, it does not explain their management actions. How the firm responds internally to mobilize its resources in response to these external events can be understood through Research Orchestration Theory (ROT). ROT is an extension of the resource-based view (RBV) of the firm. RBV postulates that competitive advantage is achieved by having resources that are valuable, rare, inimitable, and non-substitutable (Barney, 1991). ROT argues that having these resources alone is not a sufficient condition to produce competitive advantage. However, these resources must effectively be managed to achieve competitive advantage (Sirmon et al., 2007; Sirmon & Hitt, 2009). The specific ways managers influence firm performance is by structuring the firm's resource portfolio, bundling resources to build capabilities, and leveraging capabilities to exploit the marketplace (Sirmon et al., 2007). Now that we have established internal and external theories that can be used to explain the behavior of small businesses during the pandemic, we describe our methodology, then detail the events at two small freight carriers.

4. Research methodology

In this research we performed a detailed analysis of two small trucking firms hereinafter called "Trucking Firm 1" (TF1) and "Trucking Firm 2" (TF2). This research relied on both qualitative analysis and quantitative comparison through case study and a national transportation data base. According to Patton (2005), qualitative research is particularly useful when the goal of research is to gain in-depth insights of a real world phenomenon. It can be conducted via various approaches from in-depth open ended interviews to observations to written documents. The approach to the qualitative research was phenomenology. Phenomenology focuses on lived experiences, thus "seeks to make explicit the implicit structure and meaning of human experiences" (Sanders, 1982). By using qualitative interviews with a phenomenological focus, we specifically and inductively generated rich narrative descriptions from in- depth interviews. This method provides a detailed analysis of the conditions faced by these small trucking firms that would be difficult to uncover relying on quantitative methods alone.

A convenience sample was used based on the researchers' knowledge of small transportation firms and cross checked through a Small Business Development Center. We felt the case study was an appropriate means to study the responses and actions to a complex and continually changing pandemic. According to Yin (2012) the case study method is an appropriate method to investigate a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident. Further, case studies allow researchers to collect data from participants through interviews and direct observation. We collected both qualitative and quantitative data through multiple interviews at various time periods. In order to collect accurate responses, we guaranteed the companies anonymity and confidentiality. For our case data collection, we followed the research protocol listed below.

This research utilized a semi-structured interview format to investigate the phenomenon of interest (McCracken, 1988). A multi-stage approach was used whereby the researchers first reviewed existing literature on small business, supply chain, and government actions to ameliorate the pandemic. This was followed by in-depth interviews conducted with one owner and one chief operating officer (COO) of two family-owned small transportation firms. The research method enabled collection of detailed responses to identify critical issues affecting these businesses during the pandemic. We then reviewed our notes and returned for additional rounds of interviews to provide clarification and interview depth until we reached saturation point. Given our small sample size we continually cross checked our results with national studies to increase external validity and generalizability. Since our participants are from one sector this helps increase internal validity while providing a detailed analysis of two small carriers during the pandemic.

5. Analyses of the trucking firms

TF1 is truly a family owned, as the co-owners are a father-son tandem. The father started the business and the son joined the business after graduating from college. In their business model the owners focus managing all aspects of the transportation transaction for their independent drivers. This includes all the back-office documentation and billing and support for the drivers. TL1 does all the back-office functions and pre-pandemic provided loans to drivers to repair their equipment and cash supplements for incidental expenses of meals, tolls etc. TL1's philosophy was summed up by the co-owner as "our staff support allows the drivers to focus on driving and not worry about all the back office documentation processes."

Most of TL1's drivers' business is obtained through third party logistics carriers (3 PLs) and or freight brokers. TL1 scans the market for business opportunities that their independent drivers are offered opportunities to bid. The drivers also develop their network of customers

that are managed by TL1. TL1's owners receive the difference between the rate they quote their customers and the rate paid to the freight carriers.

According to the TF1, 2018 was a good year for the trucking industry. This led to an increase in the number of drivers buying trucks which resulted in more trucking and driver capacity. However, the load volumes at TF1 did not increase enough to absorb this extra capacity. As a result, the oversupply of drivers resulted in a decrease in rates. This excess capacity continued into 2019 and many single operator truckers went out of business and their trucks were repossessed. This resulted in fewer drivers and lead to the hope that 2020 would be a good year since rates were expected to improve. TF1 expected to have higher revenue in December 2019 and January 2020 than the comparable months a year earlier. However, this did not happen as COVID-19 began affecting shipments from China. When China shut down in January, business volumes declined and when China started re-opening, the U.S. started shutting down.

TL2 is an asset-based carrier that provides customers with a direct seamless transportation source. Customers are one call from having their freight needs met. TL2's customers are in a variety of retail and manufacturing businesses. On the retail side TL2 transports beverages, groceries, and pet supplies. On the manufacturing side they transport HVAC equipment and flooring products. The business was established in the mid-1980's and is family owned. TL2 employs its own company drivers as well as utilizing independent owner operators.

Business opportunities are developed by marketing directly to customers. TL2's philosophy is to put the customer first by emphasizing the human element versus machine interaction when customers call about shipping requests and order follow-up. From a total revenue perspective, approximately 70 percent of the revenue is on the asset side and 30 percent from freight broker activities. Of the brokerage portion only about 3 percent originates through 3PLs. Brokerage operations allow TL2 to provide its customers coast to coast service. Shipments from the brokerage side are carried by independent drivers or other asset-based trucking firms. TL2 considers the brokerage business to be much more transactional in nature than its established customers.

5.1. TL1's COVID-19 challenges

TL1 experienced a COVID-19 driven power shift as a result of the drop off in carrier volumes. This made the market for scarce resources (customer shipments) critical and those who secured customer contracts (in our case, brokers) became powerful players in the supply chain. As can be seen in Fig. 1 below, TL1 in a normal pre-pandemic market on average received 6% of the total shipment revenue. For example, if the shipment revenue from a customer was $1000, TL1 would net $60. The other 94% of revenue was split between the driver (60%), broker (25%) and agent (9%). However, as stated earlier, transportation revenue dropped dramatically during the pandemic. This resulted in fewer customers shipping goods and thus the power in the supply chain shifted to the brokers. Brokers that were able to win customer orders from this smaller customer base through their systems and network were now the power players in the supply chain. Once they posted the customer requirement on their Dashboard, the same number of pre-COVID drivers were now competing for much smaller shipping volumes. As a result, drivers lowered the price they were willing to accept for moving freight.

A national study of almost 4000 confirmed this weakness in rates (ATRI, 2020).

> "For fleets with fewer than five power units, 39 percent of respondents reported that their freight levels were "much lower". In contrast, 30 percent of respondents with fleets of over 1,000 power units reported that their freight levels were "about the same." This disparity indicates that, in terms of freight volumes, smaller fleets are more negatively impacted than larger fleets. From a revenue standpoint, owner-operators and small fleets also rely more heavily on the spot market, which declined 38 percent from March to April 2020, according to DAT's spot market load postings."

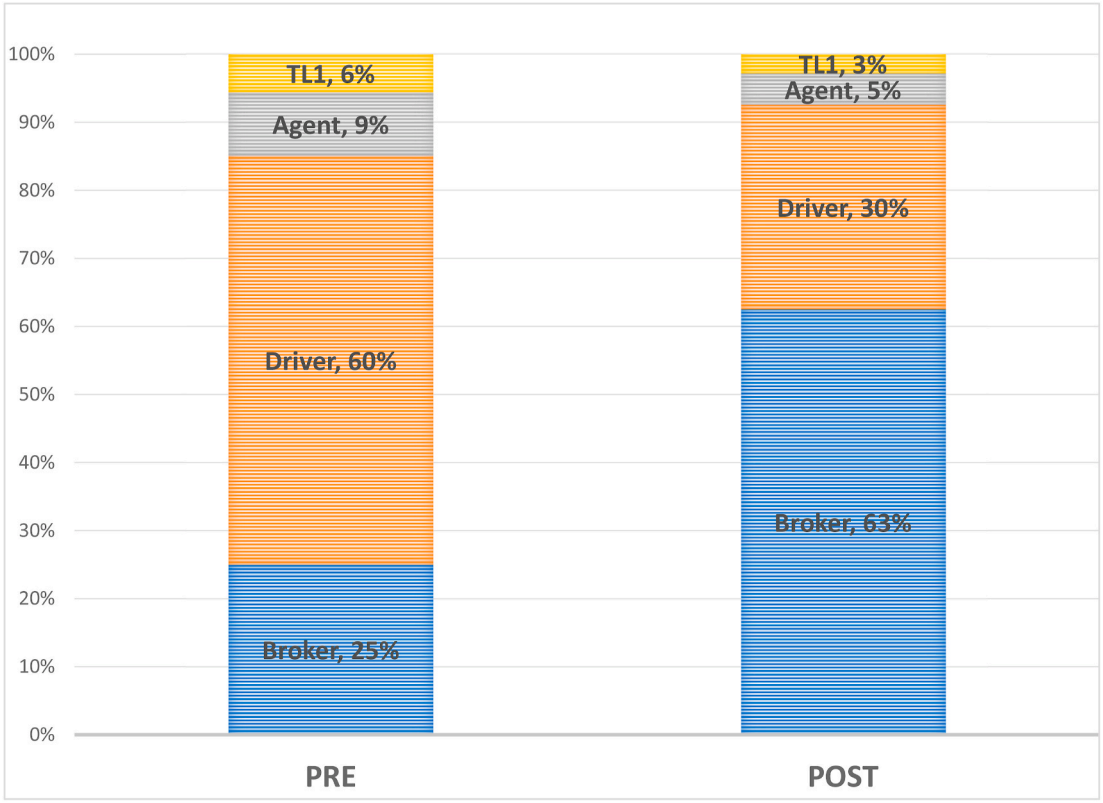

Fig. 1. Pre and post pandemic supply chain payout.

In this weak market, the broker negotiated a fixed price from their customer for moving the freight and they acted opportunistically by capturing a larger share of the total supply chain revenue. The driver (30%), small business owner (3%) and agent (5%) all received much lower revenue when compared to pre-pandemic levels. Meanwhile, the broker (62%) prospered by their opportunistic actions and extracted 2.5 times more revenue from the supply chain. In essence, the power shifted from the driver to the broker who now controlled the scarce resource that prior to the pandemic was controlled by the drivers who were in short supply and were the scarce resource. The broker's portion left TL1's position in the supply chain weakened and they struggled to survive at these much lower revenue and profit levels. They experienced pressure to meet revenue and profit levels that would allow them to breakeven. The following comment illustrated TL1's frustration.

> "Major demand decline across the industry allowed Brokers to retain greater share of the revenue even though the customer firms (for example the large retailers) were paying the same or more than pre-COVID rates to "help out". But that was "for nothing" because the broker kept a bigger share than pre-COVID simply because they could."

Internally, they responded to this lower level of volume and revenues prior to the Care's Act by laying off three of their seven staff members. According to TL1's owner, "the Care's Act saved us from additional layoffs as it allowed us the funds to continue paying our four remaining employees." TL1 took other proactive measures to reduce their operating costs and increase their chances of survival. These actions reflect the proactiveness and risk-taking dimensions of EO.

> "First we eliminated driver loans which provided drivers a source of funds to fix their trucks. Secondly, we tightened the recruitment strategies. Before COVID we basically took any driver. Now a new driver cannot hold more than five jobs in five years. The goal of this policy is to ensure that the drivers possess the characteristics and values that indicate they will continue to carry freight for us vs jumping ship for a marginal increase in pay." "During the pandemic we have experienced high driver turnover." Several drivers left our firm to work for companies that guaranteed rates."

From a theoretical perspective, TL1 managed risk and avoided failure to an exogenous event (COVID-19) by using management's initiatives in taking advantage of government assistance. This assistance provided a safety net to extreme layoffs created by the lower total revenue from reduced rates and volumes. Second, to further manage risk and avoid broker's price gouging, TL1 performed market research to identify potential customers and avoid brokers. TL1 has made efforts to diversify its portfolio. TL1 stated "we increased dedicated lanes and reduced broker driven markets where drivers had to pick their customers (on broker dashboards)." From an applied perspective, the need for portfolio diversification and brokerage avoidance are potentially two of the biggest lessons learned as well as considerations in future crises planning strategies developed by TL1.

5.2. TL 2's COVID-19 challenges

TL2 indicated their market experienced a 31% average rate drop from 2019 to March 2020. This significant drop was proceeded by average rates falling 9% year over year from 2018 to 2019. Thus, on average freight rates were 40% lower at TL2 in 2020 from average rates charged in 2018. Operating with this significant revenue drop required difficult decisions and as a result staff was reduced by 18%. Company drivers were being paid at a fixed cost per ton mile. These fixed costs combined with less freight volume and lower rates forced TL2 to reduce internal driver headcount by 40%. Finally, owner operators, who are true variable cost since they are paid by the job at the revenue rate negotiated by TL2, were downsized only by 8%.

TL2 being asset based operates a more direct business model than TL1. On the brokerage side of their business they were able to capture higher gross profits per load during the pandemic. Again, the independent drivers captured less of the supply chain revenue. However, with the recent business pickup drivers were pushing to recapture revenue.

> "The brokerage side of the business is very transactional. When dealing with the carriers we broker, we do not have contracted rates. Each load is independent, the pricing is market driven, and the load rates are negotiated for each load. In regular times we will average 12% gross profit per load and during the peak of Covid19 we were seeing 21% gross profit per load. Now freight is picking back up and carriers are pushing back and currently we are running in the 15% range."

As a carrier, the pandemic related shutdowns were a source of concern and their expectation was that 2020 would continue to be filled with challenges. When asked what the most significant challenge was TL2 commented:

> "The biggest challenge to our business was the government (state & local) mandated shut down of manufacturing and retail locations reducing consumer demand and overall freight opportunities."

TL2 indicated they were implementing forward looking strategies to handle these challenges and capture revenue when it came back on-line. They were managing risk and making extensive efforts to reach out to customers as well as be innovative by exploring new markets.

> "We are devoting significant time and effort to leveraging existing relationships to be the first- choice carrier when a customers' freight opportunities increase."

> "We are actively seeking to develop new customers in higher demand pandemic related areas. For example, we have been continually targeting the grocery space to make up for the loss of manufacturing related freight."

> "Additionally, we are increasing sales focus on growing existing customers that are shipping and working with customers set to open soon to ensure we are one of the early carriers back in the door."

External government assistance was also part of the plan to insure continuous operations through the pandemic and retain valuable employees. The politically sensitive issue of when the economy will reopen is part of another difficult decision the government could make that would help TL2.

> "We have received a paycheck protection (PPP) loan from the SBA. This loan helped us retain key employees. We plan to meet all employee retention criteria and will apply the additional funds to eligible expenses. As a result, expect that SBA will forgive our loan."

> "There is nothing specific the government could do to help improve our business, but opening up the economy as much as possible to increase consumer spending."

Disaster planning is another area for which the trucking industry was under-prepared. The ATRI/OODIA study indicated only 24 percent of respondents had disaster response plans in place before the COVID-19 pandemic. TL2 did have a business continuity plan in place that allowed them to shift to a work from home environment. They also learned from previous natural disasters such as hurricanes and floods to have backup systems, generators, and IT equipment to mitigate risks and ensure business continuity.

> "We were able to shift our operations off-site quicker than some of our competitors and even customers. For example, we had one Fortune 500 customer who we had no contact with for more than one week. We only had their phone numbers at work. Initially, their

home systems even lacked email access. As a risk mitigation strategy, we have requested emergency cell phone numbers from all our customers. In our business you have to be able to communicate continually with customers."

Driver turnover is a way of life in the trucking business and TL2 indicated that average driver turnover in a year is in the 75-80 percent range.

"We have significant driver turnover, but it is a bimodal distribution. One group of our drivers is low turnover, they will stay five years and up. The high turnover group will work two or three months on average and then move on. We are constantly adding and losing drivers in this group."

From a theoretical view TL2's actions demonstrated the proactiveness dimension and risk mitigation dimensions of EO. Management orchestrated their resources by restructuring their resource portfolio via layoffs and managing to hold key employees through SBA's PPP loan program. They also leveraged their capabilities to other markets through increased sales efforts and attempting to become the customer of choice with existing customers as they resume normal business activities. During this period, management's actions of securing external funding and reducing the employee base, allowed the firm to remain a viable operating concern.

6. Cass Index vs. TL1 and TL2

Years prior to the pandemic, researchers and practitioners described the business environment as rapidly changing and characterized by volatility, uncertainty, complexity and ambiguity (VUCA). In their opinion, these characteristics would define the new normal in business (Bennett & Lemoine, 2014). To measure this volatility under these uncertain conditions that are fraught with ambiguity, we compared the monthly sales revenue from TL1 & TL2 to the Cass Freight Index for a thirty-month period from January 2018 to June 2020. As previously mentioned, The Cass Freight Index® is a measure of the North American freight market. The monthly data provides insight into freight trends as they relate to other economic and supply chain indicators and the overall economy.

As is illustrated in Fig. 2, the volatility of the TL1 was much greater than the Index. TL2 being the larger of the two businesses and with a more direct supply chain and greater customer diversity, particularly in groceries and bottled water, experienced less volatility. We would expect that the Cass Index volatility would be lower than that of our two firms given that it is mainly populated by larger firms. The comparisons provide a compelling look at small business over a thirty-month period including the last six that were affected by the pandemic. They also show that both TL1 and TL2 while dropping at a faster rate, follow the same overall trend lines as their larger competitors in the Cass Index.

There was economic growth for the first 24 months of the 30-month period until the slowdown in transportation in early 2020 due to the Chinese pandemic. For example, GDP grew 3.1% and 2.3% respectively in both 2018 and 2019 (Macrotrends, 2020). This is compared to the Bureau of Economic Analysis data showing a 5.0% GDP drop in the first quarter of 2020 (BEA, 2020). Overall, during this entire period TL1's volatility compared to the Index averaged 38% greater and TL2's 14%. One explanation of this is size. TL2's revenues for the full two-year period were approximately 10 times those of TL1. TL2's revenue was further buffered by a more diversified customer base. One of TL2's biggest customers is groceries which experienced increased demand during the pandemic and offset weakness in the manufacturing sector.

Cass Freight Index shows expenditures experienced steady volume growth in 2018 with the Index hitting its peak of 115 in September of 2018, due to buildup for the holiday season. TL1 experienced robust revenues that exceeded the Index in April and July of 2018. However, the remainder of the year, except for October, was below January 2018 levels. TL 2 revenue was less volatile than TL1 and its revenue slightly exceeded the Index through June, whereas from July through December it ran below the Index. Average volatility from the Index for both firms during 2018 was relatively stable at 12% for TL1 and 9% for TL2.

In 2019 the negative gap between TL1 and the Index widened, averaging 57% for TL1 and 15% for TL2. The gap continued in 2020

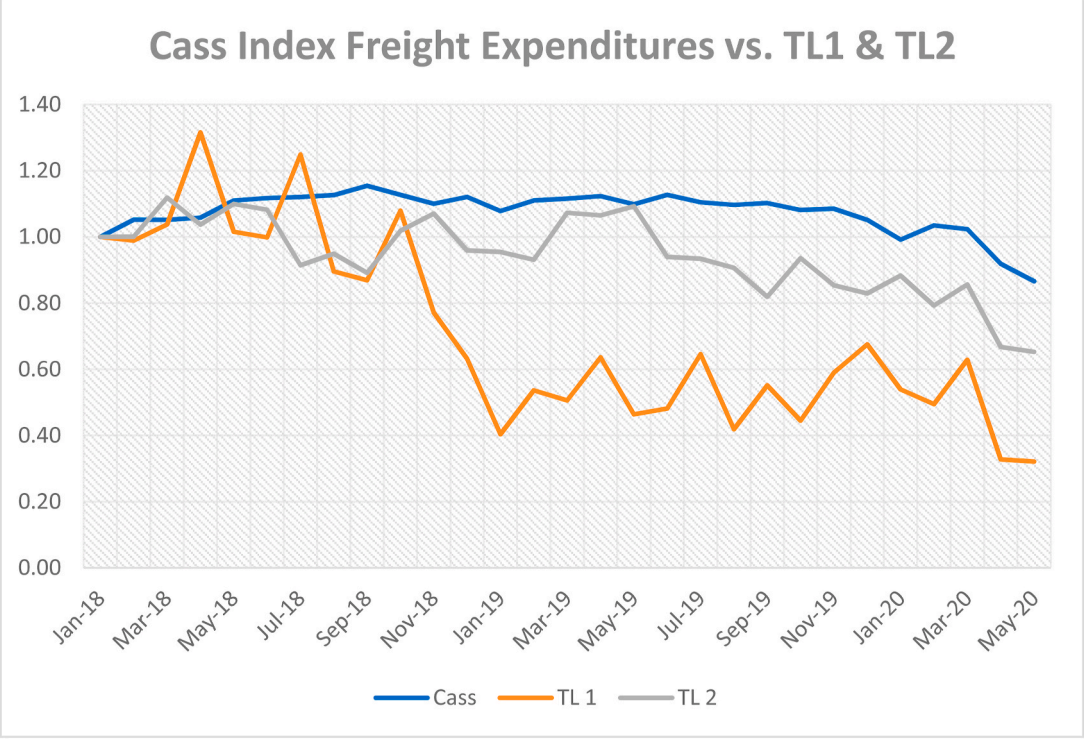

Fig. 2. Cass Index vs. TL1 and TL2.

while both experienced a small uptick in March then greater declines as the shutdown took effect in early April. Year to date revenue for both carriers is lower on a year to year basis. As explained earlier, both carriers took significant actions related to reducing staff and drivers to allow their businesses to operate at these lower volumes.

7. Conclusions, implications, and recommendations

This research has provided an in-depth analysis of what is happening in the trucking sector of small business experiencing the crisis created by a pandemic. Fig. 3 provides a summary of what we discovered in this research from both a theoretical and business perspective. We used a case study methodology and triangulated our findings with a national survey of 5000 respondents. Per Yin (2012), in depth case studies are useful to uncover phenomena in investigating a contemporary phenomenon. The COVID-19 pandemic is phenomena that we were directly able to observe through our interaction with these small carriers. It has created a double whammy within supply chains. In the medical, grocery, and e-commerce sectors supply chains are stressed to meet demand. For example, the demand and pricing for personal protective equipment (PPE), ventilators, hospital beds, ND common consumer items has stressed manufacturers capacity and created temporary shortages.

Meanwhile, the business shutdown over the general economy has left many supply chains with a surplus of capacity, lower rates and a struggle for survival. One of these sectors is transportation, the Cass Index reported freight expenditures increased 6.4% in June from May 2020. This concurs with TL2 in our study who indicated rates were firming in June. However, year-over-year and two-year expenditures were down 18%. While June showed improvement, recent COVID-19 related spikes in the southeast and western states pose problems for continued momentum of a return to normal business operations. This will continue to contain potential freight gains from increased economic activity and continue to limit increased rates as volume gains will be muted.

From a theoretical perspective we observed that these lower volumes and rates changed the power in the supply chain from the driver to the broker at both TL1 and TL2. The broker was able to use its ability to obtain freight contracts from customers. The contracts were scarce due to decreased demand. This created a condition of dependence as drivers bid lower rates to move these fewer contracts. As a result, brokers took advantage of this, acted opportunistically, and captured more value (in TL1's case 2.5x) post pandemic than pre pandemic. These actions highlight the interaction of resource dependency and transaction cost economics in explaining the behavior of the actors in TL1's supply chain. By obtaining access to scarce resources (customer orders) the brokers put themselves into a power position and acted opportunistically to capture more of the supply chain revenue. TL2 experienced less of this variation as their supply chain was shorter and more direct since only 3% of their business revenue was through 3 PL providers. While TL2 brokered out 30% of their business volume, they also captured more value, but refrained from major margin increases. TL2's actions represented a more relational view in TCE as they didn't use increased dependence for excessive short-term gains. They perceived current conditions as fleeting and would only harm longer term business opportunities.

This opportunistic broker behavior led to a collective attempt by the truckers to regain their fair share of load revenue. First, May Day demonstrations were "organized to protest unscrupulous freight brokers, who truckers felt were taking advantage of the chaos to charge unfair prices" (CDL Life, 2020). Second, a group of drivers conducted a protest strike in Washington D.C. This demonstration drew widespread media attention and also resulted in a meeting between the truckers and President Trump (CDL Life, 2020). Third, a social media movement "Stop the Tires 2020" started and gained momentum but was later canceled due to concerns that it might divide trucker unity. It was

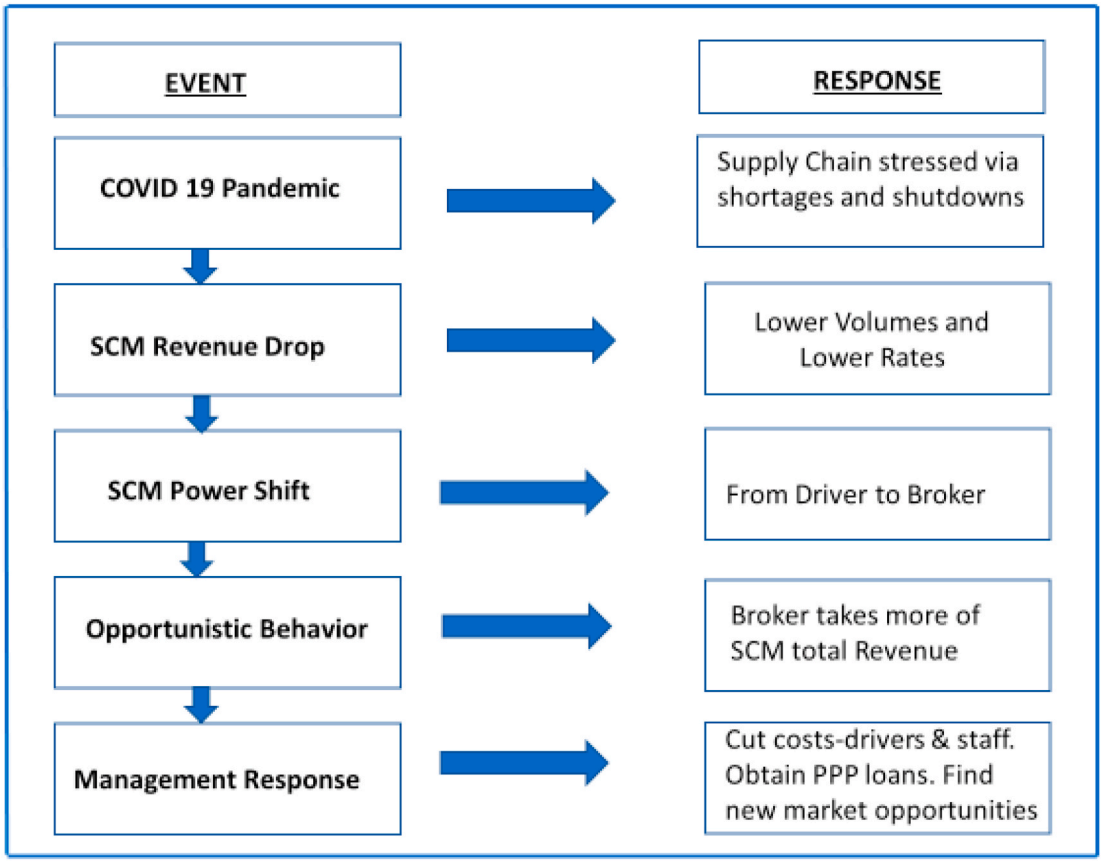

Fig. 3. COVID 19 and Supply Chain Events and Response.

important enough for TL1 to mention that "they tried to force brokers to pay them a minimum amount per mile, something similar to a minimum wage". These efforts were mostly unsuccessful and TL1 discontinued these negotiations with their brokers. While not directly mentioned by TL1, it is possible that these efforts were discontinued because of fear of repercussions and subsequent loss of broker-driven business which could lead to potential bankruptcy.

Internal management activities at both TL1 and TL2 initially focused on cutting costs by releasing drivers and staff. Both also took advantage of the SBA's PPP loan program to retain their critical staff members by paying their salaries. Comparisons to the Cass Index clearly indicated that TL2's larger size, more direct supply chain and moving goods for the grocery sector lessened their sales revenue drop. Meanwhile TL1's longer supply-chain and dependence on third party brokers created greater volatility and much greater volume swings. Small trucking firms are advised to use this experience and develop risk mitigation plans. They also should actively market to existing customers to seek to be the carrier of choice and seek new markets to improve their market position when business returns to pre-pandemic levels. Both these businesses clearly utilized their entrepreneurial orientation (EO) by being forward-looking and managing risk. They also restructured their resource portfolios by lowering their cost structures through layoffs. Further, they took advantage of market opportunities by obtaining PPP loans and pursuing new market opportunities. This behavior is explained by a combination of EO and Resource Orchestration Theory in avoiding business failure in a pandemic. While the pandemic created severe disruptions for these two businesses, they avoided ultimate bankruptcy. Thus, capturing the knowledge gained during these times is critical. The following discussion reviews lessons learned by these firms.

7.1. Lessons learned from the COVID-19 pandemic

The following are the major lessons learned from this crisis for small business. They were developed in our post analysis discussion with these small business leaders, other external contacts (SBA), and with the benefit of hindsight.

First, small businesses need to be *cognizant of our global economy*. For example, prior to the pandemic President Trump enacted tariffs against China to help American business. Yet, depending on the business, some suffered. For example, one small consumer products firm in the soap and beauty business saw raw material prices spike and domestic supply dry up. Earlier identification of the supply chain source of this material in China would have mitigated the need to increase prices to prevent margin erosion and allowed continued sales growth.

Second, there is the need to *monitor both political changes and exogenous events* (pandemics, weather, etc.) that could impact their business environment. For example, how will the Biden infrastructure plan in the U.S. impact the type of products carriers' haul? Are key customers using the Suez Canal as a transportation route? TL1 specifically noted the political effects on the industry during crisis by stating that the trucking industry and the company's "future will depend on how the government will respond next".

Third, trucking firms should *network* either on social media or through an association that is populated with similar businesses. For example, the National Association for Small Truckers describes itself as a "voice for small truckers" and provides an invaluable source of knowledge. Social media such as LinkedIn and Facebook also have interest groups that discuss trucking issues of small businesses. More specifically, business owners could track these online communities to discover opportunities, threats and dynamics within the industry by conducting a simple netnography. Netnography, is performed through studying online communities. The researcher's goal is to uncover behaviors in these communities that are potentially threatening or unethical to consumers and businesses (Rynarzewska, 2019). Another industry specific publication (Truckinginfo.com) cited an OOIDA study (One Voice For Truckers Everywhere) that advised trucking firms to work with brokers that provide transaction transparency since it leads to a reduction of unfair compensation (Lockridge, 2020). Refusal to sign contracts that allow brokers to bypass federal regulations would potentially balance the effects of brokers' power in low demand scenarios witnessed during the pandemic.

Bringing together the business intelligence gathered from various networking techniques can be used to *develop a risk management program* that will provide early warning signals that trigger mitigation plans. For example, TL1 noted that the company has already made efforts in portfolio diversification and reduction of broker dependent business in order to safeguard themselves from broker dependence. TL1's goal is to grow their direct customer business and reduce reliance on brokered business.

Finally, small trucking firms should develop a *crisis management* plan. However, this pandemic has made them realize there needs to be a plan in place to deal with these unexpected events. Dealing with high uncertainty and rapidly changing circumstances requires changes in managerial attitudes. Management needs to realize the importance of having strong relationships with employees and other stakeholders. This includes fostering cooperative relationships with suppliers and customers. In these highly uncertain periods, trust becomes a very valuable asset (Csath, 2021). Thus, how management obtains maximum value from their resources, which become scarcer in times of crisis, often hinges on the level of trust and cooperation built up with employees, customers and suppliers. Therefore, the owners of these small trucking firms must be committed to a philosophy of continuous learning and improvement in normal times. These actions will facilitate the foundation for a strong business that will be able to survive the crisis conditions created by unforeseen events such as COVID-19.

CRediT authorship contribution statement

Larry C. Giunipero: Writing – original draft, preparation, theory, data collection, survey question preparation. **Diane Denslow:** Writing, literature review, editing and reviewing. **Ania Izabela Rynarzewska:** data collection, Methodology, reviewing, data analysis, data triangulation.

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Developing transactive memory to the supply chain based on buyer-supplier digital communities☆

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ABSTRACT

Knowledge and expertise are critical to the proper functioning of supply chains. However, scholars have only stated the need for knowledge and information sharing and overlooked how it conceptually develops in organizations. This research provides an in-depth look at the source of knowledge through the lens of four decades of Transactive Memory Systems (TMS) research. Through netnographic research, we first identified communities where TMS occurred naturally. We found that they were developed to provide members access to a greater pool of knowledge that improved product innovation and supplier choice and affected their buying behavior. We also found that it enabled members to become more resilient during the global supply chain crisis. Finally, we identified distinct, though often overlapping, member roles to encourage TMS development. Previous research on TMS has mainly focused on relationships between dyads and within small organizations. This paper extends the TMS literature into the supply chain by applying it through a structure-strategy-performance model. We conclude by reasoning that understanding the theory behind the source of knowledge will enable firms to develop and enhance more efficient supply networks. Finally, we also outline the extent to which these networks can be developed.

1. Introduction

Boundary-spanning marketing research extends beyond its borders and impacts various businesses. The COVID-19 pandemic forced operations to shut down, leading to supply chain shortages. These disruptions impacted most business sectors. During this period of volatility, certain businesses in the same sector were more successful than others. Success was accomplished through innovative teams driving agile and resilient supply chain processes (Ivanov, 2022). Innovative teams are usually interdisciplinary, where everyone can contribute their unique expertise. These teams develop interconnected knowledge networks that may prove efficient in times of crisis. On a day-to-day basis, having access to knowledge within networks fosters efficiency, agility, and resilience (Cotta and Salvador, 2020). Research suggests that knowledge networks benefit organizations, but developing effective ones is challenging.

COVID-19 necessitated this boundary spanning effect, highlighting those organizations whose supply chains were able to pivot and adjust quickly and efficiently, thereby reducing the negative impact of a pandemic. Academics made calls to expand supply chain

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management (SCM) research and view business consumers as part of dynamic supply chains instead of limiting research to individual business units (Baldi et al., 2024). We argue that business consumer (BtoC) networks within supply chains can be a source of information and knowledge to better understand threats and opportunities within supply chains, thus providing an opportunity to improve entire supply chains. In this research, we study behaviors of consumer networks in naturally occurring transactive memory systems (TMSs). We propose that supply chain members of varied expertise must be appropriately managed. This management will lead to increased responsiveness and efficiency in addressing crises. It will also help manage day-to-day tasks and help them become more innovative in responding to threats and opportunities within their business environments. Finally, it will help solve cross-boundary problems of individual business units.

Based on fully immersive, multi-year netnographic research of online supply chain member communities and prior research, this research proposes that TMSs are networks of information that facilitate accurate and effective information sharing, fostering innovations and improving crisis mitigation. These information networks can be especially beneficial when applied to the supply chain. Global geopolitical tensions are rising, as illustrated by the pandemic, the Russian-Ukrainian war, and the Israeli-Palestine conflict. These crises challenge supply chains' effectiveness and affect all business sectors, from healthcare to cosmetics to global food supplies and eventually to the consumer (Rynarzewska et al., 2024).

This research fills a gap in the existing research by developing and applying a model of TMS in a supply chain context. Support for the application of TMS in multi-unit, cross-functional teams can be found in the literature (Kotlarsky et al., 2012). More recently, Fernandez-Giordano et al. (2022) introduced TMS as an antecedent to agility and innovation, but the authors did not specify how these models develop or function. This research, therefore, provides an in-depth look at the source of knowledge through the lens of TMS based on netnographic findings. Knowledge networks could develop naturally, but we argue that properly managed TMS can effectively improve efficiency and resilience within firms and between supply chain members.

Previous research on TMS has mainly focused on relationships between dyads, teams, and small organizations (He and Hu, 2021). Recently, literature began introducing TMS to the supply chain as an antecedent of key variables. For example, Fernandez-Giordano, Stevenson, Gutierrez, and Llorens-Montes (2022) found that TMS is an antecedent to supply chain agility, while Huo, Haq, and Gu (2021) found it to be an antecedent to supply chain flexibility, which is likely to contribute to the ability to respond to supply chain disruptions and encourage innovations. This research extends previous research by explaining how TMS can be established and utilized within a supply chain context.

Further, this paper extends the TMS literature into the supply chain by applying it through a structure-strategy-performance model. It also extends supply chain literature by clearly outlining the possible strengths of TMS introduction to supply chain and proposing how it can be developed. Based on a multi-year netnographic study and a thorough interdisciplinary literature review encompassing marketing, supply chain, communication, psychology, and organizational studies, we propose how it can be developed internally and strategically on an organizational and supply chain level. Therefore, this study breaks the boundaries of a classic marketing study, offering implications within and across disciplines.

The theoretical basis for this research flows from the Strategy-Structure-Performance paradigm proposed by Defee and Stank (2005). Their model extends the strategy literature to the supply chain environment to foster a better understanding of the elements characterizing a strategic decision. The current research extends their model to the knowledge component term TMS. Knowledge sharing has been important for supply chain success, but there is a gap in what theories would lead to the effective transfer and retention of this knowledge. We propose extending TMS to the supply chain to provide a rich understanding of the theoretical component necessary to foster information, knowledge sharing, and continual learning. We term this extension "supply chain transactive memory" (SCTMS).

Properly managed supply chains substantially contribute to individual firm performance (Hult et al., 2006; Miles and Snow, 2007). This makes them a key subject of study, especially with respect to improving firm performance. Taking into account the importance of supply chains and knowledge sharing, it is no surprise that marketing and management researchers, as well as practitioners, focus on examining the benefits of information sharing and knowledge networks on a supply chain's performance and variables affecting that performance (Hult et al., 2004; Klein and Rai, 2009; Lee et al., 2000). Still, the complexity of modern supply chain systems demands continuous explorations to understand their interdependencies and identify ways to improve supply chain performance. The ongoing supply chain disruptions and a very competitive environment in an uncertain economy make this study even more relevant.

Knowledge sharing has been shown to be related to organizational performance. Improper knowledge flow may hinder success (Singh, 2005; Sorenson et al., 2006). This is likely to be true given the recent supply chain disruptions that have reached a global scale. For example, an effective knowledge system would have helped organizations pivot sooner when faced with pandemic-related crises or threats like opportunistic suppliers (Rynarzewska et al., 2024). Establishing structures or networks of knowledge and information sharing that enable organizational learning and task execution becomes crucial for practitioners who want to improve an organization's capabilities (Flores et al., 2012). Knowledge structures may enable reaching higher levels of effectiveness and efficiency, which cannot be underestimated, especially from a perspective of meeting task or project related objectives and deadlines by the working team (Akgun et al., 2005; Xue et al., 2010) in a regular course of business. Additionally, they may help improve the speed of responsiveness to threats to prevent delays and enhance effectiveness.

The relationship between knowledge development and sharing positively affects organizational performance (Hult et al., 2007). This paper looks at how information and knowledge can be shared while simultaneously reducing the cognitive load on individuals within organizations in a supply chain by introducing TMS. Practitioners can improve the supply chain's effectiveness and increase organizational performance through greater access to knowledge and information sharing. Lewis and Herndon (2011) specifically state that "TMS provides an ideal—albeit underutilized—lens through which to consider the performance and development of groups engaged in complex, dynamic tasks" (p. 1262). We argue that the same can be done in a supply chain environment known for its

complexity. Finally, we define a Supply Chain Transactive Memory System (SCTMS) as the cumulative sum of individual memory systems communicated by task experts. Communication occurs between individuals at a firm's boundaries, leading to increased information and knowledge sharing, thus creating inter-organizational learning that benefits each firm's performance. Now that we have introduced TMS and SCTMS, a review of the TMS literature is provided, followed by a discussion of the value of TMS as a conceptual tool for increasing information sharing in the supply chain.

1.1. Literature review

1.1.1. Transactive memory System(s) (TMS) defined

A transactive memory system (TMS) is, in essence, the reliance on experts' knowledge for task execution (Renand and Argote, 2011). It is a form of a knowledge network from a psychology research perspective (Phelps et al., 2012). TMS is viewed as a type of socially shared cognition, but what makes TMS unique from other forms of socially shared cognition are three features that include "(1) differentiated knowledge; (2) transactive encoding, storage, and retrieval processes; and (3) the dynamic nature of TMS functioning" (Lewis and Herndon, 2011, p. 1255).

TMS can also be viewed as a structure of cognitive interdependence among group members where group members rely on one another to take responsibility for storing information and where retrieval is enabled (Hollingshead, 2001). A well-developed TMS relies on networks of experts within their fields (Austin 2003; Hollingshead, 1998). These networks should be easily accessible by non-experts within a group to promote the best and most efficient completion of a task or project. A non-expert within one area may be an expert within another area. When all group members are aware of each other's expertise, TMS works at its best (Austin, 2003), which means there are no misconceptions about who has expertise in a particular area. If no misconceptions of member expertise are present, a high degree of transactive memory exists. According to Lewis, Lange, and Gillis (2005), a TMS helps solve the task at hand and enhances understanding of the task domain. Based on the above, a TMS is a connected network of transactive memory networks (network of networks) or meta knowledge.

Several studies found that a high level of transactive memory within a firm increases performance and the organization's dynamic capabilities (e.g., Austin, 2003; Argote and Ren, 2012; Liang et al., 1995; Lewis, 2004; Moreland, 2006). A meta analysis study reported the positive impact of TMS on affective, behavioral, and performance measures. Specific dimensions included trust, satisfaction, knowledge sharing, absorptive capacity, and transfer. Performance dimensions included efficacy, innovation, objective performance, effectiveness, and efficiency (Zhou and Pazos, 2020). What follows is the development of the TMS network.

1.1.2. Framework for the TMS network.

1.1.2.1. Development of individual memory (IM). Individual memory (IM) is an antecedent to TMS development. Individual memory systems in the system can be viewed in two ways. First, within a firm, a single individual possesses a memory on which others can rely. At some point, the individual becomes an expert when s/he accumulates enough in-depth knowledge within their individual memory. Members of the group became aware of this expertise during interactions (Peltokorpi, 2012). Each firm consists of several individuals with individual memories, creating a memory system within this firm (Austin, 2003; Brandon and Hollingshead, 2004). In this case, the firm becomes a TMS when members can access each other's memory to execute projects. Within this system, an individual with specialized expertise becomes a location of information for those who are not experts (e.g., Hollingshead, 1998; Wegner, 1987). This individual possesses an individual memory (IM) in a TMS at a firm level.

1.1.2.2. Development of Task-Expertise-Person (TEP). Once TMS is developed and team members become aware of the cognitive interdependence between the individuals, a second TMS development cycle can occur. During the second cycle, group members associate people, their expertise, and the knowledge the experts can offer with the task to be solved or a project to be completed (Brandon and Hollingshead, 2004; Lewis and Gillis, 2005). Brandon and Hollingshead (2004) proposed another structure of TMS, advancing the understanding of how the system works by introducing task-expertise-person (TEP) units. These units "become fundamental building blocks of a TMS by articulating which task (T) is performed by whom (P) with what domain expertise (E)" (Yoon and Zhu, 2022, p. 239). TEP is viewed as a dynamic structure because the group's perceptions of the associations between task, expertise, and person can change over time. TMS depends on linking expertise with an individual and how well the knowledge fits the task's needs (Akgun et al., 2005; Brandon and Hollingshead, 2004; Lewis, 2004). Tasks need to be divided so that the TEP can function. TMS' effectiveness is highly dependent on how well TEP units are developed and executed in group performance (Yoon and Zhu, 2022). However, it must be noted that TMS should not be only used for a specific task solution but rather viewed as an opportunity for broader use across task domains (Lewis et al., 2005; Peltokorpi, 2012), including limited-term teams (O'Toole et al., 2023).

1.1.2.3. Three-stage process of transactive memory systems development. TMS development occurs during a three-stage process involving encoding, storage, and retrieval (Hollingshead, 1998; Lewis et al., 2005; Wegner, 1987). The first stage, *encoding*, is when experts and information are encountered and assigned a naming property, otherwise known as labeling. Labeling is associated with providing a naming category for the information encountered and linking it to the correct expert. For example, during a supplier meeting, an individual may discuss and define several complex components the organization offers. Each component receives its specific name (either catalog name or a commonly used abbreviation) under a broad category of "components" and is linked to the individual who has knowledgeably discussed these components. The second stage is referred to as the *storage stage*, during which the

newly encoded information is stored in either internal or external memory, otherwise known as location. The internal memory is the storage in one's memory (i.e., brain), while the external location is outside of one's memory. The external location may be computer memory, calendar, notebook, etc. The members become locations of external storage for each other (Austin, 2003; Hollingshead, 1998; Lewis, 2003; Lewis and Herndon, 2011; Wegner, 1987; Wegner, 1995). Group members may choose to learn in-depth information about components, or they may choose to rely on the expert when the information about components is needed. As noted earlier, during group discussions, the exchange of information among members takes place (Hollingshead, 1998), providing an opportunity to clarify misconceptions about the identity of actual experts within a field should be clarified, a necessary step for accurate TMS (Austin 2003; Hollingshead, 1998; Peltokorpi, 2008; Yan et al., 2021). We found support for this in Study 1 where true experts could correct any group members who shared incorrect information, thereby minimizing the risk of group members misidentifying an "expert."

Finally, the third stage is the *retrieval stage,* during which the information is recalled when needed from either an internal or external memory location (Moreland et al., 1996). TMS, however, develops when an external location is another individual. Shared working experience between individuals fosters the development of TMS, while differentiation of knowledge allows members to be responsible for unique knowledge (Lewis, 2004; Lewis and Herndon, 2011; Moreland and Argote, 2003; Zheng, 2012). Communication plays a key role in all TMS development stages as it enables accurate recognition of the expert and facilitates retrieval (Yan et al., 2021).

1.1.3. Value of the TMS network

1.1.3.1. Reduces cognitive load. Cognitive load theory addresses human learning. It explores the relationship between our limited memory, learning, and knowledge sharing. The objective is to maximize learning and minimize associated errors (Reese et al., 2016; van Nooijen, 2024). Cognitive load theory establishes that individuals can process only a limited amount of new information (e.g., Miller, 1956; Sweller and Chandler, 1991). Once too much information is encountered, attempts at learning additional information result in increased errors (Sweller and Chandler, 1991). Because of the complexity and diversity of tasks, individuals are more likely to encounter tasks that require information outside their own area of expertise. What adds to the complexity is the need for tasks to be completed under time pressures, which, according to the cognitive load theory, is likely to lead to an increased error rate. Information quantity or complexity overload can result in a loss of information from working memory (van Nooijen, et al., 2024).

Wegner (1987), Hollingshead (2001), and Austin (2003) specifically state that specialization diminishes the cognitive load on an individual. Furthermore, a group of experts with specialized knowledge, each of whom had direct interactions while working together on a task or project, is more likely to be more creative as a team than those teams without direct interaction (Gino et al., 2010). Experts help non-experts with cognitive load by reducing the amount of unnecessary information needed (cueing) to complete tasks and deciding which information is needed while connecting it with existing knowledge (chunking). These decisions lower the load (van Nooijen et al., 2024). Cognitive load is typically considered at an individual level. However, when individuals collaborate, it is also present on a collective level. Thus, the collective load can be reduced through collaborative and transactive activities (Kirschner et al., 2018). Therefore, TMS can be viewed as a tool that enables effective information sharing and diminishes the cognitive load on the individual and the collective collaboration level.

1.1.3.2. Increases organizational communication. Communication needs to occur for the memory to become transactive (Hollingshead and Brandon, 2003; Kotlarsky et al., 2012; Liao et al., 2012). The exchange of information between members' internal and external memories and its impact on individual decision making makes it transactive. Communication is crucial for TMS to work effectively and

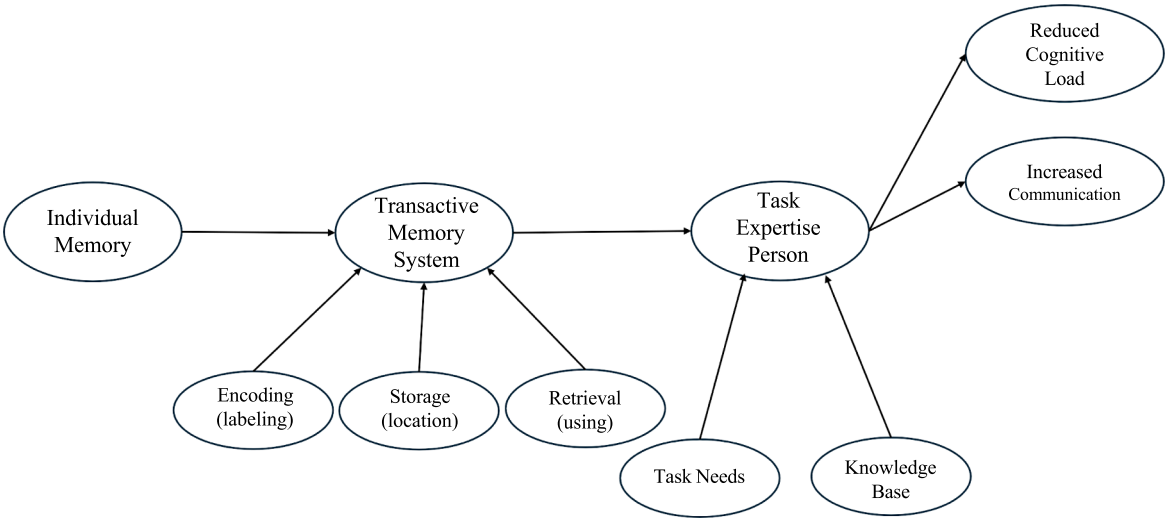

Fig. 1. Conceptually developing TMS framework.

accurately (Hollingshead, 1998; Kotlarsky et al., 2012; Yan et al., 2021) and serves as a medium for transferring information about individuals' knowledge, expertise, and experiences (Hollingshead, 1998). Communication, especially face-to-face communication, fosters the development of TMS and triggers retrieval (Lewis, 2004). Virtual teams can also develop effective TMS using technology and social media (Chen et al., 2023, Yoon and Zhu, 2022). TMS development via social media is a new area requiring more research (Yoon and Zhu, 2022).

A review of the literature on the role of communications in TMS suggested that"(1) a TMS forms through communication about expertise; (2) as a TMS develops, communication to allocate information and coordinate retrieval increases, promoting information exchange; and (3) groups update their TMS through communicative learning" (Yan et al., 2021, p. 3).

Studies suggest that communication quantity and quality play a key role in TMS development (Kotlarsky et al., 2012), particularly in the encoding and storage stage, where the label and location are assigned (Yan et al., 2021). When the location is designated, individuals become aware of who holds the expertise (Lewis et al., 2005). In this situation, transactive memory becomes an ongoing group structure that can be advantageous for the tasks at hand during day-to-day business, special projects, and any future endeavors. Therefore, a TMS may be used in a much broader sense than for a single and specific task execution. Fig. 1 summarizes our discussion of the theoretical framework for TMS. Individual memory (IM) is an antecedent to TMS (composed of three stages). Once TMS develops, there is a second cycle, which is the identification of the task expert person (TEP) who possesses the knowledge to meet the demands of the task(s) at hand. This process benefits the organization by reducing cognitive load and increasing communication.

1.1.4. Extending transactive memory systems to the supply chain

Four decades of TMS literature have mainly focused on the functions and advantages within interpersonal relationships, internal groups, and small organizations (Argote and Guo, 1996; Austin, 2003; Chen at al., 2023; Gupta and Hollingshead, 2010; Hollingshead, 1998; Hollingshead, 2001; Moreland, 2006; Peltokorpi, 2008; Peltokorpi, 2012; Ren and Argote, 2011; Yan et al, 2021). Meanwhile, only a few studies explored the challenges and possibilities of extending the concept of TMS to the organizational level. These studies mentioned the problems of organization wide TMS, including: 1) members have difficulty identifying who knows what in organizations; 2) there is little knowledge sharing across subgroup boundaries; 3) geographically distributed organizations rely on advanced technology to share information; and 4) retrieving tacit knowledge is easier in small groups than across the organization. Even fewer studies highlight the benefits of TMS on a multi-organizational scale despite many opportunities to cooperate on a network level across their supply chains. For example, Ren and Argote's review of 2 decades of TMS research (2011) focuses mainly on group and organizational-level opportunities. They also highlight the potential to create a worldwide team network, which gives rise to opportunities for inter-organizational research, combining each firm's individual level of expertise. Recently, supply chain specific TMS research provided insights into the organization-level development of TMS (Cotta and Savladaor, 2020). More recent supply chain studies focused on inter-organizational performance, innovation, and collaboration. They cited the positive effects TMS could have on the supply chain and stressed the need for research to address TMS in the supply chain (Utami et al., 2024). Despite their positive impact on the field, these studies only measured a limited number of TMS variables and provided a narrow view of TMS dimensions and capabilities. Finally, a bibliographic investigation of inter-organizational relationships highlighted the importance of knowledge networks, collaboration, and cooperation between organizations (Agostini et al., 2019). Supply chains fit the TMS model since they require communication and continual information sharing and represent a fertile area for developing a TMS. Expanding TMS to inter-organizational networks of supply chains can increase organizational capabilities and performance. TMS allows access to an extensive knowledge pool without increasing cognitive demands on an individual lacking the necessary expertise (Austin, 2003; Hollingshead, 2001; Zheng, 2012). As a result, a type of dependence on experts is created that allows for greater team efficiency and effectiveness (Mathieu et al., 2008). Supply chains promote and encourage both greater member integration and synchronization of activities. This requires expertise within and outside the organization's boundaries, thus allowing TMS application in a supply chain context.

For this study, we rely on the definitions adopted from Mentzer et al. (2001) and Choi and Krause (2006), who view the supply chain as a network of suppliers, distributors, and customers that uses upstream and downstream communication and information exchange between the focal firm and its constituents. This exchange is influenced by the quality of inter-organizational connectedness, which then allows better knowledge sharing. The overall goal is to increase performance through open lines of communication and information sharing within and outside organizational boundaries.

Supply chain specific studies support this claim by emphasizing that collaboration between supply chain participants leads to increased performance due to an increased ability to satisfy customer needs at lower cost (Fawcett et al., 2009; Hult et al., 2006). Monczka et al. (2021, p. 127) define collaboration as the process by which two or more parties adopt a high level of purposeful cooperation to maintain a trading relationship over time to achieve specific goals. These goals include cost, quality, delivery, and customer service improvements.

From a TMS perspective, dissemination of knowledge-about-knowledge needs to take place before the TMS can effectively work (Moreland, 2006; Peltokorpi, 2012). Thus, every active supply chain entity needs to be aware of who holds expertise within each area. On a *macro level*, each participating firm needs to be aware of each other's expertise. In contrast, on a *micro level*, each supply chain professional within the organization needs to be aware of experts within their own firm, as well as those of their suppliers and customers. Following this process results in a TMS system of knowledge.

Improving supply chain efficiency and effectiveness generates customer value (Monczka et al., 2021, p.8, Morash and Clinton, 1998). This value creation implies that winning the competitive battle is now between supply chains. Firms configuring the best supply chains will be the market winners (Monczka et al., 2021). TMS then can prove beneficial at several levels of the supply chain and, ultimately, the customer. First, organizations that create alliances with firms that voluntarily form networks of support and attempt to optimize them should consider both firm and alliance-level optimization, especially regarding decision-making (Walter et al., 2012).

Thus, the literature supports the formation of structures such as TMS within a firm and its goal of optimizing the entire network. Second, TMS applied to the supply chain can be beneficial because it can improve the problem-solving process. Executing tasks or launching new projects in chains of organizations is difficult since these tasks can be highly complex, differentiated, and/or extend beyond a single person's expertise. Individuals who attempt to learn new information to expand their expertise to execute tasks are likely to face problems related to cognitive load and the brain's limited capacity (Schnotz and Kürschner, 2007). The question remains how TMS can develop on a multi-organizational level. To better understand how TMS may develop within a supply chain, we immersed ourselves in online communities of producers, distributors, and suppliers who have naturally developed TMS. Based on the netnographic research findings, we propose SCTMS developments with a strategic focus.

1.2. Research methodology

Netnographic research is a qualitative research method that relies on online immersive observation and data collection. Netnography allows research on communities that develop their own culture, language, symbolism, consumption patterns (Kozinets, 2022), and even, as we propose here, knowledge systems in an online setting. As prior studies suggested, netnography is useful in studying processes of consumer socialization where attitudes and knowledge are formed based on the exchange of information in a group setting which can affect purchasing behavior (Kumar and Dholakia, 2022). Netnography was initially developed to provide ethnographic insights into end consumers who gather online (Kozinets, 2022). Rynarzewska and Giunipero (2024) expanded its applicability to supply chains. Netnography is particularly useful for studying the phenomena of interest because it allows for immersive observation of the development of networks as they happen by relying on various computer-mediated communication methods. Members of communities willingly share information and their know-how, communicate with each other, and answer questions.

1.3. Research sample

This research was conducted with social media groups of small business owners in the beauty care and candle industry. The groups varied greatly in size. For example, the largest group had 100,000 participants, and the smallest group had 150 members. Smaller groups were more focused on specific topics, such as the performance of a particular raw material. In contrast, the larger groups discussed a broad range of topics related to their industry. Regardless of size, their daily posts were highly interactive, making them ideal for studying their information exchanges, experiences, and know-how.

1.4. Analysis and findings

Consistent with the netnographic approach, we predominantly focused on real-time netnography (Rynarzewska and Giunipero, 2024), primarily engaging in contemporary rather than retrospective discourse observation and relying on field notes (Immersive Journal). We used the interpretive, reflexive approach to analysis (Braun and Clarke, 2019). During the analysis, we conceptualized themes based on direct participant quotes, which were organized into three main groups: 1. Member Roles, 2. Expertise, and 3. Outcomes.

1.4.1. Member roles

The members' roles can be divided based on the type of engagement: 1) Influencers, 2) Knowledge sharers, 3) engagement inducers, 4) Information requesters, and 5) Lurkers. These groups of individuals were classified based on how they use and contribute to knowledge sharing.

Influencers are individuals with a great deal of expertise and well-developed businesses. Influencers share their knowledge extensively, often creating educational content on YouTube and other social media platforms. This content is monetized and frequently sponsored by suppliers. Influencers receive free products to use in videos, may accept other forms of payment, and often rely on affiliate links as an additional source of income. They have a great deal of influence in groups; their content is often linked in comments when answering other members' questions. Members heavily rely on influencers' expertise to assist with various activities such as product development, testing of raw materials (fragrances, additives, other raw materials), etc. They also share their experiences and sources of their equipment. These influencers are active in community groups and self-promote by linking to their content. They often respond to comments on their respective social platforms where they upload content. Influencers are very cautious about offering negative comments on suppliers.

Like influencers*, knowledge sharers are community members who* may share their knowledge broadly and eagerly. However, unlike influencers who are predominantly focused on creating content on their preferred social media platform and monetizing it, knowledge sharers are more involved in the community, offering input on suppliers, results of materials testing, etc. Knowledge sharers are easier to access than influencers. They also serve as quality checks to detect any misinformation.

Engagement inducers post engaging content to benefit other members and ensure ongoing, information-rich conversations. They also post the results of their work to receive feedback or to inspire. Frequently, they also share "lessons learned" in the process of manufacturing their preferred products. Engagement inducers are more likely than not to be experts in their field but are more focused on community interaction than establishing themselves as experts. Over time, however, they establish a reputation as experts.

> *"Some times a what if question can produce unique results. I asked, "I wonder if I can make soap in a glass pie plate". So I tried it. Mouse and Cheese soap, all cold process. (I did not like the cheese scent…;)."*

Information requesters are members who need information or lack the knowledge to start or complete tasks. They ask questions with the primary purpose of receiving help to address their tasks at hand. These posts can generate engagement, but the requester does not have engagement as a goal. The exchange between information requesters and knowledge sharers is the most transactive since the exchange is directly related to task execution.

> *"Here I go again…Trying really hard to get this right…*
> *So I am on (supplier name) website, I want to use the blueberry fragrance oil. I look up the IFRA certificate. I look for bar soap, which is category 9. It says 76.3 %.*
> *My batch of soap that I want to make is 60 oz. Do I take 76.3 % x 60 oz which = 45.78 That does not make sense to me… Help…lol I am really trying to step up my knowledge and understanding."*

Finally, *lurkers* are members who may not engage at all. They are present in groups following their conversation and knowledge-sharing efforts but neither post nor comment. They may benefit from the group by accessing its knowledge; for example, they can use the search option in the group to access relevant information, but they do not give back in any way. For instance, they do not induce engagement or offer any benefit to other group members in return for their access to knowledge.

1.4.2. Member roles & TMS

Member roles in these computer-mediated communication sites are critical to developing transactive memory systems. They enable highly visible identification of experts whose participation and information sharing allow other members to have access to a pool of knowledge greater than any one entity could possess. All these members' roles overlap to some extent, but each member is likely to be more representative of one group by having more in common within the group than with members from other groups. The most distinctive, mostly non-overlapping roles are those of influencers and lurkers.

In these social media groups, member posts focus on expertise requested and shared by members, revolving around "how to" questions about products, promotions, pricing, branding, business practices, and "who, where, and how" about suppliers. Product-related content can be further divided into four categories: 1: product development, 2: product creation troubleshooting, 3: feedback seeking, and 4: "lessons learned," akin to feedback giving.

Product development inquiries often involved questions about the best raw materials for specific product manufacturing and quantities of raw materials for desired performance. For example, members might ask how much of each oil would contribute to product cleansing, hardness, moisturizing, and lathering properties (of soap) or what is the appropriate combination of oils, plant butters, and emulsifiers to achieve the ideal consistency, moisturizing, and conditioning properties of lotions. More general questions about ideal finished good properties were also requested to support product innovation efforts.

What characteristics does a good shampoo and conditioner bar have? How do you go about formulating a good recipe since there's so many different kinds of hair types?

Members shared their knowledge eagerly as it contributed to the common good, ensuring that products launched on the market were safe and of high quality. When their product innovation strategy failed, they may have posted content related to product troubleshooting. For example, members wondered why the product changed color from the initial to the final product or did not turn out as expected.

What could be causing the bubble like bumps on the edges of my soap? It's only on the outside edges where the soap meets the mold. I have a 44 oz batch and I did dissolve.6 oz of citric acid in my distilled water before adding the lye. This is my first time using citric acid. I'm using Soapmaking friend, so I did check my recipe. The cut side looks fine. TY edit: I did use a mica I bought on (supplier name).

Members would also seek feedback on their new products by posting photos or videos and asking for feedback.

> *"Finally done with my Fall Line. 14 designs all together. These are some of my favorites ☺"*

This feedback was often motivational, ensuring that members would not give up. Such posts usually resulted in praise of the finished products and one's creativity.

Individuals who shared their lessons learned and responded to knowledge inquiries with information that directly addressed the question became more recognized by the group members. They earned credibility, and the opinions and knowledge shared became more impactful. Their credibility is earned by their frequent posts and the usefulness and accuracy of the information they provide.

> *Testing ….… testing.....1,2,3 This thing is on. On the tray to dry. Tester recipes with 3 different scents. I posted so you could see what discoloration is happening after only 2 days. These weren't super white recipes, but the 2 lighter haven't darkened much at all. I totally expected the CP to darken.*

Members who shared the results of their lessons learned and materials testing were often elevated to knowledge sharers or influencers, depending on their other behaviors. However, if they predominantly shared only finished goods, they likely remained in the engagement inducers category. Pricing and business practices were also requested and shared.

Finally, supplier-related discussions were frequent and generated a lot of engagement. These often included logistics-related questions, including speed and delivery, packaging quality, and fulfillment timeliness. Members also discussed supplier opportunism, including various potentially deceptive practices like price gouging, temporary price drops, delays in providing information related to raw material performance, or safety parameters based on regulatory changes.

> *"Anyone else noticed Patchouli has more than doubled in price?"*

"Has anyone used (supplier name) for oils? They offer drop shipment and site pick ups around your location. Just wondering what everyone's experience is if any with them?"

Deficiencies in supplier-business consumer information sharing resulted in members' increased need for information. Business consumers would then attempt to request and share information, which would benefit everyone in the community.

I need some advice on fragrance oils. Recently, I made a batch of cold process soap using a pumpkin spice fragrance oil from (supplier name), but the scent faded significantly and ended up smelling like ammonia. This isn't the first time I've had issues with fragrance oils, and I've had to throw away several batches of soap because of this. I'm looking for recommendations on the best fragrance oils and suppliers that you've had success with.

Members would reply to each other's requests, offer motivational support, and build interactive files where they would document the performance of various raw materials based on application. Those included material workability (such as whether the material is "fast-moving" or "slow-moving"), longevity, potential discoloration, regulation, and safety-related information like skin-safe usage rates.

If you're searching for a red colorant, be aware of micas from (supplier name)!!
I've been a soapmaker for over 20 years and this is my first disappointing experience with colorants.
Espresso Martini New scent from (supplier name)!
Smell is ok. I'm not overly thrilled by it to be honest. It was better out of the bottle but we'll see what it cures down to.
Super thrilled with my design though! I think it's cute. I was harnessing "me espresso" vibes hehe. IYKYK.

Member roles affected expertise shared. These key themes contributed to outcomes resulting in improved task completion, agility, and resilience during turbulent times with major supply disruptions like during the COVID-19 pandemic.

Members would support each other, collaborate, and brainstorm how to best deal with shortages, supplier deception, shipping delays, and price fluctuations. During the most significant shortages, they often sold packaging or closures that they no longer used. They would notify each other of in-stock products and price drops. They also would share how fast a supplier was fulfilling the orders, how long the shipping would take, how good the customer service was, and the quality of the packaging. Collectively, they would also strategize how to replace raw materials that are difficult to stock. For example, they would discuss what oil in shortage could be swapped for another to achieve the same product properties in the finished good. Often, they would either tag the person who they perceive to be the most knowledgeable on the topic or direct an individual to that knowledgeable person either to post links to expert blogs or educational videos on YouTube.

However, it must also be noted that during the COVID-19 pandemic, there appeared to have been a surge of new entrepreneurs leaving their jobs due to layoffs, perceived employer mistreatment, or fear for their health at the prior job. Therefore, many would attempt to start a business inspired by abundant social media DIY recipes and videos available online shared by individuals who were not experts in the industry. These newcomers were inspired by social media posts falsely promoting making easy income in the industry. Community members initially welcomed and directed such new entrepreneurs to sources of information but eventually got frustrated as they felt that the newcomers were looking for a handout. They also felt the newcomers were unwilling to study the craft, its safety, and regulations or do any research on their own. Yet, even members who became more protective of their knowledge directed newcomers to resources such as videos and blog posts made by influencers or explained how to search groups for information already shared.

It is important to note that such extensive collaboration gave members access to a vast pool of knowledge. They created what appeared to be transactive memory systems on a large scale with members who carried various areas of expertise. The expertise variety showed signs of specialization. Some members were better at creative expression and creative means to elevate packaging, product visual appeal, or labeling. Others may have had very narrow areas of expertise, like properties of raw materials and their performance and specific finished goods. In contrast, others may have broad areas of expertise spreading across various product categories, from soap to lotion to bath bombs. Over time, members realize who holds expertise in which areas due to frequent posting and computer-mediated communication, sharing valuable tips, and willingness to help with tips and suggestions that have proven effective.

This system-wide collaboration resulted in the ability to make adjustments quickly, allowing entrepreneurs to be agile and responsive to dynamic changes, and supply chain opportunities, and threats. They could switch opportunistic suppliers to suppliers who did not price gauge. Members could secure new suppliers without lengthy research simply because they could access a greater pool of experience beyond their own. Additionally, some community experts started offering services by becoming for-profit knowledge suppliers by providing workshops, recipes, and tips or becoming suppliers of raw materials that they could use for their business. At the same time, they also made some profit and reduced the per unit cost as they could order larger quantities and then sell to other members. Finally, access to a large pool of knowledge allowed members to quickly respond to any price changes in stock material and move away from potentially opportunistic suppliers.

Overall, the interpretative findings from netnography indicate that there are information and knowledge seekers and those who are willing to share their knowledge freely for the greater good. The interpretive and higher-order analysis allows us to infer motivations for these collaborations. Members found the collective knowledge pool beneficial to task completion, from product innovation to pricing and branding to supplier selection and raw material testing. Even though they were competitors for the same type of consumer in the same product category, often offering products at similar prices, they shared their knowledge for the greater good. There was an understanding that providing others with accurate information benefited the industry, protecting it from what they thought would be too strict government oversight if too many SMEs engaged in unsafe practices. They wanted to ensure that the product brought to the

market would be safe and high-quality. In a way, it was driven by self-preservation. Members knew that if an end consumer bought a sub-par product from a similarly situated competitor, the consumer might not be willing to try from the same product category but from a different maker. Finally, members were also motivated by reciprocity. Having been helped in the past, they felt motivated to help others who were starting their business or needed motivation to remain in business despite difficult times.

1.4.3. Member roles & TMS themes

Fig. 2 captures key themes and benefits associated with developing TMS within this knowledge sharing community and illustrates the community's expertise in product(s), pricing, promotion, and supply chain.

The expertise-related information and knowledge sharing led to various outcomes, such as product innovation, effective task completion, and changing sources from opportunistic suppliers to competitive ones who were able to respond to their needs.

1.4.4. Discussion of study 1

Study 1 presents compelling evidence for developing knowledge networks consistent with transactive memory systems where members, through written, pictorial, or video, computer mediated communication, request and share their expertise in online communities to help those who need it to complete tasks successfully. The tasks ranged from product innovation and problem solving to selecting capable suppliers who had raw materials in stock and techniques for improving customer service. These knowledge systems developed naturally in online community groups of individuals motivated by requests for information from business owners.

Within these communities, five different types of members emerged and included: 1) Influencers, 2) Knowledge sharers, 3) engagement inducers, 4) Information requesters, and 5) Lurkers. Interestingly, members who were influencers rarely requested others' expertise, but they did contribute in other ways, such as developing video content tutorials, material testing, helping find new suppliers, etc. At the same time, experts who may have significantly contributed to the system but were not influencers would eagerly seek expertise outside of their own by requesting it from other members.

The transactive memory systems allowed members to create better products, stay current on regulations, access safety, and performance-related information, avoid questionable suppliers, and choose effective ones.

Community interactions and the development of transactive systems occurred before the COVID-19 pandemic. However, during the pandemic, observations provided insights into the effectiveness of the systems and extended beyond task execution. For example, access to a greater pool of knowledge, a characteristic of TMS, enabled members to respond to changes quickly and efficiently.

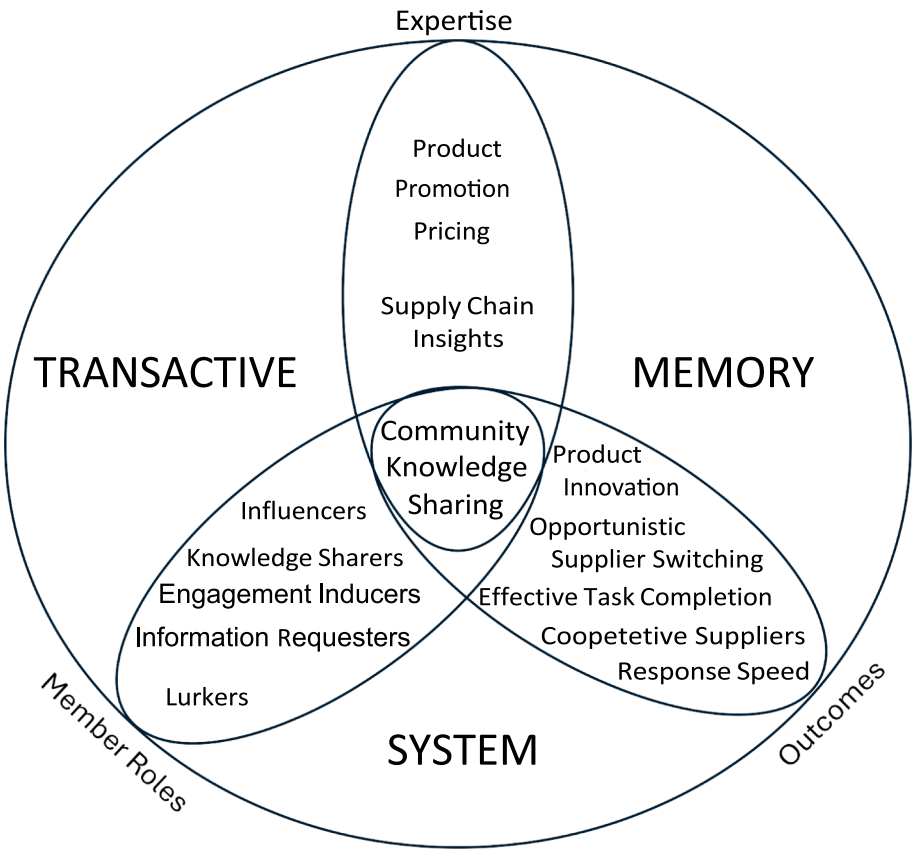

Fig. 2. Members' roles, shared expertise and outcomes associated with TMS.

Accurate recognition of experts and the ability to access their knowledge per-need basis allowed members to showcase their resilience and ability to pivot despite extreme demands on global supply chains.

In this study, the transactive memory systems were a form of coopetition. Members were buyers, manufacturing the same type of products and serving similar retailers and end consumers. Yet, for their benefit and the benefit of the industry, they chose to collaborate and share their knowledge with others in the community. Some decided to diversify their product manufacturing business to satisfy the needs of other business consumers. Some members repositioned themselves in the supply chain and focused solely on becoming suppliers of raw materials. Others remained business consumers while becoming suppliers of knowledge and raw materials.

While qualitative findings cannot be statistically generalizable, the findings from netnography can be applicable and transferable to other situations (Rynarzewska et al., 2024). That netnography study found evidence for developing transactive memory systems among competitors, resulting in coopetitive efforts benefiting members. Further, Study 1 also addressed the need to study the role of social media in TMS while providing insight into social media and computer-mediated communication in developing TMS (Yoon and Zhu, 2022).

In the next section, we build on Study 1 to extend the findings to supply chains with more complex business structures. We incorporated an additional review of the literature with findings from Study 1 to develop a strategic transactive memory system in supply chain. Specifically, we respond to Rynarzewska and Giunipero (2024) suggestions to build on netnographic findings and develop testable propositions.

2. Study 2 Transferability for naturally occurring TMS to supply chains

2.1. Literature review

2.1.1. Knowledge sharing, management and collaborative relationships

While supply chain literature has introduced TMS in its models as predictors (Scheibe et al., 2022; Cotta and Salvador, 2020; Utami et al., 2024), it currently lacks specificity in how TMS can be strategically developed. Further, writers have proposed concepts that would apply to a TMS model. These include knowledge sharing and collaborative relationships, discussed in the following sections.

While information sharing can lead to increased knowledge in TMS, knowledge is often more complex than simple information exchanges because it involves "the exchange of know-how, and feedback with customers, organizational experts, and others outside the group" (Cummings, 2004, p. 352). Unlike information, knowledge begins with experience, which makes it challenging to share and acquire by those without related experience (Argote and Miron-Spektor, 2011). Knowledge sharing works best in well-defined knowledge networks. Knowledge networks consist of nodes or clusters of individuals that "serve as heterogeneously distributed repositories of knowledge and agents that search for, transmit, and create knowledge—interconnected by social relationships that enable and constrain nodes' efforts to acquire, transfer, and create knowledge" (Phelps et al., 2012). What makes knowledge so important is its link to performance, thus making it a fundamental concept for understanding and managing organizations (Brauner and Becker, 2001).

As evidenced in Study 1, members shared their unique expertise and know-how, which, without experience, is difficult to attain. Members who relied on experts' shared knowledge successfully applied that knowledge to the task at hand, such as product failure troubleshooting or innovating new offerings. Hence, knowledge is more intricate, difficult to acquire without experience, and challenging to transfer, mainly when the need is unprompted. Findings from naturally occurring TMS suggest that when the need for unique knowledge is prompted by communicating the need, knowledge can be shared more effectively and in a targeted manner, providing access to only information and the know-how relevant to the task at hand. Thus, information is only a subset of knowledge, but it is linked to know-how and experience. Information is easy to store electronically, whereas knowledge is inherently human. With that, knowledge sharing that characterizes TMS systems in internal organizations can be applied to supply chains and managed.

A bibliographic review of three decades (1990–2020) of knowledge management research suggests that optimization of knowledge flow necessitates management, participation, and collaborative learning (Di Vaio et al., 2021). As the authors state: "the degree of transfer, sharing, and exploitation of knowledge requires the cooperation of all company departments through the implementation of collaborative and inter-organizational learning processes that exploit large flows of information" (p. 226).

Knowledge and its management are complex and multifaceted. Knowledge management systems (KMS) were developed as technology improved to support knowledge creation, transfer, and management. Effective KMS helps firms maintain a competitive advantage (Gupta et al., 2022). For example, big data software platforms can uncover knowledge sources across departments through data access and improved information flow (Di Vaio et al., 2021. Technology assists with recognition and flow; companies must exploit it through internal and external sharing processes to enhance know-how and increase organizational knowledge (Di Vaio et al., 2021). KMS is a broad set of technology-based tools that enable knowledge management. TMS is much narrower and focuses on specialized expertise, which relies on effectively recognizing who knows what to gain access to knowledge.

In contrast, KMS is focused on technology to enable knowledge creation, transfer, and management. Together, TMS and KMS positively affect knowledge sharing and application, affecting performance (Jackson and Klobas, 2008). For example, a blockchain-enabled food supply chain requires inter-organizational knowledge of the entire supply chain to identify problems and generate solutions (Pham et al., 2024). As the application of TMS continues to expand into inter-organizational networks, the reliance on technology-mediated communication through social media will increase (Yan et al., 2021; Yoon and Zhu, 2022).

Although the technology used for KMS may change over time, KMS can support but not replace TMS development among groups and organizations that are geographically separated. Because there is an inherently human aspect to TMS that allows it to succeed as humans create and possess knowledge and affect the transfer processes (Rashid et al., 2021). For those reasons, peer-to-peer

interactions and personal ties are critical in inter-organizational communication and sharing (Talbi et al., 2024). While KMS supports these inherently human aspects of collaborative knowledge sharing, they can't replace TMS.

Given the literature above, collaborative knowledge networks are essential because they allow for knowledge to be disseminated among the members (Singh, 2005). For example, sharing demand information among the members of the supply chain not only reduces demand distortion (Lee et al., 1997; Langley et al., 2025, p. 207) but can also lead to more accurate demand forecasts, increased capacity utilization, optimal inventory levels, and better customer service (Lee et al., 2000).

2.1.2. Collaborative relationships and organizational learning

Sharing knowledge and information among members of an organization is often viewed from an organizational learning perspective. Organizational learning (OL) is a systems approach that enables organizations to convert individual knowledge into organizational knowledge. Based on an extensive literature review Wang and Ahmed (2003) concluded that organizational learning involves collectivity of individual learning, process or system, culture or metaphor, knowledge management, and continuous improvement. They extended these key areas by incorporating creativity and radical innovation. A major focus of OL literature is on a learning culture that maximizes organizational learning, intending to integrate employee knowledge while providing structure for continuous learning within the organization regardless of its challenges and changes (Naqshbandi et al., 2023). Basten and Haamann (2018) extended OL to include tacit and explicit knowledge. Explicit knowledge can be articulated, codified, and communicated using symbols or language (e.g., in documents), whereas tacit knowledge is highly personal as it is deeply rooted" in individual expertise. While OL and TMS share the focus on knowledge transfer from individual experts, OL focuses on organizational learning. At the same time, TMS emphasizes access to experts, maximizing the pool of knowledge while minimizing the cognitive load on the individual and collective. Thus, access to individual expertise within an organization (individual memory systems) and the supply chain's transactive memory system must occur through the participation and collaboration of all entities across supply chains.

Collaborative relationships between supply chain partners that include information sharing increase efficiency and sustainable competitive advantage and foster trust and commitment between the participating entities (Nyaga et al., 2010). Therefore, it can be inferred that information and knowledge sharing at the supply-chain level is acquiring knowledge about markets and customers across multiple organizations. One program that highlights this information sharing and collaboration is the retail sector program termed efficient consumer response (ECR) collaboration. Corsten and Kumar (2005) studied the impact of ECR on the suppliers of a large retailer. They found that ECR adoption positively impacted supplier economic performance and capability development. However, it also generated supplier perceptions of inequity, but these were moderated by the degree of trust the supplier had with the retailer.

In a related example, the leadership at Under Armour stated that supply chain collaboration would be a core competence both internally and externally. In 2013, Under Armour had $2.3 billion in sales, which had grown to $5.7 billion by 2024, representing a 250 percent growth in a decade. Under Armour's success formula involved developing supply chain capabilities that quickly adapted (speed to market) to the increased volume and variety generated by its stream of innovative products. Supply chain responsiveness requires speed, subject to constraints of customer demands (predictability) and cost parameters in distribution and shipping (control).

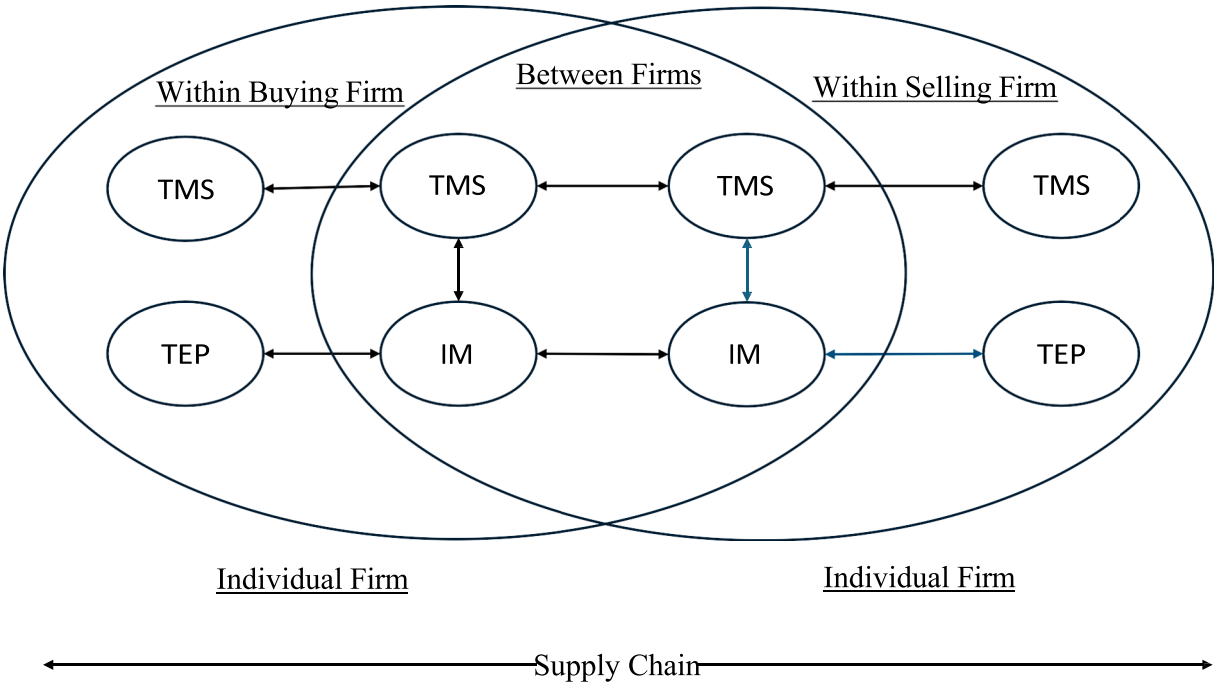

Fig. 3. Boundary spanning TMS in Supply Chain.

Hence, Under Armour's growth was the multiplicative outcome of product innovation and supply chain resilience (Gilmore, 2014). Achieving speed with predictability and control requires the TEP within the firm to extend TMS across organizational boundaries.

As is shown in Fig. 3 below, achieving internal and external alignment requires collaboration in the supply chain. The individual firm's TMS (supplier TMS and customer TMS) intersects at the organization's boundaries to create a collaborative TMS.

Depending on the task, these cross-organizational interactions are carried out by different TEPs at both the customer and supplier sides. For example, when solving a quality problem, the supplier's quality personnel will meet with the customer's operations team. Alternatively, if it is a discussion about the price of a good or service, the TEPs will be the supply manager and the marketing manager. Through these interactions, joint SCTMS is developed, and the TEPs increase their individual memories (IM), leading to enhanced TMS at both the supplier and customer firms.

2.2. Model development

Beeby and Booth (2000) extend the model of organizational learning as an inter-level process developed by Rashford and Coghlan (1994). The framework identifies four levels (individual, team, interdepartmental group, and organizational) where learning and unlearning occur. They argue that this framework requires modification to reflect the increasing incidence of cooperative relationships between organizations and the need for knowledge acquisition and integration within such relationships. They propose incorporating an additional inter-organizational level of aggregation at which it is also meaningful to speak of productive organizational learning (Beeby and Booth, 2000).

We propose extending TMS to the supply chain provides a rich understanding of the theoretical component necessary to foster open knowledge sharing and continual learning. We propose increased knowledge sharing and properly aligning these key elements to increase collaborative inter-organizational learning and improve inter-firm performance. A model based on the work of Defee and Stank (2005) was used to apply TMS to the supply chain. Their framework shows an iterative relationship between strategy, structure, and performance measurement systems and implies that a company's supply chain strategy should complement supply chain partners. It also identifies the elements comprising a supply chain structure required to support supply chain strategy implementation. These elements included technology integration, communication, standardization, decision-making location, and reward and compensation programs.

Further, Defee and Stank (2005) extend the strategy literature to the supply chain environment to foster a better understanding of the elements characterizing a strategic decision. We extend the structural aspect of this model to TMS in the supply chain. We term this extension of TMS as a supply chain transactive memory system (SCTMS). We present SCTMS as the summation of individual memory systems communicated through a task expert that takes place between individuals at the boundaries of a firm and leads to increased information and knowledge sharing, creating collaborative inter-organizational learning benefiting each firm's performance. Building on Defee and Stank (2005), we offer a quantitative representation of SCTMS, shown in Fig. 4. The SCTMS equals the sum of the TMS at the focal firm plus the TMS of the customers and/or suppliers. Depending on the supply chain network's upstream and downstream complexity, the SCTMS could be quite substantial and involve many TEPs.

Fig. 5 illustrates the application of the SCTMS Structure Strategy Performance Model. Our model extends Defee and Stank's model by adding a TMS perspective and introducing SCTMS to encompass the interactions that occur when organizations interact. All of the variables discussed in this research are presented in their model. They include information, information sharing, knowledge, knowledge sharing, collaborative learning, TEPs, and TMS. Our model intends to illustrate how SCTMS can enhance inter-firm performance. While recent supply chain literature acknowledges some underlying variables, they only offer a limited view suggesting a need to integrate them into an SCTMS framework. For example, according to encoding, storage retrieval contributes to efficiency and performance within the supply chain (Cotta and Salvador, 2020). In comparison, Scheibe and colleagues (2022) focus their research more on coordination and its link to supply chain resilience.

Finally, from a risk perspective, cognitive load theory relies on the premise that individuals can learn only limited amounts of new information. Once too much information is encountered, attempts at learning additional information result in increased error (Sweller and Chandler, 1991). Supply chain members frequently require information about another organization's expertise. If this exceeds the expertise of the parties' capabilities, the entire organization could be exposed to the risk of error. One example of this was General Motors' discovery of defective ignition switches. Does the blame for the defect fall on the focal firm, General Motors, because of a faulty design or its supplier due to supplying defective switches (Bennett, 2014)? In either case, the SCTMS was insufficient to avoid the problem, or the expertise necessary to solve it (TEP) was not located. Our model proposes that increased knowledge and information sharing will reduce the risk of error and thus allow the supply chain to become more responsive. Monczka et al. (2021) support this by stating that sharing critical data in the supply chain can help all parties achieve their goal of increased shareholder value through

$$SCTMS = \sum^{focalfirm} TMS + \sum_{i=1}^{customers} TMS + \sum_{i=1}^{suppliers} TMS$$

Note: SCTM=Sum of TMS of Focal Firm+ Sum of TMS customers + Sum TMS supplier

Fig. 4. Visual representation of the summative SCTMS structure.

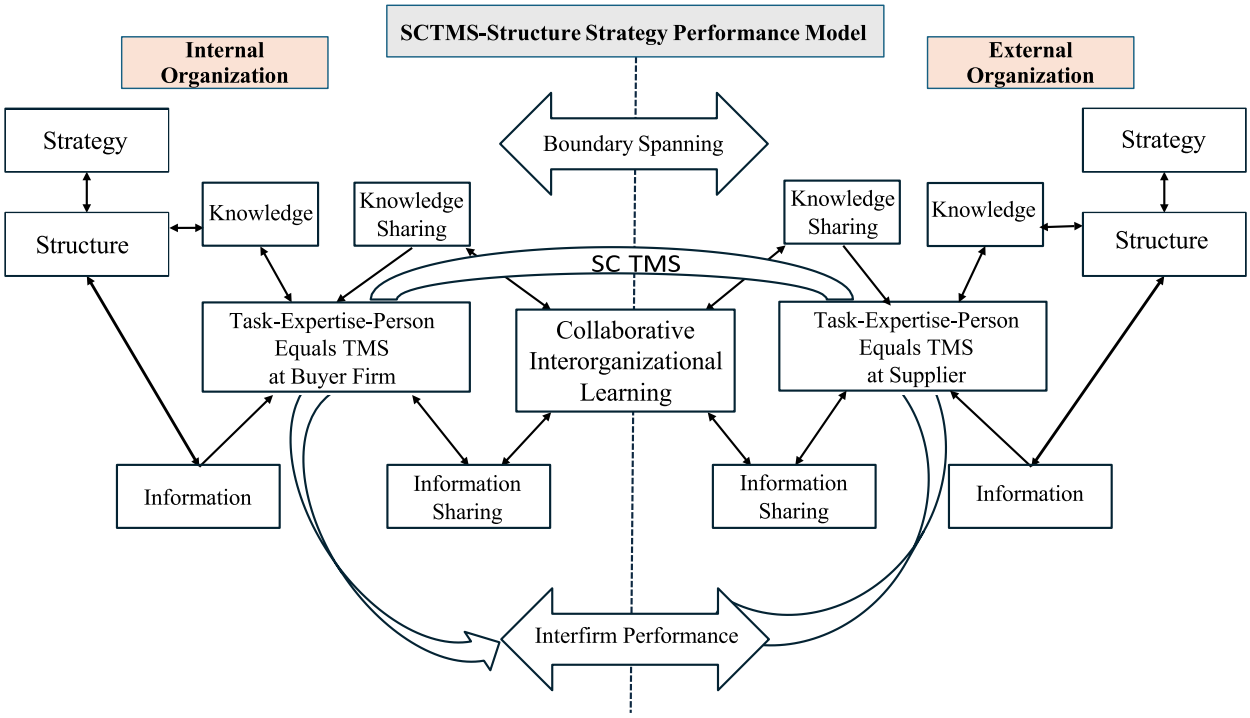

Fig. 5. Strategy Performance Model and Supply Chain Transactive Memory System.

revenue growth, asset utilization, and cost reduction (p.744). We also posit that SCTMS should not induce fear of saturation as one's knowledge cannot be cloned or perfectly replicated; instead, it expands the pool of knowledge and capabilities despite any learning occurring in the process. Further, specialization, credibility, and coordination, the elements of TMS, positively affect supply chain network optimization and collaboration, which, in turn, positively affects asset efficiency and process innovation (Scheibe, Mukandwal and Grawe, 2022). Next, we will trace SCTMS development through the previously mentioned steps of TMS development.

2.3. Stages of supply chain transactive memory system development

2.3.1. Labeling

Based on the literature reviewed, group members, when studied from a supply-chain perspective, develop a 'hierarchical set of labels' to enable themselves to access individuals and promote joint task responsiveness. This is TMS's initial encoding stage, which begins with labeling. Labeling is a complex step in the development of TMS for three reasons. First, the correct label must be assigned because mislabeled information is difficult to retrieve in later steps. Secondly, some information needs to be assigned a broader category, which leads to hierarchical labeling. Thirdly, an individual who voices expertise must be able to claim that expertise. In other words, an individual must be a true expert.

For example, eleven years ago, P&G's product offerings expanded rapidly, where its intense focus on in-store sales and price promotions played havoc with product demand. This caused short-term, marketing-induced spikes in demand. In response, P&G spent millions on increasing manufacturing capacities, inventories, warehouses, and logistics to keep up with fluctuations in demand (Sims, 2013). To rectify this situation, P&G modified its supply chain focus, both internally and externally, with suppliers and customers. This increased transparency was accomplished by closely tying their internal marketing and production to their external customers and suppliers to improve responsiveness to meet changing business requirements (Sims, 2013). From a SCTMS perspective, P&G's success could be associated with a well-run system that began with proper hierarchical labeling. For example, price promotion could have been labeled as one of the broad domains. From there, narrower categories could be assigned to each task or information related to price promotions, such as competitive price matching, quantity discounts, coupons, etc. An individual was assigned to each broad domain or, more narrowly, each category. The more complex the domain, the more nested the hierarchy of labeled information becomes. Each member knows who is responsible for which domain or category, which allows for easy access to that domain or category through the proper assignment of an expert. When someone wanted to gain access to P&G price promotion-specific information, this information could have been easily obtained by accessing a domain-specific expert. Once a label is assigned to domain/category-specific information, this expert's location can be assigned.

2.3.2. Location

After the labels are developed, estimating a task's parameters takes place, followed by decision-making about the resources necessary to execute the task. This is the "what, how, and who" of the task execution, between the development of the labels and the decision-making about "what" (the task), "who" (the expert), and "how" (the necessary resources), a connecting link is necessary. The best way to establish the expertise mentioned above is through group interaction and communication between the individuals within an organization (Hollingshead, 1998; Hollingshead and Brandon, 2003; Kotlarsky et al., 2012). This stage aligns with the "stored" stage of TMS.

One example of this is Warehouse Management System (WMS) software. WMS is designed to help manufacturers, distributors, or retailers perform warehouse operations faster and with fewer errors. WMS systems improve customer service and resource utilization regarding inventory, buildings, and people. (Langley et al., 2025 p.323) (Muehlbauer, n.d.). As previously discussed in the P&G example, when a group member wanted to access price promotion related information, access could be gained through knowledge of where the information was located. As previously mentioned, in TMS, another human is the location of information and the domain-specific expert. In an SCTMS, this is true regardless of whether the group member needing access to the information is employed by P&G or a customer such as Walmart.

2.3.3. Retrieval

The expert provides the resources, which in the case of TMS is the task specific knowledge (Hollingshead, 2001) and becomes a part of the "retrieval" stage of TMS. Each expert, whether at a single organization or multi-organizational (supply chain), can be a part of the task-expertise-person (TEP) unit. In TEP units, depending on a task, expertise is associated with a person (Brandon and Hollingshead, 2004). Expertise is assigned on an individual or organization level. Austin (2003) and Brandon and Hollingshead (2004) suggest that a task must be accurately assessed for the TMS to work at high levels. We have proposed that the TEP can also exist within a supply chain context. In a supply chain, depending on the task, a specific firm within the supplier or customer base is assumed to have expertise in an area required to complete the specific task. Once the expertise is assigned to a company, the focal company can retrieve information necessary to execute a task from the company holding the expertise. As previously mentioned, P&G has a representative stationed at Walmart headquarters in Arkansas who orders P&G products based on Walmart's daily sales. These orders replenish stock, leaving Walmart's distribution centers bound for customers. This process has made retrieval easier by locating a TEP on site (Sims, 2013). These three processes have been linked to supply chain efficiency and performance (Scheibe et al., 2022).

2.4. Research propositions

Applying this new conceptual model (SCTMS) to the supply chain leads to four research propositions for effective supply chains. These propositions anchor SCTMS into the existing literature and can serve as a framework for future researchers to extend this conceptual work.

2.4.1. Task expertise person (TEP) in an SCTMS model

The highest TMS levels occur within groups with direct interaction and task experience and are stable over time as opposed to frequently changing members (Gino et al., 2010). Brandon and Hollingshead (2004) state that for TMS to be efficient, TEP must also develop. We propose that multiple TEP units need to be developed for a firm to have high levels of TMS. Based on the above, Tier I firms need to establish TEPs for SCTMS to advance. Within this framework, retrieval takes place using labeling and location. Thus, when a task is encountered, it can be assessed in a way that makes it clear where expertise is located. Knowing where the expertise resides (hierarchical labeling and location assignment) allows supply chain members to assign information correctly to the right expert.

The validation of information has been previously described as the encoding of information (Wegner, 1987; Hollingshead, 1998, Yan et al, 2021). According to Wegner (1987), "individuals are seen as linked to knowledge on the basis of their personal expertise, or through the circumstantial knowledge responsibility that accrues as a result of how the knowledge has been encountered by the group" (p. 192). Similarly to the individual level, on the supply chain level, inter-organizational team members' ability to encode, interpret, retain, and recall knowledge is key to the development of TMS (Scheibe et al., 2022). Based on the literature, logic, and previous discussion of Fig. 4, proposition one follows.

Proposition 1. *To develop an SCTMS, each entity within the supply chain must develop multiple TEPs within their organization and interface with other TEPs outside the organization's boundaries, collectively or individually.*

2.4.2. Improving TEP matching

Intra and inter-organizational interaction and communication are essential in achieving flexibility, responsiveness, and competitiveness in a supply chain context (Gunasekaran and Ngai, 2004). Information and knowledge sharing through interaction and communication allow an organization to perform tasks faster and more effectively, as it can access a wide range of knowledge within a group (Yan et al., 2021). Knowledge sharing in an SCTMS model is enhanced by adequately matching those knowledge entities on each side of the supply chain dyad. According to Austin (2003) and Brandon and Hollingshead (2004), developing an effective TMS does not rely only on the interaction between the entities. The information exchanged during the interaction needs to be accurately assigned so that the experts are assigned according to their particular areas of expertise, which, in turn, can be used to solve a task. Thus, better matching of the TEPs at both organizations will increase the timeliness and accuracy of information exchanged across an SCTMS system.

As previously mentioned, TMS relies heavily on how members perceive each other's knowledge (Hollingshead, 2001). Only a precise perception of the knowledge can lead to the distribution of knowledge responsibilities. Following this logic to supply chain application would imply the need for accurate recognition of knowledge sources to enable the accurate distribution of knowledge responsibilities within a group, which is necessary for effective SCTMS. Only accurate representation of expertise within an organization can allow for high TMS levels. Wegner (1987) emphasizes interaction as necessary for accurate TMS development. He suggests that knowledge recognition and responsibility for knowledge among members should not be left to chance. Thus, it is critical for inter-organizational communication that the TEPs on both sides of the supply chain dyad are clearly identified, matched, and allowed to interface freely. This leads to Proposition 2.

Proposition 2. *Organizational structures that enable increased visibility for their task expertise personnel (TEPs) will permit more efficient sharing of information and knowledge in SCTMS systems*.

2.4.3. Collaborative inter-organizational learning

It follows from proposition two that firms who value the results from better matching their TEPs will experience higher levels of SCTMS. The frequent inter-organizational interaction of these TEPs will lead to increased collaboration. This collaboration results in increased inter-organizational learning. Organizational learning is a function of two related but different concepts. These two concepts are the learning process and the learning organization's structure. Organizational learning is the development of new knowledge or insights that have the potential to influence behavior (Slater and Narver, 1995). A learning organization is an organization skilled at creating, acquiring, and transferring knowledge and then modifying behavior to reflect this new knowledge (Garvin, 1993). Organizational learning has been studied from a high-level supply chain and at a strategic level (Hult et al., 2003). These researchers suggest learning is a composite construct of learning, systems, team, and memory orientations.

As mentioned earlier, the OL literature addresses knowledge transfer from the individual to the organization to maximize organizational learning (Naqshbandi et al., 2023). In contrast, cognitive load theory focuses on reducing errors, primarily at the individual level (Kirschner et al., 2018). We build on these two knowledge and transfer theories combined with TMS research. They provide the basis for our proposal that this system-driven collaboration will increase the interaction of the TEPs, leading to inter-organizational learning at the boundaries of the organization. A management focus on inter-organizational collaboration will improve inter-firm performance through improved efficiencies and error reductions individually and collectively.

Firms that better match their TEPs across boundaries will learn from each other and gain inter-organizational knowledge that can create an environment that improves the performance of both firms. While we have focused our research on the tier-one supplier, it is logical to assume this improvement can be extended to multiple supply chain tiers. Thus, we make our third proposition.

Proposition 3. *Better-matched TEPs on both sides of the dyad will lead to increased collaborative inter-organizational learning and increased inter-firm performance through improved efficiencies*.

2.4.4. Cognitive load and SCTMS

A TMS is most effective when its members can accurately specify the experts (Brandon and Hollingshead, 2004). When an accurate task assessment and accurate specification of the task are present, an individual, using previously learned schemata, may approach task attainment without increased cognitive load. Accurate recognition of the types of knowledge necessary for task solutions and effective project work allows the members of the systems to access a greater pool of knowledge by accessing the expertise of others. The dissemination of information within an organization allows for organizational learning and strengthening of TMS while lowering cognitive load on those without the expertise.

It should be noted, however, that in situations where an individual is repeatedly exposed to the same information, this individual learns the new information even if pieces of old information are replaced with new information (Ben David et al., 2011; Cook, 1994; Wogan and Waters, 1959). Hence, the individual cannot only access a larger pool of knowledge due to the network character of TMS but also, over time, learn new information while reducing the total cognitive load. In SCTMS, knowledge becomes objectified and easily retrieved when needed (Kotlarsky et al., 2012). On the other hand, internal cross-functional teams face challenges related to knowledge flows from knowledge differentiation and integration (Liao et al., 2012; Majchrzak et al., 2012; Oborn and Dawson, 2010). Therefore, from a supply chain perspective, it is logical to assume that as the network of firms in the chain expands, so does the scope of information to which individuals are exposed. Correspondingly, if the right TEPs are not identified and interfacing across the supply chain, the likelihood is higher that demands on individuals exceed their cognitive capabilities. This is especially true because the supply chain can also be viewed as an extended and hierarchical network of firms, within which the focal firm and its direct suppliers (Tier I) and suppliers (Tier II) are included in an extended supply base (Choi and Krause, 2006). Exceeding cognitive load on a SCTMS is likely to lead to more errors and higher risk. This risk can lead to supply disruptions and have a detrimental effect depending on the probability and magnitude of the risk (Zsidisin and Smith, 2005). However, this risk can be mitigated using transactive and collaborative activities, which reduce collaborative cognitive load (Kirschner et al., 2018).

If the information shared by the TEPs proves to be accurate and valid, the cognitive load on the supply chain is manageable and performance attainable. Conversely, poorly matched TEPs will produce a situation where the organizations' cognitive load is exceeded, leading to potential errors and risk of supply disruption. This leads to propositions four (a) and four (b):

Proposition 4a. *Improved matching of TEPs across the supply chain reduces the cognitive load on inter-firm interactions and leads to higher levels of SCTMS*.

Proposition 4b:. *Mismatching of TEPs across the supply chain leads to an increase in cognitive load on the inter-firm interactions and lower*

levels of SCTMS.

3. Conclusions, implications, & limitations

3.1. Conclusions

Table 1 summarizes the findings and references to the appropriate literature. Supply chain performance is linked to TMS collaboration, which can stem from inter-organizational team members' ability to encode, interpret, retain, and recall knowledge (Scheibe et al., 2022). In supply chain, firm-level TMS predicts resilience, which can help organizations better prepare for major disruptions such as the Covid-19 pandemic (Cotta and Salvador, 2020; Nikookar and Yanadori, 2022). Still, research has neglected to conceptualize how the transmittal of this knowledge can be developed and managed across the supply chain on micro and macro levels. In this research, we bridge that gap. First, through netnographic research, we gain insight into TMS that naturally developed in a computer-mediated social media environment, a newer research area (Chen, Agrawal et al., 2023). Findings provided a basis for understanding how communities of buyers can build networks of experts to allow them access to a greater pool of knowledge for task completion. We recognized five different types of members whose engagement in the community encourages TMS development for more efficient task execution, agility, and resilience in turbulent times. We then highlighted the most frequently shared types of expertise and the positive outcomes related to the ability to access such a vast pool of knowledge. We also found that members supported each other in finding capable suppliers compared to incumbents who acted opportunistically. This finding was consistent with Rynarzewska et al. (2024), who found supplier opportunistic behavior and deception that led to supplier switching. Through this study, we responded to Baldi et al., 2024 call for viewing B2B customers not as individual units but as part of a larger supply chain. We then build on these contributions to propose that the transmittal of knowledge can be viewed through the lens of TMS and TEPs, ultimately forming a supply chain (SCTMS). The research particularly focuses on the role of the TEP on each side of the dyad. It proposes that how organizations match their TEPs in a supply chain context will affect the level of SCTMS that the firm achieves and reduce the cognitive load on the entire system.

Specifically, this paper develops SCTMS as an information-intensive and collaborative inter-organizational process among supply chain members, creating a specialized knowledge network. A highly valued advantage of SCTMS is its capability to lower the cognitive load on individuals at the boundaries of the organization. Cognitive load theory focuses on each individual's limitations when working on a new, complex task. Reducing this cognitive load allows individuals to process new information without errors and learn ways of solving a problem or executing a complex task. While the cognitive load is usually associated with individual learning, it can also be extended to collaborative learning. However, on a collaborative level, collective, cooperative, and transactive activities will reduce the load (Kirschner et al., 2018). It directly highlights the importance of activities related to SCTMS, which can be used to reduce collaborative cognitive load. Further, developments of cognitive systems such as TMS can help improve competitive position and operational efficiency with supply chains (Yang et al., 2025), all while reducing cognitive load.

This paper proposes a model of SCTMS development while also providing insights into antecedents of effective TMS. Employees involved in day-to-day business and even team members collaborating on special projects may eventually acquire some of the knowledge that the experts hold. However, this knowledge will most likely not reach an expert's level of in-depth knowledge. The newly acquired knowledge by non-experts would not replace the expert. Therefore, members must have differentiated, non-overlapping expertise so that each member can access a large pool of knowledge by relying on expert members. In this paper, based on a naturally occurring TMS between groups of supply chain members gathered online, we highlighted and underscored the importance of different member roles and their contribution to a well-developed TMS. Consequently, in a strategically managed supply chain, individual firms are expected to have differentiated, predominantly non-overlapping expertise. This matching of TEPs across organizational boundaries can be improved by organizations permitting increased visibility into their systems.

The research has also posited that TMS can improve problem-solving effectiveness in a single organization or in a dyadic relationship, as suggested before, and within a supply chain context. Both academicians and practitioners could benefit from developing and further researching SCTMS as an information transference mechanism. The validity of this proposition is embedded in the research that supports the notion of TMS improving supply chain efficiency and contributing to resilience (Cotta and Salvador, 2020, Scheibe et al., 2022). However, it does not provide details of how TMS can be developed in supply chains.

Extending the existing literature, we propose that increased efficiency and complex task solving capabilities can occur when high knowledge and information flow levels are enabled through the networks of expertise. Furthermore, a level of knowledge differentiation between the system's members must be present for different experts to emerge. These different features are the key aspects of

Table 1
Summary of findings & literature.

SCM Performance → collaboration (Scheibe et al 2022)
TMS facilitates resilience → improved crisis mitigation (Cotta and Salvador, 2020)
Social media research → naturally developed TMS (Chen et al., 2023)
Community engagement → sharing of expertise (Rynarzewska et al., 2024)
TMS and TEPs → Supply Chain (SCTMS) (Baldi et al., 2024)
SCTMS → lowers cognitive load (Kirschner et al., 2018)
TMSSCTMS → Increased Efficiency (Scheibe et al., 2022)
Defee and Stank Model → extended to supply chain (Defee and Stank 2005)

SCTMS, which, in turn, make complex tasks and projects more manageable and enable their successful and timely completion without increasing the cognitive load on individuals. High levels of SCTMS should also enhance the focal firm's overall TMS. Ongoing interaction between supply chain members should optimize the focal firm's overall SCTMS through increased information accuracy and retrieval in the supply chain. Criteria for elevated information accuracy in the TMS and SCTMS are the careful selection and monitoring of a manageable supply and customer base.

Furthermore, the authors proposed an extension of Defee and Stank's model. The new model includes both the upstream and downstream flow of product/services/knowledge works in a TMS within a supply chain network. The antecedents of effective and accurate TMS are interactions and communication among members, information sharing among the active entities, task and knowledge specialization, as well as shared representations of the networks of expertise.

3.2. Managerial implications

The benefits to managers for the introduction of TMS to SCTMS are twofold. First, it is expected that a well-developed SCTMS will directly affect the firm's performance through the dissemination of expertise among internal members. Second, additional indirect benefits are expected, such as increased collaboration, innovation, enhanced quality, and profitability for all supply chain members. Perhaps most importantly, this SCTMS is not easily duplicated or copied and is in line with resource-based theory, so it can provide a firm with a competitive advantage (Barney and Clark, 2007). Getting SCTMS to the strategic level requires managers to consider implementing some or all the suggestions listed below.

By their very nature, supply chains trigger complexity and require that strategic and tactical tasks be managed timely, effectively, and accurately. This complexity is magnified by multiple profit-seeking firms in the supply chain with competing goals. Recent global events, such as the COVID-19 pandemic, triggered supply chain disruptions that required immediate action. Learning from major disruptive crises can help prepare for future disruptions (Nikookar and Yanadori, 2022). Effective supply chains require communication, and managers need to understand how organizational knowledge transfers. Identifying TEPs on each side of the dyad is the first step towards building SCTMS.

Individuals can be buying center boundary spanners located in purchasing and marketing. Alternatively, other individuals in the buying center, such as engineers, maintenance supervisors, or operations managers, can also be boundary spanners. Managers should develop TMS internally and relay the information to boundary spanners developing the SCTMS capabilities. Fully developed SCTMS requires managers also to consider total supply chain costs. This requires matching supplier capabilities to customer demands. TMS experts from both sides of the dyad will perform a supplier capability evaluation. As illustrated earlier, Under Armour's supply chain success depends on capable suppliers responding rapidly to changing customer demands.

Managers must continually assess the accuracy of the data transmitted in the supply chain as it leads to greater confidence in the knowledge transferred (Pillai, 2010). The accuracy of the individual TMSs is cumulative in an SCTMS model. Increased confidence in knowledge has synergistic effects that can result in collaborative inter-organizational learning. The effects of inter-organizational learning are measured via cross organizational goals, such as total supply chain inventory, supplier responsiveness, innovation in process redesign, etc. The Walmart and P&G example provides a roadmap for managers desiring increased collaboration and aligns with our SCTMS model. Managers in smaller organizations can apply these principles. Small business buyers in our study gained access to new knowledge and executed tasks faster through TMS development.

Astute managers will develop SCTMS systems that provide visibility to suppliers that allow both parties to reach their goals. This can include sharing forecasts and cost data. Technology supports the rapid transfer of data. Leading ERP firms recognize the need to be more effective at the boundaries (Jones, 2012). For example, SAP acquired Ariba over a decade ago to improve its upstream presence in the supply chain, and the merged firm is named SAP Ariba. Traditional data transfers via email and fax imply a lower SCTMS maturation level.

Managers must strive to limit roadblocks to SCTMS, such as corporate culture, policies, and protocols. Thus, managers need to look beyond technology and develop policies and governance structures that create a culture suitable for knowledge sharing (Human, 2021), (Gupta et al., 2022). Finally, as mentioned above, from a strategic viewpoint, SCTMS is not easily duplicated or copied and can provide a firm with a competitive advantage.

3.3. Limitations and future research

While the model was proposed by relying on an extensive literature review and findings from qualitative netnography, the first and most natural suggestion for future research is to empirically test the proposed model. Before that, the conceptual model can also be further expanded. Expansion can also be done by describing the processes within a supply chain that lead to the development of SCTMS. Specifically, more focus should be placed on antecedents and dimensions of SCTMS. Moreover, when looking at propositions outlined in this paper, it is important to further examine the effects of communication and interaction among members as it relates to knowledge transfer. Risk and trust factors should be evaluated whenever lines of communication are open and access to expertise is free flowing. Therefore, future research should focus on testing the proposed model and its propositions and expanding it by looking at risk and trust factors.

This study has its limitations. First, this is a conceptual piece, and like every conceptual piece, its significance does not rely on data. However, we strengthen the proposed model's conceptual nature by drawing on netnography findings, which uncovered naturally occurring TMS. The goal of a conceptual piece is to generate knowledge and become a cornerstone for theory building in a particular area. Considering a rapid decline in the number of published conceptual pieces, the substantial number of citations of these pieces

indicates their relative importance to the marketing field (Yadav, 2010).

CRediT authorship contribution statement

Ania Izabela Rynarzewska: Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **Larry C. Giunipero:** Writing – review & editing, Writing – original draft, Conceptualization. **Diane Denslow:** Writing – original draft, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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RESEARCH ARTICLE

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Typology and impact of follower responses to social media influencer "promotional crisis"

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Abstract

This study introduces a typology of follower responses to seemingly deceptive promotional content by a social media influencer (SMI) and the effects of those responses on observers. Through a large-scale, mixed-methods analysis of an influencer's "promotional crisis" in early 2023, popularly known as "Mascaragate" on TikTok, we identified follower engagement types that potentially harm both SMI and the promoted brand. The crisis sparked an unusually high level of network activity, providing valuable insights into the ripple effects of follower reactions. Drawing on parasocial relationship theory and social capital theory, we proposed that interactions between influencers and their followers, as well as among followers, evolve systematically through linguistic and social cues. These interactions can shift the original meaning of the influencer's message, leading to unintended consequences for both SMI and the brand. Through netnography and k-means cluster analysis, we identified three distinct clusters of followers with unique attitudes toward the post and SMI. One group (i.e., "Type 1") was particularly adept at reshaping the meaning of the SMI post through rational engagement with other followers. A subsequent experiment assessed the impact of each group's comments on the observers within a broader community network, focusing on credibility, skepticism, and the impact of social media dependency. The findings offer practical tools for brands and SMIs to analyze follower comment patterns and suggest strategies for addressing crises stemming from SMI-linked promotional content, ultimately helping to preserve brand reputation and trust.

KEYWORDS

Influencer Marketing, Influencer Promotion Crisis, Influencer Transgressions, Parasocial Relations, Social Capital, Social Media Influencer-Audience Relationship, Social Media Influencer-Follower Network, TikTok

1 | INTRODUCTION

Influencer marketing (IM) has become a prominent and effective strategy for brands to connect with target audiences in a personalized manner (Eigenraam et al., 2018; Voorveld, 2019). IM relies on the stock of social capital that a social media influencer (SMI) uses to create authentic and engaging promotional content that resonates with followers and encourages purchase of recommended products (Filieri et al., 2023; Hughes et al., 2019; Nafees et al., 2021). Using SMI resources (e.g., follower networks, personal positioning, communication content, and follower trust), firms attempt to enhance marketing communication (Leung et al., 2022). Not surprisingly, the global IM industry continues to grow, valued at $21.1 billion in 2023 and projected to grow to $139 billion by 2030 (Pitt, 2023). An

increasing percentage of consumer-oriented brands use influencers to market their products, with 26% of companies spending over 40% of marketing budgets on IM (Influencer Marketing Hub, 2024). Overall, this marketing effort seems effective: industry reports suggest that 49% of consumers admitted to relying on SMI recommendations for purchasing (Pitt, 2023).

However, recent evidence highlights a darker side of influencer power, contributing to a general decline in SMI credibility (Audrezet et al., 2020). Several factors have influenced this decline, including the increasingly commercial nature of SMI content and the prevalence of unethical and fraudulent activities, such as the purchase of fake followers or bots (Gamage & Ashill, 2023), displaying insensitivity (Cocker et al., 2021), dishonesty or inappropriate content (von Mettenheim & Wiedmann, 2023), or betrayal (Reinikainen et al., 2021). These phenomena lower follower engagement and the perceived authenticity of SMI, diminishing the effectiveness of influencer marketing (Audrezet et al., 2020). The underlying mechanism of this decline needs attention. Scholars have examined some of the factors leading to and some of the outcomes of SMI transgressions (Cocker et al., 2021; Gamage & Ashill, 2023; Reinikainen et al., 2021; von Mettenheim & Wiedmann, 2023); however, they have not investigated SMI deception and product/promotional misrepresentation in a social media post. Therefore, we investigated the effects of an SMI promotional crisis (SMI-PC) and how a follower network might exacerbate such a crisis. Building on the call for a deeper understanding of influencer network dynamics and qualitative attributes (Leung et al., 2022) and guided by the idea of parasocial relationship (PSR) and social capital theory, we analyzed the audiovisual content in a TikTok post by a famous beauty industry SMI. In doing so, we further responded to calls for additional research on IM across formats other than text alone (Filieri et al., 2021, 2023).

We examined the impact of a significant SMI-PC in early 2023 known as "Mascaragate," which involved an SMI partnering with an international brand to promote a mascara on TikTok. The post was a video that allowed followers to scrutinize SMI behavior and respond to what they observed. This video generated numerous comments and significant attention on both social and mainstream media. We considered reactions to the original SMI post and responses and engagement within the broader follower network (outside the immediate community of the posting SMI), including reactions to follower comments under the original post (e.g., follower-follower interaction).

Our research aims to answer the following research questions:

1. How did a seemingly deceptive SMI post affect SMI followers and their responses (SMI-follower level)?
2. How did follower reactions and interactions evolve within the SMI follower network during and after the SMI-PC (follower-follower level)?
3. What underlying processes drove follower responses to the original SMI post and follower responses to first-level responses?
4. What impact did follower comments have on observers and the broader follower network (follower-observer level)?

To answer these questions, we used a mixed-methods approach to investigate the processes and implications of an SMI-PC and its near real-time spread within a follower network (e.g., Filieri et al., 2021). A mixed-methods approach involves sequencing, prioritizing qualitative and quantitative results, and integrating those results to make meta-inferences (Venkatesh et al., 2023). We conducted several studies using qualitative and quantitative methods. Each study provided evidence for the next study, guiding subsequent research design and contributing to the meta-inferences we made. We first used a netnographic approach to interpret follower responses to the SMI post and categorized comments into unique types using linguistic and cluster analysis. Then, we conducted an experiment to analyze the impact of each comment type on observers without parasocial ties to the SMI (e.g., viewed message and comments while scrolling on social media). Using structural equation modeling (SEM), we then assessed the complex relationships among key variables and their impact on managerially relevant outcomes related to working with SMIs.

Our findings make several important contributions to research in the field. First, they are the product of the first systematic analysis of SMI follower network dynamics during SMI-PC. By examining reactions to the original post and the subsequent engagement among followers, we provide a more comprehensive picture of the unfolding crisis. Second, our findings suggest that segmenting followers in social media networks based on linguistic patterns in their comments and interactions is feasible. This segmentation can help brands and SMIs identify effective crisis management strategies in near real-time, enhancing their ability to respond promptly and appropriately to mitigate unfavorable consequences. Third, the findings show that SMI followers are not merely passive recipients of information and influence. Instead, they actively participate in the co-creation and transformation of SMI messages. They can alter the meaning of a message and influence the intentions of other community members through a network contagion effect, which can change the direction, content, and sentiment of conversations. This process influences follower perceptions of and intentions toward SMI and the promoted brand. The specifics of this effect are contingent upon the particular segments of SMI followers within the network, the language they use, and the attitudes and intentions suggested by that language and their engagement with other followers, not merely the original SMI post.

In the sections that follow, we first introduce the central concepts of social media influence and its impact on persuasion and discuss them through the lens of parasocial relationships and social capital theory. Second, we develop our methodological approach sequentially and reveal the findings at each individual study of the mixed method research: a netnography (Study 1), developing a typology of follower responses (Study 2), and testing the impact of follower response types during SMI-PC on non-follower attitude and intention (Study 3). Finally, we discuss our findings, outline theoretical and practical implications, and suggest avenues for future research.

2 | LITERATURE REVIEW

2.1 | Social media influencers and influencer marketing

Unlike traditional celebrities, SMIs gain prominence through social media presence and close connections with followers (Khamis et al., 2016). Previous findings show that consumers strongly connect with SMIs, perceiving them as more authentic than traditional celebrities (Stefanone et al., 2010; Tran & Strutton, 2014). Followers perceive SMIs as relatable and approachable opinion leaders, making them compelling role models (Belanche et al., 2021; Lou & Yuan, 2019). Their electronic word of mouth (eWOM) concerning brands and products appears more trustworthy and authentic than brand-created messages (Kim & Kim, 2021). As a result, SMIs play a significant role in IM, an approach to marketing in which brands collaborate with influencers to promote goods or services (Nafees et al., 2021). IM is an essential part of the marketing communication mix, as the authenticity and credibility of SMIs enhance consumer trust and engagement with promoted brands (Eigenraam et al., 2018; Voorveld, 2019).

2.2 | Distinct nature of relationships in influencer space

2.2.1 | Followers and influencers: Parasocial relationships (PSRs)

The connection between SMIs and their followers fits the criteria of PSR: one-sided, asymmetric connections in which followers invest energy, time, and interest in the influencer (Giles, 2002; Horton & Richard Wohl, 1956). Despite the lack of real-life interaction, followers develop a sense of intimacy and trust with SMIs, driven by perceived similarities, shared values, and influencer authenticity (Belanche et al., 2021; Cheng et al., 2024). These PSRs foster loyalty and receptiveness to influencer content, making followers more highly engaged and more likely to act on influencer recommendations (Du et al., 2023; Lou & Yuan, 2019).

While Lueck (2015) and Tsiotsou (2015) defined PSR as inherently one-sided and nonreciprocal, others have highlighted the role of responsiveness in enhancing the PSR experience. Labrecque (2014) found that interactivity (e.g., influencer reference to followers by username) enhanced perceived connection among followers, even when SMI did not directly respond to them. Frederick et al. (2012) observed that interactions between athletes and specific followers on social media heightened the parasocial experience of followers witnessing the exchange. Similarly, Lim et al. (2020) suggested that observing interactions among followers influenced perceived connection to SMI. These dynamics show that PSR is more complex than traditionally thought, blending elements of perceived reciprocity and community interaction. Moreover, PSR significantly influence consumer behavior, heightening engagement, brand preference, and purchase intention by fostering perceived similarity and shared values between followers and influencers (Du et al., 2023). This dual understanding of PSR—both one-sided and interactive—highlights its critical role in IM and follower engagement. PSR fosters a sense of intimacy and trust between followers and SMIs, forming the basis of bonding social capital (Adler & Kwon, 2002; Kawamoto & Kim, 2019; Nicholas et al., 2019; Putnam, 2000; Zheng et al., 2024). The perceived personal connection and shared values within PSR enhance follower loyalty and engagement, strengthening the social network of an influencer (Delbaere et al., 2021; Hwang & Zhang, 2018; Yuan & Lou, 2020). Additionally, the authenticity and trust cultivated through PSR bridges and links social capital, facilitating broader community ties and valuable partnerships with brands and institutions (Kawamoto & Kim, 2019; Nicholas et al., 2019; Putnam, 2000).

2.2.2 | Follower-Follower relationships: Social capital

Interactions among followers themselves are increasingly significant within the influencer space. Social capital theory explains how these connections, facilitated by PSR, can be valuable resources within a community (Adler & Kwon, 2002). Follower networks can have significant impact on SMI effectiveness, as certain followers emerge as digital opinion leaders who shape the interpretation and dissemination of SMI content (Casaló et al., 2020). For instance, the "Mascaragate" incident demonstrated how follower-follower interactions can amplify a collective response to perceived influencer deception, leading to a strong network-wide outcry (Gurrieri et al., 2023). This interconnectedness within the follower base can also enhance SMI reach and credibility, contributing to a robust and engaged community (Joshi et al., 2023).

Karg et al. (2022), in their study on the Logan Paul "suicide forest" scandal, found that the Logan Paul fan community reacted with compassion rather than anger or disgust. However, non-followers felt distinctly disgusted by the Logan Paul video. However, Karg et al. (2022) did not rule out the possibility of SMI scandals, where "dissonance reduction fails, and the high attitude importance and affection will transform into strongly negative feelings and condemnation" (p. 21). Feeling betrayed and disappointed, followers might respond with intense disapproval, diminishing SMI credibility and follower engagement and, in turn, compromising SMI ability to attract new followers and secure brand partnerships.

2.3 | Implications for influencer transgressions and follower responses

Influencer transgressions (e.g., deceptive practices or ethical violations) can undo trust and weaken PSR (Cocker et al., 2021). Perceived betrayal of the emotional bond that followers have with an influencer can trigger intense backlash and damage influencer reputation and social capital. Findings from influencer transgression studies show various follower reactions. While some might accuse the influencer of "selling out" or engaging in unethical behavior (Kozinets et al., 2010;

Lee & Abidin, 2024; Mardon et al., 2018, 2023), others might respond with compassion, especially those within the fan community (Karg et al., 2022). Collective responses within follower networks, often sparked by follower comments, can redefine the narrative around SMI actions, underscoring the fragile nature of PSR and the influence of social capital in shaping these outcomes (Cocker et al., 2021; Gurrieri et al., 2023).

Scholars have yet to examine how deceptive practices by trusted SMIs might trigger community-wide responses that redefine the conversation within a follower network. We explored this phenomenon, focusing on (a) the power of follower comments to redirect the narrative during SMI-PC and (b) the broader implications for SMIs, brands, and the follower community. Our findings build on existing studies about influencer transgressions and contribute to a deeper understanding of the dynamics at play during PSR violation within an SMI-follower network (Cocker et al., 2021; Gamage & Ashill, 2023; Karg et al., 2022; Lee & Abidin, 2024; Mardon et al., 2018, 2023; Reinikainen et al., 2021; von Mettenheim & Wiedmann, 2023).

3 | METHODS, STUDY CONTEXT, AND HYPOTHESIS DEVELOPMENT

3.1 | Research context: "mascaragate"

"Mascaragate" is a social media controversy that started on January 24, 2023, when TikTok beauty influencer Mikayla Nogueira posted a sponsored review of globally renowned L'Oréal's Mascara. In the video, she praised the mascara's lengthening effects, but viewers quickly noticed what appeared to be false eyelashes, leading to accusations of deceptive advertising. By January 25, 2023, the controversy exploded as more users and other influencers called out the apparent dishonesty, using hashtags such as #mascaragate on TikTok (Mendez, 2023). The video shows the influencer in the process of applying mascara. After an editing cut, the influencer displays her lengthened eyelashes from various angles. She emphasizes that the mascara has changed her life. While the original video first appeared on TikTok, discussions and criticism continued on TikTok and other platforms, including YouTube, Instagram, Twitter (now X), and even the professional network LinkedIn. Finally, the discussion migrated to numerous mainstream media outlets, including *Time*, *Seventeen Magazine*, *Business Insider*, *Vogue*, *NBC News*, and *Rolling Stone*. Because the data we collected was already widely available to the public, no cloaking (e.g., hiding SMI identity) was necessary.

3.2 | Mixed methods study overview

Mixed method studies rely on at least one method from each paradigm (i.e., qualitative and quantitative), organized sequentially such that each individual study builds on the previous (Vankatesh et al., 2023). In the current research, we moved from exploratory interpretive netnography (Study 1) to exploratory quantifiable text analysis (Study 2) to confirmatory experimental research (Study 3). Table 1 presents the method, data, purpose, and findings of each study.

TABLE 1 Mixed methods outline and findings of studies.

Method	*Sample and Analysis*	*Purpose*	*Findings*
Netnography	Two Stage: 1. Observation of videos and comments beyond SMI original post. 2. Thematic and Chronological analysis of 51,530 comments and 10,359 comment "likes" under SMI original post.	1. To engage in the broad search of online traces to understand beauty community, 2. To explore and interpret how the deceptive video affected the narrow beauty community of SMI followers; to analyze and interpret follower comments posted under the video and the impact of other followers.	Findings show a shift from initial response to SMI promotional content to impact of follower comments on other followers, spiraling into a crisis where initial approval of and intent to use the promoted product gave way to questioning SMI honesty and follower perception of violation of parasocial norms.
Typology	Linguistic & Cluster Analysis of 51,530 comments.	To engage in linguistic typology to identify segments of followers based on linguistic cues within comments, how these linguistic cues affected follower engagement, and how the segments relate to key netnographic findings.	Typology of comments revealed three unique comment types based on social process and word complexity. Type 1 comments were low in social process and high in word complexity. This type received the most "likes" and was the most authentic and rational in language use.
Experiment	ANOVA and SEM, sample of 404 participants, 3 manipulations, and control.	To determine the impact of comment-based segments on observers, potential new followers, and the broader beauty community outside of SMI's narrow community of followers.	Results confirmed the effect of Type 1 comments on observer attitude toward SMI, resulting in lower perceived influencer credibility, weaker intent to follow SMI or purchase product than any other segment. SEM model suggests how these variables affect other managerially relevant outcomes.

3.3 | Study 1: Netnography

3.3.1 | Study 1: Method and analysis

As an interpretative qualitative method used to study communities of people who gather online to discuss shared values, passions, and interests (Rynarzewska & Giunipero, 2024), netnography "adapts the methods of ethnography and other qualitative research practices to the cultural experiences that encompass and are reflected within the traces, networks, and systems of social media" (Kozinets, 2020, p. 19). Netnography is useful for studying not only online communities but also influencer transgressions (Mardon et al., 2018, 2023; von Mettenheim & Wiedmann, 2023). For this study, we used a *two-stage netnography*: (a) initial, broader search for online traces and (b) focused immersion to uncover and interpret the impact of an SMI video post on followers (Kozinets et al., 2010; Kozinets, 2022). The first stage involved non-participatory observation of various online discussions related to the interests of the beauty community to understand the content they generated on TikTok and other social media platforms: videos, comments, and reactions to the presumably deceptive SMI post. The second stage involved a more focused analysis of the comments made directly in response to the SMI original post.

For the first stage, we conducted a keyword search on social media platforms to capture various perspectives: "mascaragate," "mascara," "Mikayla Nogueira," "mascara tips," and "beauty tips." Watching the relevant videos and commentary helped us understand the culture, language, values, and behaviors of the beauty community (i.e., people interested in makeup) beyond the immediate SMI followers, including typical discussion before "Mascaragate" and atypical commentary during "Mascaragate." Overall, this preliminary observational approach revealed that a great majority of the response videos were critical of SMI and permitted the formulation of research questions and refinement of our study focus (Kozinets, 2022).

For the second stage, we analyzed the responses of SMI followers to the original video. In qualitative research, the focus of analysis can be an individual, an organization, or an event (Venkatesh et al., 2023). For this study, we focused on the event "Mascaragate" and the development of a crisis. We first read the comments under the post during full immersion, using an emic approach predominantly in real-time, subject to an algorithm that pushed relevant comments to the top based on user engagement in the form of "likes," additional comments, and replies. We then read the comments in chronological format after extracting them into a semi-structured database, using a retrospective, etic approach. Based on Rynarzewska and Giunipero (2024), we first relied on progressive netnographic data collection: "studying online communities by collecting data in real-time, which enables near-simultaneous analysis with a potential for data interpretation to evolve and deepen as the inclusion of social media reactions and the presence of artifacts adds to the complexity of findings." We then conducted static netnographic data collection, "a technique that is retrospective in nature and relies on semi-structured data, with lesser emphasis on ongoing engagement" (Rynarzewska & Giunipero, 2024). A semi-structured data set combines structured elements (e.g., screen name, date posted, and reactions) associated with unstructured data elements (e.g., comments made by social media users). We extracted all comments under the original video unless the user account was set to private. This data set was, therefore, rich in information, containing date and content of 51,530 comments and 10,359 comment "likes." We used reflexive thematic analysis (Braun & Clarke, 2020) to conceptualize the main themes while preserving the observational and interpretative nature of netnography (Rynarzewska & Giunipero, 2024). Interpretive research focuses on reflections rather than codes. These reflections are supported by descriptive reporting using narrative (Sheard, 2022) rather than quantification using sanitized codes, which tend to be stripped of relevant context code (Rynarzewska & Giunipero, 2024). Direct quotes exemplify emergent themes and provide evidence for our reflections (see Appendix I for a comprehensive list of themes).

3.3.2 | Study 1: Findings

Chronological and reflexive thematic analysis yielded an expected pattern of comments under a popular SMI post: excitement in being early to comment ("*I've never been this early. Hiiiii!* 🥳"), expression of PSR ("*Hi Mikayla, love you!* ❤️," "*I actually just bought that one. I really like it. also I think you are amazing. love you*"), and curiosity about the product ("*Is it waterproof?*," "*Is the main difference between this and the original telescopic the curve?? Or is the formula different*"). Furthermore, the followers shared their love for SMI, product, or brand. The comments also highlighted trust ("*You are the only influencer I trust with makeup! I'm getting this!*") and the need for immediate purchase, fearing the product would sell out ("*Add to cart*,*" "*no!!!! it's gonna sell out!*"). Followers were obviously aware that posts by this SMI could immediately drive up sales. Initial favorable responses to SMI and near-instant willingness to purchase suggest high source credibility (Ki & Kim, 2019; Lou & Yuan, 2019; Nafees et al., 2021) and trust from established PSR.

However, as the comment section expanded, more diverse comments emerged, shifting from product desirability, love for SMI, and intent to buy to more critical and negative views. Community members began to discuss the video, pointing out the poor performance of previous SMI recommendations and implying influencer deception. As negative comments accumulated, confidence in posting critiques seemingly increased. Initially, accusation of deception was implied, but followers later began to "call out" the SMI explicitly. For example, followers initially said the product was not as good as the influencer claimed ("*Mine didn't do that.... I actually hate this* 😭😭😭") or expressed slight skepticism using emojis ("*long AND lengthened* 😳"). Later, they raised questions about false lashes ("*I love your videos, but this would have been great branding for KISS Falsecara not L'Oreal Telescopic.*😔") and ultimately asserted that the lashes were false and the SMI was lying ("*Not you adding false lashes, denying it, and lying about it. BSFFR girl* 😂" where BSFFR means "but

seriously, folks, for real" but can also mean "*expletive*, for *another expletive* real"). The moral judgment became apparent ("*Shame on you!"*), along with accusations of financial motivation ("*i trusted u* 😢*#sellout*," "*this girl does this on purpose cause it pays her bills*"). Emotional responses such as sadness and disappointment began to emerge, along with skepticism, sarcasm, and anger. Perceived violation of trust became obvious as analysis progressed ("*Shes literally wearing false eyelashes on the right, what a disappointment*," "*Mikayla I love you soo much but babe please keep it real!! You were one of the few real ones out there*😢") reducing previously perceived credibility ("*So you add falsies? Can't trust a thing you say about a product now. Your credibility is shot*," "*you've lost all credibility at this point*"). At the same time, the community hoped that the SMI would restore trust by posting or live-streaming an apology ("*staying tuned for apology video*").

Still, the most loyal followers were willing to give chances to regain trust, disregard the offense, and offer tips on how she could recover ("*falsies or not, the first coat still looks promising lol. It has potential*," "*an idea: for the people who think it's falsies just make a new video with you putting it on and pulling on your lashes or even just do the video in*." They were also willing to defend the influencer and remain *ultra-loyal*, meaning loyal despite knowing that they had been mistreated ("*Mikaylaaaaa I love you girl and I'm still gonna buy the mascara buttt we'll still buy this because it's YOU! chill with them falsies* 😂😂😂," "*Girl, length is one thing. Adding in additional hair is another* 😳😂 *I'll still follow you but… something fishy there at the end*"). However, for others, this violation of trust and PSR ultimately led to, at least, a temporary period of separation from the SMI followed by dissolution of their relationship ("*Girl no I have to unfollow you. This is just… the falsies… can't trust you fr*").

As conversations shifted toward more unfavorable views, the impact of community comments on new attitude formation, increasing negativity, and behavioral change became explicit. Users indicated a lack of willingness to buy, stronger intent to unfollow, and a decision to unfollow. Some followers addressed community members to warn them directly. The chain effect of SMI impact on followers and of SMI followers of other members of the beauty community became apparent.

Once interaction shifted from followers responding to the SMI ("*Okay miss lash cluster* 😭 *why did you think you could fool us like this girl*") to followers addressing each other ("*It's because she's using lash clusters unfortunately so it's not her natural lash*," "*Guys chill about the falsies… I can't keep up with liking all the comments!* 😂😚") and comment effects on the broader follower network emerged, the discussion shifted to a more global problem. Users pointed out that this deception for personal gain was not an individual problem but an industry-wide problem ("*Oh look. Another beauty guru sale out. Jaclyn hill taught you well on how to be a scam artist*," "*I'm really really happy people are realizing these influencers are being paid by companies. No mascara will change ya life*"), fueling skepticism toward SMIs and the brands they endorse ("*@lorealparis false lashes = false advertising. get that bag back*") and eventually affecting behavioral intention ("*Well I was all dead set to buy this until I saw the comments*"). Individuals who appeared skeptical were willing to buy the mascara themselves to test it instead of trusting the SMI or completely disregarding her recommendations due to the community effect ("*I'm about to buy this and test it myself*"). Some users even posted videos to "collaborate" with the original influencer by clipping part of her video, highlighting her statements and actions that indicated deception, screenshotting the "before and after," counting lashes, etc. Ultimately, instead of influencing consumers to buy the product, the SMI inadvertently and unintentionally "*de-influenced*" or negatively affected intent to buy by sparking unfavorable community interaction. This community effect led members to change their position from the urgent willingness to buy to *disintent* to buy, a shift from favorable purchase intention to active avoidance of purchase. Community members scrutinized SMI behavior and communicated to the follower network that traditional commercials might be more reliable due to Federal Trade Commission (FTC) regulations and that the SMI should follow those regulations ("*Aside from the lash debacle, I really wish influencers would follow FTC rules and actually disclose verbally that it's a sponsored post/ad*").

3.3.3 | Study 1: Summary and discussion

As an interpretive research method, netnography enables the exploration and understanding of complex dynamics within online communities. Thematic and chronological analyses facilitate the conceptualization of meaning and identification of shifts in community sentiment. In the context of SMI followers, netnography reveals how discussions can evolve from favorable sentiments such as love and adoration to negative emotions such as anger and sadness. These shifts can result from collective scrutiny of SMI posts. When community members perceive SMIs as deceptive and morally judge their actions as primarily driven by financial gain, thereby violating PSR norms, their reactions tend to become critical and disapproving. This shift highlights the ability of a community driven by perceived breaches of trust and authenticity to reshape the narrative surrounding SMI actions. The community plays a crucial role in shaping the moral judgment of SMI actions because evaluating whether an action reflects principles that are reasonably acceptable or objectionable requires the presence of others (Scanlon, 1998).

These findings are relevant to marketing decisions because reliance on SMIs increases the chances of SMI-linked promotional crises and unintended spillover effects on brands. Figure 1 highlights the sequential nature of the mixed method approach and the chronological shift in community sentiment from first-level follower comments (SMI-follower) to second-level follower comments (follower-follower). The figure illustrates how these findings informed our development of Study 2, in which we accounted for and categorized linguistic cues and reactions in follower comments. The figure also highlights how Studies 1 and 2 informed the development of Study 3. Finally, the figure also represents how netnographic findings contribute to our understanding of findings in Studies 2 and 3, ultimately providing evidence for the holistic nature of mixed methods that allow sequentially building each study, contributing to meta-inferences.

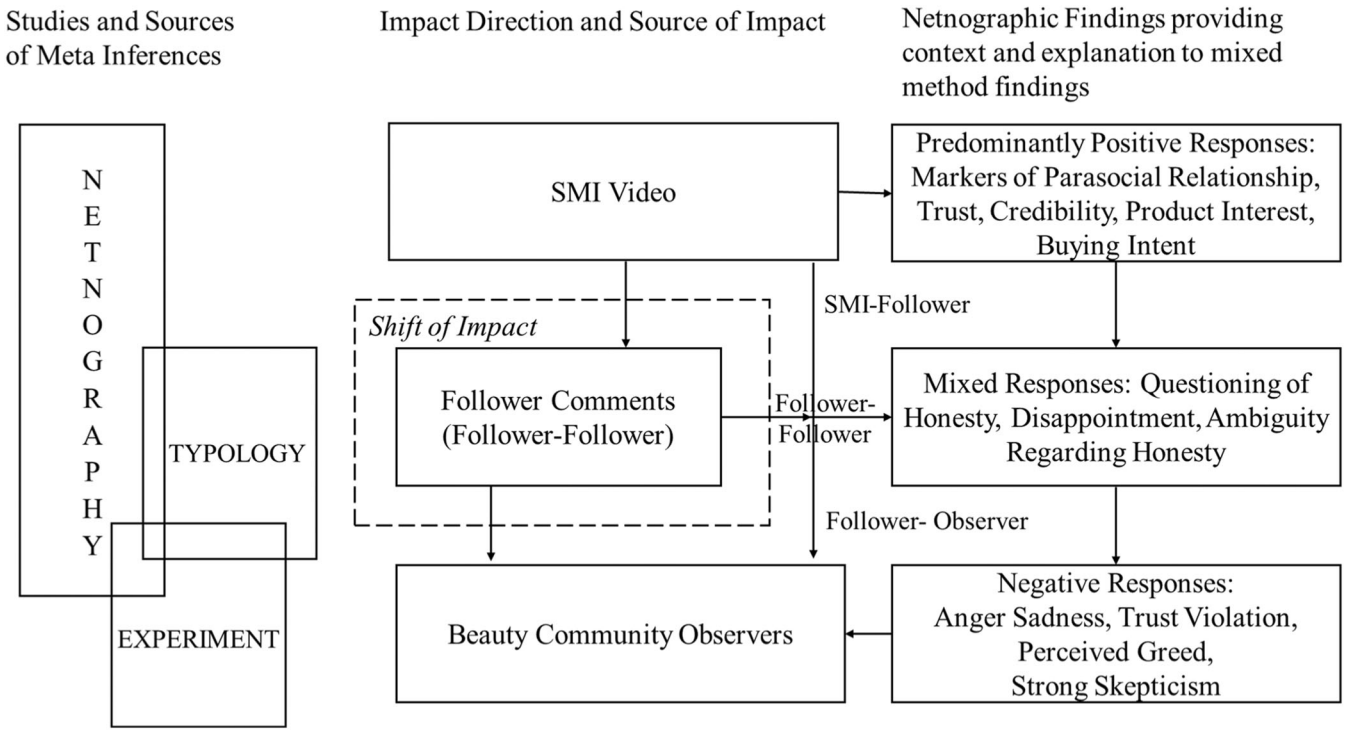

FIGURE 1 Netnography Findings and the Sequential Progression of Studies and Impact.

3.4 | Study 2: Typology

Study 1 revealed that followers responded to the SMI video post in both positive and negative ways. Given the perception of PSR norm violation, follower comments resembled a form of self-expression and coping with apparent distress. These comments shifted the conversation from the intended SMI message, becoming their own medium and message simultaneously. In addition to specific themes that emerged from netnography, Study 1 also revealed that some comments generate more engagement than others. Engagement is relevant because it suggests social approval. Marketing scholars have studied the linguistic cues of SMI posts that generate the most engagement (Syrdal et al., 2023). However, the linguistic cues in follower comments that generate the most engagement remain unexplored, especially during SMI-PC involving PSR norm violations that prompt moral judgment of SMI actions. Such moral judgments can evoke a range of emotions, from sadness to anxiety to anger. The specific emotion elicited by observers can vary based on a follower's use of moral justification and emotional display, with some emotions (e.g., sadness and anger) serving as moral signals (Plaks et al., 2022).

Moreover, perceived immoral behavior that violates expectations of moral conduct weakens PSR (Bonus et al., 2021). Our netnography revealed that some followers chose to reduce or completely sever parasocial ties with the SMI due to her actions. PSR dissolution can be stressful (Cohen, 2003). Individuals can cope with stress by engaging in expressive writing, which can improve health and well-being (Pennebaker, 2017). Therefore, higher engagement and a higher number of comments (over 77,000) than the typical amount (2,000–8,000) might be indicative of coping through writing. In fact, followers did not shy away from expressing their thoughts and emotions in the face of perceived PSR norm violations. Therefore, understanding linguistic cues of engagement-generating comments should benefit researchers (Bacile, 2024), practitioners, and SMIs hoping to avoid SMI-PC or to mitigate one already unfolding.

To determine the behavioral effect of comments on an SMI post perceived as deceptive, we ran Linguistic Inquiry and Word Count (LIWC) to extract and quantify linguistic cues. The process extracted approximately 80 variables, including summary variables (e.g., word count, use of complex words) and linguistic cues associated with underlying cognition, affect, and social process (Boyd et al., 2022). The analysis also yielded 468 instances of the top 9 in-text emojis used, which we classified into unique variables.

Once we established the linguistic cue data set, we ran regression analysis using SPSS 22. The dependent variable was comment-generated "likes," which are social cues of acceptance (Scissors et al., 2016). Findings suggest a high degree of social process present in comments, as well as the importance of words to express thoughts and feelings. Social process, a term used in LIWC, refers to social behaviors of the following types:

1. Prosocial behaviors or referents indicative of helping or caring about others on an interpersonal level (e.g., Penner et al., 2005).
2. Politeness cues (e.g., "please" and "thank you") suggesting compliance with social norms (Brown & Levinson, 1987; Holtgraves & Joong-Nam, 1990).
3. Interpersonal conflict words (e.g., "fight," "kill," and "argue") reflecting conflict (e.g., Barki & Hartwick, 2004).

4. Moralization or words indicating judgment with underlying moral evaluation of another person (Brady et al., 2020).
5. Communication words describing and capturing the communication process (e.g., "talking," "explaining," and "disagreeing").

Therefore, the measure of social process seeks to capture thoughts about and attention to social interaction, including social connections and closeness (Sillars et al., 1997; Stone & Pennebaker, 2002). Findings from psychological studies suggest that social process correlates to extraversion across various contexts (Chen et al., 2020). Extraversion might also relate to word complexity, which, in LIWC, depends on Word Count (WC) and words per sentence (WPS). Individuals who write longer texts are perceived as more extroverted (Baek & Ihm, 2020). Social process and word complexity are relevant to the current study (study 2) because study 1 results indicate the presence of multiple subcategories of social process. Furthermore, extraversion relates to expressiveness and the active use of social media sites and user-generated content (Pagani et al., 2013).

3.4.1 | Study 2: Analysis

Previous findings show that social process linguistic cues and word complexity measures predict "likes." We used regression analysis to measure the impact of these predictors. Social process cues and word complexity determinants (WC and WPS) significantly contributed to "likes" despite the expected small effect size ($R = 0.015$, $F = 3.935$, $p < 0.01$). To create a typology of impactful follower comments capable of shifting the conversation and meaning away from SMI intention, we used "like" predictors to create clusters of individuals who used similar linguistic cues. To that end, cluster analysis helped us segment objects into homogenous groups based on variables of interest (Sarstedt & Mooi, 2014) with the exploratory purpose of "formation of a taxonomy—an empirically based classification of objects" (Hair et al., 2019, p. 201). It is consistent with marketers' typical use of cluster analysis for consumer segmentation (Sarstedt & Mooi, 2014). In the current study, we used the method to identify and categorize community member comments capable of shifting meaning and generating an SMI-PC.

Using a nonhierarchical cluster algorithm known as k-means clustering, the most popular method of clustering (Hair et al., 2019), resulted in a three-cluster solution, we identified three types of linguistic cues in follower comments:

1. Low social, high word complexity ($n = 27407$)
2. Very high social, low word complexity ($n = 2893$)
3. Medium social, high word complexity ($n = 21229$)

Post-hoc qualitative analysis suggests that Type 1 was the most authentic but least emotional (e.g., "*That's crazy using falsies n denying it* 😬😬"). Type 2 was the most emotional, showing both admiration and sarcasm, and had short word counts (e.g., "*Mikayla babe. bffr*"). Type 3 was the least analytic but often featured terms of leadership linguistic cues, affect, and emotion (e.g., "*I love you so so much, but I reeeeaaally feel like you're wearing lashes at the end*"). Type 1 and Type 3 shared comment features and were statistically similar in terms of moral judgment, anger, and money-related linguistic cues. Type 2 was more loyal, seemingly more emotional, showed love and support despite the backlash, and actively defended the SMI, apparently trying to reduce the negative impact on the community. Comments such as "*apologize*," "*bffr*," and "*love ya still, babe*" were common. However, this segment was much smaller in number. Given that moral judgment can induce emotions of anger, anxiety, and sadness (Plaks et al., 2022, that the violation of moral expectations can weaken PSR (Bonus et al., 2021), that the netnographic findings suggested PSR norm violations, and that perceived financial gain motivation induced moral judgments of SMI actions, we further analyzed how each cluster differed in terms of these variables. In addition to emotionally charged linguistic cues, moral judgment, and financial motivation, we also analyzed authentic, cognitive, analytic, and clout linguistic cues, which are considered summary variables in LIWC. Authentic language is closely associated with honest language, inducing perceived trustworthiness, while clout aligns with expertise; both positively affect engagement in a social media setting (Syrdal et al., 2023). Analytic language includes evidence-based cues, which have a negative impact on engagement (Syrdal et al., 2023). Finally, cognitive language relies on rational cues linked to rational thought (Tausczik & Pennebaker, 2010). We further explored the impact of and differences between these clusters using analysis of variance (ANOVA) on the key outcome and linguistic cues that emerged from our netnographic findings (see Table 2). The results suggest that Type 1 followers had the highest social support and standardized "likes," followed by Type 3 and Type 2 (see Table 2).

3.4.2 | Study 2: Discussion

Type 1 follower comments featured linguistic cues that were the highest in authenticity associated with trustworthiness, which Syrdal et al. (2023) found to draw the highest number of "likes." Type 1 was below average in analytic and rational language (i.e., cognitive processes) and, surprisingly, the lowest in moral judgment and emotional charge. Type 1 followers used honest, trustworthy, and rational language and used more cues linked to sadness and money. Given our netnographic findings, we attribute the sadness to their realization that the deceptive SMI actions were financially motivated. Despite our expectations that followers who express high moral judgment and emotional charge in their comments would generate more social support in the form of "likes," Type 1 debunked this idea. Type 1 also scored the lowest on leadership cues (i.e., clout). One interpretation is that followers in this cluster were disappointed in the SMI, accusing her of being a "sellout," violating PSR norms. They did not try to influence the community; rather, they expressed disappointment when the SMI put money first. Their expressions of distress and their cognitive analysis of the SMI resonated with other

TABLE 2 ANOVA of Segments Following Cluster Analysis.

Outcomes and Characteristics	Type 1	Type 2	Type 3	Average
"Likes"	0.013	−0.02	−0.02	0
Authentic	38.92	7.42	32.86	34.65
Cognitive	12.71	1.98	13.47	13.7
Analytic	41.94	69.17	24.12	36.13
Clout	38.23	91.82	79.57	58.27
Affect	5.93	10.34	8.05	7.05
Emotion	2.45	4.52	3.22	2.89
Positive Tone	3.09	5.82	4.36	3.77
Negative Tone	1.92	4.36	3.01	2.5
Negative Emotion	0.94	2.64	1.79	1.38
Anxiety	0.04	0	0.07	0.05
Anger	.21**	0.17	.39**	0.28
Sadness	0.59	0.12	0.37	0.47
Moral Judgment	.18**	4.11	1.24**	0.84
Money	.99**	0.25	.98**	0.95

Note: *Comparing Type 2 and Type 3 to Type 1; **Groups were not statistically different, all $p < 0.001$, except for negative tone $p < 0.05$ and "likes" $p < 0.01$.

community members. This finding raises a question that goes beyond engagement: do followers (e.g., Type 1) who generate more social support and also differ from other types in key marketing outcomes? In other words, does the shift in direction and meaning of conversation have any implications for SMI-brand, SMI-follower, and follower-brand relationships? To address these questions and further validate Type 1, 2, and 3 clusters, we developed Study 3.

3.5 | Study 3: Experiment

In Studies 1 and 2, we explored the initial impact of SMI promotional video content on follower comments, the influence of follower comments on other followers, and the effects of different comment types on engagement with respect to the SMI video. We primarily examined interactions between the SMI and their followers and among followers within the comment section (see Figure 1). The netnography also revealed that some followers raced to comment first on the SMI video post, indicating high social media consumption rates and potential social media dependency. PSRs fulfill emotional needs (Lotun et al., 2024), indicating a potential drive to stay connected. Social media dependency might help explain whether followers rely on frequent interaction with SMI to fulfill these needs, including the accumulation of social capital via PSR. At least some of the followers engaged in compulsive behavior, commenting within a second of posting just to demonstrate their immediate responsiveness. Building on these insights, Study 3 to confirm the impact of follower comment clusters on observers, potential new followers, and the broader beauty community outside the immediate SMI network. We also sought to understand the potential impact of social media dependency on these effects. Study 2 revealed that comment segments varied in engagement, emotionality, authenticity, cognition, moral judgment, and financial motivation. Given that emotional displays in moral judgment scenarios can affect observers and that loyal follower comments can impact observers in social media settings (Bacile, Elmadag, et al., 2024), we investigated how different comment clusters influenced perceived SMI credibility, reliability of SMI-conveyed information, intent to follow SMI, and intent to buy the product among observers (see Figure 1). The conceptual framework for Study 3 also incorporated social media consumption and dependency based on netnographic findings and previous studies.

3.5.1 | Social media consumption (Consumer Based Social Media Use) and social media dependence

Social media consumption refers to using and engaging with social media platforms to access, view, and interact with various content shared by individuals, brands, or organizations (Alhabash et al., 2017). Users satisfy their social, emotional, and entertainment needs (Alhabash et al., 2017) and seek opportunities to boost peer interactions online (Dobrean & Pasarelu, 2017). Increased social media usage might lead to dependency, whereby users rely heavily on social media platforms for their effects on behavior, emotion, and overall well-being. As users become more dependent on social media for information (Kim & Jung, 2016; Lee & Choi, 2018), they might be less discerning about the credibility of the sources they rely on, making users more vulnerable to misinformation and biased content (Saldanha et al., 2024).

3.5.2 | Source credibility and willingness to rely on information by influencer

Scholars have extensively studied perceived source credibility (Hovland & Weiss, 1951; Pornpitakpan, 2004), which has three primary dimensions: expertise, trustworthiness, and goodwill (Ohanian, 1990). Sources who exhibit these dimensions, especially perceived expertise, exert greater social influence than less credible sources (Nafees et al., 2021). Message information quality on social media platforms, including posts, shares, comments, and reviews (De Veirman & Hudders, 2019), reflects the general perceptions and attitudes of SMI toward the commutative quality of the information related to their endorsed products (Grover et al., 2022; Jiménez-Castillo & Sánchez-Fernández, 2019). Information quality can shape follower willingness to rely on information and intent to purchase products (De Veirman & Hudders, 2019). Ultimately, followers can perceive the influence of their favorite SMI, increasing their SMI

dependency (Saldanha et al., 2024; Sokolova & Kefi, 2020) and eventually influencing intent to buy and continue following.

3.5.3 | Intent to follow and intent to buy

Intent to buy refers to a consumer's expression or indication of willingness to purchase a product or service. Previous findings about online shopping with no human interaction show that impulsive buying was less likely to happen (Madhavaram & Laverie, 2004), making the intent to follow an influencer an important factor in user engagement and social media dynamics. However, opinion-based reviews of product quality and source credibility, along with behavior-based social interactions that provide observational learning, contribute to impulsive online purchasing (Zhang et al., 2014). Similarly, IM (e.g., opinion-based and behavior-based SMI interactions on social media) has facilitated impulsive buying (Trivedi, 2021). SMI reliance among followers derives from a desire to identify online outlets that provide valuable and accurate evidence, informing their decision-making and directing their behavior (Trivedi, 2021). This reliance on SMI advice influences the intent to buy and enhances the intent to follow SMI.

In study 1, we found that the overarching theme across the broader community and follower comments was skepticism about SMI trustworthiness. Further, study 1 also provided evidence for the importance of source credibility and the attenuating effect of community comments on SMI credibility. Source credibility affects message acceptance and behaviors (Trivedi, 2021), including willingness to rely on the information presented, intent to follow or unfollow, and intent or *disintent* to buy after realizing SMI deception. Given the findings from studies 1 and 2 and based on previous findings, we proposed the following hypotheses (see Figure 2).

H1: Social media dependency will positively affect (a) social media consumption and (b) willingness to rely on SMI-conveyed information.

H2: Social media consumption will positively affect (a) willingness to rely on SMI-conveyed information and (b) intent to follow SMI.

H3: Influencer skepticism will inversely affect (a) influencer credibility and (b) willingness to rely on SMI-conveyed information but (c) positively affect intent to buy the product.

H4: Influencer credibility will positively affect (a) willingness to rely on SMI-conveyed information, (b) intent to follow SMI, and (c) intent to buy the product.

H5: Willingness to rely on SMI-conveyed information will positively affect (a) willingness to follow SMI and (b) intent to buy the product.

H6: Intent to follow SMI will positively affect intent to buy the product.

3.5.4 | Study 3: Method and measures

We used a survey method with manipulation to determine the effects of follower comments on non-follower/observer attitude formation and to test the complex relationships among key variables. Participants, from commercially available recruiters (e.g., Prolific and Cloudresearch), resided in the United States, were active on social media platforms, and followed beauty trends. The sample ($N = 402$) consisted of 153 men (38.1%), 236 women (58.7%), 7 nonbinary, third-gender participants (1.7%), 2 individuals who preferred to self-describe (0.5%), and 4 participants who preferred not to respond (1%). Over 67% of respondents held a Bachelor's degree or higher, and over 68% had annual income above $25,000, with most (28.6%) falling between $50,000 and $74,999.

To ensure the quality of responses, we excluded participants who did not meet the criteria for the study and who did not pass attention checks or bot detection screens. We also prevented participants from taking the survey more than once. To address common method variance, we followed the questionnaire design and reporting of Hair et al. (2019), Lindell and Whitney (2001), and Conway and Lance (2010). In our survey, we interposed irrelevant scales, incorporated positively and negatively worded scales, avoided order effects, and measured factors using different scales. The appendix contains the confirmatory factor analysis (CFA) results and evidence of validity (and reliability).

First, we asked participants about their social media use (adopted from Tuck & Thompson, 2023) and social media dependency (Tang & Mahoney, 2019). Next, participants viewed a video of a woman applying mascara, similar to one they might see while browsing TikTok. To maximize the realism of the study while minimizing the chances of source familiarity, we sourced the video from a relatively unknown TikToker who promoted an unrelated mascara brand. Participants then viewed a comment section manipulated based on the findings of our cluster analysis (Study 2). Thus, we created a control group and three unique comment sections based on actual comments from the three respective clusters. We randomly assigned participants to one of the four conditions. Postexposure, participants answered additional questions to measure purchase intent, intent to follow SMI, willingness to rely on SMI-conveyed information (adopted from Soh et al., 2009), source credibility (i.e., trustworthiness, goodwill, and expertise; adopted from McCroskey & Teven, 1999), and skepticism linked to influencer trustworthiness (adopted from Zhang et al., 2014). The manipulations allowed us to compare the most impactful comments in Type 1 to comments to the other two types and the control (see Appendix). This method also added variability in attitudinal outcomes, which we later tested in a larger model (Rynarzewska, 2019).

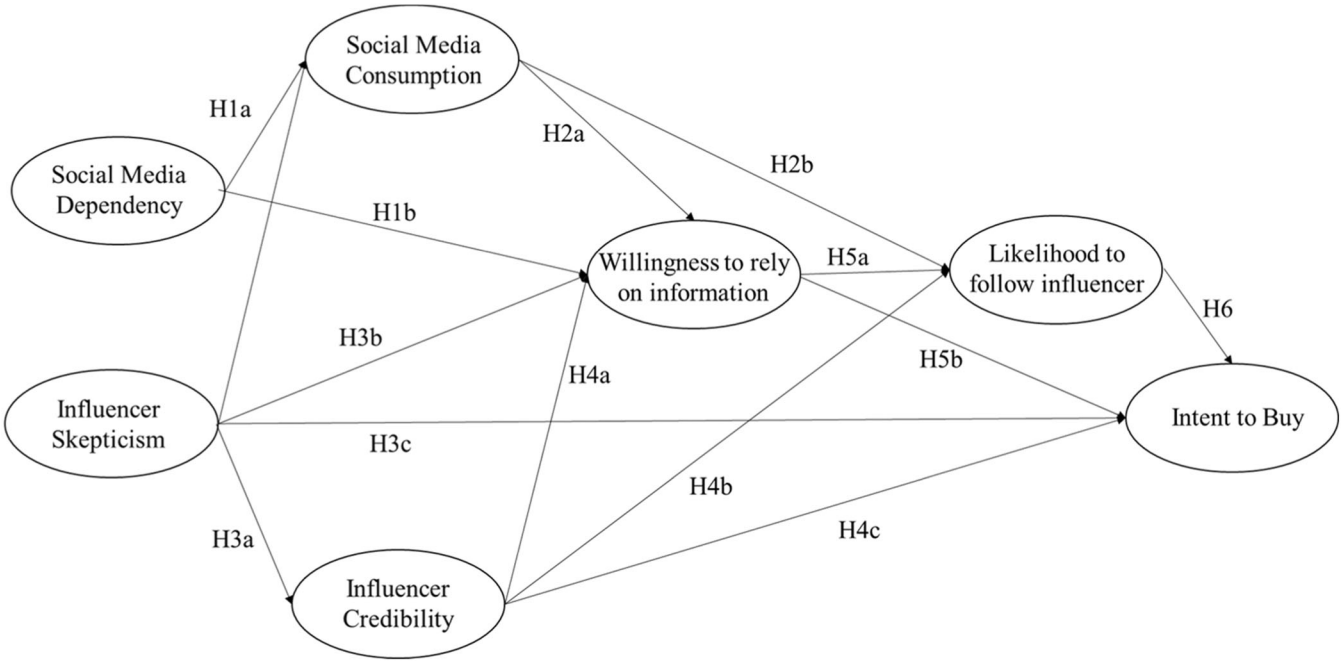

FIGURE 2 Attitudes and intentions of social media followers.

3.5.5 | Study 3: Analysis and results

We determined the quality of measures using CFA with Mplus 5.1 software, allowing for the retention of well-performing items and removing poorly performing ones. For a list of items, factor loadings, component reliability, and average variance extracted, see Table 2 in the appendix. The Comparative Fit Index (CFI) and The Tucker-Lewis Index (TLI), with values of 0.943 and 0.938, respectively, were acceptable given the cut-off value of 0.9 (Hu & Bentler, 1999). Root Mean Square Error of Approximation (RMSEA) was 0.062, under the 0.08 threshold (Kline, 2005). The standardized Root Mean Residual (SRMR) was 0.055, below the value of 0.08 for good fit (Hu & Bentler, 1999). Overall model fit was good (Hu & Bentler, 1999; Kline, 2005), reducing the chances of Type I and Type II errors.

Preliminary analysis using ANOVA confirmed expectations that comments linked to Type 1 extracted in Study 2 significantly underperformed all other types and the control on key variables, especially credibility, willingness to rely on influencer-conveyed information, intent to follow SMI, and intent to buy (see Table 3).

The results highlight the differences between the types and the control group. Notably, perceived influencer credibility, intent to follow SMI, and intent to buy the product were lower for those who read Type 1 comments. This finding is important because SMI credibility is key to marketing effectiveness (Nafees et al., 2021; Ooi et al., 2023). To determine the effect of credibility on the key outcome variables, based on inferences from Studies 1 and 2 and a review of the literature, we tested the hypotheses using a covariance-based structural equation model (SEM).

Based on the model results, all but one hypothesis were supported (see Table 4). As expected, we found direct positive effects among social media dependency, social media consumption, SMI credibility, willingness to rely on SMI-conveyed information, and intent to buy. The relationship between intent to follow SMI and intent to buy the product was substantially positive. We found an inverse relationship between skepticism and SMI credibility. Surprisingly, no direct effect of willingness to rely on SMI-conveyed information emerged on intent to buy. Yet social media consumption, social media dependency, and SMI credibility positively affected willingness to rely on SMI-conveyed information. Moreover, mediation analysis suggested an indirect effect of willingness to rely on SMI-conveyed information on intent to buy, fully mediated by intent to follow SMI. At the same time, SMI credibility affected intent to buy, similar to willingness to rely on SMI-conveyed information. These results further highlight the importance of SMI credibility.

4 | GENERAL DISCUSSION

In this study, we investigated the unfolding of an SMI-PC, the resulting dynamics within an SMI follower network, and the effects on the online community beyond that SMI follower network. As brands gain awareness of best practices in using SMIs in IM, they tend to overlook the intricate relationship dynamics within SMI follower networks (Chen et al., 2019). We analyzed reactions to an SMI post-crisis and subsequent engagement within the SMI follower network, including interactions among followers in their comments. Using both qualitative and quantitative analysis, we sequentially examined how an SMI post led to a promotional crisis. We observed how followers, perceiving a PSR norm violation, used rational comments to call out the SMI, subsequently increasing social media

TABLE 3 Descriptive Statistics and Difference Test of Impact of Comment Clusters.

	Variable	Control	Type 1	Type 2	Type 3	Total
n	Intent to Buy	102	102	101	101	406
M		2.81	1.78*	2.72	2.49	2.45
SD		1.93	1.03	1.89	1.67	1.71
95% CIL		2.43	1.58	2.34	2.16	2.28
95% CIU		3.19	1.99	3.09	2.82	2.68
n	Intent to Follow	102	101	100	101	404
M		2.63	1.51*	2.34	2.22	2.17
SD		1.82	0.86	1.73	1.60	1.60
95% CIL		2.27	1.33	1.99	1.90	2.02
95% CIU		2.98	1.67	2.68	2.53	2.33
n	Credibility	102	101	100	101	403
M		3.78	2.68*	3.72	3.43	3.4
SD		1.18	0.98	1.20	1.07	1.19
95% CIL		3.55	2.48	3.48	3.22	3.23
95% CIU		4.01	2.87	3.96	3.64	3.52
n	Information Reliance	102	101	100	101	404
M		4.08	3.98	4.18	3.85	4.02
SD		1.59	1.46	1.45	1.56	1.52
95% CIL		3.76	3.68	3.89	3.54	3.87
95% CIU		4.39	4.27	4.47	4.16	4.17

*Significantly different from other groups $p < 0.01$.

engagement within the SMI follower network. This engagement spiraled into a full-blown crisis, spreading rapidly. This phenomenon supports the findings of Frederick et al. (2012), who observed that interactions between athletes and specific followers on social media heightened the parasocial experience for all followers witnessing the exchange. The dynamics we observed illustrate how social capital, built through relationships and trust among followers, amplifies reactions. The collective actions and shared norms within a follower community enhance social capital, which in turn influences the spread and intensity of engagement during a crisis.

4.1 | Theoretical implications

Our study is among the first to explore the complex dynamics that follow a promotional post perceived as deceptive (i.e., SMI transgression) within a follower network. The findings make several key contributions to the literature. First, we addressed the call for more research on the complexities of the symbiotic-parasitic relationship between influencers and target audiences (Gurrieri et al., 2023). While influencers ostensibly monetize their audiences, our findings show the significant power that followers hold over influencers. Followers are not merely passive recipients of SMI information; instead, they actively cocreate and even alter SMI messages. This process can transform the direction, content, and sentiment of conversations, ultimately reshaping the intended message of the SMI and the brand. This phenomenon aligns with and extends previous findings (Mardon et al., 2018, 2023; Tafesse & Wood, 2021; Wolter et al., 2023) that followers can influence other community members through various forms of follower-to-follower and follower-to-SMI engagement.

Answering the call by Leung et al. (2022), we investigated influencer network dynamics and qualitative attributes by analyzing audio-visual content (i.e., TikTok post) by a well-known beauty industry SMI. This approach involved the examination of IM across formats beyond text alone (Filieri et al., 2021, 2023). Moreover, we illustrated the actual process by which followers change the meaning of an SMI post, leading to a promotional crisis. We applied PSR theory, which posits that followers develop one-sided relationships with influencers, generating a sense of personal connection and trust. When an influencer violates these perceived norms, followers might feel betrayed, intensifying their reactions and engagement. This heightened engagement also relates to social capital theory, as the relationships and trust among followers amplify the collective response.

The observed effect depends on specific segments of SMI followers within the network, their language, attitudes, and intentions as reflected in their comments and interactions with other followers comments, beyond first-level responses to the original SMI post. For instance, the "Type 1" segment was especially adept at altering the meaning of the SMI post through rational argument and engagement with other followers. These comments, characterized by high authenticity and sadness but low clout and overall emotion, exerted substantial influence. As measured by "likes" received, these comments generated the most social support and had the most detrimental effect on perceived SMI credibility. The structural model highlights that credibility strongly influenced the intent to follow SMI and the intent to buy the product, demonstrating the power of SMI-driven promotions on consumer choice. Type 1 comments, low in social process and emotionality but high in word complexity, profoundly affected online engagement and follower network behavior, extending even to those who were not following the SMI. These findings explain the "Mascaragate" phenomenon: increased engagement on TikTok spilled over to other social media platforms and mainstream media.

Finally, while previous findings show that influencer transgressions impact SMIs and the brands they promote (von Mettenheim & Wiedmann, 2023) and call for a greater understanding of dynamic interactions within social networks (Chen et al., 2019), our findings suggest that SMIs and brands analyze follower comments and identify particularly influential commenters. Their reach extends beyond the immediate follower network, affecting broader audiences and shaping promotional outcomes (Cheung et al., 2022; Gräve, 2019).

TABLE 4 SEM Results of Main Effects Testing.

Hypotheses	Direct Path	Estimate (standardized)	S.E.
H1a	SM Dependency → SM Consumption	0.464***	0.054
H1b	SM Dependency → Willingness to Rely	0.211***	0.058
H2a	SM Consumption → Willingness to Rely	0.174***	0.050
H2b	SM Consumption → Intent to Follow	0.079*	0.040
H3a	Influencer Skepticism → Influencer Credibility	−0.618**	0.039
H3b	Influencer Skepticism → Willingness to Rely	−0.421***	0.057
H3c	Influencer Skepticism → Intent to Buy	0.161**	0.058
H4a	Influencer Credibility → Willingness to Rely	0.207***	0.058
H4b	Influencer Credibility → Intent to Follow	0.650***	0.041
H4c	Influencer Credibility → Intent to Buy	0.228**	0.069
H5a	Willingness to Rely → Intent to Follow	0.166**	0.048
H5b	Willingness to Rely → Intent to Buy	0.093 (ns)	0.049
H6	Intent to Follow → Intent to Buy	0.598***	0.055

***$p < 0.001$; **$p < 0.01$; *$p < 05$.

4.2 | Managerial implications

Our findings also point to managerial and societal issues related to social media dependency and consumption-driven engagement. First, our findings can help practitioners who wish to take a nuanced yet quantifiable approach to studying social media comments. While cluster analysis in marketing is typically used to segment consumers, we showed how this tool can cluster followers when combined with linguistic analysis of their comments. This application can help marketers develop typologies of comments and segment followers based on linguistic cues. Effectively, brands and SMIs, by distinguishing follower types within their networks based on their comment content and interaction with other users, can create interventions in near real-time if needed. Some of the interventions were proposed by the loyal followers and included: live applications when deceptive practices are suspected, apology video, and interaction in comments. While the SMI strategy was silence and diminished postings, this strategy is not recommended due to the impact on followers who felt not only violated, as noted in our findings, but also ignored.

Second, higher social media dependency amplifies social media use for consumption of and reliance on SMI-conveyed information. While these effects can benefit influencer-brand relationships and associated consumption patterns, the risk of overconsumption and excessive spending looms. Our findings indicate widespread skepticism about SMI credibility (Belanche et al., 2021), based not only on specific instances of SMI transgression but also on trends in the industry as a whole, dampening trustworthiness, reliance on SMI-conveyed information, and purchase intention. In light of these findings, marketers and brand managers should monitor SMIs who engage in unethical promotional practices to limit brand exposure to detrimental carryover effects. Given the critical role of SMIs in consumer decision making, more oversight is needed. Additionally, as our netnography suggested, followers scrutinized SMIs for dubious disclosures of relationship or no disclosure at all, deceptive promotional practices, and overall efforts to benefit without regard for consumer welfare. Policymakers need to tighten regulations and see SMIs for what they are: powerhouses of influence. Our findings shed new light on this problem and point to a potential solution: followers can play a role in calling attention to SMI and brand misbehavior.

4.3 | Future research and limitations

Despite the value of our findings, several limitations of this study open avenues for future research. Cluster analysis of social media comments offers significant potential for additional examination. Our findings about social media consumption and dependency highlight need further exploration, particularly due to the timely nature of the negative effects of social media. Scholars have examined social media anxiety and addiction in the context of social comparison with influencers and impulsive buying. But social media dependency is complex, potentially weakening one's guard against deceptive influencer messages. Additionally, the effects of social media dependency on influencer-follower relationships and self-esteem warrant further investigation. For instance, followers who responded defensively to criticism might be highly dependent, nurturing an obsessive relationship. Understanding these "brand loyal" followers could shed light on postcrisis image restoration in influencer marketing. Scholars should also explore the intent not to buy products that emerges when influencer-follower interactions fail. Moreover, a deeper analysis of linguistic and social cues (e.g., complaint language) could enhance understanding of follower network dynamics in promotional campaigns (Bacile, 2024). A promising avenue for future research is to uncover a tipping point where positive follower comments turn

into complaints; the timing of this shift would be particularly interesting to both scholars and practitioners.

Each method we used also has limitations. Netnography, an interpretive method, is subject to researcher experience, skill, and knowledge (Kozinets, 2013). Netnographic data collection relies on online traces, which algorithms can more or less affect (Kozinets, 2020). We used a keyword search to limit algorithmic effects, but some degree of impact is nearly impossible to avoid when collecting internet field data. Similarly, k-means cluster analysis depends on researcher expertise to determine the appropriate number of clusters. While these limitations are typical, experimental design can help validate findings in a controlled environment. Our mixed-method approach mitigates these limitations by providing breadth and depth of findings. Additionally, we focused on the beauty industry and a single product type (i.e., mascara), limiting generalizability to other products or industries. Finally, reliance on data from a single influencer video is not inherently limiting, as qualitative studies often focus on single events or individuals. However, scholars should investigate multiple SMIs across different industries to determine the transferability of findings.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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Anti-consumption: A Preliminary Examination of a Set of Social Considerations That Impact a Consumer's Decision to 'Punish' Marketers Deemed to be Engaging in Irresponsible Behavior

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Anti-consumption: A Preliminary Examination of a Set of Social Considerations That Impact a Consumer's Decision to 'Punish' Marketers Deemed to be Engaging in Irresponsible Behavior

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ABSTRACT

A sample of 175 students from two universities provided insight regarding the rationale for engaging in anti-consumption behavior. A review of the literature identified myriad reasons why consumers engage in personal boycotts. This study examines 12 of these reasons: environmental concerns, political stance, religious orientation/affiliation, country-of-origin (COO), attitudes towards the LGBTQ community, the size of the marketer, the use of disliked celebrity endorsers, the use of offensive marketing tactics (e.g. advertising), animal cruelty including the use of live animal testing, perceived violations of basic human rights, employing a nonunionized workforce, and employment-related discrimination based on the gender, age, race, religion, or ethnicity of the individual. Respondents rated the appropriateness of each of these 12 issues as a consideration for consumers when making a purchase decision, and they indicated the extent to which they personally use each issue in making their own purchase decisions. The results show that the most accepted rationale for engaging in a public boycott is a reported transgression related to sustainability whereas the least acceptable of the 12 reasons under scrutiny is the large size of the marketer. The respondents also indicated that they were personally most likely to consider anti-consumption because of a firm's engagement in perceived violations of the basic human rights of the firm's employees whereas the use of a non-unionized workforce was the issue that was least likely to result in a personal boycott. Five of the six measured demographic variables were found to be associated with the decision-making process with gender and ethnicity being the most common factors. The consideration most likely to be influenced by demographic variables was the company's position regarding the LGBTQ community.

Keywords: *Anti-consumption, Boycotts, Politics, Purchase, Punish, Demographics, LGBTQ*

INTRODUCTION

In recent years, marketers have witnessed an uptick in two distinct consumer actions. More specifically, consumers are known to engage in boycotts and buycotts – two issues at opposite ends of the social spectrum. A *boycott* is a behavior that most consumers have long understood; it has been defined by Friedman as "an endeavor by at least one gathering to accomplish certain goals by asking singular buyers to avoid making chosen buys in the commercial center." Perhaps more succinctly stated, it was also defined by Friedman as "an attempt by one or more parties to achieve certain objectives by urging individual consumers to refrain from making selected purchases in the marketplace" (Friedman 1985, p. 97). Conversely, a *buycott* represents "the conscious and deliberate decision of consumers to make consumption choices to reward organizations for their good deeds" (Chatzidakis and Lee, 2013; Crane and Matten, 2004, p. 290). So, whereas boycotts represent anti-consumption as a way of punishing unacceptable behaviors, buycotts represent the antithesis or the "flip side" of boycotts (Rivaroli, Ruggeri, Novi and Spadoni, 2018, p. 143). Thus, buycotts represent an overt effort to encourage the purchase of specific products as a way of rewarding positive behavior on the part of the marketer (Friedman, 2002).

While both phenomena are important for marketers to understand, this study focuses solely on boycotts. These refusals to purchase a particular product or from a particular marketer may be an individual's personal response to an issue that they find offensive in some manner, or the boycott may be organized among specific groups of consumers with the goal of punishing marketers that the groups view as engaging in unacceptable behavior. Whether the focus is on an individual consumer or a reference group, there are a multitude of reasons as to why these consumers may choose to boycott a particular marketer. As such, this research addresses the reasons why consumers engage in anti-consumption behavior as a form of economic punishment.

LITERATURE REVIEW

Unlike the vast majority of research on consumer behavior, rather than examining why people choose to purchase a product or brand, this research will focus on why they reject a particular product or brand. This rejection may be via a singular personal decision or as part of a group action based on reference group influence. The act of rejecting a specific product, or a particular brand, is termed *anti-consumption*. Whereas the decision to make a purchase is essentially rewarding a company that projects a brand personality and/or a company philosophy that is congruent with the consumers' values, anti-consumption is viewed as a way of punishing an organization engaged in and/or supporting behavior deemed unacceptable by the consumer (Sudbury-Riley, Kohlbacher, 2018; Friedman, 2002; Smith, 1990). As articulated by Nebenźahl, Jaffe, and Kavak (2000), consumers can choose to reward or to punish marketers with their own purchase behavior. The extant literature is replete with examples of anti-consumption.

Consumers tend to make informed decisions regarding the products that they purchase; however, they often have an agenda that excludes some products from their evoked set of acceptable alternatives. In many regards, younger consumers, namely Millennials and Gen Z, appear to be more issue-driven; therefore, they tend to possess more of a collectivist mindset as opposed to a

more individualistic perspective. In fact, Generation Z has been characterized as the most "socially-driven generation;" this phenomenon was especially evident as it related to recent global protests regarding perceived social injustices in the aftermath of George Floyd's death at the hand of Minneapolis police (Davis, 2020). From an anti-consumption perspective, it has been stated that Generation Z is "focusing on consumerism as a channel for change" and that "more than 67 percent have stopped purchasing or would consider doing so if the company stood for something or behaved in a way that didn't align with their values" (Joker, 2018, p. 4). For example, from an environmental standpoint, research has shown that sustainability is more important to Gen Z than it is to any other generational cohort group. Consequently, members of that age group are more inclined to reject certain products in favor of more sustainability-focused options (Fullerton, 2019). Given this reality, it is reasonable to presume that anti-consumption behavior is likely to be related to other demographics as well. As such, the primary focus of this study is the rationale – that is to say the reasons – why a consumer rejects one or more marketers because those marketers employ what the consumer deems to be unacceptable business tactics. It concurrently assesses how these attitudes are related to a number of demographic considerations.

A thorough examination of the extant literature provided the opportunity to identify myriad reasons for anti-consumption. It concurrently provided insight into the rationale for developing a deeper stream of research on the topic. As noted earlier, anti-consumption represents a consumer's effort and intent to achieve certain goals by asking individual consumers to refrain from patronizing a marketing organization that is perceived to be acting in a manner contrary to some subset of society's goals (Friedman 1985). So, just what are these societal goals that permeate the consumers' mindset? The answer to that question emerges from a thorough literature review.

The issue of *sustainability* is the most common area for research that addresses the refusal to buy from a particular marketer (Sudbury-Riley and Kohlbacher, 2019; Cherrier, 2009). For example, because McDonald's has (rightly or wrongly) been accused of contributing to deforestation, many consumers are concerned about what they believe to be a breach of sustainability*;* as a consequence, these consumers may refuse to dine at McDonald's Restaurants (Kuo and Means, 2018) while encouraging other consumers to likewise boycott McDonald's. Concerns regarding sustainability precipitated a call for Swedish consumers to boycott air travel (Pallini, 2020). Similarly, Royal Dutch Shell has been the target for numerous consumer boycotts; one of the more recent was Greenpeace's call for a boycott due to oil drilling practices that created environmental concerns (Donovan, 2015). It has been stated that sustainability-rooted anti-consumption leads to a greater propensity to engage in consumer boycotts of those companies deemed to be engaged in non-green behavior than do other concerns on the part of consumers and a plethora of watchdog groups (Seegebarth, Peyer, Balderjahn, and Wiedman, 2016).

From a *political* perspective, a modest amount of research has shown that some consumers will refrain from purchasing products when they believe the marketer has a political agenda that is incongruent with their own (Sandikci and Ekici, 2009). In the politically-polarized United States today, it is logical to presume that a company's overarching political philosophy may lead to a backlash on the part of opposing segments of consumers (Hydock, Paharia, and Weber, 2019).

An example of this phenomenon is consumers who refuse to stay at a Trump-branded resort because of political beliefs that conflict with their own. From a similar perspective, at the height of the contentious 2020 presidential campaign in the United States, there was a call for a boycott of Hobby Lobby because of the appearance of a display at one of their stores that encouraged Americans to vote to re-elect President Trump (Tyko, 2020a). The call for a boycott was made even though there was no evidence as to whether it was a store employee or a customer who created the display using moveable letters on a sign board.

The third consideration to surface was the boycotting of companies that support or even abide by a company policy that adheres to a recognizable *religious philosophy*. For example, Hobby Lobby and Chick-fil-A close on Sunday for religious reasons. Many consumers take issue with this religion-oriented decision (Swimberghe, Woolridge, Ambort-Clark, and Rutherford, 2014). Adherence to Muslim, Jewish, Mormon, and many other religious faiths may lead companies to make a number of tactical decisions that fall within their faith but outside of the mindset of the mainstream, or at least some segment of the market. Consumers often exhibit their disdain for these companies by boycotting the products they do sell on the days that they are open (Malek, Umberger, and Goddard, 2019; Dekhil, Jridi, and Farhat, 2017). There may also be religious mandates that require those individuals who abide by a particular religious doctrine to refrain from engaging in certain consumption behaviors. Pork, beef and non-Halal products are prohibited by certain faiths. As such, this refusal to purchase and consume these products represents a form of anti-consumption that is predicated upon religious underpinnings.

When the focus shifts to *Country-of-Origin (COO)*, research has shown that consumers with a home country bias will often boycott foreign products (Hoffmann, 2013). Boycotts predicated upon COO concerns have been linked to the potential of saving domestic jobs thereby having a positive impact on the domestic economy (Hoffmann, 2011). In the United States, members of automotive labor unions have long been discouraged by their union and their peers from buying cars that are not domestically produced (McGough, 2010). An example that goes beyond reference group pressure is the fact that Ford employees who drive foreign cars may be required to park in designated lots that are significantly more distant from their workspace than are the lots for U.S.-sourced cars (Popely and Mateja, 2006). Likewise, there are anti-American sentiments in some countries that have led to boycotts of noteworthy American brands such as McDonald's, Starbucks, and Levi Strauss (Al-Shebil, Rasheed, and Al-Shammari, 2011). Similarly, some American consumers have recently expressed a desire to boycott Chinese products in retaliation for their presumed role in the Covid-19 pandemic (Zhao, 2020). Consumers appear to be very willing to participate in such COO-based boycotts (Hoffmann and Müller, 2009), and as noted, this response is not just an American phenomenon. For example, one study reported that 56% of German consumers expressed a willingness to boycott Nokia after the marketer moved its German-based subsidiary to Romania (Weber, 2008).

Social deterrents have been shown to contribute to anti-consumptive behavior (Zavestoski 2002; Sen, Gurhan-Canli and Morwitz, 2001). Two recent examples of socially-driven consumer boycotts are consumers who refuse to frequent Chick-fil-A and Hobby Lobby because of these companies' emotional and financial contributions to entities that are perceived to foster an *anti-LGBTQ* mindset. "Marketing the Rainbow" is a gay rights organization that has characterized

boycotts as a way of dealing with companies that "negatively dealt with gay issues" (Anonymous, 2020c). Among their calls for boycotts were Coors and Florida Orange Juice. Ironically, consumer boycotts may address either side of this phenomenon; a consumer may boycott because of anti-LGBTQ sentiment whereas other consumers might be inclined to boycott because of positive-LGBTQ support (Flores and Flores, 2020; Anonymous, 2020c).

The sixth consideration identified in the literature is the *size of the organization.* Interestingly, some consumers refuse to buy from small companies such as mom-and-pop shops because of concerns about inferior customer service, whereas the more common outcome occurs when consumers refuse to buy from large companies because of myriad concerns. These concerns include the perceived lack of personal attention, the belief that large companies do not contribute to the local community-at-large, and that their sheer size-based power may be deemed anti-competitive and detrimental to small local businesses. They are also often perceived to be unduly influencing governmental policies and decisions (Beck, 2018). For example, Facebook's Mark Zuckerberg contributed $350 million to fund political activities and staffing considerations that were seen as focused on benefitting Democrat candidates in the 2020 election (Goerg, 2020). In light of such concerns, large marketers such as Walmart or Amazon may be targeted (Waddock and Graves, 1997). Some research has characterized these size-driven boycotts as a mentality of favoring the underdog (McGinnis, Gao, Jun and Gentry, 2017; Prell, 2011; Zavestoski, 2002).

The seventh issue identified was the *use of celebrity endorsers* that are disliked by a segment of the consumer market (Odoom, Kosiba, Christian, and Narh, 2019; Hue, Lim, Won, and Kwon, 2018). In such cases, it is the disdain for the spokesperson that drives consumers to boycott the marketer. This spokesperson could be any well-known celebrity, but the most common are athletes, actors, musicians, politicians, and even royalty among others (Fullerton, 2017). But some celebrities are hated. This hatred can be related to any number of reasons including some of the six issues that were previously mentioned. For instance, a celebrity may be known for supporting a particular political candidate (Kid Rock) or for adhering to a religious doctrine that the consumer dislikes (Tom Cruise). But it could be a less imposing reason; the consumer may hate an athlete that plays for a rival team or one who abandoned their favorite team as a free agent (Tom Brady). Irrespective of the reason, the outcome is the same. The consumer dislikes the celebrity endorser; consequently that individual refuses to buy the product that the celebrity endorses. It is when that dislike is common among a large group of individuals that the collective boycott potentially becomes problematic.

The next issue identified in the literature review is that *of using offensive marketing tactics.* Though advertising is at the forefront of this phenomenon, there are many other marketing tactics that can foster consumer contempt. It could be the product itself or a decision specific to pricing, distribution, or a target marketing concern. One of the most commonly disliked tactics is sex in advertising (Knittel, Zana, Karolin Beurer, and Adele Berndt, 2016). For example, Hardee's and Carl's Jr. were roundly criticized for advertising using a bikini-clad Morgan Fairchild and messages that exuded sexual innuendo (Johnson, 2018). The roles portrayed by women in advertising have also resulted in a backlash to the extent that companies such as Dove have instituted so-called *femvertising* as a way of highlighting a positive image of women (Feng,

Chan and He, 2019). Such initiatives have, in fact, resulted in buycotts with consumers expressing a sincere desire to purchase products from marketers such as Bumble, Secret, L'Oréal, and Microsoft, companies whose advertising is seen as portraying women and younger girls in positive roles (Anonymous, 2020a). Among other offensive marketing tactics that have precipitated action are exclusionary target marketing practices such as "redlining" in the insurance industry; this strategic initiative led to boycotts by black consumers who were negatively impacted by the practice (Rahman, 2018).

The ninth consideration documented in the literature is that of animal cruelty. Although much of the concern in this regard has been focused on the use of *live animal testing* in the research and development of a marketer's products (Cambefort and Roux, 2019), other issues have been brought to the forefront over time. For years, boycotts have been called against circuses for perceived abuses in the training of animals (Shani and Pizam, 2008). More recently, a boycott was called against the Chaokoh brand of coconut milk because of reports of abuse of the so-called "monkey labor force" that is used to climb trees and harvest coconuts. The reports even caused Costco to remove the brand from their store shelves (Tyko, 2020b). Backlashes against companies that use live animals in their product testing protocols have led some companies such as Body Shop International to extoll the virtues of their philosophy of not engaging in this practice (Dobson, 2018; Hartman and Beck-Dudley, 1999). But for those who do use live animal testing, the backlash among critics and activists can be loud, and it can be significant. And it is more pronounced today than in the past. For these reasons, People for the Ethical Treatment of Animals (PETA) has encouraged consumers to boycott companies such as Estee Lauder, Mary Kay, and Victoria's Secret because they still use live animals in their tests of cosmetics and other health and beauty products (Anonymous, 2020b). As a consequence, many firms have abandoned animal testing in their efforts to better appeal to the concerned citizenry.

The tenth consideration for anti-consumption that was identified in the examination of the secondary data was that of *perceived violations of basic human rights* (Zollo, Yoon, Rialti, and Ciappei, 2018; Ishak, Khalid, and Sulaiman, 2018; Brearton, Bhyat, Fernandez, Gross, Sosa, Ranney, and Palardy, 2007). Advocates of human rights organize and support boycotts of companies they deem to be guilty of violating the rights of their workforce, even if the workers do not work directly for the company being boycotted. This issue is particularly noteworthy as it often relates to the manufacturing labor forces in countries such as Vietnam and China. For example, Nike has long been the target of consumer boycotts because of perceived labor abuses in Vietnam (Bauer and Umlas, 2017; Chylinski and Chu, 2010). The concerns articulated typically include low compensation, child labor, forced overtime, and the lack of adequate restroom breaks.

The penultimate consideration on the list is the use of a *non-unionized work force*. This issue is particularly relevant in North America and Western Europe. While it typically involves workers at manufacturing facilities, it may also involve the retail work force. Those engaging in this type of boycott are generally union members (Hyman and Curran, 2000); they may also engage in buycotts whereby union members are encouraged to buy products and shop at retailers where the labor force is unionized. So, while American union members may have long embraced Budweiser beer, they long boycotted the non-unionized Coors brand (Savan, 1989).

The final rationale for anti-consumption that surfaced during the literature review is *discrimination against employees and prospective employees* based on demographic considerations (Lee, Kim, and Jeong-Nam, 2019). While the more common demographic variables that are associated with this form of discrimination are gender and race, other issues are documented in the literature. Among the additional variables are age and marital status. Discrimination may mean that certain individuals may not be considered for promotion, or even being hired, by company decision makers. When such discrimination comes to light, boycotts are often implemented. Two of the many examples identified in the literature are the called boycotts of Nordstrom's for its alleged discrimination against black employees (Rizzo, 2002) and Pinterest's alleged discrimination against female employees (Burroughs, 2020).

The literature review resulted in 12 specific potential considerations for engaging in anti-consumption behavior – or boycotts. The list is likely neither mutually exclusive nor collectively exhaustive. Yet, while there may well be more reasons for anti-consumption, these 12 were the most prevalent, thus deemed to be the most relevant as well as the timeliest for the current project. The 12 considerations that were identified along with a brief rationale for anti-consumption for each are summarized in Table 1.

Table 1. 12 Considerations Leading to Anti-consumption and Potential Rationale for Each

Consideration	Potential Rationale for Punishment
Sustainability	Harming the Environment; Global Warming
Political	Company Politically Oriented in Different Direction
Religion	Religious Platform Runs Counter to Mainstream/Segment
Country-of-Origin	Ethnocentricity; Domestic Economic Impact; Adversary
Anti-LGBTQ	Viewed as Discriminatory Based on Sexual Orientation
Size of the Organization	Large Companies Viewed as Detriment to Small Business
Disliked Celebrity Endorser	Dislike of Spokesperson Translates to Dislike of Marketer
Offensive Marketing Tactics	Any Element of Marketing Mix such as Sexy Advertising
Animal Abuse and Testing	Backlash for Cruelty & Live Animals for Product Testing
Basic Human Rights Violations	Concern, Particularly for Foreign Manufacturing Workers
Non-union Workforce	Backlash against Companies with Non-unionized Labor
Employment-related Discrimination	Workforce Discrimination against a Demographic Group

RESEARCH OBJECTIVES

The objectives associated with this initial component of a much larger project are fourfold. First is that of determining the extent to which members of Generation Z feel that a number of potential reasons to engage in a boycott are appropriate for consumers to take into consideration when making a decision to participate in a boycott of a particular marketer. Second is the determination of the extent to which each of the 12 issues under scrutiny impacts their own personal purchasing behavior. The third objective is the identification of relationships between commonly used demographics and the two dependent variables for each consideration that were measured in this study (appropriateness and personal use). The final objective is to use the

results to identify glitches in the research instrument while concurrently allowing for the reduction in the total number of items used to measure specific psychographic traits that will be used in the follow-up study. The results emanating from the final objective will provide the opportunity to refine the final survey and prepare it for the larger, more scientifically-selected sample from the United States. It will also provide the basis for planned surveys in South Africa and South Korea along with potential dissemination in New Zealand and Australia.

METHODOLOGY

The literature review was an essential component of the research process. Myriad considerations for consumer boycotts were identified. Though the research team began the process with an eye on four considerations to examine, upon completion of the comprehensive literature review, a total of 12 were ultimately selected for inclusion in the data collection instrument. Specifically, the research addressed:

- environmental concerns (sustainability),
- political orientation,
- religious orientation/affiliation,
- country-of-origin (COO),
- attitudes towards the LGBTQ community,
- (large) size of the marketer,
- use of disliked celebrity endorsers,
- offensive marketing tactics (e.g., sexy advertising),
- animal cruelty and the use of live animal testing,
- perceived violations of basic human rights,
- employing a nonunionized workforce, and
- employment-related discrimination based on demographic considerations.

The questionnaire included two questions for each of the 12 considerations. First was the appropriateness of consumers using each issue as a basis for making a decision to refrain from buying from a particular marketer. Second was the extent to which the respondent personally used each criterion when deciding which marketers they would avoid when making their own purchase decisions. Appropriateness was measured using a forced, balanced, six-point itemized rating scale where each of the six response points was labelled. Personal use was measured using a forced, unbalanced, six-point scale with each point labeled. Demographics were measured using multiple choice response sets. For age, respondents were simply asked to place themselves within one of five age ranges that correspond to the five commonly discussed generational cohort groups. These cohort groups range from the Silent Generation to Gen Z. The final set of questions focused on several multi-item psychographic scales. Their purpose for inclusion in this part of the study was data reduction. This assessment facilitated the identification of the more appropriate scales while eliminating unneeded items from the final survey that will be distributed to a targeted sample of adult (age 18 and older) residents in the United States. The final survey is set for distribution in the United States, South Africa, and South Korea with other countries potentially included.

Students at a large Midwestern university and a smaller Southeastern university completed the survey as part of their course requirements. They were provided a link, and the survey was completed online using the Qualtrics portal. Though students provided their name (in order to receive credit for successful completion of the survey), the data set was provided to a third coauthor who was not involved in teaching any of the students. That individual provided the other two coauthors with a list of students who had successfully completed the survey. Thus, the students were assured anonymity as it related to their professor.

Analyses associated with the first two research objectives were based on simple descriptive statistics. Means and frequency distributions provided the needed metrics. To identify relationships between each of the 12 criteria under consideration and the relevant demographics, measures of association were used. Since the criteria under consideration were intervally-scaled, it was decided that a simple t-test would be used when the demographic variable was dichotomous whereas One Way Analysis of Variance (ANOVA) and the Scheffé Method of Multiple Comparisons were used when the independent variable had three or more response categories. A measure of significance of .05 or less was required for rejection of the null hypotheses of equal group means across each demographic variable for each analytical procedure.

Objective four involved data reduction of several specific psychographic scales. While those scales were not germane to this part of the study, the use of Principle Components Analysis along with the calculation of Cronbach's alpha for reliability were essential for the next phase of the study which will focus on psychographic considerations. These results will be briefly addressed in the Results section.

RESULTS

The 12 potential reasons for engaging in anti-consumption behavior that were identified in the review of the extant literature were incorporated within the data collection instrument. The initial survey went through 16 iterations among the three coauthors before the final instrument was deemed ready for pretesting. The sample for this portion of the study comprised 175 university students from two universities, one in the Midwest and one in the Southeast United States. In light of the sample focusing on university students, the vast majority of the respondents fell within the Generation Z category (96.0%) as anticipated whereas the gender demographic was more representative of the aggregate population. The breakdown based on gender was 55.4% female and 44.6% male. No respondents identified themselves as gender neutral or binary.

Appropriateness of the 12 Considerations for Others Making Anti-consumption Decisions

This variable was measured using a balanced six-point scale anchored by "Totally Appropriate" (1) and "Totally Inappropriate" (6). Of the 12 potential considerations that might be the rationale behind engaging in anti-consumption by an individual consumer or as a coordinated effort involving groups of consumers, all 12 were deemed appropriate based upon mean scores lower than the scale's midpoint of 3.5. The consideration deemed most appropriate addressed concerns about sustainability; close behind sustainability was perceived violations of the basic human

rights of the firm's employees. At the other end of the spectrum, though still deemed a relevant consideration, the issue deemed least appropriate to use as a consideration for staging a boycott was the size of the marketer. Specifically, the respondents were fairly neutral regarding the rationale of boycotting large marketers.

Other considerations that were viewed with some trepidation (means > 3.00) were country-of-origin and any religious orientation that is espoused by the marketer. As noted, none of the considerations exhibited a mean greater than 3.50, thus all 12 considerations can be characterized as having some degree of appropriateness in regard to their use as a determinant as to which firms should be targets of personal or consumer group boycotts. An overview of these results is provided in Table 2.

Table 2. Perceived Appropriateness of Each Consideration as Basis for Anti-Consumption

Consideration	Mean
Environmental Concerns (Sustainability)	1.64
Perceived Violations of Basic Human Rights	1.67
Employee/Hiring Discrimination Based on Demographics	1.77
Offensive Marketing Tactics (e.g. Sex in Advertising)	1.84
Animal Cruelty/Use of Live Animal Testing	1.89
Attitudes towards the LGBTQ Community	2.49
Political Orientation	2.59
Use of Disliked Celebrity Endorsers	2.95
Employing a Non-unionized Workforce	2.95
Religious Orientation/Affiliation	3.06
Country-of-Origin (COO)	3.12
Size of the Marketer (Large)	3.23

Scale: 1 = Totally Appropriate and 6 = Totally Inappropriate

Personal Considerations in Making Anti-consumption Decisions

The second research objective focused on the determination of the extent to which Gen Z respondents used each of the 12 considerations when making their own personal decision to not purchase products sold by a specific marketer or at a specific retailer. These variables were measured using an unbalanced six-point scale anchored by "Always (1)" and "Never (6)". Using that six-point scale, three were deemed to be commonly used in the consumers' decision-making process.

The consideration that the respondents were most likely to personally use when deciding to boycott a particular marketer was perceived violations of one's basic human rights, in particular the labor force that is involved in manufacturing activities in less-developed countries such as Vietnam. Next on the list were discrimination against some employees based upon their demographic profile and concerns about animal cruelty. The issue least likely to result in a decision to boycott a specific marketer is the use of a nonunionized work force in manufacturing and retail operations. Fully 31.4 percent of the respondents indicated that they always or very frequently considered a company's record on human rights whereas 48.6 percent of the

respondents indicated that they never used a firm's nonunionized workforce as bases for boycotting a particular marketer. An overview of these results is provided in Table 3.

Table 3. Tendency to Personally Use Each Consideration as a Basis for Anti-Consumption

Consideration	Mean
Perceived Violations of Basic Human Rights	3.31
Employee/Hiring Discrimination Based on Demographics	3.44
Animal Cruelty/Use of Live Animal Testing	3.48
Offensive Marketing Tactics (e.g. Sex in Advertising)	3.66
Environmental Concerns (Sustainability)	3.74
Political Orientation	4.00
Attitudes towards the LGBTQ Community	4.06
Use of Disliked Celebrity Endorsers	4.66
Country-of-Origin (COO)	4.78
Religious Orientation/Affiliation	4.91
Size of the Marketer (Large)	4.93
Employing a Non-unionized Workforce	5.09

1 = Always, 2 = Very Frequently, 3 = Frequently, 4 = Sometimes, 5 = Seldom, and 6 = Never

Demographics

The issues germane to anti-consumption have much in common with ethical judgments on the part of consumers. Given that the literature is replete with examples of how an individual's ethical mindset is related to demographics, and despite the relative limitation in the distribution of ages across the sample, it was anticipated that differences in one's beliefs and behaviors regarding anti-consumption would be documented among some, if not all, of the demographic variables under scrutiny. Such was indeed the case as the respondents' attitudes regarding the appropriateness of using the 12 issues as a basis for anti-consumption were found to be influenced by four of the six demographic variables under scrutiny. The demographic variable that was most frequently found to be related to the 12 boycott considerations was gender. It was related to six of the 12 potential considerations. The consideration that was most commonly impacted by the six demographics under scrutiny was the marketer's perceived position regarding the LGBTQ community. It was found to be related to three of the six demographic variables: gender, ethnicity and age. Regarding their own use of the 12 criteria when making a purchase decisions, all 12 were found to be related to one or more of the demographic variables. The issues of sustainability, violations of basic human rights, and position regarding the LGBTQ community were all found to be related to two of the six demographic variables. The other nine considerations were each related to a single – and not the same – demographic variable. Regarding *gender*, women deemed six of the 12 considerations to be more appropriate than did their male counterparts. Women concurrently indicated that they personally considered five of the 12 potential reasons for engaging in a personal boycott more frequently than did men when making their own purchase decisions. For none of the 12 considerations under scrutiny were men found to be either more accepting or more likely to use them as bases for punishing a marketer.

Ethnicity was also related to six of the boycott considerations. While only one consideration was deemed to be more appropriate by any ethnic group, five of the 12 considerations were reported to be used more frequently by some individuals making a personal decision to refrain from purchasing a product from a particular marketer. Hispanics were more likely to accept country-of-origin and the marketer's political inclination as legitimate boycott considerations. Those with an Asian heritage were more likely to reject offerings from companies that employed a non-unionized work force. Consumers who classified themselves as black or African American indicated a greater propensity to take violations of basic human rights, attitudes towards the LGBTQ community, and the dislike of a celebrity endorser into account when making a personal boycott decision.

Household *income* was found to be related to the frequency with which respondents chose to engage in a personal boycott. Those respondents who reported lower household incomes were more likely to use issues germane to sustainability, country-of-origin, and violations of basic human rights as bases for not patronizing a marketer they see as engaged in these unacceptable practices. When the focus shifts to *age*, little difference was expected given the fact that 96 percent of the respondents fell within the Generation Z cohort group. The small composition of the other four age-based cohort groups was expected to make the identification of statistically significant age-based differences difficult. Still, it was determined that Gen Z respondents were more likely to use religion as a basis for boycotting a marketer whereas the combined group of older respondents found the issue of a non-unionized work force to be a more appropriate consideration for boycotting a particular marketer than did their younger counterparts. Respondents who were *working* at least part time were more likely to boycott larger marketers, and they were also more attuned to the idea of rejecting a marketer because of a consumer's dislike of the marketer's celebrity spokesperson.

The sole demographic variable that was not found to be related to either the appropriateness of or the frequency with which an individual considered a boycott for any of the 12 reasons under consideration was the respondents' *marital status*. However, this fact could be attributed to the relatively small subset of married respondents who completed the survey. It should also be noted that despite their obvious differences (large/small, Midwest/Southeast), no statistically significant differences between respondents at the two *universities* were found for any of the 24 dependent variables. An overview of the demographic-based differences is presented in Table 4.

Table 4. Number of Significant Relationships with Each of the 12 Considerations

Demographic Variable	Appropriateness	Frequency of Use
Gender	6	5
Ethnicity	1	5
Income	0	3
Age	1	1
Work Status	1	1
Marital Status	0	0

Data Reduction

The data reduction objective associated with this study addressed the need to create a set of valid, yet more parsimonious psychographic scales for the upcoming second phase of this study. There were two potential *Political Inclination* scales and two alternative *Consumer Ethics* scales, thus one of each of these categories needed to be eliminated. Based on Principle Components Analysis (PCA) and Cronbach's alpha measures, the better of each of the two scales in each of the two categories was selected for retention in the final survey. Next, there were four scales that needed to be reduced in terms of the number of items comprising each scale. The results were that *Consumer Cynicism, Consumer Ethics, Political Inclination,* and *Consumer Coaching* were each reduced to four items by retaining those items that resulted in the highest metric regarding each scale's reliability. This reduction was essential for the composition of the final survey which will initially be distributed to the selected members of the target population of adult heads-of-households in the United States. It should be noted that there are seven additional multi-item scales that will be included in the final survey. However, all of these scales were already based on between three and five items as sought by the researchers, and each of the multi-item scales had been subjected to empirical scrutiny. Thus they were not included in the pretest of the data collection instrument. The results associated with the scales to be retained for the second phase of the study are summarized in Table 5.

Table 5. Final Composition of the Scales Retained for Phase Two of the Research Study

Scale	Number of Items Retained	Coefficient Alpha
Consumer Coaching	4	.922
Political Inclination	4	.916
Green Inclination	3	.894
Consumer Ethics	4	.885
Consumer Cynicism	4	.856
Anti-consumption	4	.636

DISCUSSION

Some of the 12 issues scrutinized in this study are more disconcerting than others. Sustainability and discrimination have far greater social consequences than do a disliked celebrity endorser or the size of the marketer. Thus, based on the social significance of the issue upon which consumers may act, the number of consumers who engage in anti-consumption will vary significantly for the 12 issues. For example, 17.7 percent of the respondents indicated that they **always** considered a marketer's position as it relates to discrimination against certain groups of employees based on demographic variables as a consideration for boycotting that marketer. Conversely, only 0.6 percent said they **always** refrain whereas 37.7 percent indicated that they **never** refrain from purchasing from a marketer because of its large size. Still, marketers cannot afford to ignore any of the 12 considerations.

The considerations under scrutiny in the current study all potentially create barriers to success for marketers that may find themselves to be targets of consumer boycotts. In response to this dilemma, the marketer typically has three alternatives. They can refrain from engaging in

questionable behavior. For example, Carl's Jr. has dropped its sex-laden advertising in favor of a more wholesome, product-related campaign. Second, the marketer can choose to continue to adhere to their questionable tactics and presume that it will negatively impact only a portion of its target market while being embraced by other consumers. Chick-fil-A continues to close on Sunday for religious reasons, even in airports and sports stadiums, yet it continues to be one of the most favored restaurant chains in America. Finally, the marketer can engage in a campaign designed to change people's opinions of the marketer. Nike addressed criticism that it was disregarding human rights and underpaying workers in manufacturing facilities in Vietnam with a public relations campaign designed convey a positive perspective in regard to their outsourcing strategy. Thus, there is not just one approach available to the marketer that is faced with the potential of a consumer boycott. That said, it is incumbent upon the marketer to make the determination as to which of the three directions they should take.

CONCLUSIONS

Each of the four research objectives articulated for this study was achieved. A total of 12 considerations for engaging in a boycott were identified. All 12 were deemed to be appropriate for consumers to use when making anti-consumption decisions. The extent to which respondents personally used these considerations in making their own decisions was found to vary significantly with some frequently used and others seldom, if ever, used for personal decisions. Demographics were found to play a role with gender and ethnicity more likely to be associated with the decision to engage in anti-consumption behavior. The multi-item psychographic scales under scrutiny were refined such that more parsimonious sets of items will be included on the follow-up survey which will be directed towards a much more representative sample of consumers residing in the United States with a long-term objective of producing a multinational study by engaging colleagues who are prepared to collect data in their home countries. Data have already been collected in South Africa and funding is being sought for data collection in South Korea. As such, this study represents the tip of the iceberg.

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Original Article

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Patients With ST-Segment Elevation Myocardial Infarction and Cerebrovascular Accidents: Impact of COVID-19 Vaccination on Mortality

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Abstract

Background: Coronavirus disease 2019 (COVID-19) infection is associated with proinflammatory states and adverse health outcomes such as ST-segment elevation myocardial infarction (STEMI) and cerebrovascular accidents (CVA). Limited evidence suggests that COVID-19 vaccination may decrease the adverse impact of COVID-19 infections. This study was designed to determine if patients who received COVID-19 vaccination had lower mortality from STEMI and CVA.

Methods: This is a retrospective comparative analysis of 3,050 patients, who were admitted to the hospital and diagnosed with STEMI or CVA between April 1, 2019, and April 1, 2022. Patients were divided into three different timeframes: pre-COVID (April 1, 2019, to March 31, 2020), COVID (April 1, 2020 to March 31, 2021), and post-COVID (April 1, 2021 to March 31, 2022). Chi-square analysis was completed to analyze associations between STEMI, CVA, and vaccination status. A multinominal logistic regression was used to determine significant predictors for in-hospital mortality.

Results: A total of 3,050 patients were admitted (1,873 STEMI and 1,177 CVA). STEMI accounted for about 60% of cases in each of the three time periods. There was no statistical difference in STEMI or CVA percentages in the three time periods. There was increased mortality in STEMI and CVA patients (odds ratio (OR) = 11.4; P < 0.001), but patients who received the COVID-19 vaccine were less likely to die (OR = 0.51, 95% confidence interval (CI): 0.28 - 0.93; P < 0.027) when compared to those who were unvaccinated. There was increased risk of death in patients with atrial fibrillation (AFIB) (OR = 2.43; P < 0.001) and chronic heart failure (CHF) (OR = 1.76; P = 0.004). There was increased mortality risk associated with age (OR =1.03; P = 0.001). Patients with coronary artery disease (CAD) (OR = 0.45; P = 0.014) and hyperlipidemia (OR = 0.29; P < 0.001) were less likely to die.

Conclusions: Vaccination against COVID-19 was associated with reduced mortality rates in patients hospitalized with STEMI and CVA. Patients with pre-existing cardiovascular comorbidities such as CAD and hyperlipidemia also had lower mortality.

Keywords: COVID-19 vaccination; Mortality; STEMI; CVA

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Introduction

The global pandemic caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), commonly known as coronavirus disease 2019 (COVID-19), affected more than 675 million people [1]. There is an increased risk of complications such as acute myocardial infarction (AMI) and cerebrovascular accident (CVA) associated with COVID-19 infection [2]. Most complications happen in patients with comorbidities that affect the cardiovascular and pulmonary system [3]. The hypothesized mechanism of endothelial dysfunction with apoptosis is direct viral infection of the angiotensin-converting enzyme 2 (ACE2) receptor expressed on endothelial cells, resulting in activation of the immune system, affecting multiple different organs [3]. A meta- analysis in 2021 found higher in-hospital mortality in patients with a STEMI who had COVID-19 infection versus those with no infection [4]. A meta-analysis from 2020 found that patients with COVID-19 and concurrent cardiovascular disease, hypertension, diabetes, congestive heart failure, and chronic kidney disease had a greater risk of mortality compared to patients without these comorbidities [5]. A systematic review in 2021 found patients with COVID-19 infection and stroke had higher in-hospital mortality [6].

Three vaccines for the prevention of COVID-19 infection were developed and approved in the United States. More than 13.3 billion COVID vaccines have been administered since the beginning of the pandemic [7]. With global efforts, 70.6% of the world's population has now received at least one dose

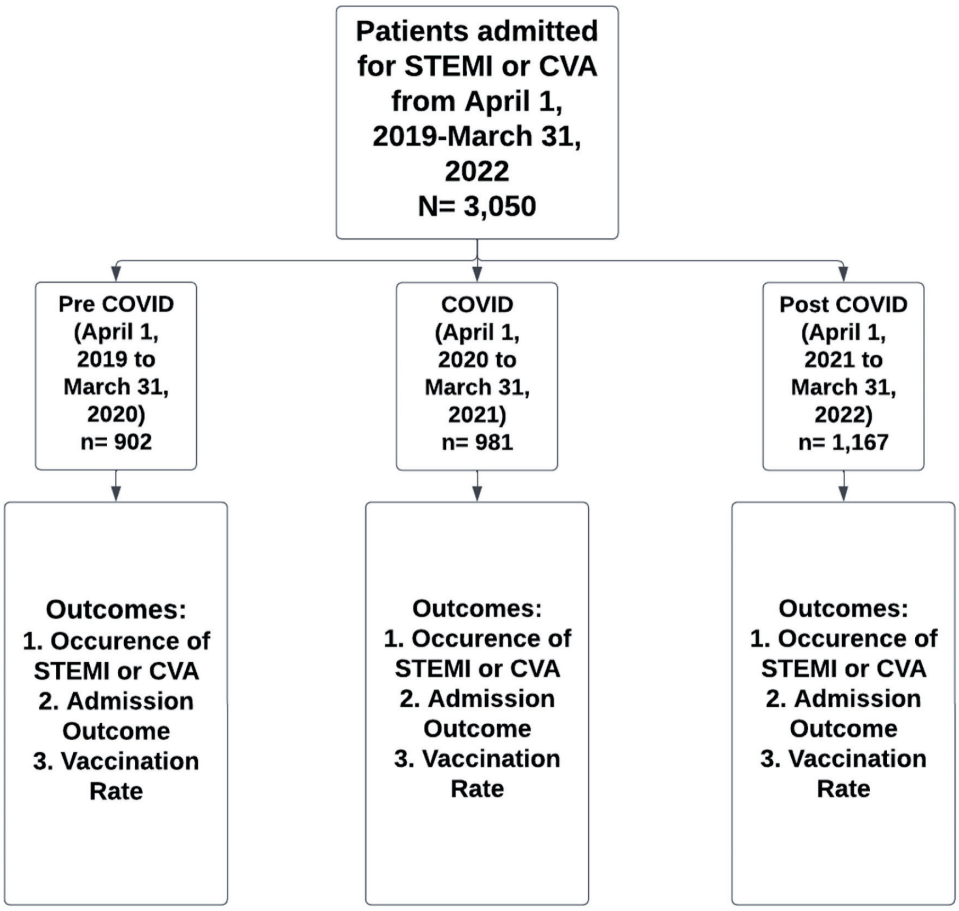

Figure 1. Group allocation and study design. STEMI: ST-segment elevation myocardial infarction; CVA: cerebrovascular accident; COVID-19: coronavirus disease 2019.

of COVID-19 vaccine [7]. Studies have shown an association between COVID-19 and proinflammatory states, which leads to ST-segment elevation myocardial infarction (STEMI) and CVA; however, there is less evidence that vaccine administration impacts the outcomes of STEMI and CVA in COVID-19 patients [2]. A study in Korea in 2022 found that full vaccination was associated with decreased risk of AMI and ischemic stroke in patients with COVID-19 infection [8]. There are no prior studies of the influence of vaccination status on hospital outcomes. Therefore, the purpose of this retrospective study is to assess the relationship between COVID-19 vaccination status and mortality and prevalence of STEMI and CVA in patients with multiple underlying cardiovascular comorbidities.

Materials and Methods

Subjects

All patients admitted to Northeast Georgia Health System from April 1, 2019, to March 31, 2022, with a diagnosis of STEMI or CVA were included in this retrospective observational study. The study used deidentified secondary data. Data acquisition was completed using ethical data governance to maintain anonymity of the patients involved in the study. This study was granted exemption from full Institutional Review Board (IRB) review by the IRB at the Brenau University. The investigation conforms with the principles outlined in the Declaration of Helsinki.

Design

A retrospective observational study was performed with patients admitted to one of four hospitals in a medium-sized health system between April 1, 2019, and March 31, 2022. Patients admitted with a primary diagnosis of STEMI or CVA were included. Data were collected through chart abstraction from electronic health records using the Current Procedural Terminology (CPT) and International Classification of Diseases, 10th Revision (ICD-10) codes. The date of these encounters was used to divide patients into three groups to observe the relationship between COVID-19 and the onset of CVAs and STEMIs. The patients were divided into times before, during, and after the COVID-19 pandemic (Fig. 1). The control group (pre-COVID) was patients admitted in the year immediately prior to the beginning of the

Table 1. Occurrence of STEMI and CVA Events per Group Year

	Pre-COVID-19	COVID-19	Post-COVID-19	Total
STEMI	549 (60.9%)[a]	585 (59.6%)[a]	739 (63.3%)[a]	1,873 (61.4%)
CVA	353 (39.1%)[a]	396 (40.4%)[a]	428 (36.7%)[a]	1,177 (38.6%)
Total (n = 3,050)	902	981	1,167	3,050

[a]Not significant associations. [b]Significant associations. STEMI: ST-segment elevation myocardial infarction; CVA: cerebrovascular accident; COVID-19: coronavirus disease 2019.

COVID-19 pandemic dated from April 1, 2019, to March 31, 2020. The pre-COVID group functions to record the annual baseline occurrence of CVAs and STEMIs prior to the COVID-19 pandemic. The second group (COVID) included patients admitted from April 1, 2020, to March 31, 2021. The third group was after the introduction of COVID vaccination. The post-COVID group included patients admitted from April 1, 2021, to March 31, 2022. Patients were considered "vaccinated" if they had received two doses of the COVID-19 vaccine, regardless of the specific vaccine received. Figure 1 outlines the group allocation. To clarify the role that COVID-19 infection and vaccination status have on the outcomes of CVA and stroke, additional data on cardiovascular and metabolic comorbidities - including coronary artery disease (CAD), atrial fibrillation (AFIB), type 2 diabetes mellitus (T2DM), hyperlipidemia, chronic heart failure (CHF), along with patient demographics were collected.

Outcomes

The primary outcome was mortality in patients presenting with STEMI and CVA before, during, and after the COVID-19 pandemic. COVID-19 vaccination status was recorded as present or absent. Patient characteristics and comorbidities were included to determine if there were any predictors for mortality or confounders.

Statistical analysis

Nonparametric data of the prevalence of STEMI and CVAs and COVID vaccination status by COVID-19 group year was analyzed using Chi-square to determine COVID group associations with STEMI and/or CVA. To determine the relationship between COVID-19 vaccination and mortality, a multinomial logistic regression analysis was conducted. The model was used to determine if any variables (CVA or STEMI, COVID vaccination, COVID-19, age, CAD, AFIB, hyperlipidemia, CHF, COVID group year, and T2DM) could significantly predict mortality in patients presenting with a primary diagnosis of STEMI or CVA. All statistical analyses were performed using IBM SPSS 28.0 with an alpha level of 0.05 to determine significance for all statistical tests.

Results

Prevalence of STEMI and CVA

During the study time period, a total of 3,050 patients were admitted (1,873 with a STEMI and 1,177 with a CVA). STEMI accounted for about 60% of cases in each time period. In contrast, stroke constituted approximately 40% of cases across the three COVID groups. Neither CVAs nor STEMIs were statistically associated with COVID-related time frames, but there were increases in both STEMIs and CVAs in the post-COVID-19 group compared to both pre-COVID-19 and COVID-19 groups (Table 1).

COVID-19 vaccination rates

There was a significant association between the COVID groups and vaccination rates. COVID-19 vaccination became available in December of 2021. Seventeen patients in the COVID timeframe were vaccinated. In the post-COVID group, slightly over four in 10 patients (44.9%) received a COVID vaccine (Table 2).

Table 2. Vaccination Rates of Patients Admitted With STEMI or CVA

	Pre-COVID-19	COVID-19	Post-COVID-19	Total
Not vaccinated	902 (100%)[a]	964 (98.3%)[b]	643 (55.1%)[b]	2,509 (82.3%)
STEMI	549	578	261	
CVA	353	386	382	
Vaccinated	0 (0%)[a]	17 (1.7%)[b]	524 (44.9%)[b]	541 (17.7%)
STEMI	0	7	167	
CVA	0	10	357	

[a]Values do not show significant associations, and [b]values show significant associations between receiving COVID-19 vaccination and the COVID-19 group year. STEMI: ST-segment elevation myocardial infarction; CVA: cerebrovascular accident; COVID-19: coronavirus disease 2019.

Table 3. Predictors for In-Hospital Mortality

Variable	OR	95% CI for OR		P value
		Lower	Upper	
STEMI and CVA[a]	11.441	6.085	21.512	< 0.001
COVID-19 vaccination[a]	0.509	0.28	0.926	0.027
COVID-19 infection[a]	2.622	1.276	5.385	0.009
Age[a]	1.033	1.017	1.049	< 0.001
Coronary artery disease (CAD)[a]	0.445	0.233	0.847	0.014
Atrial fibrillation[a]	2.428	1.632	3.611	< 0.001
Hyperlipidemia[a]	0.288	0.192	0.434	< 0.001
Chronic heart failure (CHF)[a]	1.763	1.195	2.601	0.004
COVID-19 group year				0.052
COVID-19	0.982	0.611	1.576	0.939
Post-COVID-19[a]	1.658	1.017	2.705	0.043
T2DM	1.401	0.962	2.041	0.078

[a]Significant predictor for in-hospital mortality. STEMI: ST-segment elevation myocardial infarction; CVA: cerebrovascular accident; T2DM: type 2 diabetes mellitus; OR: odds ratio; CI: confidence interval; COVID-19: coronavirus disease 2019.

Prediction for in-hospital mortality

STEMI and CVA patients have an increased risk of death (odds ratio (OR) = 11.4, 95% confidence interval (CI): 6.1 - 21.5; P < 0.001). Patients who received COVID vaccine were less likely to die (OR = 0.51, 95% CI: 0.28 - 0.93; P < 0.027). Patients with CAD (OR = 0.45, 95% CI: 0.233 - 0.847; P = 0.014) and hyperlipidemia (OR = 0.29, 95% CI: 0.192 - 0.434; P < 0.001) were also less likely to die. There was increased risk of death in patients with AFIB (OR = 2.43, 95% CI: 1.632 - 3.611; P < 0.001) and CHF (OR = 1.76; 95% CI: 1.195 - 2.60; P = 0.004). There was an increased mortality risk associated with age (OR =1.03, 95% CI: 1.017 - 1.049). T2DM was not a significant predictor for mortality but remains in the model (Table 3).

Discussion

Pre-existing cardiovascular, pulmonary, and metabolic diseases are consistently associated with severe COVID-19 infection and worse long-term outcomes. COVID-19 vaccination was introduced to decrease the spread of COVID infection and was found to decrease the severity of illness. The purpose of this study was to determine if there was a relationship between COVID-19 vaccination and outcomes of hospitalizations relating to STEMI or CVA. This study found that patients who were diagnosed with COVID-19 infection had increased mortality from STEMI and CVA; however, those who received two doses of the COVID-19 vaccination had a decreased mortality risk. STEMI and CVA prevalence were not associated with COVID-related timeframes.

This study indicates that STEMI and CVA patients who were hospitalized at our institution and were considered completely vaccinated had a lower mortality rate. These findings are consistent with previous literature showing the cardioprotective effects of COVID-19 vaccination on cardiovascular outcomes. A study by Gupta et al found a significant reduction in all-cause mortality in vaccinated patients with AMI at 30 days and 6-month follow-up [9]. Kim et al found that full vaccination against COVID-19 was associated with a reduced risk of AMI and ischemic stroke after COVID-19 infection [8]. Our results confirmed these findings even in consideration of patients who suffered from pre-existing cardiovascular comorbidities, such as CAD and hyperlipidemia. This further emphasizes that individuals with pre-existing cardiovascular disease should be vaccinated in order to improve cardiovascular outcomes. Data regarding the protective effects of COVID-19 on cardiovascular events are still limited, and further research should be conducted.

Zahid et al found that STEMI patients with superimposed COVID-19 infection had worse clinical outcomes, with almost three times higher in-hospital mortality and a higher rate of 6-month major adverse cardiac events [10]. Other diagnoses that were predictors for mortality in these patients were AFIB, CHF, and post-COVID syndrome. COVID-19 vaccination is valuable for all patients, but patients with these diagnoses should prioritize vaccination. COVID-19 predisposes patients to arterial and venous thrombosis due to excessive inflammation, platelet activation, endothelial dysfunction, and stasis [11, 12]. Furthermore, studies have shown that COVID-19 induces multiple cytokines and chemokines resulting in vascular inflammation, plaque instability, and myocardial inflammation [13].

In this study, STEMI and CVA prevalence were not significantly different pre-COVID versus during and after COVID. Data from the United States National COVID Cohort Collaborative reported that both full and partial vaccination against COVID-19 were associated with decreased risk of major adverse cardiac events [14]. In our population, only 44.9% of the patients had received a COVID vaccination in the post-COVID period. This may be linked to vaccine hesitancy. Jabagi et

al evaluated patients over 75 years old from France who had received COVID vaccination. They found no increase in the risk of stroke, acute MI, and pulmonary embolism in the first 14 days after vaccination [15]. Lin et al reviewed patients from North Carolina who received COVID vaccination and found lower risk of subsequent COVID infection, hospitalization, and death [16].

As a retrospective observational design, this study cannot establish causation or direct correlation. Additionally, the small cohort size in this study compared to the general population of vaccinated individuals may mask significant findings and lead to potential confounders. Presentation bias is another limitation that can be considered, as many patients with cardiovascular events might have developed a fear of going to the hospital during the peak of COVID. Furthermore, this study did not account for the potential effect of long-COVID syndrome on cardiovascular disease outcomes. Data regarding anticoagulation status were not reported in this study, as it is known that aspirin has a cardioprotective profile. The role of thromboprophylaxis after diagnosis of COVID was not investigated and could have altered outcomes on mortality of STEMI and CVA patients. This study did not account for the specific type of vaccination given. Patients were considered "vaccinated" if they received two doses of the vaccine which excludes patients with one dose. Finally, we were unable to account for modification in STEMI and CVA management for those who were COVID-19 positive, such as delayed percutaneous coronary intervention (PCI), thrombectomy, or limited imaging to decrease staff exposure to COVID-19.

Despite knowing that COVID-19 vaccination is beneficial in reducing mortality with STEMI and CVA, the exact mechanism as to how COVID-19 vaccination reduces the severity of these cardiovascular events remains unclear. While COVID vaccination is strongly encouraged for all populations, patients that experience specific comorbidities like AFIB and CHF should prioritize vaccination. Further research needs to be done to explore the impact of COVID-19 vaccination on these higher-risk populations and how long-COVID affects cardiovascular health. This will help better spread awareness to decrease vaccine hesitancy for optimal recovery and prevention of COVID, and its related consequences.

Acknowledgments

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This study did not receive any funding.

Conflict of Interest

The authors declare there is no conflict of interest.

Informed Consent

This is a retrospective study that reviewed secondary data. Therefore, the IRB waved the need for informed consent for the participants involved in the study.

Author Contributions

SP, MB, and SK were responsible for data collection, manuscript writing, and the development of background and methodology of the study in its origination. JD assisted as the faculty sponsor of the project with reviewing and editing of the entire manuscript and helped with clinical interpretations of data analysis. SR was responsible as the methodologist of the project and assisted in ethical compliance with IRB submission and review. AR served as the statistician of the study and worked with data cleaning, organization, and analysis. AA and JD conceived the original idea and were responsible for supervising the project.

Data Availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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Results: Mean methylation level (percent) in SLs and normal colonic tissues was as follows: normal colon, 5.7; HP, 2.9; SSL, 9.5; SSL with dysplasia (SSLD)/SSL with early invasive cancer (EIC), 9.4; TSA, 36.5; TSA with high grade dysplasia (HGD)/EIC, 56.1. Mean IHC scores were as follows: normal colon, 26.5; HP, 22.7; SSL, 25.4; SSLD/SSL with EIC, 13.0; TSA, 5.2; TSA with HGD/EIC, 6.5. These results suggest that SMOC1 is frequently methylated in TSAs and TSAs with HGD/EIC but was rarely methylated in normal colon, HPs, SSLs and SSLDs/SSLs with EIC ($P < 0.05$), and that SMOC1 is abundantly expressed in normal colon, HPs, SSLs, whereas it is significantly downregulated in TSAs and TSAs with HGD/EIC ($P < 0.05$).
Conclusion: We confirmed the correlation between methylation and expression of SMOC1 in SLs. Our results suggest that increased methylation level and reduced expression of SMOC1 is associated with progression of TSAs and that SMOC1 may be a biomarker for diagnosis and risk prediction of SLs.
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S332

Prevalence and Clinical Characteristics of Serrated Adenomas at Screening Colonoscopy in Rural Georgians

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Introduction: Serrated adenomas are a precursor lesion for colorectal cancer and account for ~15-30% of all colorectal polyps, thus making their detection and characterization crucial. There is currently minimal data evaluating serrated adenoma prevalence in community and rural settings. This study aims to investigate the prevalence, clinical characteristics, and racial/ethnic variability of serrated adenomas among patients undergoing screening colonoscopy in a community hospital system in rural Georgia.
Methods: A retrospective cross-sectional chart review was performed of patients who underwent screening colonoscopy (SC) within a community health system from 2016-2024. Patients with histologically proven serrated adenomas found at SC were included. Data on polyp size, location (right, transverse, left colon and/or rectal), patient race/ethnicity, insurance type, BMI and habits (alcohol consumption and smoking status) were collected. Data were analyzed using frequencies, Chi square tests and logistic regression models.
Results: A total of 5186 patients underwent SC during the study period with serrated adenomas were identified in 67 patients (1.3%). Among these, 26 patients (38.8%) had right-sided, 24 patients (35.8%) had left-sided, 13 patients (19.4%) had rectal, and 12 patients (17.9%) had transverse colon serrated adenomas. Smoking status was a significant predictor with former (Adj OR=1.81, $P < 0.38$, CI 1.03-3.27) and current smokers (Adj OR=3.47, $P < 0.001$, CI 1.81-6.66) more likely to have serrated adenomas than non-smokers. Alcohol use and BMI were not significant predictors. Race was also a significant predictor, but only for African American (AA) patients who had lower odds for having SA than whites (OR=0.231, P =0.042, CI 0.05-0.95). Of note, AA patients had a higher prevalence of non-smoking (62% vs 54.2%, Z= 2.3) and a lower prevalence of former smoking as compared to white patients (25.8% vs 34.2%, Z= -3.0) in the study group.
Conclusion: Smoking status, whether former or current, is a significant predictor of finding serrated adenoma at SC. In addition, AA patients were less likely to have a serrated adenoma at SC compared to whites. This finding may be explained by an increased rate of nonsmokers in the AA group. These results suggest the need for tailored screening and prevention strategies, particularly targeting high-risk groups identified by their smoking history.

Table 1. Serrated adenoma adjusted odds ratio for smoking and race

	Adjusted Odds Ratio	Confidence Interval	*P*-value
Smoking Status			
Never smoked	Reference		
Former Smoker	1.84	1.03-3.27	0.038
Current Smoker	3.472	1.81-6.66	< 0.001
Race			
White	Reference		
African American	0.231	0.056-0.950	0.042

S333

Early Onset GI Malignancies in Women: A SEER Database Analysis

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Introduction: Early onset gastrointestinal (GI) cancers in women under 50 years of age has been on the rise. However, there are limited studies evaluating this shift in epidemiology. The aim of this study was to examine the prevalence and survival trends of various GI malignancies in women under 50 years of age in the United States.
Methods: Data were collected from SEER research plus database containing 17 registries. from years 2000-2021. Women between 15-49 years of age and histology confirmed GI malignancies were included. Data on variables including survival months, race, median household income, were also included. Analysis was done using descriptive statistics and Chi square tests. Kaplan- Meir Survival analysis and Cox regression analysis.
Results: Of the total 6,198 women diagnosed with early onset GI malignancies, majority of were white 69.6% (n=4,311) followed by Asian or Pacific Islander 14.4% (n=893), African American 14.2% (n=883) and American Indian/Alaska Native 1.8% (n=111). Colorectal cancer 56% (n=3,472) was the most prevalent GI malignancy, followed by appendiceal cancer 11.8% (n=731), and gastric cancer 9.3% (n=578). The least common were gallbladder in 1.1% (n=69), biliary in 1% (n=63) and esophageal cancer in 1% (n=61). The most common age group affected was between 45-49 years 40.1% (n=2486), with decreasing frequency in the younger age groups. With regard to survival, appendiceal cancer had the longest estimated mean survival time (M=67.35 months), while gallbladder cancer had the shortest (M=27.89 months). The Breslow (Generalized Wilcoxon) test showed significant differences in survival distributions among the malignancy types, $\chi^2(10) = 570.529$, $P < .001$ (Image 1), among racial groups ($\chi^2(3) = 8.908$, $P = .031$) and age groups ($\chi^2(6) = 30.685$, $P < .001$).Compared to white women, Black women had a marginally non-significant lower risk of mortality (B = -0.294, SE = 0.181, $P = .105$, Exp(B) = 0.745, 95% CI [0.522, 1.063]). Compared to the youngest age group (15-19), the risk of mortality increased with age; women aged 35-39 had a significantly higher risk (B = 1.161, SE = 0.455, $P = .011$, Adj OR = 3.192, 95% CI [1.309, 7.781]), and those aged 40-44 had an even higher risk (B = 1.206, SE = 0.454, $P = .008$, Adj OR = 3.340, 95% CI [1.373, 8.124]).
Conclusion: High clinical suspicion and personalized approaches to cancer screening on risk factors may aid in early detection and treatments in this age group.

Table 1. Cox Regression Analysis Outcome

Variable	B	SE	Wald	df	Sig.	Exp(B)	95% CI for Exp(B)
Malignancy type			420.22	9	>0.001		
Colorectal	-1.118	0.178	39.482	1	>0.001	0.327	0.23-0.463
Appendiceal	1.240	0.194	40.731	1	>0.001	3.457	2.362-5.059
Esophageal	1.540	0.169	82.887	1	>0.001	4.664	3.348-6.497
Gallbladder	0.915	0.108	72.029	1	>0.001	2.496	2.021-3.083
Hepatic	1.033	0.209	24.500	1	>0.001	2.810	1.866-4.230
Biliary	0.912	0.084	117.102	1	>0.001	2.488	2.110-2.935
Pancreatic	0.204	0.204	2.573	1	0.109	1.388	0.930-2.072
Peritoneal	0.179	0.179	4.889	1	0.027	0.673	0.474-0.956

Table 1. Summary of the Study Outcomes

Outcomes	No. of Studies	No. of Participants	Statistical Method	Effect Size	*P* Value	I^2
Adequate Bowel Preparation	5	1734	Odds Ratio (M-H, Random, 95% CI)	1.11 [0.84, 1.46]	0.47	0
Total BPPS score	10	2898	Mean Difference (IV, Random, 95% CI)	0.30 [-0.02, 0.62]	0.06	93
Left Colon BBPS score	8	2388	Mean Difference (IV, Random, 95% CI)	0.09 [0.01, 0.17]	0.02	77
Transverse Colon BBPS score	8	2388	Mean Difference (IV, Random, 95% CI)	0.12 [0.01, 0.23]	0.03	91
Right Colon BPPS score	8	2388	Mean Difference (IV, Random, 95% CI)	0.10 [-0.12, 0.32]	0.37	95
Abdominal Discomfort	6	1748	Risk Ratio (M-H, Random, 95% CI)	0.42 [0.21, 0.84]	0.01	87
Abdominal pain	5	1395	Risk Ratio (M-H, Random, 95% CI)	0.33 [0.15, 0.75]	0.008	25
Bloating	5	1395	Risk Ratio (M-H, Random, 95% CI)	0.39 [0.19, 0.82]	0.01	69
Nausea	6	1943	Risk Ratio (M-H, Random, 95% CI)	0.65 [0.48, 0.88]	0.005	24
Vomiting	6	1943	Risk Ratio (M-H, Random, 95% CI)	0.54 [0.32, 0.91]	0.02	38
Composite nausea and vomiting	2	386	Risk Ratio (M-H, Random, 95% CI)	0.38 [0.23, 0.61]	< 0.0001	0
Other adverse events	3	1058	Risk Ratio (M-H, Random, 95% CI)	0.81 [0.51, 1.29]	0.37	0
First time of defecation (minutes)	3	1255	Mean Difference (IV, Random, 95% CI)	-9.48 [-23.17, 4.21]	0.17	99
Cecal intubation rate	4	1514	Odds Ratio (M-H, Random, 95% CI)	1.19 [0.63, 2.25]	0.6	0
Cecal intubation time (minutes)	4	1389	Mean Difference (IV, Random, 95% CI)	-0.45 [-1.03, 0.13]	0.13	88
Polyp detection rate	9	2659	Odds Ratio (M-H, Random, 95% CI)	1.10 [0.89, 1.37]	0.38	38
Adenoma detection rate	6	2053	Odds Ratio (M-H, Random, 95% CI)	1.10 [0.84, 1.44]	0.49	24
Defecating frequency	2	707	Mean Difference (IV, Random, 95% CI)	-4.17 [-7.72, -0.62]	0.02	96
Sleep disturbance	3	1246	Risk Ratio (M-H, Random, 95% CI)	0.74 [0.38, 1.42]	0.36	75
Willing to repeat	3	1110	Odds Ratio (M-H, Random, 95% CI)	3.71 [2.38, 5.80]	< 0.00001	0
Withdrawal time	6	2013	Mean Difference (IV, Random, 95% CI)	-0.09 [-0.29, 0.11]	0.38	56

Abbreviations: BBPS, Boston Bowel Preparation Scale.

S499

Utilization of Patient Counseling to Increase Colorectal Cancer Screening Rates in an Internal Medicine Resident Continuity Clinic

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Introduction: Colorectal Cancer (CC) screening is important for the early detection of CC. Current Screening tools available are: FIT test, FIT- DNA (Cologuard), Septin 9, Colon Capsule, computed tomography colonography, and colonoscopy. The purpose of our project was to implement a colon cancer screening counseling Epic Smart phrase in our resident run Internal Medicine continuity clinic. We then compared adherence to Fit test, colonoscopy, and Cologuard screening methods for patients who were counseled using the Epic Smart phrase (Epic SP) and those who were not counseled using the Epic SP.
Methods: Between August 1st, 2023, and January 31st, 2024, all Internal Medicine residents in our office were encouraged to utilize a premade Epic SP to counsel average-risk patients who were due for colorectal cancer screening. This smart phrase provided clear language to help them to discuss three different screening modalities that were available to patients in the clinic. We encouraged this using daily reminders at morning huddle, and written reminders posted in the clinic. During the study period, 281 patients had orders placed for colorectal cancer screening and had some type of discussion about colorectal cancer. Of these 281 patients, 45 patients were counseled with the Epic SP and 236 were counseled using usual care. Descriptive statistics were done using chi-squared and Fisher's Exact Test.
Results: Of the 45 patients who were counseled with the Epic SP, 31.1% of patients completed the recommended screening, but 68.8% did not complete the screening. Of the patient encounters where the Epic Smart phrase was not utilized, only 2.1% of patients completed the recommended screening test ($P < 0.001$). Of the patients who were counseled using the Epic Smart phrase, colonoscopy was the most common modality ordered, but Cologuard test had the highest rate of follow-up (70%).
Conclusion: Our results show both a clinical and statistical significance in colon cancer screening follow-up with the use of the Epic Smart phrase. It is important to note that our study included a relatively small sample size, so we are unable to determine if another factor like race or insurance type affected these adherence results. Future direction for this study would be to encourage more consistent use of the Epic Smart phrase to guide discussions about colorectal cancer screening counsel. We would also like to repeat this study with a larger patient population to search for other barriers to completion of screening such as social determinants of health.

S500

Barriers to Colorectal Cancer Screening in Rural Georgia: Results From a Survey of Unscreened Patients

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Introduction: Colorectal cancer (CRC) is the third leading cause of mortality within the United States. The state of Georgia (GA) has one of the poorest colorectal cancer screening rates in the country. Despite recommendations by the United States Preventative Screening Task Force to start CRC screening at age 45, it is estimated that about 20.3% of GA adults report never having had a CRC screening test. This study aimed to assess the patient perceived barriers to CRC in unscreened patients in GA.
Methods: Using the validated Health Belief Model (HBM), we constructed a semi-quantitative survey to assess demographics, perceived severity, benefits, and barriers to CRC screening among patients. Unscreened patients above the age of 45 and have not yet been screened for CRC were identified using a retrospective review and were recruited to complete the survey digitally through Qualtrics XM. Data were analyzed using frequencies and a Pearson chi square test was used to determine correlation between factors.
Results: A total of 106 participants completed the survey. Of the participants, majority were female (62.2%, n=66), White (23.3% n=91), had a college degree or higher (14.4%, n=56), insured (16.4%, n=64), and had heard about colorectal cancer (79.4%, n=85). Majority were not able to identify genetics (82.6%), smoking (89.7%), alcohol consumption (90.8%), and diet rich in red meat (89.0%) as known risk factors for developing CRC. The most common barriers associated with screening were cost, low scheduling knowledge, fear of colonoscopy, and ability to take time off to complete CRC screening within office hours. The highest correlation was found between cost barrier and scheduling knowledge (r=437, $P < 0.001$), followed by fear of colonoscopy and ability to take time off (r=0.365, $P < 0.001$). The lowest co-relation was between the cost of barrier and ability to take time off (r=0.268 and $P < 0.05$. Despite these barriers, majority picked colonoscopy (13.6%) over Cologuard (8.5%), FIT Test (3.3%), and computed tomography colonography (1.8%) as their preferred screening modality.
Conclusion: Our findings highlight the need to strengthen public health efforts including awareness campaign tailored to the barriers in specific communities. Additionally, utilizing navigators may help alleviate barriers around scheduling.

2022

Anti-consumption: A Preliminary Examination of a Set of Social Considerations That Impact a Consumer's Decision to 'Punish' Marketers Deemed to be Engaging in Irresponsible Behavior

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Anti-consumption: A Preliminary Examination of a Set of Social Considerations That Impact a Consumer's Decision to 'Punish' Marketers Deemed to be Engaging in Irresponsible Behavior

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ABSTRACT

A sample of 175 students from two universities provided insight regarding the rationale for engaging in anti-consumption behavior. A review of the literature identified myriad reasons why consumers engage in personal boycotts. This study examines 12 of these reasons: environmental concerns, political stance, religious orientation/affiliation, country-of-origin (COO), attitudes towards the LGBTQ community, the size of the marketer, the use of disliked celebrity endorsers, the use of offensive marketing tactics (e.g. advertising), animal cruelty including the use of live animal testing, perceived violations of basic human rights, employing a nonunionized workforce, and employment-related discrimination based on the gender, age, race, religion, or ethnicity of the individual. Respondents rated the appropriateness of each of these 12 issues as a consideration for consumers when making a purchase decision, and they indicated the extent to which they personally use each issue in making their own purchase decisions. The results show that the most accepted rationale for engaging in a public boycott is a reported transgression related to sustainability whereas the least acceptable of the 12 reasons under scrutiny is the large size of the marketer. The respondents also indicated that they were personally most likely to consider anti-consumption because of a firm's engagement in perceived violations of the basic human rights of the firm's employees whereas the use of a non-unionized workforce was the issue that was least likely to result in a personal boycott. Five of the six measured demographic variables were found to be associated with the decision-making process with gender and ethnicity being the most common factors. The consideration most likely to be influenced by demographic variables was the company's position regarding the LGBTQ community.

Keywords: *Anti-consumption, Boycotts, Politics, Purchase, Punish, Demographics, LGBTQ*

INTRODUCTION

In recent years, marketers have witnessed an uptick in two distinct consumer actions. More specifically, consumers are known to engage in boycotts and buycotts – two issues at opposite ends of the social spectrum. A *boycott* is a behavior that most consumers have long understood; it has been defined by Friedman as "an endeavor by at least one gathering to accomplish certain goals by asking singular buyers to avoid making chosen buys in the commercial center." Perhaps more succinctly stated, it was also defined by Friedman as "an attempt by one or more parties to achieve certain objectives by urging individual consumers to refrain from making selected purchases in the marketplace" (Friedman 1985, p. 97). Conversely, a *buycott* represents "the conscious and deliberate decision of consumers to make consumption choices to reward organizations for their good deeds" (Chatzidakis and Lee, 2013; Crane and Matten, 2004, p. 290). So, whereas boycotts represent anti-consumption as a way of punishing unacceptable behaviors, buycotts represent the antithesis or the "flip side" of boycotts (Rivaroli, Ruggeri, Novi and Spadoni, 2018, p. 143). Thus, buycotts represent an overt effort to encourage the purchase of specific products as a way of rewarding positive behavior on the part of the marketer (Friedman, 2002).

While both phenomena are important for marketers to understand, this study focuses solely on boycotts. These refusals to purchase a particular product or from a particular marketer may be an individual's personal response to an issue that they find offensive in some manner, or the boycott may be organized among specific groups of consumers with the goal of punishing marketers that the groups view as engaging in unacceptable behavior. Whether the focus is on an individual consumer or a reference group, there are a multitude of reasons as to why these consumers may choose to boycott a particular marketer. As such, this research addresses the reasons why consumers engage in anti-consumption behavior as a form of economic punishment.

LITERATURE REVIEW

Unlike the vast majority of research on consumer behavior, rather than examining why people choose to purchase a product or brand, this research will focus on why they reject a particular product or brand. This rejection may be via a singular personal decision or as part of a group action based on reference group influence. The act of rejecting a specific product, or a particular brand, is termed *anti-consumption*. Whereas the decision to make a purchase is essentially rewarding a company that projects a brand personality and/or a company philosophy that is congruent with the consumers' values, anti-consumption is viewed as a way of punishing an organization engaged in and/or supporting behavior deemed unacceptable by the consumer (Sudbury-Riley, Kohlbacher, 2018; Friedman, 2002; Smith, 1990). As articulated by Nebenźahl, Jaffe, and Kavak (2000), consumers can choose to reward or to punish marketers with their own purchase behavior. The extant literature is replete with examples of anti-consumption.

Consumers tend to make informed decisions regarding the products that they purchase; however, they often have an agenda that excludes some products from their evoked set of acceptable alternatives. In many regards, younger consumers, namely Millennials and Gen Z, appear to be more issue-driven; therefore, they tend to possess more of a collectivist mindset as opposed to a

more individualistic perspective. In fact, Generation Z has been characterized as the most "socially-driven generation;" this phenomenon was especially evident as it related to recent global protests regarding perceived social injustices in the aftermath of George Floyd's death at the hand of Minneapolis police (Davis, 2020). From an anti-consumption perspective, it has been stated that Generation Z is "focusing on consumerism as a channel for change" and that "more than 67 percent have stopped purchasing or would consider doing so if the company stood for something or behaved in a way that didn't align with their values" (Joker, 2018, p. 4). For example, from an environmental standpoint, research has shown that sustainability is more important to Gen Z than it is to any other generational cohort group. Consequently, members of that age group are more inclined to reject certain products in favor of more sustainability-focused options (Fullerton, 2019). Given this reality, it is reasonable to presume that anti-consumption behavior is likely to be related to other demographics as well. As such, the primary focus of this study is the rationale – that is to say the reasons – why a consumer rejects one or more marketers because those marketers employ what the consumer deems to be unacceptable business tactics. It concurrently assesses how these attitudes are related to a number of demographic considerations.

A thorough examination of the extant literature provided the opportunity to identify myriad reasons for anti-consumption. It concurrently provided insight into the rationale for developing a deeper stream of research on the topic. As noted earlier, anti-consumption represents a consumer's effort and intent to achieve certain goals by asking individual consumers to refrain from patronizing a marketing organization that is perceived to be acting in a manner contrary to some subset of society's goals (Friedman 1985). So, just what are these societal goals that permeate the consumers' mindset? The answer to that question emerges from a thorough literature review.

The issue of *sustainability* is the most common area for research that addresses the refusal to buy from a particular marketer (Sudbury-Riley and Kohlbacher, 2019; Cherrier, 2009). For example, because McDonald's has (rightly or wrongly) been accused of contributing to deforestation, many consumers are concerned about what they believe to be a breach of sustainability*;* as a consequence, these consumers may refuse to dine at McDonald's Restaurants (Kuo and Means, 2018) while encouraging other consumers to likewise boycott McDonald's. Concerns regarding sustainability precipitated a call for Swedish consumers to boycott air travel (Pallini, 2020). Similarly, Royal Dutch Shell has been the target for numerous consumer boycotts; one of the more recent was Greenpeace's call for a boycott due to oil drilling practices that created environmental concerns (Donovan, 2015). It has been stated that sustainability-rooted anti-consumption leads to a greater propensity to engage in consumer boycotts of those companies deemed to be engaged in non-green behavior than do other concerns on the part of consumers and a plethora of watchdog groups (Seegebarth, Peyer, Balderjahn, and Wiedman, 2016).

From a *political* perspective, a modest amount of research has shown that some consumers will refrain from purchasing products when they believe the marketer has a political agenda that is incongruent with their own (Sandikci and Ekici, 2009). In the politically-polarized United States today, it is logical to presume that a company's overarching political philosophy may lead to a backlash on the part of opposing segments of consumers (Hydock, Paharia, and Weber, 2019).

An example of this phenomenon is consumers who refuse to stay at a Trump-branded resort because of political beliefs that conflict with their own. From a similar perspective, at the height of the contentious 2020 presidential campaign in the United States, there was a call for a boycott of Hobby Lobby because of the appearance of a display at one of their stores that encouraged Americans to vote to re-elect President Trump (Tyko, 2020a). The call for a boycott was made even though there was no evidence as to whether it was a store employee or a customer who created the display using moveable letters on a sign board.

The third consideration to surface was the boycotting of companies that support or even abide by a company policy that adheres to a recognizable *religious philosophy*. For example, Hobby Lobby and Chick-fil-A close on Sunday for religious reasons. Many consumers take issue with this religion-oriented decision (Swimberghe, Woolridge, Ambort-Clark, and Rutherford, 2014). Adherence to Muslim, Jewish, Mormon, and many other religious faiths may lead companies to make a number of tactical decisions that fall within their faith but outside of the mindset of the mainstream, or at least some segment of the market. Consumers often exhibit their disdain for these companies by boycotting the products they do sell on the days that they are open (Malek, Umberger, and Goddard, 2019; Dekhil, Jridi, and Farhat, 2017). There may also be religious mandates that require those individuals who abide by a particular religious doctrine to refrain from engaging in certain consumption behaviors. Pork, beef and non-Halal products are prohibited by certain faiths. As such, this refusal to purchase and consume these products represents a form of anti-consumption that is predicated upon religious underpinnings.

When the focus shifts to *Country-of-Origin (COO)*, research has shown that consumers with a home country bias will often boycott foreign products (Hoffmann, 2013). Boycotts predicated upon COO concerns have been linked to the potential of saving domestic jobs thereby having a positive impact on the domestic economy (Hoffmann, 2011). In the United States, members of automotive labor unions have long been discouraged by their union and their peers from buying cars that are not domestically produced (McGough, 2010). An example that goes beyond reference group pressure is the fact that Ford employees who drive foreign cars may be required to park in designated lots that are significantly more distant from their workspace than are the lots for U.S.-sourced cars (Popely and Mateja, 2006). Likewise, there are anti-American sentiments in some countries that have led to boycotts of noteworthy American brands such as McDonald's, Starbucks, and Levi Strauss (Al-Shebil, Rasheed, and Al-Shammari, 2011). Similarly, some American consumers have recently expressed a desire to boycott Chinese products in retaliation for their presumed role in the Covid-19 pandemic (Zhao, 2020). Consumers appear to be very willing to participate in such COO-based boycotts (Hoffmann and Müller, 2009), and as noted, this response is not just an American phenomenon. For example, one study reported that 56% of German consumers expressed a willingness to boycott Nokia after the marketer moved its German-based subsidiary to Romania (Weber, 2008).

Social deterrents have been shown to contribute to anti-consumptive behavior (Zavestoski 2002; Sen, Gurhan-Canli and Morwitz, 2001). Two recent examples of socially-driven consumer boycotts are consumers who refuse to frequent Chick-fil-A and Hobby Lobby because of these companies' emotional and financial contributions to entities that are perceived to foster an *anti-LGBTQ* mindset. "Marketing the Rainbow" is a gay rights organization that has characterized

boycotts as a way of dealing with companies that "negatively dealt with gay issues" (Anonymous, 2020c). Among their calls for boycotts were Coors and Florida Orange Juice. Ironically, consumer boycotts may address either side of this phenomenon; a consumer may boycott because of anti-LGBTQ sentiment whereas other consumers might be inclined to boycott because of positive-LGBTQ support (Flores and Flores, 2020; Anonymous, 2020c).

The sixth consideration identified in the literature is the *size of the organization.* Interestingly, some consumers refuse to buy from small companies such as mom-and-pop shops because of concerns about inferior customer service, whereas the more common outcome occurs when consumers refuse to buy from large companies because of myriad concerns. These concerns include the perceived lack of personal attention, the belief that large companies do not contribute to the local community-at-large, and that their sheer size-based power may be deemed anti-competitive and detrimental to small local businesses. They are also often perceived to be unduly influencing governmental policies and decisions (Beck, 2018). For example, Facebook's Mark Zuckerberg contributed $350 million to fund political activities and staffing considerations that were seen as focused on benefitting Democrat candidates in the 2020 election (Goerg, 2020). In light of such concerns, large marketers such as Walmart or Amazon may be targeted (Waddock and Graves, 1997). Some research has characterized these size-driven boycotts as a mentality of favoring the underdog (McGinnis, Gao, Jun and Gentry, 2017; Prell, 2011; Zavestoski, 2002).

The seventh issue identified was the *use of celebrity endorsers* that are disliked by a segment of the consumer market (Odoom, Kosiba, Christian, and Narh, 2019; Hue, Lim, Won, and Kwon, 2018). In such cases, it is the disdain for the spokesperson that drives consumers to boycott the marketer. This spokesperson could be any well-known celebrity, but the most common are athletes, actors, musicians, politicians, and even royalty among others (Fullerton, 2017). But some celebrities are hated. This hatred can be related to any number of reasons including some of the six issues that were previously mentioned. For instance, a celebrity may be known for supporting a particular political candidate (Kid Rock) or for adhering to a religious doctrine that the consumer dislikes (Tom Cruise). But it could be a less imposing reason; the consumer may hate an athlete that plays for a rival team or one who abandoned their favorite team as a free agent (Tom Brady). Irrespective of the reason, the outcome is the same. The consumer dislikes the celebrity endorser; consequently that individual refuses to buy the product that the celebrity endorses. It is when that dislike is common among a large group of individuals that the collective boycott potentially becomes problematic.

The next issue identified in the literature review is that *of using offensive marketing tactics.* Though advertising is at the forefront of this phenomenon, there are many other marketing tactics that can foster consumer contempt. It could be the product itself or a decision specific to pricing, distribution, or a target marketing concern. One of the most commonly disliked tactics is sex in advertising (Knittel, Zana, Karolin Beurer, and Adele Berndt, 2016). For example, Hardee's and Carl's Jr. were roundly criticized for advertising using a bikini-clad Morgan Fairchild and messages that exuded sexual innuendo (Johnson, 2018). The roles portrayed by women in advertising have also resulted in a backlash to the extent that companies such as Dove have instituted so-called *femvertising* as a way of highlighting a positive image of women (Feng,

Chan and He, 2019). Such initiatives have, in fact, resulted in buycotts with consumers expressing a sincere desire to purchase products from marketers such as Bumble, Secret, L'Oréal, and Microsoft, companies whose advertising is seen as portraying women and younger girls in positive roles (Anonymous, 2020a). Among other offensive marketing tactics that have precipitated action are exclusionary target marketing practices such as "redlining" in the insurance industry; this strategic initiative led to boycotts by black consumers who were negatively impacted by the practice (Rahman, 2018).

The ninth consideration documented in the literature is that of animal cruelty. Although much of the concern in this regard has been focused on the use of *live animal testing* in the research and development of a marketer's products (Cambefort and Roux, 2019), other issues have been brought to the forefront over time. For years, boycotts have been called against circuses for perceived abuses in the training of animals (Shani and Pizam, 2008). More recently, a boycott was called against the Chaokoh brand of coconut milk because of reports of abuse of the so-called "monkey labor force" that is used to climb trees and harvest coconuts. The reports even caused Costco to remove the brand from their store shelves (Tyko, 2020b). Backlashes against companies that use live animals in their product testing protocols have led some companies such as Body Shop International to extoll the virtues of their philosophy of not engaging in this practice (Dobson, 2018; Hartman and Beck-Dudley, 1999). But for those who do use live animal testing, the backlash among critics and activists can be loud, and it can be significant. And it is more pronounced today than in the past. For these reasons, People for the Ethical Treatment of Animals (PETA) has encouraged consumers to boycott companies such as Estee Lauder, Mary Kay, and Victoria's Secret because they still use live animals in their tests of cosmetics and other health and beauty products (Anonymous, 2020b). As a consequence, many firms have abandoned animal testing in their efforts to better appeal to the concerned citizenry.

The tenth consideration for anti-consumption that was identified in the examination of the secondary data was that of *perceived violations of basic human rights* (Zollo, Yoon, Rialti, and Ciappei, 2018; Ishak, Khalid, and Sulaiman, 2018; Brearton, Bhyat, Fernandez, Gross, Sosa, Ranney, and Palardy, 2007). Advocates of human rights organize and support boycotts of companies they deem to be guilty of violating the rights of their workforce, even if the workers do not work directly for the company being boycotted. This issue is particularly noteworthy as it often relates to the manufacturing labor forces in countries such as Vietnam and China. For example, Nike has long been the target of consumer boycotts because of perceived labor abuses in Vietnam (Bauer and Umlas, 2017; Chylinski and Chu, 2010). The concerns articulated typically include low compensation, child labor, forced overtime, and the lack of adequate restroom breaks.

The penultimate consideration on the list is the use of a *non-unionized work force*. This issue is particularly relevant in North America and Western Europe. While it typically involves workers at manufacturing facilities, it may also involve the retail work force. Those engaging in this type of boycott are generally union members (Hyman and Curran, 2000); they may also engage in buycotts whereby union members are encouraged to buy products and shop at retailers where the labor force is unionized. So, while American union members may have long embraced Budweiser beer, they long boycotted the non-unionized Coors brand (Savan, 1989).

The final rationale for anti-consumption that surfaced during the literature review is *discrimination against employees and prospective employees* based on demographic considerations (Lee, Kim, and Jeong-Nam, 2019). While the more common demographic variables that are associated with this form of discrimination are gender and race, other issues are documented in the literature. Among the additional variables are age and marital status. Discrimination may mean that certain individuals may not be considered for promotion, or even being hired, by company decision makers. When such discrimination comes to light, boycotts are often implemented. Two of the many examples identified in the literature are the called boycotts of Nordstrom's for its alleged discrimination against black employees (Rizzo, 2002) and Pinterest's alleged discrimination against female employees (Burroughs, 2020).

The literature review resulted in 12 specific potential considerations for engaging in anti-consumption behavior – or boycotts. The list is likely neither mutually exclusive nor collectively exhaustive. Yet, while there may well be more reasons for anti-consumption, these 12 were the most prevalent, thus deemed to be the most relevant as well as the timeliest for the current project. The 12 considerations that were identified along with a brief rationale for anti-consumption for each are summarized in Table 1.

Table 1. 12 Considerations Leading to Anti-consumption and Potential Rationale for Each

Consideration	Potential Rationale for Punishment
Sustainability	Harming the Environment; Global Warming
Political	Company Politically Oriented in Different Direction
Religion	Religious Platform Runs Counter to Mainstream/Segment
Country-of-Origin	Ethnocentricity; Domestic Economic Impact; Adversary
Anti-LGBTQ	Viewed as Discriminatory Based on Sexual Orientation
Size of the Organization	Large Companies Viewed as Detriment to Small Business
Disliked Celebrity Endorser	Dislike of Spokesperson Translates to Dislike of Marketer
Offensive Marketing Tactics	Any Element of Marketing Mix such as Sexy Advertising
Animal Abuse and Testing	Backlash for Cruelty & Live Animals for Product Testing
Basic Human Rights Violations	Concern, Particularly for Foreign Manufacturing Workers
Non-union Workforce	Backlash against Companies with Non-unionized Labor
Employment-related Discrimination	Workforce Discrimination against a Demographic Group

RESEARCH OBJECTIVES

The objectives associated with this initial component of a much larger project are fourfold. First is that of determining the extent to which members of Generation Z feel that a number of potential reasons to engage in a boycott are appropriate for consumers to take into consideration when making a decision to participate in a boycott of a particular marketer. Second is the determination of the extent to which each of the 12 issues under scrutiny impacts their own personal purchasing behavior. The third objective is the identification of relationships between commonly used demographics and the two dependent variables for each consideration that were measured in this study (appropriateness and personal use). The final objective is to use the

results to identify glitches in the research instrument while concurrently allowing for the reduction in the total number of items used to measure specific psychographic traits that will be used in the follow-up study. The results emanating from the final objective will provide the opportunity to refine the final survey and prepare it for the larger, more scientifically-selected sample from the United States. It will also provide the basis for planned surveys in South Africa and South Korea along with potential dissemination in New Zealand and Australia.

METHODOLOGY

The literature review was an essential component of the research process. Myriad considerations for consumer boycotts were identified. Though the research team began the process with an eye on four considerations to examine, upon completion of the comprehensive literature review, a total of 12 were ultimately selected for inclusion in the data collection instrument. Specifically, the research addressed:

- environmental concerns (sustainability),
- political orientation,
- religious orientation/affiliation,
- country-of-origin (COO),
- attitudes towards the LGBTQ community,
- (large) size of the marketer,
- use of disliked celebrity endorsers,
- offensive marketing tactics (e.g., sexy advertising),
- animal cruelty and the use of live animal testing,
- perceived violations of basic human rights,
- employing a nonunionized workforce, and
- employment-related discrimination based on demographic considerations.

The questionnaire included two questions for each of the 12 considerations. First was the appropriateness of consumers using each issue as a basis for making a decision to refrain from buying from a particular marketer. Second was the extent to which the respondent personally used each criterion when deciding which marketers they would avoid when making their own purchase decisions. Appropriateness was measured using a forced, balanced, six-point itemized rating scale where each of the six response points was labelled. Personal use was measured using a forced, unbalanced, six-point scale with each point labeled. Demographics were measured using multiple choice response sets. For age, respondents were simply asked to place themselves within one of five age ranges that correspond to the five commonly discussed generational cohort groups. These cohort groups range from the Silent Generation to Gen Z. The final set of questions focused on several multi-item psychographic scales. Their purpose for inclusion in this part of the study was data reduction. This assessment facilitated the identification of the more appropriate scales while eliminating unneeded items from the final survey that will be distributed to a targeted sample of adult (age 18 and older) residents in the United States. The final survey is set for distribution in the United States, South Africa, and South Korea with other countries potentially included.

Students at a large Midwestern university and a smaller Southeastern university completed the survey as part of their course requirements. They were provided a link, and the survey was completed online using the Qualtrics portal. Though students provided their name (in order to receive credit for successful completion of the survey), the data set was provided to a third coauthor who was not involved in teaching any of the students. That individual provided the other two coauthors with a list of students who had successfully completed the survey. Thus, the students were assured anonymity as it related to their professor.

Analyses associated with the first two research objectives were based on simple descriptive statistics. Means and frequency distributions provided the needed metrics. To identify relationships between each of the 12 criteria under consideration and the relevant demographics, measures of association were used. Since the criteria under consideration were intervally-scaled, it was decided that a simple t-test would be used when the demographic variable was dichotomous whereas One Way Analysis of Variance (ANOVA) and the Scheffé Method of Multiple Comparisons were used when the independent variable had three or more response categories. A measure of significance of .05 or less was required for rejection of the null hypotheses of equal group means across each demographic variable for each analytical procedure.

Objective four involved data reduction of several specific psychographic scales. While those scales were not germane to this part of the study, the use of Principle Components Analysis along with the calculation of Cronbach's alpha for reliability were essential for the next phase of the study which will focus on psychographic considerations. These results will be briefly addressed in the Results section.

RESULTS

The 12 potential reasons for engaging in anti-consumption behavior that were identified in the review of the extant literature were incorporated within the data collection instrument. The initial survey went through 16 iterations among the three coauthors before the final instrument was deemed ready for pretesting. The sample for this portion of the study comprised 175 university students from two universities, one in the Midwest and one in the Southeast United States. In light of the sample focusing on university students, the vast majority of the respondents fell within the Generation Z category (96.0%) as anticipated whereas the gender demographic was more representative of the aggregate population. The breakdown based on gender was 55.4% female and 44.6% male. No respondents identified themselves as gender neutral or binary.

Appropriateness of the 12 Considerations for Others Making Anti-consumption Decisions

This variable was measured using a balanced six-point scale anchored by "Totally Appropriate" (1) and "Totally Inappropriate" (6). Of the 12 potential considerations that might be the rationale behind engaging in anti-consumption by an individual consumer or as a coordinated effort involving groups of consumers, all 12 were deemed appropriate based upon mean scores lower than the scale's midpoint of 3.5. The consideration deemed most appropriate addressed concerns about sustainability; close behind sustainability was perceived violations of the basic human

rights of the firm's employees. At the other end of the spectrum, though still deemed a relevant consideration, the issue deemed least appropriate to use as a consideration for staging a boycott was the size of the marketer. Specifically, the respondents were fairly neutral regarding the rationale of boycotting large marketers.

Other considerations that were viewed with some trepidation (means > 3.00) were country-of-origin and any religious orientation that is espoused by the marketer. As noted, none of the considerations exhibited a mean greater than 3.50, thus all 12 considerations can be characterized as having some degree of appropriateness in regard to their use as a determinant as to which firms should be targets of personal or consumer group boycotts. An overview of these results is provided in Table 2.

Table 2. Perceived Appropriateness of Each Consideration as Basis for Anti-Consumption

Consideration	Mean
Environmental Concerns (Sustainability)	1.64
Perceived Violations of Basic Human Rights	1.67
Employee/Hiring Discrimination Based on Demographics	1.77
Offensive Marketing Tactics (e.g. Sex in Advertising)	1.84
Animal Cruelty/Use of Live Animal Testing	1.89
Attitudes towards the LGBTQ Community	2.49
Political Orientation	2.59
Use of Disliked Celebrity Endorsers	2.95
Employing a Non-unionized Workforce	2.95
Religious Orientation/Affiliation	3.06
Country-of-Origin (COO)	3.12
Size of the Marketer (Large)	3.23

Scale: 1 = Totally Appropriate and 6 = Totally Inappropriate

Personal Considerations in Making Anti-consumption Decisions

The second research objective focused on the determination of the extent to which Gen Z respondents used each of the 12 considerations when making their own personal decision to not purchase products sold by a specific marketer or at a specific retailer. These variables were measured using an unbalanced six-point scale anchored by "Always (1)" and "Never (6)". Using that six-point scale, three were deemed to be commonly used in the consumers' decision-making process.

The consideration that the respondents were most likely to personally use when deciding to boycott a particular marketer was perceived violations of one's basic human rights, in particular the labor force that is involved in manufacturing activities in less-developed countries such as Vietnam. Next on the list were discrimination against some employees based upon their demographic profile and concerns about animal cruelty. The issue least likely to result in a decision to boycott a specific marketer is the use of a nonunionized work force in manufacturing and retail operations. Fully 31.4 percent of the respondents indicated that they always or very frequently considered a company's record on human rights whereas 48.6 percent of the

respondents indicated that they never used a firm's nonunionized workforce as bases for boycotting a particular marketer. An overview of these results is provided in Table 3.

Table 3. Tendency to Personally Use Each Consideration as a Basis for Anti-Consumption

Consideration	Mean
Perceived Violations of Basic Human Rights	3.31
Employee/Hiring Discrimination Based on Demographics	3.44
Animal Cruelty/Use of Live Animal Testing	3.48
Offensive Marketing Tactics (e.g. Sex in Advertising)	3.66
Environmental Concerns (Sustainability)	3.74
Political Orientation	4.00
Attitudes towards the LGBTQ Community	4.06
Use of Disliked Celebrity Endorsers	4.66
Country-of-Origin (COO)	4.78
Religious Orientation/Affiliation	4.91
Size of the Marketer (Large)	4.93
Employing a Non-unionized Workforce	5.09

1 = Always, 2 = Very Frequently, 3 = Frequently, 4 = Sometimes, 5 = Seldom, and 6 = Never

Demographics

The issues germane to anti-consumption have much in common with ethical judgments on the part of consumers. Given that the literature is replete with examples of how an individual's ethical mindset is related to demographics, and despite the relative limitation in the distribution of ages across the sample, it was anticipated that differences in one's beliefs and behaviors regarding anti-consumption would be documented among some, if not all, of the demographic variables under scrutiny. Such was indeed the case as the respondents' attitudes regarding the appropriateness of using the 12 issues as a basis for anti-consumption were found to be influenced by four of the six demographic variables under scrutiny. The demographic variable that was most frequently found to be related to the 12 boycott considerations was gender. It was related to six of the 12 potential considerations. The consideration that was most commonly impacted by the six demographics under scrutiny was the marketer's perceived position regarding the LGBTQ community. It was found to be related to three of the six demographic variables: gender, ethnicity and age. Regarding their own use of the 12 criteria when making a purchase decisions, all 12 were found to be related to one or more of the demographic variables. The issues of sustainability, violations of basic human rights, and position regarding the LGBTQ community were all found to be related to two of the six demographic variables. The other nine considerations were each related to a single – and not the same – demographic variable. Regarding *gender*, women deemed six of the 12 considerations to be more appropriate than did their male counterparts. Women concurrently indicated that they personally considered five of the 12 potential reasons for engaging in a personal boycott more frequently than did men when making their own purchase decisions. For none of the 12 considerations under scrutiny were men found to be either more accepting or more likely to use them as bases for punishing a marketer.

Ethnicity was also related to six of the boycott considerations. While only one consideration was deemed to be more appropriate by any ethnic group, five of the 12 considerations were reported to be used more frequently by some individuals making a personal decision to refrain from purchasing a product from a particular marketer. Hispanics were more likely to accept country-of-origin and the marketer's political inclination as legitimate boycott considerations. Those with an Asian heritage were more likely to reject offerings from companies that employed a non-unionized work force. Consumers who classified themselves as black or African American indicated a greater propensity to take violations of basic human rights, attitudes towards the LGBTQ community, and the dislike of a celebrity endorser into account when making a personal boycott decision.

Household *income* was found to be related to the frequency with which respondents chose to engage in a personal boycott. Those respondents who reported lower household incomes were more likely to use issues germane to sustainability, country-of-origin, and violations of basic human rights as bases for not patronizing a marketer they see as engaged in these unacceptable practices. When the focus shifts to *age*, little difference was expected given the fact that 96 percent of the respondents fell within the Generation Z cohort group. The small composition of the other four age-based cohort groups was expected to make the identification of statistically significant age-based differences difficult. Still, it was determined that Gen Z respondents were more likely to use religion as a basis for boycotting a marketer whereas the combined group of older respondents found the issue of a non-unionized work force to be a more appropriate consideration for boycotting a particular marketer than did their younger counterparts. Respondents who were *working* at least part time were more likely to boycott larger marketers, and they were also more attuned to the idea of rejecting a marketer because of a consumer's dislike of the marketer's celebrity spokesperson.

The sole demographic variable that was not found to be related to either the appropriateness of or the frequency with which an individual considered a boycott for any of the 12 reasons under consideration was the respondents' *marital status*. However, this fact could be attributed to the relatively small subset of married respondents who completed the survey. It should also be noted that despite their obvious differences (large/small, Midwest/Southeast), no statistically significant differences between respondents at the two *universities* were found for any of the 24 dependent variables. An overview of the demographic-based differences is presented in Table 4.

Table 4. Number of Significant Relationships with Each of the 12 Considerations

Demographic Variable	Appropriateness	Frequency of Use
Gender	6	5
Ethnicity	1	5
Income	0	3
Age	1	1
Work Status	1	1
Marital Status	0	0

Data Reduction

The data reduction objective associated with this study addressed the need to create a set of valid, yet more parsimonious psychographic scales for the upcoming second phase of this study. There were two potential *Political Inclination* scales and two alternative *Consumer Ethics* scales, thus one of each of these categories needed to be eliminated. Based on Principle Components Analysis (PCA) and Cronbach's alpha measures, the better of each of the two scales in each of the two categories was selected for retention in the final survey. Next, there were four scales that needed to be reduced in terms of the number of items comprising each scale. The results were that *Consumer Cynicism, Consumer Ethics, Political Inclination,* and *Consumer Coaching* were each reduced to four items by retaining those items that resulted in the highest metric regarding each scale's reliability. This reduction was essential for the composition of the final survey which will initially be distributed to the selected members of the target population of adult heads-of-households in the United States. It should be noted that there are seven additional multi-item scales that will be included in the final survey. However, all of these scales were already based on between three and five items as sought by the researchers, and each of the multi-item scales had been subjected to empirical scrutiny. Thus they were not included in the pretest of the data collection instrument. The results associated with the scales to be retained for the second phase of the study are summarized in Table 5.

Table 5. Final Composition of the Scales Retained for Phase Two of the Research Study

Scale	Number of Items Retained	Coefficient Alpha
Consumer Coaching	4	.922
Political Inclination	4	.916
Green Inclination	3	.894
Consumer Ethics	4	.885
Consumer Cynicism	4	.856
Anti-consumption	4	.636

DISCUSSION

Some of the 12 issues scrutinized in this study are more disconcerting than others. Sustainability and discrimination have far greater social consequences than do a disliked celebrity endorser or the size of the marketer. Thus, based on the social significance of the issue upon which consumers may act, the number of consumers who engage in anti-consumption will vary significantly for the 12 issues. For example, 17.7 percent of the respondents indicated that they **always** considered a marketer's position as it relates to discrimination against certain groups of employees based on demographic variables as a consideration for boycotting that marketer. Conversely, only 0.6 percent said they **always** refrain whereas 37.7 percent indicated that they **never** refrain from purchasing from a marketer because of its large size. Still, marketers cannot afford to ignore any of the 12 considerations.

The considerations under scrutiny in the current study all potentially create barriers to success for marketers that may find themselves to be targets of consumer boycotts. In response to this dilemma, the marketer typically has three alternatives. They can refrain from engaging in

questionable behavior. For example, Carl's Jr. has dropped its sex-laden advertising in favor of a more wholesome, product-related campaign. Second, the marketer can choose to continue to adhere to their questionable tactics and presume that it will negatively impact only a portion of its target market while being embraced by other consumers. Chick-fil-A continues to close on Sunday for religious reasons, even in airports and sports stadiums, yet it continues to be one of the most favored restaurant chains in America. Finally, the marketer can engage in a campaign designed to change people's opinions of the marketer. Nike addressed criticism that it was disregarding human rights and underpaying workers in manufacturing facilities in Vietnam with a public relations campaign designed convey a positive perspective in regard to their outsourcing strategy. Thus, there is not just one approach available to the marketer that is faced with the potential of a consumer boycott. That said, it is incumbent upon the marketer to make the determination as to which of the three directions they should take.

CONCLUSIONS

Each of the four research objectives articulated for this study was achieved. A total of 12 considerations for engaging in a boycott were identified. All 12 were deemed to be appropriate for consumers to use when making anti-consumption decisions. The extent to which respondents personally used these considerations in making their own decisions was found to vary significantly with some frequently used and others seldom, if ever, used for personal decisions. Demographics were found to play a role with gender and ethnicity more likely to be associated with the decision to engage in anti-consumption behavior. The multi-item psychographic scales under scrutiny were refined such that more parsimonious sets of items will be included on the follow-up survey which will be directed towards a much more representative sample of consumers residing in the United States with a long-term objective of producing a multinational study by engaging colleagues who are prepared to collect data in their home countries. Data have already been collected in South Africa and funding is being sought for data collection in South Korea. As such, this study represents the tip of the iceberg.

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ORIGINAL RESEARCH

Factors Associated With Diagnosing Psoriatic Arthritis: A Retrospective Study in Northeast Georgia

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Abstract

BACKGROUND: Approximately 15.5% of patients with psoriatic arthritis (PsA) are currently not diagnosed or experience delayed diagnosis with negative outcomes. This retrospective, cross-sectional study evaluated patients with psoriasis to determine what factors were associated with diagnosis of PsA.

METHODS: A retrospective chart review was performed using electronic medical record from primary care clinics across the northeast Georgia region. The study population included patients with psoriasis evaluated in the clinic between January 1, 2017 and December 31, 2022. Patients with PsA were compared to those without PsA to assess for factors associated with the diagnosis of PsA.

RESULTS: The probability of diagnosis of PsA increased with increasing number of clinic encounters (odds ratio [OR], 1.18; $P < .05$). Males (OR, 0.634; $P < .001$) were less likely to be diagnosed compared to females. Patients with Medicare (adjusted OR, 1.707; 95% confidence interval [CI], 1.027–2.837; $P < .05$) and commercial/private insurances (adjusted OR, 2.043; 95% CI, 1.28–3.258; $P < .01$) had a higher chance of being diagnosed in comparison to patients with Medicaid. Black patients were less likely to be diagnosed compared to White patients (OR, 0.231; $P < .001$). Hispanic patients were less likely to be diagnosed with PsA compared to patients who were not Hispanic (OR, 0.2; 95% CI, 0.07–0.51; $P < .05$).

CONCLUSIONS: The study highlighted potential factors associated with the diagnosis of PsA among patients with psoriasis. Sex, race, ethnicity, number of clinic encounters, and insurance type were all found to have associations with likelihood of receiving a PsA diagnosis. These findings were hypothesis-generating and suggest potential disparities in care, particularly for diverse populations, warranting further research.

Introduction

Psoriasis, a chronic inflammatory condition primarily affecting the skin, is driven by immune-mediated mechanisms and presents with lesions in areas such as the umbilical, gluteal, elbow, and knee joint regions.

Affecting approximately 2% to 3% of the global population,[1] psoriasis leads to psoriatic arthritis (PsA) in about 20% to 30% of cases.[2] However, PsA remains frequently underdiagnosed, partly due to the overlap of arthritis symptoms across multiple conditions. This leads to a delay in diagnosis exceeding 4 years in roughly 15.5% of patients with PsA.[3]

Diagnosing PsA presents challenges due to the absence of specific biomarkers, definitive diagnostic criteria, and different presenting pictures. Despite increasing PsA prevalence in recent years, substantial gaps persist in screening and diagnosis, impacting patients' health and quality of life. Contributing factors include symptom overlap with other joint diseases, demographic influences affecting patient understanding and communication with health care practitioners, and barriers to accessing care.[4]

As mentioned previously, the clinical picture and joint involvement vary, with 3 primary clinical patterns: Oligoarticular (affecting 4 or fewer joints), polyarticular (involving more than 5 joints), and axial disease. Other manifestations, including distal interphalangeal arthritis and arthritis mutilans, may arise, alongside hallmark symptoms such as enthesitis and dactylitis.[5] Additionally, some patients may present with distal extremity swelling and pitting edema in the hands or feet,[6] while the most common extra-articular symptom is unilateral acute iridocyclitis, occurring in about 10% of the cases.[7]

Another major challenge in PsA diagnosis and treatment lies in the disparities observed in both research representation and health care access. The majority (81%) of randomized, clinical trials predominantly have featured White populations, potentially limiting insights into PsA risk factors across diverse groups.[8] A study found Black patients were significantly less likely to receive a PsA diagnosis (30%) compared to White patients (64.5%),[9] and they faced longer delays in receiving disease-modifying antirheumatic drugs.[10] Additionally, socioeconomic factors, including insurance status, contribute to diagnostic disparities. In a particular study, psoriatic patients with private insurance or Medicare were more likely to seek care than uninsured patients, who had fewer office visits and lower odds of being evaluated for PsA.[11] These findings have underscored the importance of implementing multimodal interventions to improve health care access and education.

The current literature provides limited insight into how demographic factors are associated with PsA diagnosis and treatment outcomes. Diagnostic and treatment disparities can place a substantial lifetime burden on patients with PsA, impacting their quality of life. This retrospective, cross-sectional study aimed to identify factors associated with the diagnosis of PsA among patients with psoriasis, evaluating the role of race, ethnicity, insurance type, age, and clinic engagement on PsA diagnosis. By evaluating these factors, this study attempted to highlight factors that may be associated with diagnostic gaps in PsA care.

Methods

STUDY DESIGN AND SETTING

All patients included in the study were seen at a medium-sized health system in northeast Georgia that serves both rural and urban counties. This study received ethical approval from the institutional review board at Brenau University and was conducted in compliance with the Declaration of Helsinki. Due to this study's retrospective nature, it did not acquire consent for participation, as all information collected from this study was done via chart abstraction.

STUDY POPULATION

All patients who were included in the study were 18 years of age or older, diagnosed with psoriasis, and evaluated in northeast Georgia health system primary care clinics between January 1, 2017, and December 31, 2022. For the scope of this study, no exclusions were made to the study population.

DATA COLLECTION

All electronic medical record information pertaining to this study was abstracted using the International Classification of Diseases, 10th Revision, and the Current Procedural Terminology codes to include the following information: Sex, ethnicity, primary language, financial class, age at the time of diagnosis of psoriasis, and whether they received a diagnosis of PsA. All participants were then allocated into 2 groups of those that were diagnosed with PsA or those who did not receive a diagnosis of PsA. A manual validation of 10% of cases abstracted was completed to ensure the accuracy of the dataset and that the selected patients properly met the inclusion criteria.

STATISTICAL ANALYSIS

The primary research question was to determine which factors were associated with the diagnosis of PsA. All nonparametric data were reported in frequencies and the percentage of their occurrence, and all parametric data were reported as mean and standard deviation. A binary logistic regression was used to assess the adjusted odds of PsA diagnosis. The statistical analysis was conducted using IBM SPSS 22. A parsimonious model with only statistically significant contributions was retained, resulting in inclusion of gender, ethnicity, race, and insurance.

Results

DEMOGRAPHICS

In total, 3661 patients met the study criteria of receiving the diagnosis of psoriasis and thus formed the study population. Of the 3661 patients, 22.9% (n = 837) were diagnosed with PsA. The study population included mostly female (n = 2079, 57.0%) and White (n = 3274, 89.4%) participants, and the majority of the patients had commercial insurance (n = 2430, 66.4%). Demographic data by each psoriasis type can be seen in Table 1, along with the *P* values for the association between the psoriasis type and each variable based on the crosstabulations test with Bonferroni adjustment, as also seen in Table 1. The mean age at diagnosis for patients with psoriasis was 53.9 years (range 37–69 years), and the mean age of diagnosis of PsA was 57.8 years (range 46–70 years).

THE FACTORS ASSOCIATED WITH THE DIAGNOSIS OF PSA

Based on binary logistic regression, independent variables of race, sex, insurance type, age, and number of encounters were associated with PsA diagnosis ($P < .001$). These associations are highlighted in the Figure.

The probability of being diagnosed with PsA slightly increased with advancing age (adjusted [Adj] odds ratio [OR], 1.01; 95% confidence interval [CI], 1.004–1.017; $P < .05$), and it also was found to increase with higher number of clinical encounters (Adj OR, 1.18; 95% CI, 1.11–1.15; $P < .05$). Males (Adj OR, 0.634; 95% CI, 0.534–0.754; $P < .001$) were less likely to be diagnosed compared with females.

Patients with Medicaid were less likely to be diagnosed with PsA among other insurance categories and were used as the reference. Patients with self-pay were not associated with PsA diagnosis ($P = .307$). By contrast, patients with Medicare (Adj OR, 1.707; 95% CI, 1.027–2.837; $P < .05$) and commercial/private insurances (Adj OR, 2.043; 95% CI, 1.28–3.258; $P < .01$) had a higher chance of being diagnosed. These findings are highlighted in Table 2.

The impact of race on PsA diagnosis was assessed, showing that Black participants were less likely to be diagnosed (Adj OR, 0.231; 95% CI, 0.11–0.488; $P < .001$) compared to White participants (used as the reference), as seen in Table 3. American Indian participants had a higher Adj OR of PsA diagnosis (Adj OR, 8.232; 95% CI, 1.471–46.059; $P < .05$) compared with White participants. However, the sample size of American Indian participants was notably smaller compared with all other race categories. Meanwhile, Asian and Asian American (referred to as Asian) participants were less likely to be diagnosed with PsA (Adj OR, 0.316; 95% CI, 0.119–0.842; $P < .05$).

Finally, ethnicity was seen to also have a significant association with the diagnosis of PsA. Hispanic participants were less likely to be diagnosed with PsA compared with participants who were not Hispanic (Adj OR, 0.2; 95% CI, 0.07–0.51; $P < .001$) (Table 4).

Discussion

This retrospective, cross-sectional study was conducted to determine which risk factors were most likely to be associated with the diagnosis of PsA. This study identified a PsA diagnosis rate of 22.9% among patients with psoriasis in northeast Georgia, closely aligning with global averages (22.7%) but exceeding the US average (19.5%).[2] The global prevalence of PsA among patients psoriasis is highly variable, with rates ranging from 6% to 42% in clinic-based studies, depending on diagnostic criteria, patient populations, and health care access.[12] This variability underscores the importance of localized studies to understand regional diagnostic trends and gaps. This report demonstrated that sex, race and ethnicity, number of clinical encounters, and insurance type may be associated with disparities in the diagnosis of PsA.

Sex and gender disparities in PsA diagnosis and disease burden are well-documented. Prior meta-analyses, such as an analysis reviewing 36 observational and clinical studies, reported near-equal prevalence (24.0% in women vs 23.3% in men),[2] although other studies have suggested a higher

Category		Psoriasis type		Total	*P* value
		Psoriasis	PsA		
Sex					
Female	Count	1550_a	529_b	2079	*P* < .001
	% within type	54.9%	63.2%	56.8%	
Male	Count	1274_a	308_b	1582	
	% within type	45.1%	36.8%	43.2%	
Total	Count	2824	837	3661	
	% within type	100.0%	100.0%	100.0%	
Ethnicity					
Not Hispanic	Count	2589_a	804_b	3393	*P* < .001
	% within type	96.9%	99.3%	97.4%	
Hispanic	Count	83_a	6_b	89	
	% within type	3.1%	0.7%	2.6%	
Total	Count	2672	810	3482	
	% within type	100.0%	100.0%	100.0%	
Race					
White	Count	2488_a	786_b	3274	*P* < .001
	% within type	89.4%	94.4%	90.5%	
Black	Count	112_a	9_b	121	
	% within type	4.0%	1.1%	3.3%	
American Indian	Count	3_a	6_b	9	
	% within type	0.1%	0.7%	0.2%	
Other	Count	135_a	27_b	162	
	% within type	4.8%	3.2%	4.5%	
Asian	Count	46_a	5_b	51	
	% within type	1.7%	0.6%	1.4%	
Total	Count	2784	833	3617	
	% within type	100.0%	100.0%	100.0%	
Insurance					
Medicaid	Count	195_a	27_b	222	*P* < .001
	% within type	7.0%	3.3%	6.1%	
Medicare	Count	564_a	183_a	747	
	% within type	20.2%	22.0%	20.6%	
Self-pay	Count	194_a	34_b	228	
	% within type	6.9%	4.1%	6.3%	
Commercial	Count	1844_a	586_b	2430	
	% within type	65.9%	70.6%	67.0%	
Total	Count	2797	830	3627	
	% within type	100.0%	100.0%	100.0%	

Table 1: Demographics of patient population

Note: Each subscript letter denotes a subset of psoriasis-type categories whose column proportions do not differ significantly from each other at the .05 level.
PsA = psoriatic arthritis.

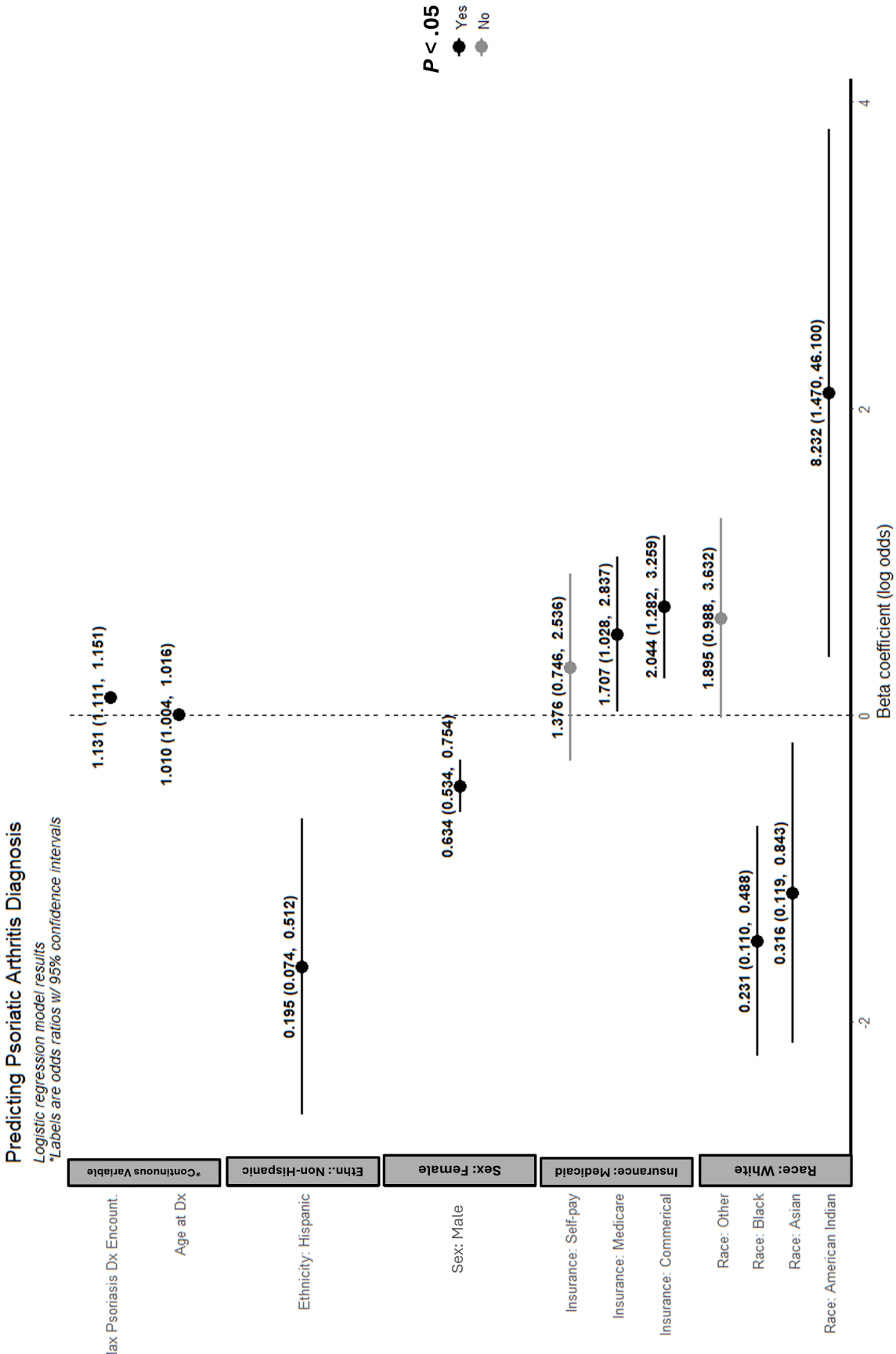

Figure: Association of factors with the diagnosis of psoriatic arthritis. Dx = diagnosis.

Category		Medicaid	Medicare	Self-pay	Commercial
Psoriasis, never diagnosed with PsA	**Count (N)**	195	564	194	1844
	% within insurance subcategory	87.8%	75.5%	85.1%	75.9%
PsA	**Count (N)**	27	183	34	586
	% within insurance subcategory	12.2%	24.5%	14.9%	24.1%

Table 2: The impact of insurance on psoriatic arthritis

PsA = psoriatic arthritis.

Category		White	Black	American Indian	Asian	Other
Psoriasis, never diagnosed with PsA	**Count (N)**	2488	112	3	46	175
	% of total within race category	76.0%	92.6%	33.3%	90.2%	85%
PsA	**Count (N)**	786	9	6	5	31
	% of total within race category	24.0%	7.4%	66.7%	9.8%	15%

Table 3: The impact of race on diagnosis of psoriatic arthritis

PsA = psoriatic arthritis.

prevalence in men or women, depending on the population and methodology.[13] In this study, women were 1.6 times more likely to be diagnosed with PsA. This finding may reflect behavioral differences, such as women's higher likelihood of seeking medical care, as well as study-specific factors like design, evaluation periods, or population demographics. Age influences PsA diagnosis rates, although its effects vary across studies. A cross-sectional study conducted at the University of California San Diego found that for every 1-year increase in the age of psoriasis onset, the odds of developing PsA decreased by 3%.[14] The authors' data showed that older age was associated with only a slightly higher likelihood of diagnosis (OR, 1.01).

Racial and ethnic disparities in PsA prevalence and diagnosis have been found to be significant. Previous research has demonstrated that White patients have higher PsA diagnostic rates compared to other racial groups, regardless of insurance type.[9,15] This finding aligns with this study, where Black and Asian populations had lower adjusted odds of diagnosis (OR, 0.23 and 0.32, respectively), while American Indian populations had significantly higher odds (OR, 8.23). Human Leukocyte Antigen B27, a genetic marker associated with psoriatic disease, was more prevalent among White participants who were not Hispanic (7.5%) compared to all other US racial and ethnic groups combined (3.5%),[16] potentially contributing to these differences. Additionally, psoriasis is more challenging to recognize in darker skin phenotypes, which may delay or reduce diagnosis in these populations.[17] The elevated odds of PsA diagnosis among American Indian patients in the study mirror findings in Canadian Indigenous populations, where a higher prevalence of psoriatic disease was reported (relative risk = 1.5) despite fewer specialty visits.[18]

Insurance type plays a critical role in access to diagnosis and care. A large retrospective study using Medicaid and Optum databases found that PsA prevalence in the United States was highest among patients using Medicare (0.32%), followed by commercially insured patients (0.23%) and patients

Category		Not Hispanic	Hispanic
Psoriasis, never diagnosed with PsA	**Count (N)**	2589	83
	% within ethnicity subcategory	76.3%	93.3%
PsA	**Count (N)**	804	6
	% within ethnicity subcategory	23.7%	6.7%

Table 4: The impact of ethnicity on diagnosis of psoriatic arthritis

PsA = psoriatic arthritis.

using Medicaid (0.13%).[15] Similarly, the findings showed the highest diagnostic rates among patients using Medicare (24.5%) and the lowest among patients using Medicaid (12.2%). Reduced access to specialty care (driven by limited practiotiner availability, financial constraints, and restricted insurance coverage) likely contributes to underdiagnosis in lower-income populations. The data also highlighted the fact that fewer psoriasis-related health care encounters were associated with lower PsA diagnostic rates, emphasizing the need to address barriers to care.

Northeast Georgia serves a diverse population, including many uninsured and underinsured individuals with low health literacy. These factors contribute to delays in recognizing chronic diseases and obtaining appropriate diagnoses. To address these barriers, in the next phase of the study, initiatives such as implementing PsA screening questionnaires, improving health care access, and raising community awareness will be planned. These efforts will be designed to reduce the proportion of undiagnosed PsA cases and improve long-term patient outcomes.

This study offered valuable insights into diagnostic disparities in PsA care within northeast Georgia. However, several limitations should be acknowledged. The retrospective cross-sectional study design and use of PsA diagnosis by the clinician inherently restricted causal inferences and relied on the accuracy of diagnosis and completeness of existing medical records, which may have introduced information bias. Furthermore, the study's regional focus and predominantly White population may have limited its generalizability to populations with differing health care systems, demographic compositions, or socioeconomic contexts. Although the authors adjusted for key demographic variables, unmeasured confounders such as genetic predispositions, environmental factors, or undocumented health care behaviors could have influenced the results. Additionally, the study population only had small sizes for certain racial and ethnic groups. Selection bias may have also existed, as individuals engaging with the health care system tend to be more likely to receive a diagnosis, potentially underrepresenting underserved populations. Future studies should employ prospective designs with more diverse populations to validate these findings and further explore the complex interplay of demographic, clinical, and socioeconomic factors in PsA diagnosis and care.

Conclusion

This study emphasized the importance of understanding factors associated with PsA diagnosis and care. It provided a potential hypothesis for disparities in the diagnosis and care of patients with PsA, raising awareness to reduce diagnostic gaps. Future research should focus on diverse populations, prospective designs, and evaluating strategies to enhance equity and outcomes in PsA care.

Data-Sharing Statement

The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

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