

**LOGISTICS SERVICE QUALITY (LSQ) AND
CUSTOMER SATISFACTION IN SOCIAL
COMMERCE: AN EMPIRICAL
INVESTIGATION**

Thesis

Submitted in partial fulfilment of the requirements for the degree of
DOCTOR OF PHILOSOPHY

by

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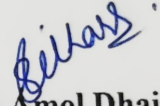
DECLARATION

(By the PhD Research Scholar)

I hereby declare that the Research Thesis entitled “**LOGISTICS SERVICE QUALITY (LSQ) AND CUSTOMER SATISFACTION IN SOCIAL COMMERCE: AN EMPIRICAL INVESTIGATION**” which is being submitted to the National Institute of Technology Karnataka, Surathkal, in partial fulfillment of the requirements for the award of the **Degree of Doctor of Philosophy in Management**, is a *bonafide report of the research work carried out by me*. The material contained in this Research Thesis has not been submitted to any University or Institution for the award of any degree.

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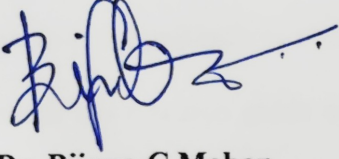
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CERTIFICATE

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ABSTRACT

The introduction of social commerce (SC) has completely changed how companies interact with customers in the dynamic world of e-commerce. SC leverages social networks to increase sales and improve consumer engagement by fusing social media platforms with traditional online retail. Friend-to-friend (Fr2Fr) SC has caught the interest of e-tailers and consumers in recent times. Fr2Fr SC offers the convenience of online shopping and the real-time trust-based shopping experience with the seller. Logistics service quality (LSQ) is critical for Fr2Fr SC sellers to meet customer expectations and satisfaction. More precisely, in Fr2Fr SC, there will be a strong 'relational' aspect of LSQ along with the 'operational' aspect that was absent in the earlier version of online commerce and SC.

Fr2Fr SC is rapidly growing due to increased penetration of the internet and smart mobile phones, high adoption of social networking sites (SNS), ultra-high shopping convenience, improved information technology, infrastructure for logistics and better e-fulfilment services. In developing countries like India, Fr2Fr SC has established a significant presence in the overall online retail market, and it is ready to expand even further. Fr2Fr SC offer a high level of real-time peer-to-peer interaction, making online shopping lively and fun. Furthermore, typical e-commerce features like easy returns and replacement policies, free and rapid order fulfilments and flash discount sales to acquire the customers are also observed in Fr2Fr SC.

This study examines Fr2Fr SC's essential part, i.e., logistics service quality (LSQ). It explores the critical LSQ aspects, operational and relational LSQ and their impact on customer satisfaction. Further, this study proposed a framework to determine the relationships between the LSQ dimensions, Operational (availability, timeliness, condition), Relational (Assurance,

responsiveness and empathy) and customer experience, trust and customer satisfaction in the Fr2Fr SC context and validates it empirically.

The relationship between LSQ and Fr2Fr SC is significant and multi-faceted, with LSQ playing a crucial role in shaping customer satisfaction and loyalty in the Fr2Fr SC context. LSQ, encompassing both OLSQ and RLSQ, directly influences how customers perceive the reliability and effectiveness of logistics services, which is essential in a socially-driven commerce environment. In Fr2Fr SC, where consumers rely on their social networks for shopping decisions, the timeliness, product availability, and condition of the product—key components of OLSQ—are critical for providing good customer experience and ensuring repeat purchases. Any delay or inconsistency can quickly erode the experience, which is amplified in a network where personal recommendations and social proof are significant drivers of purchasing behavior. RLSQ, which includes responsiveness, assurance, and empathy, further enhances customer satisfaction by addressing the relational aspects of service interactions. Responsiveness ensures that customer inquiries and issues are addressed promptly, assurance builds confidence in the service provider's competence, and empathy demonstrates that the service provider values and understands customer needs. In Fr2Fr SC, where personal relationships are leveraged for commerce, these relational qualities help foster a sense of reliability and personalized service, enhancing overall customer satisfaction and loyalty.

Based on the stimulus-organism-response (S-O-R) model, this study investigates the impact of operational LSQ and relational LSQ on customer experience, trust and satisfaction. This study conducted a survey to collect data from Fr2Fr SC users and analyzed the data using SPSS and AMOS software. The results show that operational LSQ (condition, timeliness and availability) and relational LSQ (assurance, responsiveness and empathy) positively relate to customer

experience, trust respectively and ultimately influencing customer satisfaction in Fr2Fr SC. Finally, this study also explored the moderating role of critical variables, namely, gender, product type and return/replacement experience discovered in the literature to enhance the prediction power of the proposed model.

This study may help SC firms and their logistics service providers to focus on designing customer-centric e-fulfilment architecture. The study's findings may enable SC firms to differentiate themselves well in a highly competitive online shopping market by excelling on one or more e-fulfilment dimensions. This research also contributes to academic writing in the Fr2Fr SC context by merging service operations and LSQ. The inclusion of relational aspects and their impact on customer satisfaction will advance the e-fulfilment literature. Furthermore, exploring the catalytic role of trust, customer experience, gender, product type and return/replacement experience will enrich the Fr2Fr SC e-fulfilment literature.

Keywords: Friends-to-friend social commerce, logistics service quality, operational LSQ, relational LSQ, e-fulfilment, social networking sites, customer satisfaction, customer experience, trust, India.

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ABBREVIATION

ABDC	Australian Business Deans Council
AMOS	Analysis of Moment Structures
AVE	Average Variance Extracted
B2B	Business to Business
B2C	Business to Consumer
CABS	Chartered Association of Business Schools
CB-SEM	Co-variance-based Structural Equation Modelling
CFA	Confirmatory factor analysis
CFI	Comparative Fit Index
CR	Composite Reliability
CRR	Critical Ratio
CS	Customer Satisfaction
CX	Customer Experience
d.f.	degrees-of-freedom
EFA	Exploratory factor analysis
e-LSQ	Electronic Logistics Service Quality
Fr2Fr SC	Friend-to-Friend Social Commerce
GFI	Goodness-of-Fit Index
KMO	Kaiser-Meyer-Olkin
LSQ	Logistics Service Quality
NFI	Normalized Fit Index
OLSQ	Operational Logistics Service Quality
PDSQ	Physical Distribution Service Quality
PLS-SEM	Variance-based Structural Equation Modelling
RLSQ	Relational Logistics Service Quality
RMSEA	Root Mean Square Error of Approximation
SC	Social Commerce
SCM	Supply Chain Management
SEM	Structural Equation Modelling
SNS	Social Networking Sites
SOR	Stimulus-Organism-Response
SQ	Service Quality
WoS	Web of Science

CHAPTER 1
INTRODUCTION

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1.1 CHAPTER OVERVIEW

This chapter presents the topic of the research study. Section 1.2 briefly introduce the study, outlining the shift from traditional online shopping to social commerce (SC) and emphasizing the network-based SC known as Friend-to-Friend social commerce (Fr2Fr SC). Section 1.3 deals with the background of the study. In section 1.4, an in-depth overview of SC and Fr2Fr SC in both the Indian and worldwide contexts is covered. The main factors influencing Fr2Fr SC are thoroughly examined. Section 1.5 deals with the importance of customer satisfaction in SC. Section 1.6 outlines the need for the study and elaborates on the concept of logistics service quality (LSQ). In section 1.7, the problem statement of the study is covered. Section 1.8 highlights the research questions. Section 1.9 discusses the research objectives. Sections 1.10 and 1.11 outline the study's significance and scope, respectively. Last but not least, the thesis outline is given in section 1.12.

1.2 INTRODUCTION

Shopping activity can be carried out either in offline or online modes. However, in the last few decades, online shopping has become a preferred way for many consumers. Especially, after the outbreak of the COVID-19 pandemic, online shopping has reached the nooks and corners of the world. As per the United Nations CTAD survey-2020, globally, more than 50% of consumers now shop online and rely on the internet and consumers in emerging economies have made the most remarkable shift to online shopping (UNCTAD, 2020). Online shopping offers a high level of convenience and choice that is less readily available through traditional brick-and-mortar retail. Online shopping provides various benefits: convenience, 24/7 accessibility, vast selection, comparison shopping, reviews and ratings, cost savings, no crowds or lines, access to global markets, easy returns and customer support. Despite its advantages,

online shopping was undermining the social interaction aspect of the shopping experience. Typical online shopping lacks a human touch. Social aspects of shopping, like talking to a salesperson, getting real-time feedback and recommendations, and having fun with friends, were missing in online shopping. Therefore, a new avatar of online shopping called social commerce (SC) was introduced in the last few years to meet these social needs of shopping. SC offers the convenience of online shopping and socialization aspects of offline shopping. Extant research concerning consumer behaviour in traditional online shopping is available; however, researchers have yet to dissect consumer behavioural aspects in SC in detail. Several studies (e.g., Han et al., 2018; Li & Ku, 2018; Dhaigude & Mohan, 2023b) argued that SC buying behaviour differs from traditional e-commerce, and focused studies are needed to harness the power of SC. Scholars like Lee et al. (2012) and Dhaigude and Mohan (2024) emphasized that understanding the behaviour of SC shoppers and service quality is one of the main areas for research in online retailing. As SC consumer behaviour is a complex socio-technical phenomenon. It is more challenging to gauge SC consumer behaviour than traditional offline shopping. SC retailers need to understand SC consumer behaviour as it can lead to a more focused selling approach, merchandising and marketing strategies with a higher return on investment.

In recent years, a novel form of SC known as friend-to-friend SC (Fr2Fr SC) has gained prominence, particularly in developing and emerging markets (Su et al., 2021). Fr2Fr SC is characterized by a robust foundation of relationships, which presents opportunities for enhancement within the context of conventional online shopping and other forms of SC, such as video-based commerce, live commerce, and group buying. Fr2Fr SC is addressing the trust challenges inherent in online shopping, such as information issues, product quality issues, product delivery issues, and misuse of personal information, to name a few.

Service Quality (SQ) involves evaluating the perceived performance of a service against the perceived expectations (Lewis & Booms, 1983). Electronic SQ was developed (Parasuraman et al., 2005) to understand the effect of SQ in online retailing. As the acknowledgement of the pivotal role of service quality in customer satisfaction expanded, scholars and practitioners directed their attention towards important dimension of logistics service quality (LSQ) in online retailing, thereby giving rise to research on LSQ.

The e-fulfilment dimension, namely LSQ, is an important aspect of any online commerce (Jain et al., 2021; Melacini et al., 2018), and in Fr2Fr SC, its role is even more paramount. Scholars have opined that LSQ in SC will be challenging and must be studied systematically (e.g., Dhaigude & Mohan, 2023a). In Fr2Fr SC, there will be a strong 'relational' aspect of e-fulfilment along with the 'operational' aspect that was absent in the earlier version of online commerce and SC. Therefore, it is necessary to explore the operational and relational LSQ and its impact on customer experience and satisfaction in Fr2Fr SC.

LSQ will serve not only as a backend operation but also as a differentiator in the context of Fr2Fr SC. However, the existing literature has completely ignored LSQ in Fr2Fr SC and focused on the other aspects of SC, for example, dual-role trust, swift guanxi, knowledge sharing, product risk, social ties, user experience, network dynamics, social climate, selling/network platform, social support, recommendation and customer engagement (Cao et al., 2021; Hsu et al., 2022; Su et al., 2021). This paper contributes to the body of knowledge by emphasizing the operational and relational aspects of the LSQ construct and, more importantly, its impact on customer experience and satisfaction in the Fr2Fr SC context. Customer experience refers to the overall impression and interaction a customer has with a Fr2Fr SC seller throughout the entire shopping journey, from initial enquiry to making a purchase and receiving post-purchase support (Grewal et al., 2009; Rose et al., 2012; Dhaigude & Mohan, 2023a). Olsson et al. (2022), focused on understanding customer experience

dimensions in online shopping, highlighted the need for a new way of thinking about delivery services in e-tailing. It is recognized that online retailers should focus on customer experience and its effect on customer satisfaction. Consequently, managers use operational LSQ as a means of differentiation to achieve competitive advantage. Offering consumer-centric operational LSQ calls for in-depth understanding of consumer experience and its impact on customer satisfaction. Finally, the relational side of LSQ will create and build trust and ultimately lead to higher customer satisfaction.

The following sections deal with the evolution of online commerce and trace its development to today's Fr2Fr SC.

1.2.1 Evolution of Online/Electronic Commerce

The history and evolution of online shopping and electronic commerce have been a fascinating journey, shaped by technological advancements and changing consumer behaviours. In the early stages, electronic commerce primarily involved online transactions through basic websites. However, as the internet infrastructure improved and digital technologies advanced, consumer confidence grew, and online shopping expanded its horizons.

Over the years, these platforms have evolved from basic online transactions to sophisticated e-commerce ecosystems, offering a diverse range of products and services. The global number of online shoppers has seen a substantial increase, reaching billions of users (Statista, 2024). Similarly, the e-commerce market in India has experienced rapid growth, with millions of users engaging in online transactions.

The proliferation of smartphones, improved internet connectivity, and the convenience of digital payment methods have contributed to the widespread adoption of online shopping globally. In India, the increasing middle-class population and government initiatives promoting a digital economy have played pivotal roles in the evolution of electronic commerce. The

statistics highlight not only the sheer magnitude of users but also the significant impact of e-commerce on traditional retail.

Future trends in internet purchasing show that social commerce is going to be a game-changer. Social commerce is becoming increasingly important in changing the e-commerce environment (Statista, 2023b). Social commerce integrates social media platforms into the shopping experience, allowing users to discover, discuss, and purchase products seamlessly. With social interactions and recommendations playing a crucial role in consumer decision-making, social commerce represents a new way of shopping that adds a social dimension to the online retail experience.

1.2.2 Social Commerce: New Way of Online/Electronic Commerce

SC is a new trend that has changed the online purchasing experience. SC is an emerging e-commerce avatar that uses social media platforms and networks for buying and selling products and services (e.g., Marshall et al., 2012; Huang & Benyoucef, 2013; Molinillo et al., 2021; Dhaigude & Mohan, 2023b). SC combines elements of e-commerce with social media features, creating a more interactive and engaging shopping experience. SC is the future of e-tailing as, in 2022 alone, SC generated \$53.1 billion in revenue in the US, a 34.4% increase over the previous year (LaFleur, 2023). In emerging markets like India, the estimated market size of SC is seven billion US dollars and is likely to increase to 84 billion US dollars in the year 2030 (Minhas, 2023).

SC is not a new concept; it has long existed in human existence, especially in commercial exchanges. Almost all small businesses, be it an offline boutique, a local mom-and-pop store (*Kirana* shop) or the community stores where people buy/sell from, are SC examples. The fundamental principle is to tap the social network to buy and sell goods and services. With the advent of technology, giants like Facebook and Instagram and techno-savvy start-ups like Meesho, Shopsy, and Bulbul have taken this phenomenon virtually. Leading social networking

sites (SNS) players like Facebook, Instagram, and Pinterest have started offering commercial space, such as Facebook shops/marketplaces, Instagram Checkout, and shoppable product pins, to harness the power of SC. On the other hand, leading e-commerce players like Amazon and Flipkart have started offering features like SNS on their websites.

Anybody can start a shop on these SC platforms and sell goods/services without investing significantly. For example, the Indian SC unicorn Meesho has approximately 10 million women entrepreneurs and more than 13 million resellers who offer various products/services in their social networks, like friends and family and keep expanding the network nationwide (HBL, 2023). SC offers more reach to sellers and greater convenience and experience to consumers; therefore, it is growing faster. This growth in SC, especially in the emerging and underdeveloped markets, is growing due to increased internet and smart mobile phone penetration, high adoption of SNS, ultra-high shopping convenience, improved IT and infrastructure for logistics and better e-fulfilment services.

SC provides a high level of fun and social experience in an online environment. SC experience is a close replica of traditional brick and mortar shopping, i.e. visiting a store with friends/family and interacting with a salesperson. SC offer a high level of real-time peer-to-peer interaction, making online shopping lively and fun. Furthermore, SC takes a divergent approach from the typical e-commerce and offers personal interaction and many-many real-time communications.

Tradition internet-based shopping is personal and private, whereas SC promotes sharing. As per Accenture's (2022) report, SC has broadly three models that engage in three different ways: first is content-driven, second is experience-driven, and finally, the third is network-driven. Fr2Fr SC is one of the types of network-driven SC. In the network-driven model, people rely on social networks to purchase/sell products and services. For example, Facebook

Marketplaces, Instagram business, and WhatsApp business enable online commerce for buyers and sellers. This study is trying to understand customer behavior of Fr2Fr SC customers.

1.2.3 Friend-to-Friend Social Commerce: Network Driven Social Commerce

Fr2Fr SC has emerged and proliferated, especially in developing and emerging markets (Su et al., 2021). Fr2Fr SC is the social network formed between friends and acquaintances, and users mainly self-regulate transactions (e.g., Zhang et al., 2014). For example, a WhatsApp group created by a known friend to sell products of a third-party retailer. All the group members may or may not know each other, but the group administrator (i.e., the seller) is a known person (primary or secondary contact). Fr2Fr SC has a strong relationship base, which was missing in typical online shopping. Fr2Fr SC is increasing the trialability and acceptance of online shopping, especially among customers residing in rural areas (Tier II and below) who have never purchased online. Cities in India are categorized based on population size and economic development (Reserve Bank of India, 2009; FasterCapital, 2024). The criteria for categorizing cities into Tier II and Tier III vary, but generally, Tier II cities are considered smaller than Tier I cities but larger and more developed than Tier III cities. Tier III cities, on the other hand, are typically smaller in population and less economically developed compared to Tier I and Tier II cities. More precisely, the Fr2Fr SC is building the trust deficit in online shopping activities like putting debit/credit cards online, absence of real interaction with the salesperson, anxiety about getting the wrong product, delay in delivery, quality issues, and fear of information misuse.

Various consulting reports in e-tailing have indicated that SC is the future of Indian online commerce, as social media plays a vital role in decision-making and stimulates Indians' tastes and preferences daily (Bhandari, 2023). Table 1.1 shows the top SC players in India as of 2023:

Table 1.1: Social Commerce Players in India

Sr. No.	Name	Founded in	Features/Statistics
1	Meesho	2015	Small businesses and suppliers can sell their products via social media such as Facebook, WhatsApp, and Instagram. In India, >50,000 suppliers and 8 million entrepreneurs run and manage their businesses using Meesho.
2	DealShare	2018	sources wholesale goods from local producers and sells them to customers through the DealShare App. The company also offers deals/discounts on its WhatsApp group, and each time users refer/share items with their friends and relatives, they get discounts. It supports >10,000 small businesses.
3	Bulbul	2018	It is India's first live video e-commerce platform; the seller can answer buyers' queries in real-time. Apart from this, it encourages customers with group buying and social sharing features.
4	GlowRoad	2017	It is aimed to provide a platform for micro-entrepreneurs to sell products in their network and earn online. Resellers, who reach customers through WhatsApp and Facebook, get access to millions of products along with shipping facilities and payments.
5	Mall91	2018	blends live video-based social shopping, vernacular language catalogues that can be browsed with voice commands, and WhatsApp-based checkouts on a single platform.
6	SimSim	2019	After the orders are placed, Simsim sources the products from manufacturers and suppliers and delivers them to customers through its third-party logistics partners.

Source: Literature Review

1.3 BACKGROUND OF THE STUDY

Fr2Fr SC has caught the interest of e-tailers and consumers in recent times. Fr2Fr SC offers the convenience of online shopping and the real-time trust-based shopping experience with the seller. LSQ is critical for Fr2Fr SC sellers to meet customer expectations and satisfaction. More precisely, in Fr2Fr SC, there will be a strong 'relational' aspect of LSQ (responsiveness, assurance and empathy) along with the 'operational' aspect (condition, timeliness and availability) that was absent in the earlier version of online commerce and SC. Although the extant literature has examined chiefly the motivations for Fr2Fr SC adoption and usage, how the holistic LSQ impacts customers' purchase behaviour remains to be determined. Based on the stimulus-organism-response (S-O-R) model, the study investigates the impact of

operational LSQ and relational LSQ on customer experience and satisfaction, considering intervening variable customer experience, trust, gender, product type and return experience.

1.4 OVERVIEW OF SC SHOPPING

To understand the nuances of SC, upcoming sections explain the global perspective, Indian perspectives and key drives of SC growth and risk.

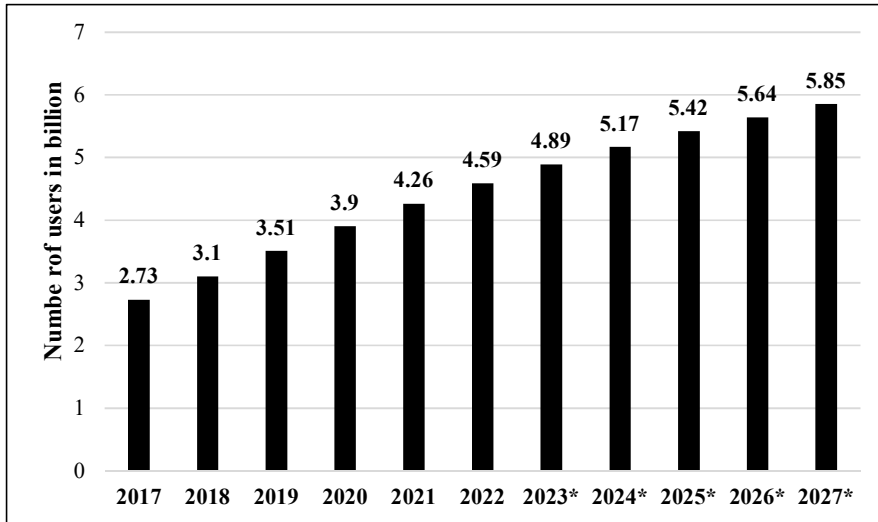
1.4.1 Global Perspective

SC occurs when social media users purchase and sell products and services using social media sites like WhatsApp, Facebook, YouTube, and Instagram. By providing knowledgeable product guidance and assistance, SC hopes to pique the interest of online buyers. Over the past few years, SC has experienced substantial growth. In China, retail SC sales are expected to reach \$186.04 billion by 2024. whereas in 2022, the retail SC revenues were barely \$19.42 billion in the US (Kats, 2020).

1.4.2 Key Drivers of Social Commerce

The growth of SC has been driven by various factors that have shaped consumer behaviour and the digital landscape. Here are some key drivers for the growth of SC:

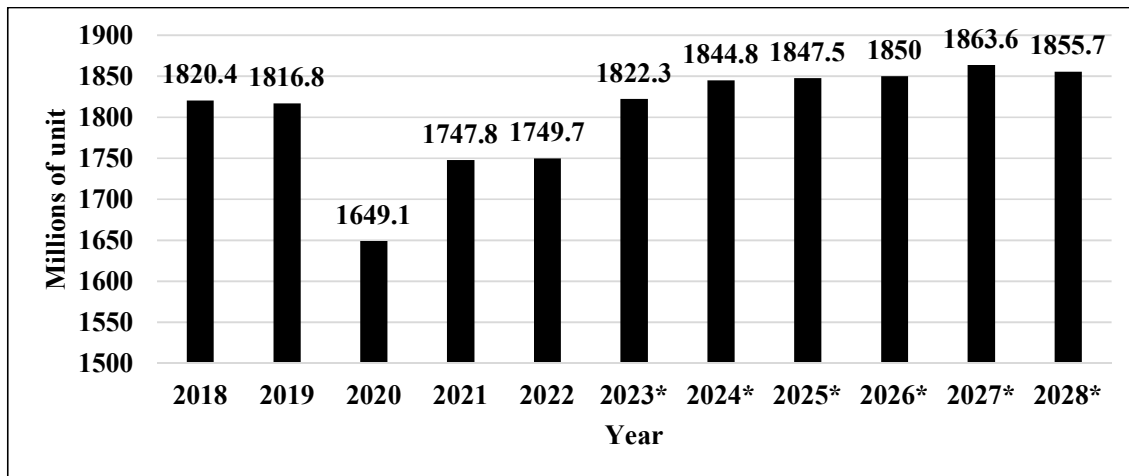
Increased Social Media Usage: The widespread adoption of social media and messaging platforms, like WhatsApp, Facebook, Instagram, Twitter, and TikTok, has created a large and engaged user base. These platforms serve as ideal spaces for SC to thrive. As per Dixon (2023), social media is one of the most common internet activities. Figure 1.1 illustrates the predicted growth in the global social media user base from 4.59 billion in 2022 to nearly six billion by 2027.



Source: Statista (2023 c): Worldwide: Statista: 2017 to 2022,
 * = Forecasted volume

Figure 1.1: Year Wise: Worldwide Social Media Users

Mobile Device Proliferation: The prevalence of smartphones and mobile devices has made it easier for users to access social media and shop online. Mobile apps and responsive websites provide a seamless shopping experience. As per the reports by Sellcell (2022), between 2009 and 2022, over 24.2 billion mobile phones have been sold globally, and the trend is upward, as shown in Figure 1.2.



Source: Sellcell (2022); * = Forecasted volume

Figure 1.2: Year Wise Global Mobile Phone Sales

Visual Content: Visual content, such as images and videos, has become a dominant form of communication on social media. This visual appeal is well-suited for showcasing products and influencing purchase decisions.

Influencer Marketing: The rise of influencers and content creators on social media has significantly impacted SC. Influencers can promote and endorse products to their followers, driving sales through their recommendations.

User-Generated Content: Various brands promote user-generated content, where customers post about their experiences with products. This builds trust and authenticity, leading to increased sales.

Seamless Shopping Features: Social media platforms have integrated shopping features, like product tagging and in-app purchasing, making it easier for users to shop without leaving the platform.

Personalization and Recommendations: To increase the likelihood of conversion, SC platforms employ algorithms to offer tailored product recommendations based on user behaviour and preferences.

Social Proof: Shoppers often rely on social proof through reviews, ratings, and recommendations from friends and influencers to make purchasing decisions.

Convenience: SC offers a convenient shopping experience where users can discover, compare, and purchase products without switching between different apps or websites.

Engagement and Interaction: SC promotes interaction and engagement with brands and other users. Features like live streaming, questions & answers sessions, and polls help users make informed decisions.

Viral Marketing: Social media platforms facilitate the rapid spread of content and trends. A well-executed social commerce campaign can go viral, generating a buzz around a product or brand.

Customer Service Integration: SC often includes chat or messaging features, allowing customers to ask questions and receive support directly through the platform.

Global Reach: Social media has a global presence, enabling businesses to reach a broad and diverse audience, regardless of geographic location.

Fast Delivery and Payment Options: Many SC platforms provide fast and secure payment options and convenient delivery methods, enhancing the overall shopping experience.

Marketplace Expansion: E-commerce platforms like Facebook Marketplace and Instagram Shopping are expanding to accommodate a broader range of products and services, increasing their attractiveness to both sellers and buyers.

1.4.3 Risks Associated with Social Commerce

SC offers numerous benefits, but it also comes with risks and challenges for businesses and consumers. It is essential to know these potential risks when engaging in or operating a SC platform. Some of the risks are mentioned below:

Security and Privacy Concerns: SC platforms may store sensitive user information consisting of personal/financial data. The risk of data breaches and privacy violations can be significant, leading to identity theft and fraud.

Counterfeit Products: Some SC platforms may have limited quality control, making selling counterfeit or fake products easier. Consumers may receive low-quality or even dangerous items.

Fraud and Scams: Scammers can create fake seller profiles or listings to deceive consumers. They may accept payments without delivering products or misrepresent the items they sell.

Payment Risks: Online transactions can involve risks related to payment processing, including unauthorized charges, chargebacks, and payment disputes. Consumers may also need to be more open to sharing their payment information.

Delivery and Shipping Issues: Late deliveries, lost packages, and shipping damages are common problems in online shopping. SC platforms need to ensure a reliable and efficient shipping process.

Influence of Fake Reviews: Fake or misleading product reviews can influence purchasing decisions. Inauthentic endorsements or biased opinions may sway consumers.

Return and Refund Policies: Unclear or restrictive return and refund policies can result in customer dissatisfaction, particularly when expectations aren't met.

Vulnerability to Trends: SC is influenced by trends, including algorithm changes and user preferences. Businesses heavily dependent on social media platforms are vulnerable to shifts in trends that could impact their reach and sales.

Dependence on Third-Party Platforms: Businesses operating on SC platforms are subject to the policies and decisions of these platforms. Changes in algorithms or terms of service can affect visibility and reach.

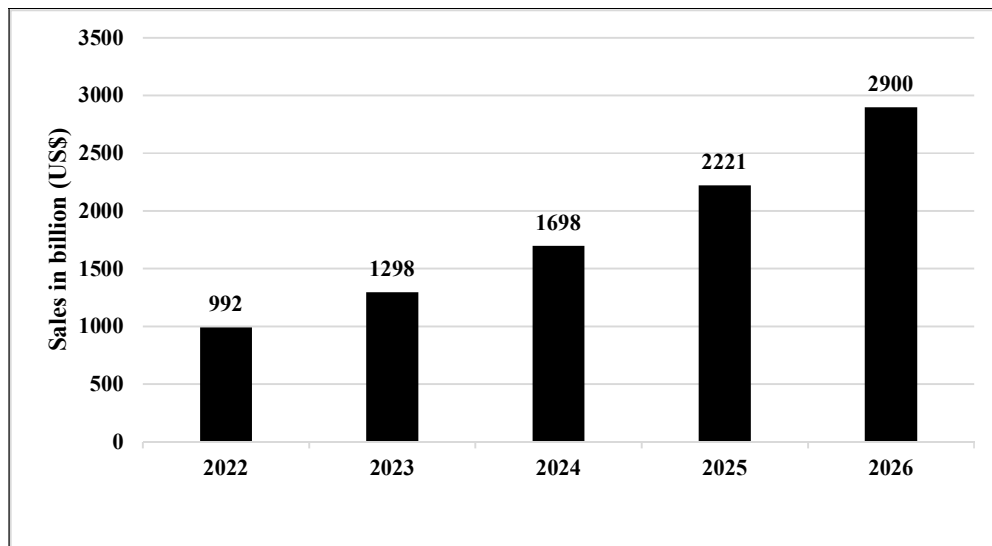
Scalability Challenges: As businesses grow, they may face challenges in managing inventory, customer service, and order fulfilment effectively.

Content Creation and Management: Maintaining a strong online presence on SC platforms requires consistent content creation. This can be time-consuming and resource-intensive.

Most of these risks can be mitigated by the Fr2Fr SC, where the seller has a personal connection with the buyer. The long-lasting trust-based relationship is the basis of the Fr2Fr SC. Therefore, unlike the typical offline shopping where returns are minimal, Fr2Fr SC has the lowest percentage of returns and a higher level of satisfaction. The customer won't make a purchase unless they're content with the product's quality, which they assess by critically examining it with the salesperson and considering recommendations from peers. The sellers' and peers' recommendations play a crucial role here, and Fr2Fr SC is based on this recommendation pillar.

1.4.4 Social Commerce in India

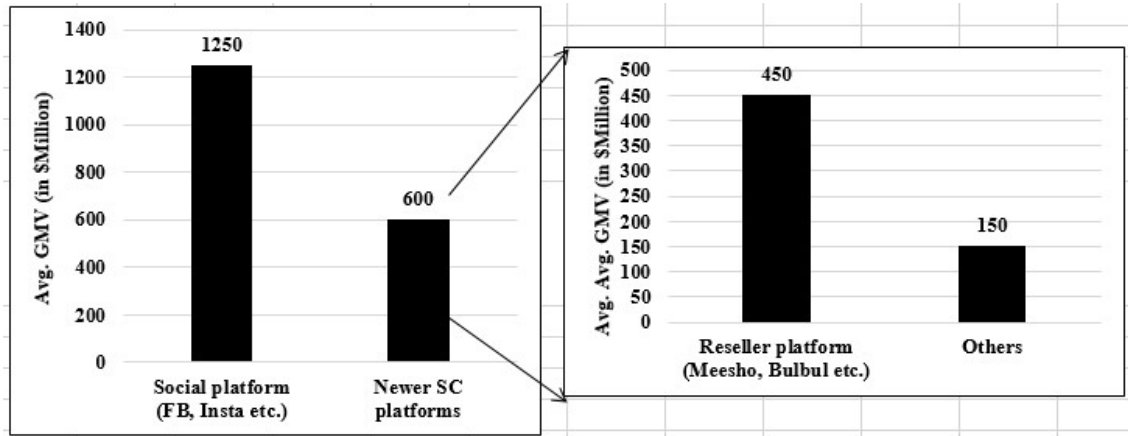
The size of the SC market in India was US\$ 3.3 bn in 2022. The SC market is expected to reach US\$ 18.2 bn by 2028, with a compound annual growth rate of 32.7% from 2023 to 2028 (IMARC, 2023). As SC is the process of selling directly through social media, the shopping experience is unique. More specifically, the entire shopping experience occurs on social media, from product discovery and research to checkout. Based on the Statista report, the popularity of SC is expected to continue growing and, as Figure 1.3 illustrates, is expected to reach around \$3 trillion by 2026.



Source: Statista (2023b)

Figure 1.3: Year Wise: Sales Through Social Media

Moreover, the BAIN & Sequoia report (2020) outlined that SNS players like Facebook and Instagram dominate the SC market, whereas newer SC platforms are becoming strong, especially the social reselling model, i.e. the Fr2Fr SC (refer to Figure 1.4).



Source: BAIN-Sequoia report (2020): *Unlocking the Future of Commerce in India*

Figure 1.4: Social Commerce Transactions in the Financial Year 2020

The process of a typical Fr2Fr SC consists of 4 steps:

Step 1: Register on the App

Step 2: Share product pictures and prices on one's social network (WhatsApp or other social media)

Step 3: Handle inquiries, pre-sales, get orders from consumers, place them on the app. SC firm take care of the logistics/delivery part

Step 4: Seller enjoys profits/gifts/bonus from the SC firm. Handle returns (if any)

Steps two and three witness a high level of social interaction where the seller and buyer connect through SNS and exchange information (relational side). Resellers of Meesho post product information in their WhatsApp groups, statuses, Facebook, and Instagram pages with just a click of a button. The buyers know the sellers (personally as well as virtually) and are comfortable asking questions. Interestingly, SC allows sellers to tap their social network and provide customized information to a wide range of customers. This is the significant difference between SC and e-commerce.

With the latest artificial intelligence driven, brand-tagged user generated content, the Indian SC sector allows customers to shop instantaneously and generates job opportunities, benefiting India and the world. The gross merchandise value of SC in India was anticipated to be around

US\$ 2 billion in 2020, and it is expected to grow to US\$ 16–20 billion by 2025 and US\$ 60–70 billion by 2030 (Bain & Sequoia, 2020). By 2025, SC operators should account for about 5% of India's e-commerce sector, with a compound annual growth rate of 65% (RedSeer, 2022). About 25% of consumers for these players are thought to come from tier I cities, 10% from metro areas, while the remainder of customers come from tier II and tier III cities.

Furthermore, several government programs and initiatives, such as the "Aatmanirbhar Bharat" project, support the goals of local players by giving them the tools they need to create their SC base, which speeds up the sector's overall growth. Indian retailers and wholesalers are also implementing multichannel models to meet the rising consumer demand. The expansion of SC will also propel related businesses, including multichannel sales, Agri-tech, logistics, and warehousing. The main drivers for the increase of SC in India are listed below:

1.4.4.1 Key Drivers of Social Commerce in India

This section provides insights into key drivers of social commerce in India with supporting statistics.

Increasing Internet Use and Preference for Online Shopping

Online shopping has become a part of daily life for most Indian households; as per the PWC's Global Consumer Insights Pulse Survey-2023, five in ten Indian consumers use e-commerce websites/apps and various search engines as the primary sources of information in the pre-purchase stage. Additionally, the COVID-19 lockout restrictions of 2020–2021 caused most consumers to switch from going outside to purchasing online, which led to an increase in internet use and a switch to online shopping behaviour. In India, around 66% of consumers use their smartphones almost regularly or frequently to research products online for availability, price comparison and special offers. This percentage is significantly higher than the global average of 56%.

India has the second number of internet users in the world. The internet penetration is 41%, far behind other countries like China, the USA, Brazil and Indonesia. However, regarding absolute numbers, India is way ahead of these countries and ranks second due to its high population; refer to Table 1.2.

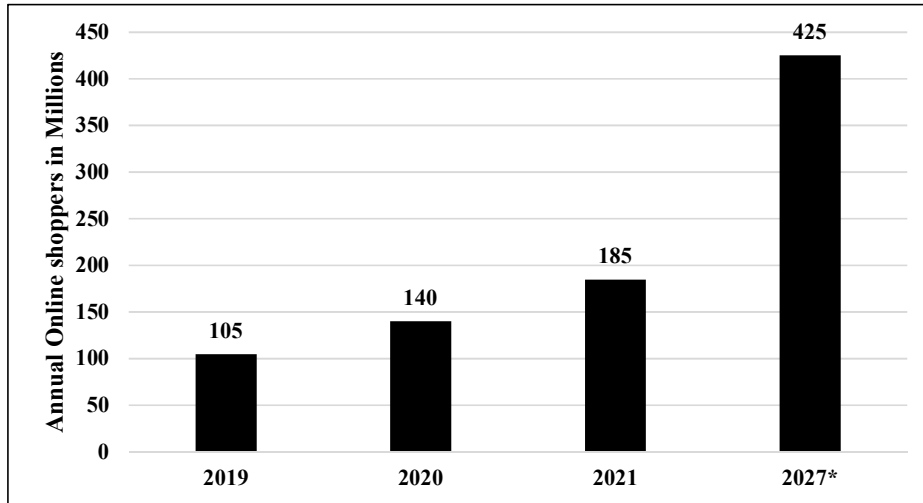
Table 1.2: Internet Users Across the Top 20 Countries in the World

Rank	Country	Internet users (in Millions)
1	China	1022
2	India	644
3	US	312
4	Brazil	170
5	Indonesia	167
6	Russia	132
7	Nigeria	115
8	Japan	99.6
9	Mexico	98.8
10	Egypt	79.2

Source: The World FactBook, 2022

Rising number of online shoppers and social media users

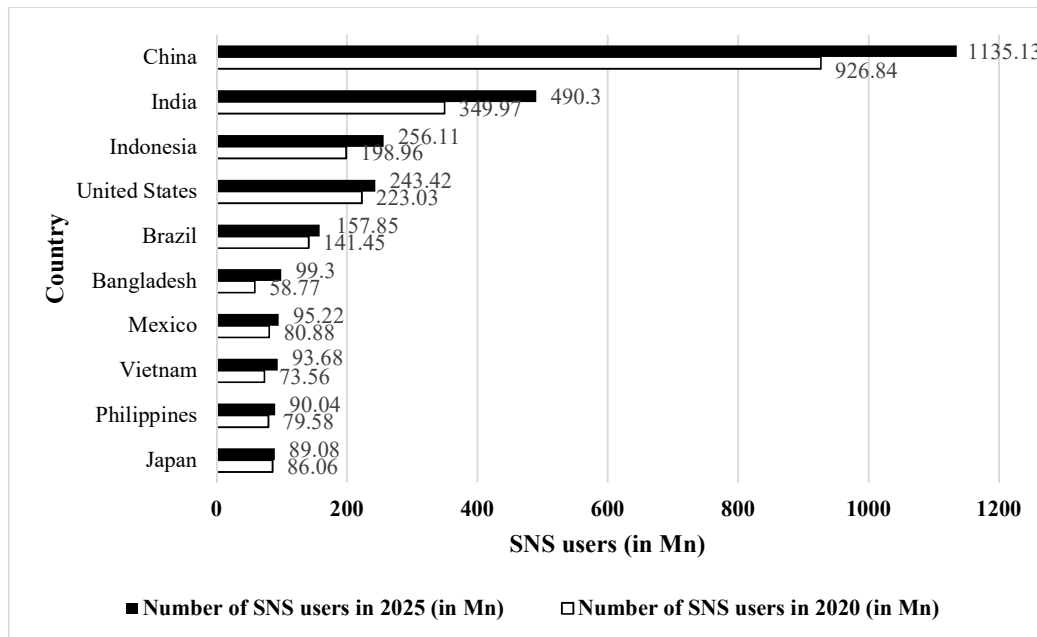
As per RedSeer (2022), there will be more than 250 million Indian internet shoppers by 2022. SC is anticipated to have a significant impact on the growth of e-commerce due to people's high level of social media engagement. Indian e-commerce sales increased by 7-8% in 2020, and the number of annual online shoppers is increasing and will touch 425 million by 2027 (Statista 2023d), as shown in Figure 1.5.



Source: Statista 2023d

Figure 1.5: Number of Annual Online Shoppers in India:2019-2027 in Million

In a similar vein, India is witnessing a rise in the number of social media users. India ranks second in terms of number of social media users, immediately behind China (Figure 1.6).



Source: Statista 2023e

Figure 1.6: Social Networking Sites Users Across the World

Burgeoning Investments

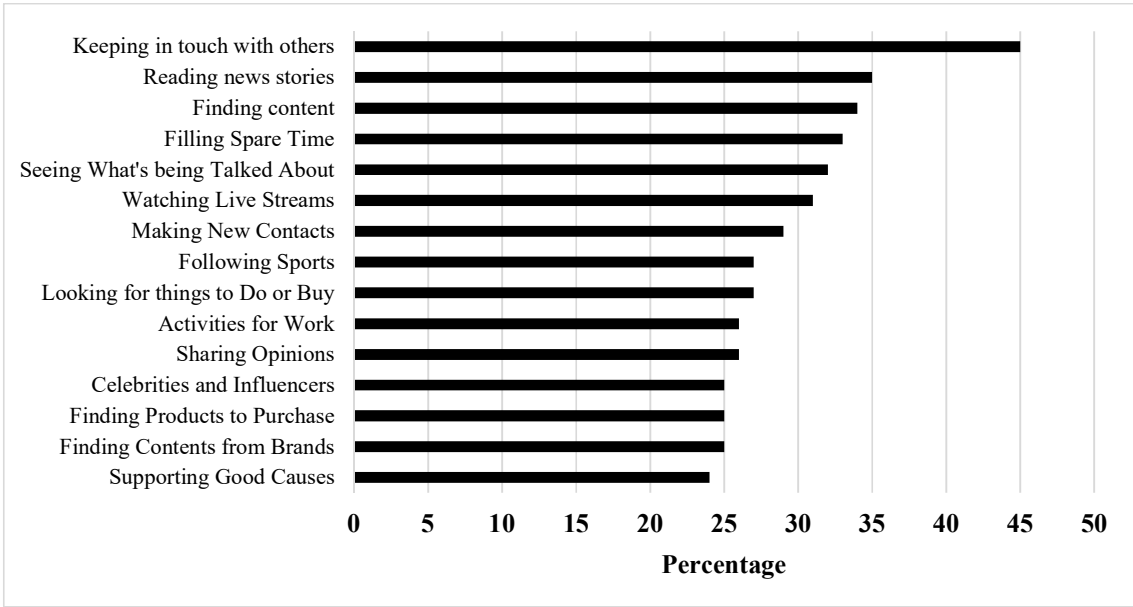
Investment in the SC sector is rising from major international companies. Facebook spent US\$ 5.7 billion on Reliance Jio in 2020 (Gupta, 2020), while Google contributed US\$ 4.5

billion to Jio Platforms. Significant changes in domestic players were also observed in 2020 (Singh, 2020). Reliance Jio has played an instrumental role in internet connectivity, especially in tier II and below locations of India. Additionally, an increasing number of Indian small- and mid-sized vendors are using e-commerce as a means of distribution. Amazon India revealed in December 2020 that around 4,152 vendors on its platform crossed the INR one crore¹ sales threshold and the number of vendors with more than crore sales rose by 29% year over year (Economic Times, 2020).

Increasing social media influence

28% of millennials purchase things because of social media endorsements, and the remainder of millennials frequently follow companies and trends on social media to keep informed about products and brands. In order to connect with younger consumers, e-commerce companies are working hard to increase their social media presence, embrace digitization, and advertise their goods on these channels. According to Forbes, 33.4% of Indians are active social media users. Additionally, the research states that 398.0 million Indian users, or 40.2% of the nation's total population, were 18 years of age or older. 67.5% of all Indian internet users, irrespective of age, utilized social networking sites in January 2023. Remarkably, the GWI (2022) poll indicates that one of the primary motivations for using social media is to 'discover items to purchase,' as illustrated in Figure 1.7.

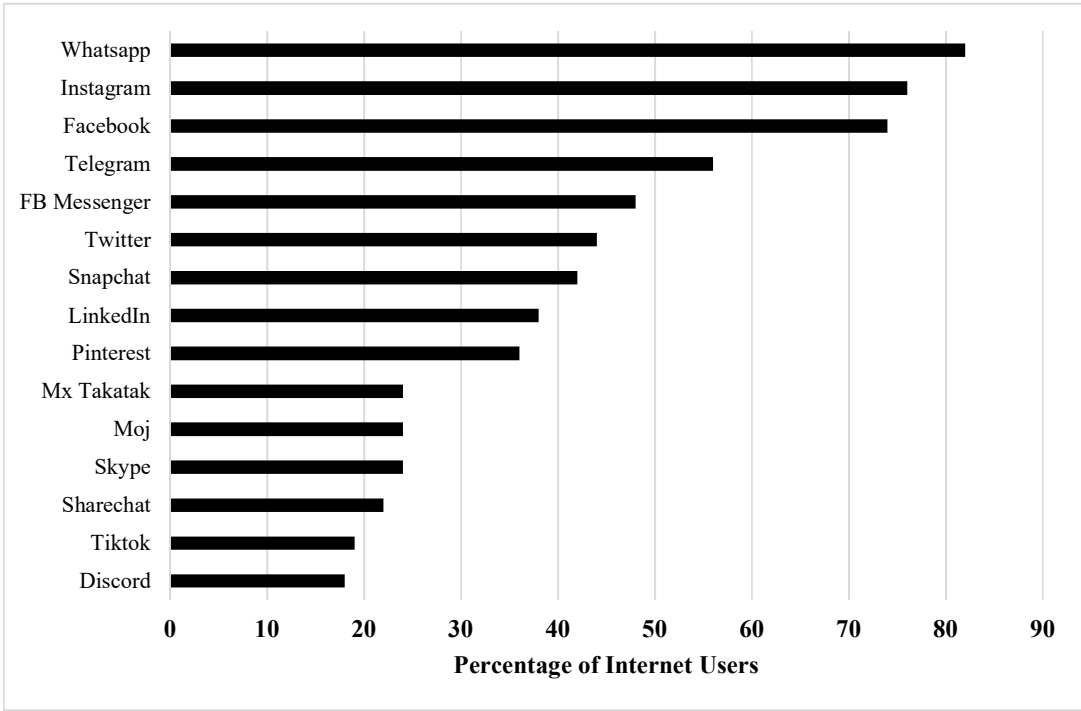
¹ INR 1 crore = US\$ 136.90 thousand on December 2020



Source: GWI, 2022

Figure 1.7: Reasons for Using Social Media

They also indicated that WhatsApp is the most widely used platform, followed by Instagram, Facebook, and Telegram, as shown in Figure 1.8.



Source: GWI, 2022

Figure 1.8: Most Used Platforms (% of Internet Users)

SC As a New Business Model for Small and Medium-Sized Enterprises

Empowered to facilitate efficient online product discovery and straightforward brand conversations, SC is quickly becoming a new communication channel and transaction platform for small and mid-sized businesses. This strategy might also empower over 40 million enterprises by providing a direct channel of connection with clients and a specialized market for each store, all thanks to India's sizable consumer base. Social media and messaging platforms like Instagram, Facebook, YouTube, Twitter and WhatsApp offer businesses access to a vast consumer base, with a combined reach of over 400 million people. A few small and medium-sized enterprises are adopting SC to grow both domestically and internationally while emphasizing the creation of new business prospects. Furthermore, several social media platform features—like polling, video calling, and photo sharing on Instagram—assist sellers in gaining important insights into customer preferences to increase sales and formulate business strategies.

Reselling and Group Buying

Apart from product discovery driven by social media, business formats like group buying and reselling have also changed. For example, Meesho, a popular SC platform in India, employs a reselling model in which suppliers publish their product catalogues on the app, and businesses/individuals get in touch with them through WhatsApp and Facebook to make purchases. Meesho is used by 8 million businesspeople and over 50,000 suppliers in India to run and manage their enterprises. Meesho has millions of resellers that use their social network to sell products and become part of the Fr2Fr SC. Another illustration would be the Jaipur-based social e-commerce start-up DealShare, which purchases wholesale products from regional manufacturers and offers them to clients via the DealShare App. The company also runs promotions and discounts on its WhatsApp group; customers receive discounts for

referring and sharing products with friends and family. It helps more than 10,000 small companies.

Open Network for Digital Commerce

The Government of India unveiled the creative Open Network for Digital Commerce (ONDC) plan to transform the nation's digital commerce ecosystem. It encourages innovation, improves user ease, and advances fair competition. ONDC aims to provide a streamlined, user-friendly platform that will increase the ease and convenience of online purchasing.

National Retail Policy

In its proposed national retail policy, the Indian government declared that e-commerce and offline retail should be managed together, focusing on five key areas: digitization of retail, focus on reforms, ease of doing business, rationalization of the licensing process, and an open network for digital commerce.

The 'Make in India' Initiative

The 'Aatmanirbhar Bharat' initiative transforms domestic producers' business strategies from in-store sales to online deliveries, thereby supporting the social commerce industry. The '#VocalforLocal' campaign also promotes technology advancements, enhancing the nation's competitiveness and international economic engagement.

The 'Digital India' Initiative

The Government of India announced the landmark program "Digital India," intending to transform the country into a knowledge-based economy and a society empowered by technology. This program was announced on July 1, 2015, and it encompasses a wide range of initiatives designed to strengthen governance, boost economic growth, and improve the standard of living for Indian residents by leveraging technology and connectivity. This

initiative has boosted digital infrastructure, broadband connectivity, digital payments, cybersecurity, and digital inclusion, which are instrumental in enhancing the SC in India. In addition, the government started many programs, including Umang, digital currency, Start-up India Portal, and Bharat Interface for Money (BHIM), along with the Digital India movement to promote digitalization.

The 'Start-up India' Initiative

The Government of India started an initiative called "Start-up India" in January 2016 to encourage and assist entrepreneurship and expand start-up companies throughout the nation. The program aims to create a conducive start-up environment, foster innovation, and accelerate economic growth. It has created a thriving start-up ecosystem that fosters job creation, economic growth, and technological advancements. It has also attracted the attention of domestic and international investors and has contributed to the growth of the Indian start-up ecosystem. Most start-ups are directly and indirectly involved in online selling, impacting/involving social commerce.

Government e-Marketplaces

The Ministry of Commerce and Industry of India launched the Government e-Marketplace (GeM) on August 9, 2016, as an online platform for public procurement. Its goal is to provide a transparent, efficient, and inclusive platform that allows buyers and sellers to engage in fair and competitive bidding.

The drivers mentioned above clearly indicate the SC will grow even further in days to come. This growth will witness multiple forms and structures of SC. One of the early trends is Fr2Fr SC, where the SC firms are capitalizing on the social network of their sellers and customers.

1.4.4. 2 Key Drivers for Friend-to-Friend Social Commerce Growth in Indian Scenario

One prominent model of SC, known as network-driven SC, in the form of Fr2Fr SC, is a growing trend in India. Fr2Fr SC is an approach that leverages social media and online networks to build relationships, establish trust, and ultimately drive sales. This Fr2Fr SC approach involves salespeople using social platforms to connect with friends and family members (i.e. potential customers), share valuable content, and engage in one-on-one interactions. Fr2Fr SC can lead to stronger customer relationships, increased sales, and a more personalized sales experience. Several vital drivers contribute to its growth, as mentioned below:

Social Connectivity: India has one of the world's largest and most engaged social media users. With millions of users on platforms like Facebook, Instagram, WhatsApp, and others, the connectivity is high, making it easy for friends to connect and share products and recommendations.

Trust and Relationships: Indians often strongly emphasize personal relationships and trust. When a friend or family member recommends a product, it carries much weight, making Fr2Fr recommendations more effective than traditional advertising.

Rise of Micro-entrepreneurs: Many individuals, especially women, turn to Fr2Fr social commerce for income. They leverage their social networks to sell products, leveraging the trust and relationships they have built.

E-commerce Penetration: India's e-commerce market is rapidly growing, and online shopping is becoming more common. Friends often share their shopping experiences and product recommendations, leading to Fr2Fr sales.

Localized Content and Messaging: SC platforms and sellers often tailor their content and marketing to specific regional and cultural preferences. This localization makes it more appealing to a diverse Indian audience.

Convenience and Personalization: Fr2Fr social commerce offers a personalized shopping experience. Sellers can understand the preferences of their friends and recommend products that are likely to appeal to them, enhancing the overall shopping experience.

Digital Payments: The rise of digital payment systems and mobile wallets in India has made Fr2Fr social commerce transactions easier. This includes online payment gateways and UPI (Unified Payments Interface) apps.

Innovative Sales Techniques: Fr2Fr sellers often employ innovative sales techniques, such as live streaming, interactive sessions, and flash sales, which engage the audience and create a sense of urgency, encouraging sales.

Influencer Marketing: Social media influencers and micro-influencers play a significant role in promoting products and brands. They often have a considerable following and can influence purchasing decisions among their followers.

User-Generated Content: Users often share their own experiences and reviews of products, creating a community of trust around the Fr2Fr social commerce platform. This user-generated content helps build credibility.

Government Initiatives: Government initiatives like Digital India, Make in India, and Start-up India have contributed to the growth of e-commerce and digital payment systems, indirectly benefiting Fr2Fr social commerce.

Rural Expansion: Fr2Fr social commerce is not limited to urban areas. It has expanded to rural India, providing opportunities for individuals in remote areas to become micro-entrepreneurs and earn income through social selling.

The previous section highlighted the SC concept, its evolution, drivers of social commerce, SC global and Indian statistics and risks associated with SC. One of the important risks was delivery, shipping issues and return policy.

In order to connect these dots in the SC context. More precisely, the study tries to explore how the LSQ aspect affects SC customers. The evolution and dimension of LSQ is explained in the following section:

1.4.4.3 Importance/Relevance of Logistics Service Quality in Social Commerce

Scholars have opined that e-fulfilment, especially the LSQ-related aspects of the SC, will be a challenging task and needs to be studied systematically (Changchit et al., 2021; Shin et al., 2020). In SC, there will be a relational aspect to LSQ that was absent in the earlier version of online commerce. Scholars have argued that LSQ is a crucial business aspect that affects customer experience, satisfaction and loyalty (Bienstock et al., 1997; Jain et al., 2021; Mentzer et al., 2001; Rao et al., 2011).

LSQ construct has evolved in the last 25 years and is crucial for e-tailing (Dhaigude & Mohan, 2023a). Mentzer et al. (1989) originated and studied the term "logistics service quality". They argued that in addition to physical distribution services, customers' opinions toward LSQ are also considered to be other crucial factors. Timeliness, availability, and quality are the three dimensions that make up LSQ, according to Mentzer et al. (1989). Bienstock et al. (1997) emphasized the importance of service quality in the B2B context and developed a new measure called the physical distribution service quality (PDSQ). Grönroos' (2001) and Mentzer et al. (1997) classified LSQ under customer service quality and PDSQ. Operational LSQ and relational LSQ were proposed by Davis (2006). Operational LSQ deals with perceptions about the service provider's logistics activities, while relational LSQ represents knowing/understanding customer needs. Scholars have stressed the importance of relational LSQ and urged to research more on it, especially in the context of online shopping (Jain, Gajjar & Shah 2021). LSQ is estimated and studied in various dimensions in various forms of retailing, from traditional brick-and-mortar to modern multi-channel retailing (Cotarelo et al., 2021). LSQ comprises two dimensions: operational and relational performance (Daughtrey et al., 1998;

Stank et al., 2003). Bouzaabia et al. (2013) and Davis (2006) examined Operational and relational LSQ and found that operational LSQ leads to loyalty, whereas relational LSQ leads to satisfaction. Perceptions of logistical operations carried out by the seller that led to steady quality, productivity, and efficiency are referred to as operational LSQ. In comparison, relational LSQ perceptions are those of logistics operations that aid businesses in forging stronger ties with their clients; firms can better understand the expectations and requirements of customers and can efficiently address those needs with superior services. The conceptualization of OLSQ and RLSQ by Bouzaabia et al. (2013) and Davis (2006) was very different and the context was traditional commerce.

Bouzaabia et al. (2013) compared the perceptions of retail LSQ between Romanian and Tunisian customers and identify the dimensions of LSQ that most significantly impact customer satisfaction and loyalty. LSQ was evaluated through two dimensions: relational LSQ (assurance, responsiveness, and caring of Carrefour employees) and operational LSQ (Carrefour reliability). The authors found that both Romanian and Tunisian respondents reported high LSQ levels, with Romanians rating both dimensions higher than Tunisians. In Tunisia, relational LSQ was the key predictor of satisfaction, while operational LSQ was most influential for loyalty. In Romania, relational LSQ was the primary predictor for both satisfaction and loyalty.

Davis (2006) explored customer loyalty and the role of logistics service in fostering it. LSQ consists of two constructs: relational LSQ and operational LSQ, both driving customer satisfaction. The unit of analysis was a retailer and data were collected in the US setting. This study examined loyalty as a causal relationship between affective commitment and purchasing behavior, moderated by calculative commitment, which involves assessing costs, benefits, and available alternatives. Satisfaction influences loyalty, with a linear relationship to affective commitment and a nonlinear relationship to purchasing behavior, being more significant at

extremes. By defining and testing these constructs, along with calculative commitment and satisfaction, Davis (2006) identified different loyalty types. Last but not the least, Davis (2006) proposed the conditions that drive various customer relationship types, recognizing that firms manage a portfolio of diverse customer relationships.

Operational LSQ has been explored well in various online and offline shopping contexts like business to consumer(B2C) (Grant & Phillipp, 2014); mobile commerce (Liu et al., 2020), business to business (Gaudenzi et al., 2020; Russo & Confente, 2017). Operational LSQ contributes to customer satisfaction (Thirumalai & Sinha, 2005), loyalty (Bouzaabia et al., 2013; Cotarelo et al., 2021), experience (Gaudenzi et al., 2020), word of mouth (Giovanis et al., 2013) and other performance benefits. In contrast, relational LSQ focuses on aspects like assurance, responsiveness, and empathy during the transaction. Customer interaction with the seller is the crux of relational LSQ based on trust and relationship management (Gil-Saura & Ruiz-Molina, 2011). Published research in online shopping has yet to explore the holistic LSQ construct. More specifically, the focus was on operational aspects only, and the relational aspect of LSQ has been ignored.

The importance of logistics service quality in achieving customer satisfaction cannot be overstated. In today's competitive marketplace, where customers have myriad options and high expectations, ensuring top-notch logistics service quality is essential for businesses to thrive. A seamless and efficient delivery process, free of errors and delays, not only meets customer expectations but also exceeds them, leading to increased customer satisfaction. This satisfaction, in turn, translates into loyalty, repeat business, and positive word-of-mouth, ultimately contributing to the long-term success and sustainability of the business. Therefore, investing in and maintaining high standards of logistics service quality is imperative for any business looking to maintain a satisfied and loyal customer base.

1.5 CUSTOMER SATISFACTION IN SOCIAL COMMERCE

Customer satisfaction is a pivotal metric in business, and researchers have extensively investigated its nuances, contributing to a rich body of literature that informs businesses on how to enhance customer experiences.

Customer satisfaction is important because of its direct correlation with customer loyalty, repeat business, and positive word-of-mouth recommendations. A seminal study by Anderson and Sullivan emphasized the impact of customer satisfaction on customer loyalty and subsequent business success (Anderson & Sullivan, 1993).

In the realm of online shopping, customer satisfaction takes different forms across various platforms. In traditional e-commerce, factors such as website usability, product variety, and timely delivery are crucial. Research by Tsiotsou and Vlachopoulou (2011) explored the role of website quality in influencing customer satisfaction in online retailing.

As for social commerce, which integrates social media elements into the shopping experience, customer satisfaction research is relatively nascent but rapidly growing. Studies by Zhang et al. (2014) have explored the impact of social commerce features on customer satisfaction, highlighting the social interactions and peer influence in purchase decisions. Studies by Hajli et al. (2017) provide insights into the impact of social commerce features on customer satisfaction, emphasizing the importance of social interactions and community engagement.

Customer satisfaction research is integral to understanding and improving the customer experience in different forms of online shopping. In the specific context of logistics service quality influencing customer satisfaction in social commerce, academic research may benefit from exploring the role of real-time tracking, transparent communication, and efficient order fulfilment within the social commerce framework. Investigating these aspects and their impact on customer satisfaction can provide valuable insights for businesses aiming to optimize their logistics operations within the unique environment of SC.

As the field of social commerce continues to evolve, understanding the intricate relationship between logistics service quality and customer satisfaction becomes essential for businesses looking to thrive in this dynamic and interconnected landscape

1.6 NEED FOR THE STUDY

SC is the upcoming e-commerce trend valued and the future of online commerce. SC empowers retailers/service providers to offer their consumers a sense of offline shopping in a virtual environment. All the major e-commerce (say Amazon, Flipkart, and Alibaba) and social networking players (Facebook, Whatsapp, Instagram, Tik-Tok, Snapchat, and WeChat) worldwide have already embraced the SC, and this number is expected to grow. Moreover, independent players like Meesho, Bulbul, and Pinduoduo are bringing innovations and taking the SC wave to greater heights. Various scholars and practitioners have predicted that SC will be the next thing in online commerce, and it will impact online consumer behaviour (Hajli & Sims, 2015; Zhang & Benyoucef, 2016; Boardman, 2019; Bugshan & Attar, 2020; Busalim & Ghabban, 2021).

Furthermore, scholars have opined that e-fulfilment, especially the LSQ-related aspects of the SC, will be a challenging task and needs to be studied systematically (Changchit et al., 2020; Shin et al., 2020) and in Fr2Fr SC, its role is even more paramount. Scholars have opined that LSQ in SC will be challenging and must be studied systematically (Dhaigude & Mohan, 2023a). In Fr2Fr SC, there will be a strong 'relational' aspect of e-fulfilment along with the 'operational' aspect that was absent in the earlier version of online commerce and SC. Table 1.3 clearly summarizes the difference in OLSQ and RLSQ. Therefore, exploring the operational and relational LSQ and its impact on customer experience and satisfaction in Fr2Fr SC is necessary. LSQ will serve not only as a back-end operation but also as a differentiator in the context of Fr2Fr SC.

Table 1.3: Difference between RLSQ and OLSQ

Sr No	Dimension	Operational LSQ	Relational LSQ
1	Definition	OLSQ means perceptions of logistics activities performed by service providers that contribute to consistent quality productivity and efficiency	RLSQ is defined as perceptions of logistics activities that bring the firm closer to its customers in order to understand customers' needs and expectations and have the ability to provide quality services to meet them in an efficient manner.
2	Key component	Delivery speed, order accuracy, completeness of delivery, cost-effectiveness, technology use.	Trust, communication, flexibility, problem-solving ability, relationship strength.
3	Focus	Physical distribution service	Marketing customer service
4	Customer Expectations	Reliability in fulfilling orders, consistency in service delivery.	Responsiveness to queries, ability to handle exceptions, personalized service
5	Impact	Directly affects operational efficiency and cost management.	Influences loyalty, repeat business, and long-term partnerships

Source: Literature

Service providers need to pay attention to logistics to help them achieve greater economic and environmental performance. However, the existing literature has completely ignored LSQ in Fr2Fr SC and focused on the other aspects of SC, for example, dual-role trust, swift guanxi, knowledge sharing, product risk, social ties, user experience, network dynamics, social climate, selling/network platform, social support, recommendation and customer engagement (e.g., Cao et al., 2021; Hsu et al., 2022; Su et al., 2021; Wang & Chang, 2013). The e-fulfilment dimension, namely LSQ, which is a critical aspect of SC, is not yet explored well in the literature. Therefore, the study is an attempt to fill this void. There are no studies that has considered the holistic LSQ (OLSQ and RLSQ) in the SC context and explored its impact on customer satisfaction.

LSQ refers to the performance of logistics services in meeting customer expectations and needs. It encompasses a range of factors that influence the efficiency, reliability, and satisfaction derived from logistics services. LSQ is typically divided into two main components:

Operational LSQ (OLSQ): This includes tangible aspects of logistics services such as: Product Availability: Ensuring that products are in stock and ready for delivery when customers need them. Condition of the Product: Delivering products in good condition without damage. Timeliness: Delivering products within the promised time frame.

Relational LSQ (RLSQ): This involves the service provider's interaction with the customer and includes: Responsiveness: The ability to promptly address customer inquiries and issues. Assurance: Building customer confidence in the service provider's competence and reliability. Empathy: Demonstrating understanding and care for the customer's needs and concerns. LSQ is crucial for customer satisfaction and loyalty, especially in the logistics-intensive e-commerce and social commerce sector.

Fr2Fr SC is a modern form of online commerce where consumers leverage their social networks to make purchasing decisions. In Fr2Fr SC, customers shop based on recommendations, reviews, and shared experiences from their friends or acquaintances within their social network. This type of commerce integrates social media features with e-commerce, allowing for a more personalized and trust-based shopping experience. Key aspects of Fr2Fr SC include:

- **Social Recommendations:** Purchasing decisions are influenced by friends' reviews and recommendations.
- **Trust and Reliability:** Consumers tend to trust recommendations from friends more than anonymous reviews.
- **Social Interactions:** The shopping experience is enriched by social interactions, discussions, and sharing of product information (Phan & Huynh, 2023).

Fr2Fr SC leverages the inherent trust in social relationships to enhance the shopping experience, making it a powerful tool for driving customer engagement and loyalty in the digital marketplace.

Interlinkage among LSQ and Fr2Fr SC

The relationship between LSQ and Fr2Fr SC is significant and multi-faceted, with LSQ playing a crucial role in shaping customer satisfaction and loyalty in the Fr2Fr SC context. LSQ, encompassing both OLSQ and RLSQ, directly influences how customers perceive the reliability and effectiveness of logistics services, which is essential in a socially-driven commerce environment. In Fr2Fr SC, where consumers rely on their social networks for shopping decisions, the timeliness, product availability, and condition of the product—key components of OLSQ—are critical for positive customer experience and customer satisfaction (Jain et al., 2021). Any delay negatively impact customer experience, which is amplified in a network where personal recommendations and social proof are significant drivers of purchasing behavior.

RLSQ, which includes responsiveness, assurance, and empathy, further enhances customer satisfaction by addressing the relational aspects of service interactions. Responsiveness ensures that customer inquiries and issues are addressed promptly, assurance builds trust in the service provider's competence, and empathy demonstrates that the service provider values and understands customer needs (Gupta et al., 2022). In Fr2Fr SC, where personal relationships are leveraged for commerce, these relational qualities help foster a sense of reliability and personalized service, enhancing overall customer satisfaction and loyalty (Huma et al., 2020). Empirical studies have shown that high LSQ positively impacts customer satisfaction and repurchase intentions in various business contexts like online commerce, mobile commerce, omnichannel retailing and traditional brick and motor retailing. Improved LSQ leads to higher customer retention rates and positive word-of-mouth, which are vital in the Fr2Fr SC model where social influence and peer recommendations play a significant role (Jain et al., 2021). As customers experience consistent and high-quality logistics services, their satisfaction levels increase, which in turn encourages them to recommend the service to others within their social

network, creating a virtuous cycle of trust and loyalty. Overall, LSQ is a pivotal element in the success of Fr2Fr SC, as it ensures the seamless and satisfactory delivery of products, which is fundamental to maintaining the trust and satisfaction of customers who rely on their social networks for shopping decisions.

1.7 PROBLEM STATEMENT

With the advent of technology, Fr2Fr commerce became Fr2Fr SC, where transactions occur through social media platforms, online marketplaces, and apps that allow friends and acquaintances to connect for buying, selling, and sharing goods and services. These platforms provide a convenient way to expand the scope of Fr2Fr SC while maintaining the personal connection between individuals.

Hu et al. (2022) argued the importance of social support in affecting continued social intention in Fr2Fr sales. People place greater trust in their social media friends than in companies, which explains the effectiveness of friends in making a purchase decision (Hu et al., 2022; Hajli, 2020; Zhao et al., 2019; Jin & Ryu, 2020).

The role of e-fulfilment, especially the LSQ, has yet to be explored in Fr2Fr SC. In Fr2Fr SC, there is a strong relational aspect; therefore, including the relational side of LSQ is critical. Online commerce and non-Fr2Fr SC have ignored the relational side of LSQ and focused only on the operational side of LSQ. This paper tries to fill this research gap by including the relational side of LSQ and exploring the holistic LSQ and its impact on customer experience and satisfaction.

This research dives deep into India's Fr2Fr SC phenomenon and investigates its critical antecedents, consequences and intermediates. More specifically, the problem statement for this thesis is:

How does logistics service quality impact customer satisfaction in Friend-to-Friend social commerce? More specifically, this thesis explores the operational and relational aspect of

logistics service quality and their impact on trust, customer experience and satisfaction in friend-to-friend social commerce in India.

1.8 RESEARCH QUESTIONS

The following research questions were framed to find solutions to the issues emerging in the research gap.

1. How does the logistics service quality impact customer satisfaction in the context of Friend-to-Friend social commerce?
2. What is the role of customer experience and trust in the logistics service quality - customer satisfaction relationship in the context of Friend-to-Friend social commerce?
3. Do the gender, product type and return experience influence the logistics service quality - customer satisfaction relationship in the context of Friend-to-Friend social commerce?

1.9 RESEARCH OBJECTIVES

The following research objectives were developed to systematically address the research questions developed in section 1.8.

1. To explore the impact of operational LSQ on customer satisfaction in a Friend-to-Friend social commerce.
2. To explore the impact of relational LSQ on customer satisfaction in a Friend-to-Friend social commerce.
3. To explore the mediation effect of trust on relational LSQ and customer satisfaction in Friend-to-Friend social commerce.
4. To explore the mediation effect of customer experience on operational LSQ and customer satisfaction in Friend-to-Friend social commerce.
5. To explore the moderating effect of gender, product type and return experience on operational LSQ and customer experience in Friend-to-Friend social commerce.

1.10 SIGNIFICANCE OF THE STUDY

The study has crucial contributions to theory and practice. The first significant theoretical result is exploring the holistic LSQ construct by combining OLSQ and RLSQ and their impact on customer satisfaction in Fr2Fr SC. This study also clarifies the factors that are integral to OLSQ and RLSQ and their impact on customer satisfaction. The second significant theoretical result is the application and testing the S-O-R model in Fr2Fr SC literature. The research study conceptualized the LSQ offered by the Fr2Fr SC as a crucial antecedent of trust, customer experience and satisfaction. One of the most important theoretical implications is the inclusion of relational aspects of LSQ along with the traditional operational aspects of LSQ. In formats like Fr2Fr SC, sellers are expected to provide assurance, responsiveness, and empathy to the customers, as well as assortment and good conditioned and timely delivery of products.

The second implication is the treatment of customer experience, and trust is regarded as an organism variable, and LSQ of Fr2Fr SC seller is considered as a stimulus. Customer experiences and trust (organism) are expected to impact the social, cognitive and emotional levels as the LSQ (stimulus) is relationship-driven. Keeping S-O-R theory as a base, the customer experiences as responses promoted by LSQ lead to customer satisfaction in Fr2Fr SC. Another important theoretical implication is that Fr2Fr SC customers consider it essential to display customer experience as an attainment of LSQ, more specifically in online shopping where touch and feel aspects are missing. It was thus anticipated that customers would have a better experience if they believed the LSQ of the Fr2Fr SC seller to be of a higher quality.

Consequently, SC is the future of e-tailing and formats like Fr2Fr SC will open new doors and opportunities for marketers. Especially in the Fr2Fr SC context, the operational LSQ (condition, timeliness and delivery) and the seller's relational LQS (assurance, responsiveness and empathy) dimensions become integral to customers' e-shopping experience. These customers are naïve and new to online shopping; therefore, the relational side of LSQ becomes even more important.

As a result, it was regarded as a significant theoretical implication that Fr2Fr customers will have pleasant experiences owing to the high LSQ offered by Fr2Fr SC sellers and will have high customer satisfaction.

The study also has significance for practice. Adapting Fr2Fr SC is critical for SC firms. The next wave of e-commerce will be a social network-driven approach, where transactions will happen, offering the best of online and offline shopping contexts. Understand the LSQ aspects, especially the relational side of LSQ, are critical for generating trust whereas operational LSQ require for positive customer experience. SC players should be meticulously involved in assessing and effectively addressing LSQ issues. The SC players and Fr2Fr SC sellers must understand and evaluate customer experience and devise strategies to enhance operational LSQ to enrich the customer experience that increases customer satisfaction.

As no prior studies exist on the LSQ aspects of Fr2Fr SC, the managerial implications of the study will contribute to the literature and help SC players formulate appropriate business strategies.

1.11 SCOPE OF THE STUDY

The impact of operational and relational LSQ on customer satisfaction is studied in many variations of commerce like business-to-business commerce, business-to-consumer commerce, consumer-to-consumer commerce, mobile commerce, electronic commerce/online commerce or offline commerce. The present study analyses the impact of operational and relational logistics service quality on customer satisfaction in friend-to-friend social commerce. The present study focuses on tier II cities of India where the Fr2FR SC is growing consistently. The study is focused on product purchasing behaviour in friend-to-friend SC.

1.12 BRIEF OUTLINE OF THESIS

This thesis has five chapters, as mentioned below:

Chapter One comprises the introduction of the research study, which includes the study's background and a detailed description of the global and Indian social commerce sector. It provides a snapshot of the key drivers and challenges faced in social commerce from the perspective of consumers and e-tailers. The chapter also highlights new trends in the SC shopping industry and the key players in the Indian SC sector. The chapter outlines the need for the study, the problem statement, the research questions, the research objectives, the significance of the findings, and the study's scope. A concise outline of the thesis wraps up the chapter.

Chapter Two provides an extensive literature review that strongly supports the present study. An exhaustive literature review covering most of the critical studies relevant to the study topic was done to understand the study constructs. The various relevant theoretical models and background of such studies have been comprehensively discussed. The chapter provides strong literature support for the research gaps identified. The chapter comprises 1) a conceptual framework, 2) an operational definition of the constructs, and 3) research hypotheses formulated and their alignment with research objectives.

Chapter Three consists of the research methodology used for the study, explained in detail. The research methodology encompasses the approach, methods, and design of the research and its sources of data. The chapter highlights the research instrument, a structured questionnaire, and sources used in constructing the instrument. The sampling method is explained in detail in this chapter. The chapter also includes a thorough explanation of the pilot study, including how it was conducted and its results. The chapter provides a snapshot of the statistical tools that were deployed for analysis and interpretation.

Chapter Four comprises data analysis, which consists of descriptive statistics, reliability and validity analysis, correlation and regression, multivariate statistics, and structural equation modelling. The data analysis results are interpreted thoroughly to provide an answer to the research questions.

Chapter Five discusses the findings and conclusions of the study in detail. This chapter offers a detailed understanding of the results and compares the findings with past studies. The chapter highlights the study implications from a theoretical as well as a practical perspective. The chapter further sheds light on limitations and proposes future research recommendations.

CHAPTER 2
REVIEW OF LITERATURE

CHAPTER 2

REVIEW OF LITERATURE

2.1 CHAPTER OVERVIEW

The first chapter provided a detailed introduction to the study. In the second chapter, an in-depth literature review is presented. This chapter provides a deeper understanding of the concepts and development of SC and the factors influencing Fr2Fr SC. Section 2.2 discusses the evolution of shopping from brick-and-mortar to click-and-order. Section 2.3 outlines the four major themes in the SC literature. Section 2.4 provides an overview of Fr2Fr SC. Section 2.5 provide difference between web communities and Fr2Fr SC. Section 2.6 deals with LSQ and provides its evolution, scientific mapping, and dimensions, namely operational LSQ and relational LSQ. Section 2.7 covers customer experience in SC using scientific mapping and evolution. Section 2.8 deals with the literature highlighting customer satisfaction in Fr2Fr SC. Section 2.9 deals with the theoretical framework used for this thesis, providing a detailed overview of the Stimulus-Organism-Response framework. Section 2.10 deals with research gaps after a thorough review of the literature. Section 2.11 presents the formulation of the conceptual framework based on a rigorous literature review. Section 2.12 deals with hypothesis building and proposes six direct and five indirect hypotheses. Section 2.13 provides operation definitions of all the constructs used in this study. The chapter concludes with section 2.14, which provides the chapter summary.

2.2 BRICK-AND-MORTAR TO CLICK-AND-ORDER

Shopping as a human activity is as old as human existence (e.g., Prus & Dawson, 1991). People shop for a multitude of reasons, and often, it is a blend of diverse motivations like a necessity, functionality, self-expression, emotional fulfilment, social interaction, exploration, discovery, cultural and social norms, keeping up with trends, personal

growth, bargain hunting, tradition and rituals (e.g., Arnold & Reynolds, 2003; Rohm & Swaminathan, 2004; To et al., 2007; Wagner & Rudolph, 2010; Yang & Kim, 2012). It is a complex dance of necessity, desire, and social dynamics that adds flavour to the human experience. The social construct of shopping is not just about snagging the latest gadgets or trendiest outfits; it is woven into the very fabric of human life. Customers stroll through a bustling market, exchange smiles with vendors, chat with fellow shoppers, and haggle a bit. It is more than a transaction; it is a social dance, a shared experience transcending mere commerce. Shopping is not just a transaction; it is a social ritual that connects us with others, shapes our identity, and fulfils deeper emotional needs (Dawson et al., 1990). It is a fundamental part of the human experience, an ever-evolving dance that weaves through the tapestry of human being existence.

In shopping, there is the self-expression angle (Helmi, 2016). What people buy says something about who they are. Whether it is a unique piece of art, a book that resonates, or a snazzy pair of shoes, people's purchases become an extension of their identity. Shopping becomes a way to communicate customers' tastes, values, and even moods. It is like curating one's museum of self. Beyond self-expression, shopping also taps into one's psychological needs (De Bellis & Johar, 2020). In retail therapy, there is a genuine emotional satisfaction in finding that perfect item, be it a mood-boosting treat or a practical necessity. The anticipation, the discovery, and even the act of unwrapping contributes to a human being's well-being.

On the other hand, shopping has created and promoted markets (Slater, 2002). In short, the markets have been gathering places for centuries where people do not just exchange goods but also stories, advice, and camaraderie. It is a space where neighbours become friends, and strangers share a moment over a common need or desire. Shopping,

whether in a local bazaar or a modern mall, fosters social connections, turning a mundane task into a shared ritual.

In the digital era, online shopping may lack the tactile experience of a physical marketplace, but it introduces a new dimension of social interaction (Xu-Priour et al., 2014). Social media and review platforms allow people to share their shopping escapades, seek advice, and contribute to a global conversation about products and trends. Buying has become a shared narrative in the vast book of online communities, giving birth to 'SC'. In today's world, adding products to online carts is a thread in the rich fabric of our social existence.

2.3 SOCIAL COMMERCE

In 2005, when Yahoo debuted its "Yahoo Shoposphere," the term "social commerce" was first used (Wang & Zhang, 2012). Using social media, firms can increase closeness with the customers; social interaction among customers influences the purchase intention in SC (Ng, 2013). In the literature, SC has two types: 1) Generic SNS that contain commerce components allowing for online buying/selling and 2) typical e-commerce sites with social components: "share" and "like" buttons to enable social exchanges in an online mode (Zhang & Benyoucef, 2016). The way of doing business in SC is innovative, sociable, and collaborative (Curty & Zhang, 2013), which helps traditional e-commerce overcome its flaws. SC relies on Web 2.0, which helps in collaborative/many-to-many interactions, whereas traditional e-commerce websites have Web 1.0, which provides one-to-one interaction (Huang & Benyoucef, 2013). The SC issues that are explored in the literature are adoption, purchase intention, shopping experience sharing, value co-creation, review/referrals, website quality, app usage behaviour, and loyalty toward the brand (Busalim et al., 2019; Zhang & Benyoucef, 2016).

The SC framework was proposed by Zhou et al. (2013), which deals with technology, people, information, and business. In order to promote the growth of SC, the four components interact with one another. Furthermore, the model clarifies why some succeed with SC methods while others fail. In SC, Yadav et al. (2013) established a framework for a contingency to analyze the possibility of marketing and promotion. Furthermore, Zhang and Benyoucef (2016) summarized the literature on consumer behaviour in SC. To understand SC's behaviour, they built a consolidated paradigm using the stimulus–organism–response (SOR) and five stages of the consumer buying process. Busalim & Hussin (2016) explain the difference between SC and e-commerce. Dhaigude & Mohan (2023b) have outlined that SC consumer behaviour differs from traditional e-commerce and offline shopping (Table 2.1). The key distinction lies in how social commerce seamlessly merges online shopping within social media platforms, while e-commerce involves separate online stores or websites for transactions.

Han et al. (2018) concentrated on SC research techniques and stressed on doing research in various aspects of SC namely consumer behavior and SC platforms management. Cui et al. (2018) presented a cohesive research framework using bibliometric analysis and concluded that SC literature is fragmented and more research is needed on the antecedents and consequences. Grange et al. (2020) offered an SC definition based on the network, thereby stressing the importance of SNS in SC and emphasized its value. Finally, Busalim et al. (2019) compiled a list of criteria that affect website consumer involvement.

Table 2.1: Difference in Social Commerce, Offline Shopping and E-Commerce

Dimension	Social Commerce	Offline shopping	E-commerce
Orientation	SC has changed the way from a business-focused to a consumer-focused (Busalim, 2016)	Offline shopping is focused on business	e-commerce is product-oriented
Convenience	SC is highly convenient as it comes with the benefit of e-commerce and social support, which convinces the customer to purchase.	The convenience is low in the offline context as customers need to visit stores, sometimes more than one store, until they find a product they required	Convenience in online shopping is considerable as customers can order anytime using a laptop/desktop or mobile device. Still, it does not reduce search effort or comparison on different websites.
Website design/Technology	User-centred and customer-centred (Huang & Benyoucef, 2013), and uses Web 2.0, which is the basis of social interaction like user-generated contact.	Not applicable	Product-centred and catalogue-based (Huang & Benyoucef, 2015), and it uses Web 1.0, a classic way of browsing.
Search cost	Complete information on the website/social media, along with social connection support, makes the search effort of customers very low (Bai et al., 2015)	Customers repeatedly compare the information they receive from each store before choosing the best item that meets their needs. Hence, search costs are high in an offline context (Chiu et al., 2019)	Complete information on the website reduces customers' search efforts.
Seller Buyer Communication	Many-to-many communication, as SC is a customer-focused, firm focus to encourage purchase through social connection/communication (Jensen & Gilly, 2003).	Sellers and buyers connect one-on-one in a physical setting	Sellers and buyers connect on a one-to-one basis; mostly, communication is one-way and ad-hoc basis (occurs if there is a discrepancy). Customers rely on information provided by the firm
Customer connection	Encourage social interaction to improve customer interaction (Kim & Srivastava, 2007).	Individual and independent shopping activity	Individual and independent shopping activity (Kim & Srivastava, 2007)
Customer control	Consumers are empowered (Constantinides & Fountain, 2008)	Consumers have little or no control	Consumers have little or no control (Huang & Benyoucef, 2015)
System interaction	Offering a more social, interactive, and collaborative online experience (Parise & Guinan, 2008)	NA	Providing one-way browsing (Parise & Guinan, 2008)
Business goal	Focusing on social activities like collaboration, networking and information sharing (Wang & Zhang, 2012)	Maximizing shopping efficiency	Maximizing shopping efficiency, the customer has no connection with other customers during the purchase process (Carroll, 2008)
Customer experience	Immersive, real-time, and highly engaging	Immersive, real-time, and highly engaging	Passive, virtual and less engaging

Source: Dhaigude and Mohan (2023b)

2.3.1 Themes in SC literature

During the literature review, four major themes emerged in social commerce: group buying, swift guanxi, information support and emotional support.

Theme 1: Group Buying

Online group buying effectively gained popularity with the advent of US-based websites like Groupon in 2008. Group buying is a type of SC where a minimum number of customers jointly purchase and get a discount (Chen & Rau, 2012). Further, to process the transaction, the criterion of the minimum number of customers must be attained. By combining the purchases of many items, significant discounts can be achieved. Importantly, in 2010 and 2011, the popularity of this online buying trend significantly increased. Consumers' faith in a SC player within an online setting is known as trust, which fosters positive attitudes regarding SC. Specifically, customers' trust in an online vendor does have a big and favourable impact on customer experience (CX) (Ku, 2012; Hsu et al., 2014). Other than trust, some of the other important SC elements include low price (Lee et al., 2016), reduced search cost (Tseng & Lee, 2016), higher customer value (Lim, 2017), habit (Hsu et al., 2015), advertising (Lim, 2015), rewards (Chiu et al., 2018), customer involvement (Sharma & Klein, 2020), which impact the cognitive and affective dimensions of CX.

Theme 2: Swift Guanxi

Swift guanxi is an expansion of traditional guanxi and is modelled on the Chinese idea of guanxi. It is defined as "a buyer's perception of a swiftly formed interpersonal relationship with a seller" (Ou et al., 2014). SC's one of the key benefits is the ability to create quickly create and join an online community and formulate buyer-seller relationships (i.e., guanxi) (Hajli, 2015). In its most basic form, guanxi is more intimate and dependent on friendship. Its effective worth in social relationships outweighs its

financial value (Wu & Chiu, 2016). Moreover, swift guanxi is a quick-building extension of traditional guanxi that is impacted by communication technologies in e-marketplaces (Lisha et al., 2017) and can influence CX significantly. More precisely, it comprises common understanding, mutual favours, and relationship coordination that impact CX's cognitive and affective dimensions (Fan et al., 2019).

Shi et al. (2018) provided empirical evidence of the link between Swift Guanxi and online service quality. According to Lin et al. (2019), SC affordances like interaction, stickiness, and word of mouth have a beneficial impact on swift guanxi. Additionally, researchers have looked at the causes of swift guanxi from the customers' perspective. Fan et al.'s (2019) study, for instance, showed that customer trust has a favourable impact on swift guanxi.

Theme 3: Information Support

With the rise in internet penetration, customers now have a new channel via which they may communicate their thoughts and experiences to a large number of other customers (van Esch et al., 2018). Peer review and recommendations, which provide information support, have grown in importance as an information source in SC. Many online shoppers use other users' reviews to assess features and CX and influence their purchasing decisions (Karakaya & Barnes, 2010; Wang et al., 2022). Thakur (2018) demonstrated that the amount and valence of peer reviews and recommendations influence consumer experience. A phenomenon that is commonly known in literature is that SC users commonly depend on the experiences and views of others to guide their own purchasing decisions (Zheng et al., 2013; Chen et al., 2019). Positive reviews are helpful, especially when discussing core performance, technological features, and aesthetics. Negative reviews, on the other hand, are helpful when they discuss service

failures. Potential customers consider unfavourable reviews helpful to online shopping decision-making (Ahmad & Laroche, 2017).

Theme 4: Social Support

Social support refers to “an exchange of resources between at least two individuals perceived by the provider or the recipient to be intended to enhance the well-being of the recipient” (Shumaker & Brownell, 1984, p. 13). Online social support is intangible and manifests as informational and emotional support, primarily as interactions in SC are conducted through electronic gadgets.

Consumers who receive emotional assistance can experience psychological advantages and thereby meet their mental and emotional requirements (Jiang et al., 2019; Tajvidi et al., 2020). Peer relationships could improve with this support (Hu, Chen & Davison, 2019) the element of subjective well-being (Chiu et al., 2015), improved social identity (Farivar et al., 2018), increase trust in SC (Cutshall et al., 2022), and risk reduction (Doha et al., 2019), and thereby improve the quality of peer relationships (Hajli, 2014), which ultimately result in an improved shopping experience. Perceived emotional support does influence cognitive and affective dimensions of CX, leading to a positive outlook toward SC, encouraging customers to be more proactive, and providing other consumers with their recommendations and opinions (Hajli, 2014)

It has been discovered during the literature review that the majority of the studies focused on customer behaviour (prior and post-purchase) in the SC context. Consumers' behaviours have been investigated since they engage in a variety of activities on SC platforms. Among them are consumer engagement, purchase behaviour, buying behaviour, intention to use SC, avoidance behaviour, social shopping behaviour, electronic word of mouth, privacy, security difficulties, and intention toward social sharing.

2.3.2 Customer Satisfaction of Social Commerce Consumers

Various scholars have investigated the role of customer satisfaction (CS) and its antecedents and consequences in SC (e.g., Lu et al., 2016; Gan and Wang, 2017; Lin et al., 2017; Lin et al., 2019; Osatuyi et al., 2020). Table 2.2 summarizes these studies in detail. From Table 2.2, it is evident that most of the studies have focused on the social, technical, and motivational factors that could impact CS, for example, swift guanxi, website quality, interactivity, perceived value, social media marketing activities, alternative attraction and vendor characteristics. However, studies exploring the role of e-fulfilment dimensions, namely logistics service quality, on CS in the SC context have been completely ignored. With the evolution of technology, especially Web 2.0, the rise of social media and the adoption of SNS, SC has taken the form of Fr2Fr SC.

Table 2.2: Summary of Customer Satisfaction Studies in the Context of Social Commerce

Source	IV	Mediator	Moderator	Findings	Theory
Lim et al. (2020)	trust, compatibility, reliability, responsiveness	CE	SC navigation	SC cues positively affect CE, leading to RI, while SC navigation moderates this link.	S-O-R
Shang & Bao, (2020)	swift guanxi, alternative attraction, PV, CS	NA	CS	Swift guanxi positively influences RI, whereas alternative attraction is a threat to RI. PV negatively affects alternative attraction. Social media marketing activities affect satisfaction through SI and PV. SI and PV indirectly affect CI and PI.	RT
Chen and Lin (2019)	Social media marketing activities, SI, PV, CS, CI, PIN, PI	PV, SI	NA	Interactivity, recommendations, and feedback will favour swift guanxi and trust. External referents and repurchase information search activity factors are integrated with ECT characteristics in this study to produce a parsimonious model that predicts RI simultaneously.	SIT
Lin, Li & Wang (2017)	Interactivity, Recommendations, Feedback	swift guanxi and trust	NA	Trust and commitment are mediators in consumer views of online commerce ethics, customer satisfaction and RI.	S-O-R
Liao et al. (2017)	Expectation, disconfirmation, perceive performance, satisfaction	satisfaction and Regret	Prior loyalty	Buyers' intentions to repurchase and actual repurchases from sellers are predicted by swift guanxi and trust.	ECT, RT, PT
Elbeltagi and Agag (2016)	Consumer perceptions of online retailing ethics, trust, commitment, satisfaction	trust, commitment	NA	From a customer perspective, website quality can be a crucial aspect in improving RI.	CTT
Ou et al. (2014)	Interactivity, presence, swift guanxi, trust	NA	NA		CMC, MRT, MST
Shin et al. (2013)	Site quality, CS, customer trust, e-commitment	CS, trust, e-commitment	NA		NA

Note: AMOS: Analysis of Moment Structure, CI: continuance intention, CE: Customer Engagement, CMC: computer-mediated communication, CS: customer satisfaction, CT: Contract Theory, CTT: Commitment-trust theory, ECT: Expectancy confirmation theory, MRT: Media Richness Theory, MST: Media Synchronicity Theory, PI: Purchase intention, PIN: Participate intention, PLS: Partial Least Square, PT: Prospect Theory, PV: Perceived Value, RI: Repurchase Intention, RMT: Relationship marketing theory, RT: Regret theory, SC: Social Commerce, SI: social identification, SIT: social identification theory, SCT:–Social Capital, SEM: Structural Equation Modelling, S-O-R: Stimulus-Organism-Response, SPT: Social Presence Theory, TCE: Transaction Cost Economics.

Source: Literature Review

2.4 FRIEND-TO-FRIEND SOCIAL COMMERCE

SC is an exchange-related activity that occurs in, or is influenced by, an individual's social network in computer-mediated social environments, where the activities correspond to the need recognition, pre-purchase, purchase, and post-purchase stages of a focal exchange' (Yadav et al., 2013). Customers recommend, comment, review and review products/services on SC (Zhao et al., 2019). It offers customers other people's personal experiences (user-generated content) with the product and/or service, which helps them make informed purchasing decisions (Park et al., 2007). Customers believe the reviews of other customers are more trustworthy and credible than the seller's provided content (Dou et al., 2012). As per Accenture's (2022) report, SC has broadly three models that engage in three different ways: first is content-driven, second is experience-driven, and finally, the third is network-driven, as explained in the introduction section.

The Fr2Fr social commerce is a network-driven SC that has deep roots in business evolution and probably has existed ever since humanity started trade/business-related activities (e.g., Granovetter, 1985). Tapping social networks for commercial activities (buying and selling things) is a widely accepted phenomenon (Herranado et al., 2022; Xq et al., 2021; Riaz et al., 2021). The research on Fr2Fr commerce has attracted the attention of the global research community (Agnihotri et al., 2012; Su et al., 2021; Bi & Zhang, 2022; Li et al., 2018). Fr2Fr commerce is a term that describes informal economic transactions or exchanges that occur directly between individuals, typically friends, acquaintances, or people within a personal network. This type of commerce is often based on trust, personal relationships, and mutual benefit. F2F commerce can take various forms, such as peer-to-peer (P2P) recommendation (Nadeem et al., 2015; Hu et al., 2019), bartering (Williams, 1996), group buying/collaborative consumption,

recommendations and referrals (Sharma & Klein, 2020; Hossain et al., 2021). Fr2Fr commerce has several advantages, including building and strengthening personal relationships, fostering trust, and often leading to more flexible and informal arrangements. However, it also has its limitations, such as potential misunderstandings, disputes, or the need for clear communication and boundaries to maintain healthy friendships.

With the advent of technology, Fr2Fr commerce became Fr2Fr SC, where transactions occur through social media platforms, online marketplaces, and apps that allow friends and acquaintances to connect for buying, selling, and sharing goods and services. These platforms provide a convenient way to expand the scope of Fr2Fr SC while maintaining the personal connection between individuals.

The research on Fr2Fr SC is limited and has focused on exploring its antecedents and consequences. For example, Su et al. (2021) have explored the dual-role-based trust model in Fr2Fr SC and how *guanxi* and role-based trust interact to support social media users' friend-engagement behaviour. The study by Buttner and Goritz (2008) and Wu and Tsang (2008) investigated the influence of knowledgeable friends and their effect on purchase decisions and found it significant. At the same time, Hajli (2020) discovered the positive effect of e-WOM and its influence on purchase decisions in a social network-driven sales context. Hu et al. (2022) argued the importance of social support in affecting continued social intention in Fr2Fr sales. People place greater trust in their social media friends than in companies, which explains the effectiveness of friends in making a purchase decision (Hu et al., 2022; Hajli, 2020; Zhao et al., 2019; Jin & Ryu, 2020).

But till today, the role of e-fulfilment, especially the LSQ, has yet to be explored in Fr2Fr SC. In Fr2Fr SC, there is a strong relational aspect; therefore, including the

relational side of LSQ is critical. Online commerce and non-Fr2Fr SC have ignored the relational side of LSQ and focused only on the operational side of LSQ. This paper tries to fill this research gap by including the relational side of LSQ and exploring the holistic LSQ and its impact on customer experience and satisfaction.

2.5 WEB COMMUNITIES AND FR2FR SC

A web community is an online platform where individuals with shared interests, goals, or activities interact, share information, and build relationships. These communities can take various forms, such as forums, social networks, or specialized interest groups, and they thrive on the active participation and engagement of their members. The primary goal of a web community is to facilitate communication and collaboration among its members, fostering a sense of belonging and collective identity (Ridings & Gefen, 2004). Web communities can be centered around various topics, such as hobbies, professional interests, support groups, or fan clubs, and they often provide a space for members to share knowledge, ask questions, and offer support (Preece, 2000).

In contrast, Friend to Friend (Fr2Fr) social commerce (SC) is a specific type of online commerce that leverages social networks to facilitate shopping. In Fr2Fr SC, consumers rely on recommendations, reviews, and shared experiences from their friends or acquaintances within their social network to make purchasing decisions. This form of commerce integrates social media features with e-commerce, creating a more personalized and trust-based shopping experience. The emphasis is on social interactions and the influence of personal relationships, which drive purchasing behavior and enhance customer engagement (Huang & Benyoucef, 2013).

The key difference between a web community and Fr2Fr SC lies in their primary purposes and the nature of interactions they facilitate. Web communities are primarily focused on communication, collaboration, and relationship-building among individuals

with shared interests. The interactions within these communities are typically centered around information sharing, support, and socializing, rather than commercial transactions (Wellman & Gulia, 1999). On the other hand, Fr2Fr SC is fundamentally commerce-driven, with interactions centered around product recommendations, reviews, and purchases influenced by social connections (Wang & Zhang, 2012).

While both web communities and Fr2Fr SC leverage social interactions, the latter explicitly integrates these interactions into the purchasing process, making social influence a critical component of the shopping experience. In web communities, the primary value is derived from the exchange of information and support, whereas in Fr2Fr SC, the value is also derived from the social validation and trust embedded in personal recommendations (Liang et al., 2011).

2.6 LOGISTICS SERVICE QUALITY

Service quality (SQ) has been one of the most popular research areas and has attracted the attention of scholars and practitioners across the world (Parasuraman et al., 1991; Johnston, 1995; Santos, 2003; Seth et al., 2005; Collier & Bienstock, 2006; Rolland & Freeman, 2010; Blut, 2016; Boonlertvanich, 2019; Raza et al., 2020; Nunkoo et al., 2020; Hallencreutz & Parmler, 2021).

In its most potent form, SQ is an assessment of a service's perceived expectations (E) and perceived performance (P), resulting in the equation "SQ=P-E" (Lewis & Booms, 1983). The expectancy-disconfirmation paradigm inspired this interpretation of SQ (Oliver, Balakrishna & Barry, 1994). According to business literature, SQ is a customer service achievement (Kenzelmann, 2008). It echoes at every service encounter. The service expectations are a function of past experiences, word-of-mouth and marketing communications (Parasuraman et al., 1991). Customers generally compare perceived and expected service; if the former falls short of the latter, they are dissatisfied. The 4I

properties, namely intangible, inseparable, inconsistent and inventory, make services difficult to manage compared to products. The SQ is studied in varied service contexts like banking, hospitality, education, insurance, and retail, to name a few. Published literature argues that SQ has been studied extensively in the Business to Business (B2B) and Business to Consumer (B2C) conducted through online and offline modes (Vazquez et al., 2001; Collier and Bienstock, 2006; Xing et al., 2010; Patten et al., 2020).

SERVQUAL scale, developed by Parasuraman, Zeithaml and Berry (1985), has been used to study B2C service quality extensively in the services marketing literature. SERVQUAL works effectively in consumer applications where the provider performs intangible actions for the customer. Furthermore, SERVQUAL was unsuitable for the B2C electronic shopping setting. E-SERVQUAL was developed by Parsuraman et al. (2005) and is focused on physical distribution, efficiency, system availability, and privacy. However, just the physical distribution failed to fully explain the nuances of order fulfilment aspects of B2B transactions. PDS focuses on the transactional components of the order fulfilment process, such as the actions that enable the movement of goods/material and information from the origin to the consumption point (Lambert & Stock 1993). PDS quality has given rise to logistics service quality (LSQ) and is a critical concept in offline and online retailing (Rao et al., 2011; Jain et al., 2021). LSQ in online retailing refers to the level of excellence in the delivery and fulfillment processes, including factors like speed, accuracy, reliability, and responsiveness to customer needs.

2.6.1 Bibliometric Analysis: Logistics Service Quality

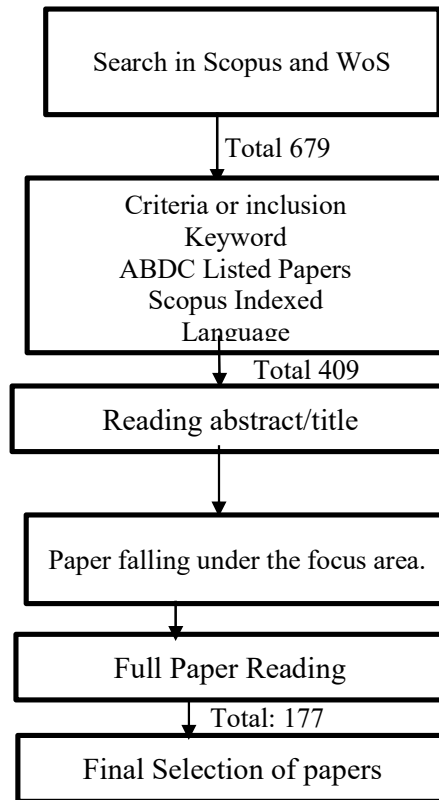
A search was made on both Web of Science (WoS) and Scopus databases using a combination of keywords: logistics service quality, e-fulfilment, e-fulfillment, online

product delivery, online order fulfilment, online order fulfillment and online retailing. This search returned 177 articles, which were then identified and selected for analysis. Bibliometrix, an R-tool that offers complete mapping of science and VoS viewer, has been used to analyze the dataset. This study has used the science mapping approach as suggested by Donthu et al. (2021). More specific details and a flowchart of articles are provided in Table 2.3 and Figure 2.1, respectively.

Table 2.3: Key Information of the LSQ Articles Published in WoS and Scopus Database

Research Procedure	Description
Selection of databases Criteria (Filter)	Searches were performed in two key databases: Scopus and WoS Business, Management and Accounting, Decision Sciences, Social Science, Economics, Econometrics & Finance, Arts and humanities, Multidisciplinary (Scopus only)
Document Type (Filter)	Multidisciplinary Sciences, Operations Research, Management Science, Social Sciences Interdisciplinary, Transportation, Transportation Science Technology (WoS only)
Language	Article
Timeframe	Research papers published in the English language were considered 2001 to 2021
Search Criteria	Keywords, title, abstract
Search terms	Logistics service quality, Logistic service quality, e-fulfilment, e- fulfilment, online product delivery, online order fulfilment, online order fulfilment, online retailing
Inclusion criteria	Paper focused on LSQ in business-to-consumer online shopping, ABDC and Scopus Listed
Exclusion criteria	Duplicity, paper not falling under focus area, Not ABDC and Scopus indexed
Data analysis	Using Bibliometrix called Biblioshiny and VoS viewer

Source: Dhaigude & Mohan (2023a)



Source: Dhaigude & Mohan (2023a)

Figure 2.1: Flowchart of LSQ Articles Collection from WoS and Scopus Database

Table 2.4 summarizes the basic details about the dataset obtained from WoS and Scopus, covering articles on LSQ in Business to consumer (B2C) online shopping. The table provides a variety of useful statistics, e.g., the average citation per article is 45.50, and there are 2.25 authors per document.

Table 2.4: Basic Information: Articles Published on LSQ in B2C Online Shopping

Description	Results
Documents	177
Sources (Journals)	78
Keywords Plus (ID)	633
Author's Keywords (DE)	470
Period	2001:2021
Average citations per document	45.50
Authors per Document	2.25
Co-Authors per Documents	2.88
Collaboration Index	2.35

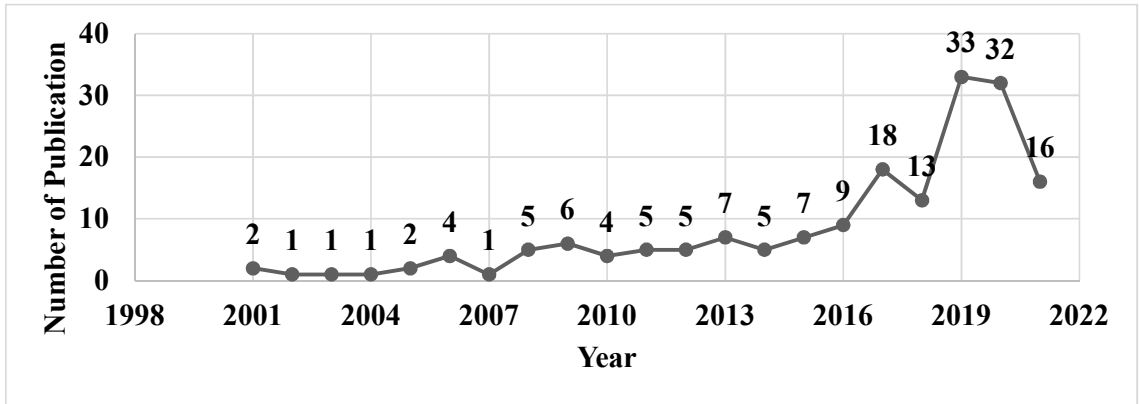
Source: Dhaigude & Mohan (2023a)

2.6.1.1 Journals and Time-Wise Distribution on Logistics Service Quality In

Business to consumer

The yearly output of publications on LSQ in B2C online shopping is depicted in Figure 2.2. In 2001, the first paper on LSQ in B2C online shopping was published. The same trend of low output continued till 2007. However, the low number of articles from 2001 to 2007 is understandable as online shopping was in its inception stage and recovering from the bubble burst of the year 2000. In this period, most online retail transactions were buying software and basic things like books, CDs, and other low-involvement products (e.g., Ward 2001), and e-tailers' focus was on winning the trust of consumers and increasing the adoption of online shopping (Kolsaker & Payne, 2002). This led to more focus on fields like website design, secure payment, referrals, product assortment, and logistics being ignored.

From 2008 to 2016, there were, on average, almost six publications per year. LSQ was getting attention during this period, and researchers started to acknowledge that logistics could be a differentiator and needed to be studied (Gil Saura et al. 2008; Rao et al., 2011). As the B2C e-commerce was booming, activities like atmospheric qualities of a virtual store (Eroglu et al., 2001), electronic trust (Mukherjee & Nath, 2007), user acceptance (Ahn et al., 2007), ethics in online retail (Román, 2007), and service failure and recovery (Holloway & Beatty, 2003) were getting momentum and LSQ in B2C started to emerge as an independent field. The year 2017 witnessed the first jump when 18 articles were published. After that, the number of articles kept increasing, except in 2018, and 33 and 32 articles were published in 2019 and 2020, respectively. By early 2021, 16 articles have already been published, and the number is expected to increase.



Source: Dhaigude & Mohan (2023a)

Figure 2.2: Year-Wise Distribution of Articles on LSQ in B2C Online Shopping

2.6.1.2 Most Relevant Sources for Logistics Service Quality

Tables 2.5 and 2.6 depict the distribution of the most prominent journals that published B2C e-tailing research on LSQ. The 177 articles are spread across 78 journals. *The European Journal of Operational Research* tops the list with 13 articles to date. This result is expected as one of the focus areas of the journal is logistics management. *International Journal of Physical Distribution and Logistics Management* comes second with 12 articles, followed by the *International Journal of Retail and Distribution Management* with 11 articles, followed by the *International Journal of Production Economics* with eight articles. *Journal of Business Logistics*, *Journal of Operations Management* and *Transportation Research Part E: Logistics and Transportation Review* have seven articles each. LSQ in B2C online shopping is a matter of physical distribution, and its increasing presence in these reputed journals is encouraging. Furthermore, several of these outlets have an A*/A and 3-to-4-star rating from the Australian Business Deans Council (ABDC) and the Chartered Association of Business Schools (CABS). These ratings indicate that the discipline is recognized among high-quality business and management journals.

Table 2.5: Most Relevant Sources for Logistics Service Quality

Journal Name	ABDC Ranking	CABS Ranking	Publisher	TP
European Journal of Operational Research	A*	4	Elsevier	13
International Journal of Physical Distribution and Logistics Management	A	2	Emerald Group Publishing	12
International Journal of Retail and Distribution Management	A	2	Emerald Group Publishing	11
International Journal of Production Economics	A	3	Elsevier	8
Journal of Business Logistics	A	2	John Wiley & Sons, Inc.	7
Journal of Operations Management	A*	4*	Wiley-Blackwell Publishing	7
Transportation Research Part E: Logistics and Transportation Review	A*	3	Elsevier	7
International Journal of Production Research	A	3	Taylor & Francis Online	5
Naval Research Logistics	B	3	Wiley-Blackwell Publishing	5
International Journal of Logistics Research and Applications	B	1	Taylor & Francis Online	4
Journal of Retailing and Consumer Services	A	2	Elsevier	4
Manufacturing and Service Operations Management	A*	3	INFORMS	4
Asia Pacific Journal of Marketing and Logistics	A	NR	Emerald Group Publishing	3
Production and Operations Management	A*	4	Wiley-Blackwell Publishing	3
Transportation Research Part A: Policy and Practice	A*	3	Elsevier	3

NR= Not ranked. TP = Total publications. *Source: Dhaigude & Mohan (2023a)*

Table 2.6: Top Authors, Institutions, and Countries in LSQ Literature

Top Authors		Top institutions		Top countries	
Authors	TP	Affiliations	TP	Country	TP
Hübner A	6	Auburn University	11	USA	161
Rao S	6	Catholic University	11	China	100
Griffis S E	5	Michigan State University	10	Germany	35
Kuhn H	5	University Of South Carolina	7	UK	32
Goldsby Tj	4	Villanova University	7	India	27
Holzappel A	4	University of Vigo	6	Canada	18
Hu X	4	Dalian University of Technology	5	Netherlands	15
Ishfaq R	4	Indian Institute of Management Indore	5	Sweden	14
Mahar S	4	Izmir University of Economics	5	France	12
Rabinovich E	4	University of Arkansas	5	Spain	12
Wollenburg J	4	Xi'an Jiaotong University	5		
Gajjar H	3				
Jain Nk	3				
Shah Bj	3				
Sorkun M F	3				
Wright P D	3				
Zhang Y	3				

TP = Total publications Note: Country count is based on author affiliations. For example, if one paper has five authors belonging to three different countries, the country count is treated as three.

Source: Dhaigude & Mohan (2023a)

2.6.1.3 Highest Cited Logistics Service Quality Articles

Citation count helps to explore the citation volume an article has accumulated over a specific time interval. Generally, an article with relatively more citations is more prominent and influential than a less cited one. Citation analysis is one of the most recommended approaches for mapping the impact of a scholarly article (Tsay, 2009). Table 2.7 displays the distribution of the ten most widely cited articles on LSQ in B2C online shopping globally and locally between 2001 and 2021. Global citations relate to the frequency of citations of a document by other publications throughout all databases, including different domains and scientific subjects. On the other hand, local citations reveal how many times other articles in this 177-node network reference an article. Results show that Agatz et al. (2008) and Lee and Whang (2001) are the highest globally cited articles with 603 and 445 citations respectively. Hübner et al. (2016) and Hübner et al. (2016) fall in third and fourth positions with 287 and 254 citations. Therefore, these articles are the most influential, flooring further research on LSQ in B2C online shopping. They offer a theoretical base supporting the different logistics models for effective and efficient e-fulfilment. Also, they delivered crucial empirical evidence on supply chain management (SCM) for e-commerce and integrated omnichannel fulfilment.

The paper, which has significant local citations, can be considered an influential work on LSQ in B2C online shopping. Hübner et al. (2016) rank first with 15 local citations, followed by Hübner et al. (2016) with 13 local citations. Therefore, A. Hübner, J. Wollenburg, A. Holzapfel, and H. Kuhn are regarded as the most important contributors to the body of knowledge in this field. It can further be inferred that besides building the foundation for the field, the dynamics of SCM of omnichannel retail is the most influential topic in the scholarly network. The apparent disparity in local and global

citations indicates that other disciplines have taken an interest in LSQ in B2C online shopping.

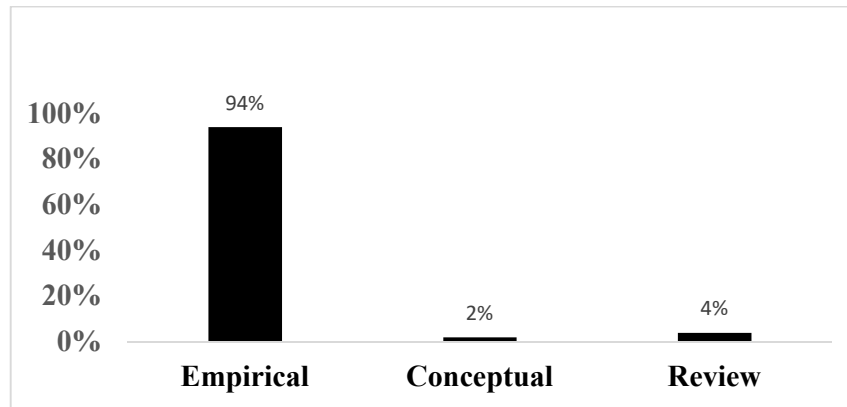
Table 2.7: Highest Cited Logistics Service Quality Articles

Rank	Authors and Journal	Global Citations	Local Citations
1	Agatz N.A.H., 2008, European Journal of Operational Research	603	3
2	Lee H. L., 2001, MIT Sloan Management Review	445	5
3	Hübner A., 2016, International Journal of Retail and Distribution Management	287	12
4	Hübner A., 2016, International Journal of Physical Distribution and Logistics Management	254	15
5	Weltevreden J.W.J., 2008, International Journal of Retail and Distribution Management	217	0
6	Hübner A., 2016, Business Research	196	13
7	Boyer K.K., 2006, Journal of Operations Management	194	7
8	Lewis et al., 2006, Marketing Science	194	6
9	Griffis S.E., 2012, Journal of Operations Management	189	6
10	Heim G.R., 2001, Manufacturing & Service Operations Management	177	3

Source: Dhaigude & Mohan (2023a)

2.6.1.4 Logistics Service Quality Articles by Study Method

Research on LSQ in B2C online shopping has been conducted using a variety of research approaches. The 177 papers are manually classified into three broad research methodologies to examine the different modalities of research employed (Brozovic, 2018): empirical, conceptual/theoretical, and review. The goal of conceptual studies is to create a framework grounded in a theory/concept. Empirical studies use surveys, experiments, simulations, heuristics, and mathematical modelling to assess LSQ levels and evaluate factors and experiments to quantify the impact of various aspects on online retailing. Review studies look back on earlier research and propose the way ahead. Figure 2.3 presents the proportion of different study techniques applied in LSQ research. 94 per cent of the 177 studies are empirical, barely 2 per cent are conceptual, and only 6 per cent are reviews. None of the studies traces the development of LSQ in B2C online shopping through a bibliometric analysis.



Source: Dhaigude & Mohan (2023a)

Figure 2.3: Distribution by Study Method

2.6.1.5 Co-Occurrence Network for Logistics Service Quality

The co-occurrence structure based on author keywords is shown in Table 2.8. The results show that the 16 keywords can be divided into three groups. The first cluster contains four items, the second contains nine items, and the third cluster contains three items. Each cluster is dominated by online retailing, e-commerce and omnichannel retailing, respectively. These results match with earlier results and reinforce the validity of our findings.

Table 2.8: Co-Occurrence Structure Based on the Author Keywords

Node	Cluster	Btw centrality
Online retailing	1	165.57
Customer satisfaction	1	7.82
Logistics service quality	1	1.50
Product returns	1	1.80
E-commerce	2	360.74
Order fulfillment	2	57.98
Supply chain management	2	3.49
Retailing	2	2.52
Logistics	2	0.30
Online shopping	2	9.15
Drop-shipping	2	37.00
E-grocery	2	1.07
Distribution management	2	0.67
Omnichannel retailing	3	238.05
E-fulfillment	3	13.30
Buy-online-and-pick-up-in-store	3	3.05

Source: Dhaigude & Mohan (2023a)

LSQ is made up of two dimensions: operational LSQ and relational LSQ. The following section provides insights into these two phenomena.

2.6.2 Operational Logistics Service Quality

The origins of Operational logistics service quality (OLSQ) can be traced back to Mentzer et al.'s pioneering work (1989; 2001). These scholars looked at PDSQ from three perspectives: availability, timeliness, and condition. Availability refers to the accessibility of products for purchase on the online retail platform. It includes factors such as having the desired products in stock, providing accurate and up-to-date information on product availability, and ensuring that customers can easily find and select the products they wish to purchase. And the Timeliness refers to the speed and reliability of the delivery process. It includes factors such as the speed of order processing, shipping, and delivery, as well as the accuracy of delivery estimates provided to customers. Timeliness also involves meeting or exceeding promised delivery timelines and providing customers with timely updates on the status of their orders. These LSQ qualities are linked to customer satisfaction by Mentzer et al. (2001) by capturing nine dimensions of LSQ as features of order placement and order receipt. Previous research (Bienstock et al., 1996, Emerson & Grimm, 1996, Mentzer et al., 1989, 2001) looked at different aspects of PDSQ, including delivery quality, delivery timeliness, product availability, order condition and order status information. However, the majority of these studies looked at them in a B2B setting, but they can also be applied to B2C, multichannel retail, and pure e-tailing.

Hüseyinolu et al. (2018) looked into how LSQ affects omnichannel capability. The study's goal was to learn how customers felt about delivery and return options. The study found that availability is critical in LSQ. According to Jain et al., (2021), the most

crucial e-LSQ characteristic is shipment condition, and its relationship with shopping satisfaction differs depending on payment choices, gender, and returning experience.

2.6.2.1 Operational Logistics Service Quality and Customer satisfaction

Thirumalai and Sinha (2005) studied customer satisfaction with order fulfilment according to different product types. Otim and Grover (2006) argued that customer loyalty is positively influenced by post-purchase services, namely on-time delivery, order tracking, and customer care support. Using archival data on retailers, Rao et al. (2011) created the notion of electronic LSQ (e-LSQ) to understand the link between e-fulfilment quality and its influence on consumer loyalty. They discovered that customer satisfaction with the e-LSQ is linked to customer satisfaction with their purchases and customer retention.

Billing accuracy was added by Koufteros et al. (2014) as an order fulfilment service quality construct. According to Murfield et al. (2017), omnichannel customers are unique, and each of the three LSQ aspects (condition, availability, and timeliness) has a distinct impact on customer satisfaction.

2.6.3 Relational Logistics Service Quality

The root of relational logistics service quality (RLSQ) can be traced in seminal works by Stank et al., (2003) and Mentzer et al., (1999). The LSQ level supplied by merchants is determined by the physical components of service distribution and the relational aspect of service delivery (Stank et al., 1999, Stank et al., 2003, Davis-Sramek et al., 2008). According to these authors, not only do OLSQ aspects (delivering the correct services/products in the right amount, to the right place, and at the right time) matter, but the relational side of logistics (contact staff quality) impacts satisfaction. For example, Mentzer et al., (1999) looked at personnel contact and information quality, whereas other scholars have looked at relationship qualities, including personnel

quality, assurance, empathy and reliability (e.g., Bienstock et al., 2008; Gil-Saura et al., 2010).

Assurance refers to the confidence and trust that customers have in the online retailer's ability to deliver high-quality products and services consistently. It encompasses factors such as providing clear and accurate information about products, policies, and procedures, as well as offering guarantees or warranties to reassure customers about the reliability and credibility of the online shopping experience. Responsiveness refers to the online retailer's willingness and ability to address customer inquiries, concerns, and requests promptly and effectively. It includes factors such as providing timely responses to customer queries and feedback, offering multiple channels of communication for customer support (e.g., live chat, email, phone), and resolving issues or complaints in a satisfactory manner to enhance customer satisfaction and loyalty. And empathy refers to the online retailer's understanding and consideration of the customer's needs, preferences, and emotions throughout the shopping journey. It involves factors such as demonstrating empathy and compassion in interactions with customers, personalizing communication and recommendations based on customer preferences and past behavior, and going above and beyond to anticipate and fulfill customer needs to create a positive and memorable shopping experience.

Operational LSQ is defined as “*the ability to perform the promised service dependably and accurately*” and relational LSQ as “*the store’s (or service provider’s) ability to understand customer needs and expectations*” (Bouzaabia et al., 2013, p. 635). In order to determine the LSQ level, the relational part of LSQ considers the employee's role, assurance, responsiveness, and caring. Rita et al., (2019) focused their study on Indonesian consumers to understand the impact of service quality on customer satisfaction. They highlighted that personnel quality is not a significant factor in the

Indonesian sample. The reason may be that not all customers need support in each transaction, so personnel quality is insignificant in the study. Apart from highlighting the insignificance of personnel quality, Rita et al., (2019) also urged future research to understand service quality in some other context.

Customers' switching costs are low in online marketplaces (Cho et al., 2008); hence, e-tailers must pay close attention to LSQ to stay competitive (Marino et al., 2018; Lim et al., 2018). In Internet shopping, the separation of geography and time generates consumer concerns and expectations (Daugherty et al., 2019). Customers want their purchases to arrive swiftly, in good condition, and exactly as depicted on the website (Han & Xie, 2019). Three critical features of OLSQ are underlined in light of these issues: timeliness, accuracy, and order condition (Murfield et al., 2017). Another important feature of LSQ in online sales is the simplicity with which it may be returned (Jain et al., 2017). As the customer can not physically inspect, see or try the product in online shopping hence the rate of return is higher than in offline shopping (Melacini et al., 2018; Agatz et al., 2008). This shortcoming highlights the necessity of the online retailer's buying advice to customers; as a result, the relational dimensions of LSQ are emphasized during the order fulfilment process. Customers are looking for a quick and relevant response from the online seller to reduce the transaction time; hence, communication from them should be strong and clear to assist the customer in buying (Han & Xie, 2019).

2.6.3.1 Relational Logistics Service Quality and Customer Satisfaction

Scholars such as Bienstock et al. (2008) and Gil-Saura et al. (2008/2010) worked on RLSQ to understand its impact on customer satisfaction. Gil Saura et al. (2008) studied the LSQ and its effect on satisfaction among Spanish manufacturer companies (B2B). They found that customer contact personnel quality (assurance, empathy and

responsiveness) significantly impacts customer satisfaction. The authors tried to understand LSQ with the advancement of information and communication technology and its effects on loyalty in B2B and B2C contexts. They found that apart from OLSQ, service providers should focus on customized information and reply to queries, i.e., the relational aspect (reliability and empathy) of LSQ, especially in the B2C context, to improve customer satisfaction. Bouzaabia et al. (2013) have measured the LSQ in a B2C environment from the consumer's standpoint. They concluded operational and relational LSQ are the two main factors that impact consumer satisfaction.

RLSQ will lead to high-quality personnel equipped with strong communication skills and product knowledge enables personalized assistance, fostering positive customer-retailer interactions. Moreover, assurance, established through transparent communication about shipping policies and return procedures, instills confidence in customers regarding their transactions. Finally, empathy demonstrated by actively listening to customer feedback and offering personalized solutions enhances customer satisfaction.

2.7 CUSTOMER EXPERIENCE IN THE CONTEXT OF SOCIAL COMMERCE

Customer Experience (CX) is a result of a divergent view from a strictly 'logical perspective' of the purchase process. Holbrook & Hirschman (1982), for instance, explored CX by widening the understanding of consumer behaviour by considering "experiential dimensions of consuming." In fact, the new experiential view considered the dominant cognitive-informational aspects along with subjective inputs (including personality traits, creativity, and religion) and consumers' affective reactions to environmental inputs (i.e., sensory responses to non-verbal stimuli, figurative benefits of products/services, and emotional responses). According to this experiential perspective, a consumer not only chooses a product logically during the consumption

process but also acts in reaction to both the subjective and objective inputs. As a result, the experiential view incorporated additional courses (experiential) of output consequences for customers with the utility of goods and services, such as pleasure, happiness, fun, and joy. Holbrook & Hirschman's (1982) study, which is regarded as a pioneer of CX, along with concurrently emerging ideas of customer satisfaction (Oliver, 1980) and service quality (Parasuraman et al., 1988) in the 1980s, contributed to the identification of antecedents of the CX discipline. Some of these major milestones of CX literature are summarized in Table 2.9.

In the context of e-commerce, CX has been well-researched (Petre et al., 2006, Chen & Yang, 2021); while in the SC context, CX literature has been emerging, and scholars have explored the role of various factors, such as customer reviews (Kawaf & Istanbuluoglu, 2019), social influence (Nakhata & Kuo, 2014), trust towards seller/SC/friends (Su et al., 2021), perceived risk (Molinillo et al., 2020) and group buying (Xiao et al., 2017) on CX.

Table 2.9: Major Milestones of the Customer Experience Literature

CX literature milestone	Source
Influence of the service encounter theory: Experience is a function of encounters and is influenced by variables like customers, employees, and physical surroundings.	Bitner (1990, 1992)
Theory of CX: Notion of an extraordinary experience	Arnould & Price (1993)
CX in managerial practice: Focus on creating memorable experiences	Pine & Gilmore (1998)
Shift from extraordinary experiences to everyday experiences, reduction in levels of hedonism	Carù & Cova (2003)
service-dominant logic theory: Value co-creation highlights the Customers' roles as co-producers of their own experiences and as value proponents within businesses.	Vargo & Lusch (2004, 2008)
Dynamic-temporal dimension: past experiences have an impact on current and future ones.	Verhoef et al. (2009)
Convergence of CX and customer journey	Lemon & Verhoef (2016)

Source: Dhaigude and Mohan (2024)

2.7.1 Bibliometric Analysis: Customer Experience in the Context of Social Commerce

A search was made on both WoS and Scopus databases using a combination of keywords provided in the annexure. This search returned 116 articles, which were then identified and selected for analysis. Bibliometrix, an R-tool that offers complete mapping of science and VoS viewer, has been used to analyze the dataset. This study has used the science mapping approach as suggested by Donthu et al. (2021). More specific details of research procedures are provided in Table 2.10.

Table 2.10: Research Procedures: Customer Experience in the Context of SC

Research Procedure	Description
Selection of databases	Searches were performed in two key databases: Scopus and WoS
Criteria (Filter)	Business, Management and Accounting, Computer Sciences, Decision Sciences (Scopus only); Computer Science Theory Methods, Computer Science Artificial Intelligence, Computer Science Information Systems, Business, Management, Computer Science Interdisciplinary Applications, Behavioral Sciences, Computer Science Cybernetics (WoS only)
Document Type (Filter)	Article
Language	Research papers published in the English language were considered
Timeframe	2005 to 2021
Search Criteria	Keywords, title, abstract
Search terms	Social Commerce Context, Consumer experience and Consumer Outcome
Inclusion criteria	Paper focused on social commerce and customer experience in ABDC A and A* Journal
Exclusion criteria	Duplicity, paper not falling under focus area, non-journal and non-top tier journal outlets
Data analysis	Using Bibliometrix called Biblioshiny and VoS viewer

Source: Dhaigude and Mohan (2024)

2.7.1.1 Articles in Web of Science and Scopus Focusing on Customer Experience in SC

We compiled the dataset, including papers on CX in SC from data compiled through WoS and Scopus (Table 2.11). This table shows a number of important statistics; for example, 72.58 and 2.34 refer to mean citation per article and authors per article respectively.

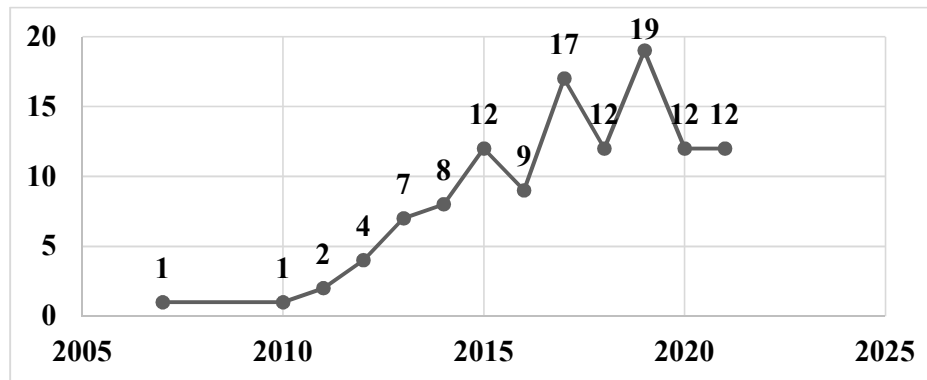
Table 2.11: Articles In WoS and Scopus Focusing on Customer Experience in SC

Description	Results
Documents	116
Sources (Journals)	39
Keywords Plus (ID)	430
Author's Keywords (DE)	364
Period	2005:2021
Average citations per documents	72.58
Authors	271
Author Appearances	329
Authors of single-authored documents	13
Authors of multi-authored documents	258
Single-authored documents	16
Documents per Author	0.428
Authors per Document	2.34
Co-Authors per Documents	2.84
Collaboration Index	2.58

Source: Dhaigude and Mohan (2024)

2.7.1.2 Time-Wise Distribution: Customer Experience in Social Commerce

Figure 2.4 shows the annual scientific yield of papers on CX in SC. The first paper on CX in SC was published in 2007; the trend continued till 2015. 2016 witnessed the first drop in the number of papers, but the growth trajectory continued, amounting to 19 papers published in 2019. By February 2022, there are already 12 papers published matching the 2021 number, and there will be more papers in months to come, most probably surpassing the highest figures of 19 papers published in 2019.



Source: Dhaigude and Mohan (2024)

Figure 2.4: Time-Wise Distribution: On CX in SC

Within the period 2007-2015, most of the research scholars were trying to understand pre-purchase behaviour via buying/purchase intention (Ng, 2013; Hajli, 2015), SC intention (Hajli & Sims, 2015), group buying intention (Ku, 2012; Lim & Ting 2014, Lim, 2015), social commerce intention (Hajli, 2014) of customers in SC. As noted earlier, there was a slight dip in the number of papers in 2016, wherein most scholars' attention was on seller characteristics in terms of information disclosure (Tseng & Lee, 2016), relationship quality (Zhang et al., 2016), and SC seller trustworthiness (Lu et al., 2016).

2017 to 2019 witnessed more than ten papers being published, showing the scholars' attention in the field, whereby most of the scholars tried to understand the actual purchase/actual use (Nadeem et al., 2017), repurchase intention (Cheng et al., 2019), loyalty (Wu & Li, 2018; Zhang et al., 2018) and word of mouth (Mikalef et al., 2017, Yang, 2019).

2020 and 2021 witnessed the same number of paper scholars' community focused in these eras on customer engagement (Molinillo et al., 2020), institution-based trust (Hajli, 2020), trust in products and seller/retailer (Irshad et al., 2020), trust toward a friend (Su et al., 2021), among others.

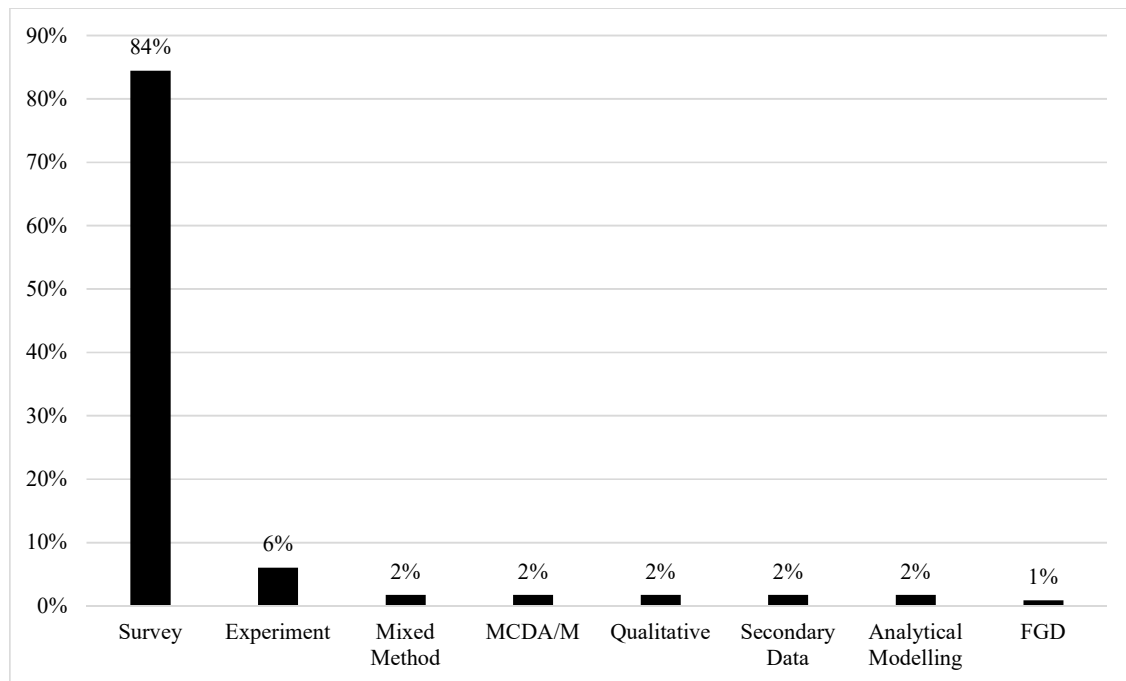
In summary, the year-wise trend witnessed scholars' attention in three major categories:

a) the pre-purchase stage, how the intention to use a website and intention toward SC

was explored; b) the actual purchase behaviour of customers was captured; c) customer engagement perspective on trust and impulse buying behaviour, along with revisit intention was captured.

2.7.1.3 Articles by Study Method: Customer Experience in Social Commerce

Many different study methodologies have been used in CX in SC research. In order to investigate the various research modalities used in the field, we categorized 116 papers manually into seven different study procedures (Brozovic, 2018) that include survey, experiment, multi-criteria decision attributes/methods, qualitative, secondary data, analytical modelling, and mixed methods. The percentage of various study approaches used in CX in SC research. Notably, 84% of the 116 studies that we looked into were survey-based, while 6% used experimental techniques, 2% each used multi-criteria decision attribute, qualitative, and secondary data, and finally, 1% each used the mixed method and analytical modelling (Figure 2.5).



Source: Dhaigude and Mohan (2024)

Figure 2.5: Articles By Study Method: Customer Experience in SC

We noted that surveys, experiments, simulations, heuristics, and mathematical modelling were used in empirical articles to determine CX levels, identify antecedents and consequences, and conduct experimentations to measure the effects of these factors in SC settings. Further, it may be noted herein that using a survey method, it is possible to conduct interviews with a predetermined group of people to gather information for a project. We carried out an experimental investigation, employing a scientific method, along with two sets of variables. Notably, the term 'mixed methods' refers to using both quantitative and qualitative research methodologies within the same research. Furthermore, in multi-criteria decision attributes/methods, researchers need to make choices while ranking or selecting among options, which, in turn, necessitates taking into account numerous criteria (or objectives) at once. The aim of qualitative research, on the other hand, is to gain a complete knowledge of social phenomena within their natural settings. Hereby, researchers do have the possibility to access previously collected study data, known as secondary data. Further, an analytical model is a quantitative tool that helps with decision-making and provides an answer to a specific query. Focus groups are a type of qualitative study where participants are questioned about their perceptions, opinions, and attitudes relating to a concept, service, advertisement, etc.

2.8 CUSTOMER SATISFACTION IN THE CONTEXT OF FRIEND-TO-FRIEND SOCIAL COMMERCE

In Fr2Fr, the SC customer experience encompasses all the interactions and touchpoints a customer has with the SC seller throughout their journey, from initial awareness to post-purchase support. Customer experience refers to the overall impression and interaction a customer has with a Fr2Fr SC seller throughout the entire shopping journey, from initial enquiry to making a purchase and receiving post-purchase support

(Grewal, Levy, & Kumar, 2009; Rose et al., 2012; Dhaigude & Bijuna, 2024). Customer experience includes factors such as communication, responsiveness, social media app usability, product quality and overall interaction quality (Gentile, Spiller, & Noci, 2007). When customers have a positive experience in Fr2Fr SC, they find the process of discovering, evaluating, purchasing, and receiving the product enjoyable, efficient, and hassle-free. Positive experiences are often associated with factors like user-friendly interfaces, helpful customer support, timely delivery, and high-quality products, thereby leading to customer satisfaction (Becker & Jaakkola, 2020; Ejaz et al., 2013; Kumar et al., 2022).

In the retailing context, scholars like Oliver et al. (1997), Yu and Dean (2001) and Sukhu et al. (2019) have indicated that an important factor in getting positive WOM and customer satisfaction is positive emotions. Zaranenello and Schmitt (2010), Pei et al., (2020), and Kim and Kim (2022) argued that experience can enhance customer attention, brand reliability and customer satisfaction. A positive customer experience in Fr2Fr SC can significantly enhance customer satisfaction by ensuring that customers not only receive quality products or services but also have a smooth and enjoyable journey throughout their interaction with the seller on Fr2Fr SC platforms (Tajvidi et al., 2021).

OLSQ and RLSQ are important touch points in the Fr2Fr SC context as they induce various cognitive, emotional, sensory, and social responses impacting the customer experience, which ultimately leads to customer satisfaction. For example, the timeliness dimension of OLSQ will invoke the feeling of being valued and a positive customer experience, whereas the assurance, responsiveness and empathy aspects of RLSQ induce the feeling of trust. The overall positive experience and trust will impact

customer satisfaction. Therefore, customer experience and trust play a crucial role in attaining customer satisfaction.

2.9 STIMULUS-ORGANISM-RESPONSE FRAMEWORK

Consumer behaviour in SC is a complex and multifaceted area of study that delves into the intricacies of why individuals make the choices they do on social media. In this context, the Stimulus-Organism-Response (SOR) framework emerges as a valuable model for comprehending the dynamic interplay between external influences, internal processes, and observable behaviours. This framework provides a structured lens through which researchers and marketers can analyze and understand the various factors that contribute to the consumer decision-making process in SC.

According to Mehrabian Russell's (1974) stimulus-organism-response (SOR) model, environmental inputs impact emotions and subsequent behaviour. This theoretical framework explains how internal physiological and psychological reactions to external stimuli affect behavioural outcomes. Stimulus is caused externally; the body is the intermediate connection, and response is an outcome of the stimulus and the body's direct or indirect interaction. These three stages are closely related.

2.9.1 Stimulus

The SOR framework begins with the stimulus, representing the external triggers that initiate the consumer's cognitive and emotional processes. These stimuli can take diverse forms, including advertising messages, product displays, social media recommendations, or even word-of-mouth communication. The effectiveness of these stimuli lies in their ability to capture attention and spark interest, setting the stage for the subsequent stages of the decision-making process.

In the SC milieu, stimuli encompass a myriad of digital cues ranging from sponsored social media posts and influencer endorsements to user-generated content and peer

recommendations. These stimuli play a pivotal role in capturing the attention of social commerce participants and initiating the decision-making process. Understanding the effectiveness of different types of stimuli in this context is essential for marketers seeking to optimize their strategies and create impactful consumer engagements within social platforms.

2.9.2 Organism

The second component, the organism, delves into the internal state of the individual consumer. This encompasses psychological and emotional factors, such as attitudes, beliefs, motivations, and past experiences. The organism serves as the proverbial "black box" wherein the external stimuli are processed and interpreted. Individual differences, cultural influences, and personal predispositions all contribute to shaping the internal response to the stimulus.

The organism component in the SOR framework gains unique significance in the SC setting as it delves into the intricate internal processes of consumers navigating online social spaces. Factors such as trust in online communities, perceived social influence, and the desire for social validation contribute to shaping the organism's response to stimuli. Cultural nuances and individual user characteristics further influence the internal cognitive and emotional state, ultimately influencing the decision-making process within the realm of social commerce.

2.9.3 Response

The ultimate manifestation of consumer behaviour occurs in the response phase. This is the observable outcome, representing the consumer's decision or action in response to the stimuli and internal processes. Responses can encompass a wide range of behaviours, including making a purchase, expressing interest, seeking additional information, or even choosing to abstain from the decision altogether. Understanding

these responses is crucial for businesses seeking to tailor their strategies to meet the diverse needs and preferences of their target audience.

The observable responses within social commerce range from the straightforward act of making a purchase to more nuanced behaviours such as sharing product recommendations, leaving reviews, or participating in online discussions. These responses not only reflect individual preferences but also contribute to the social fabric of the digital community. Understanding the multifaceted nature of responses in social commerce is crucial for businesses aiming to foster user engagement and build a vibrant and loyal online community.

Extending the SOR model in our study, we argue that relational LSQ and operational LSQ belonging to the stimulus categories may significantly affect customer experience and satisfaction in the response category. For instance, an online interaction with a Fr2Fr SC seller who is courteous, helpful and kind results in a pleasant experience and impacts the customer's likelihood of revisiting. Similar to this in Fr2Fr SC, the seller is available to provide order delivery information to the customer's convenience as per their requirement, which leads to quality perception and positive experience to get satisfied customers.

Nunthiphatprueksa (2018) and Tian et al., (2022) found that favourable outcomes like positive WOM, repurchase intention, etc., can be achieved using service quality as a stimulus. The application of the SOR framework in the context of SC provides a valuable framework for researchers and practitioners seeking to unravel the intricacies of consumer behaviour in the digital age. By dissecting the stimuli that permeate social platforms, exploring the internal processes of users within these online spaces, and observing the diverse responses, this research contributes to a deeper understanding of the nuanced dynamics that govern social commerce interactions. The insights derived

from this analysis can inform targeted strategies for businesses navigating the complexities of consumer engagement within the evolving landscape of social commerce. Therefore, this study uses SOR theory as a base and considers LSQ of Fr2Fr SC act as the stimulus, customer experience as the organism, and finally, customer satisfaction as the reaction.

2.10 RESEARCH GAPS

OLSQ and RLSQ are two dimensions of the LSQ that, when combined, can provide a strong incentive for enterprises to obtain a competitive edge. OLSQ, the first LSQ dimension, is internal and operations-driven and includes delivery, availability, and condition characteristics. RLSQ, the second component of LSQ, reflects an external and market-oriented aspect that captures the firm's ability to recognize and respond to consumer requirements and build relationships through personalized human contact. According to Stank et al. (1999), these two dimensions are the co-varying antecedents of satisfaction. This indicates that more innovative companies in terms of operations are also more conscious of customer requirements and vice versa. The positive impact of logistics services on customer satisfaction has constantly been highlighted by Mentzer et al. (2001), Mentzer et al. (2004), Gil Saura et al. (2008) and Bienstock et al. (2008). Furthermore, various scholars have argued that RLSQ is positively related to customer satisfaction (e.g., Zhao & Stank, 2003, Davis-Sramek et al., 2008, 2009).

2.10.1 Research Gap 1

To examine the relationship between LSQ and customer retention, Rao et al. (2011) created the notion of electronic LSQ (e-LSQ). Using archival data from 260 online retailers, they discovered that customer satisfaction is linked to customer retention in e-commerce. Their studies focused on the operational part of LSQ (condition, timeliness and availability) and completely ignored the RLSQ with the argument that in online

shopping, the seller will interact with a customer only in the post-purchase stage (if there is any exchange /return required). Condition refers to the condition of shipment on arrival, timeliness refers to whether the package arrived on time, and availability refers to the availability of the product in stock.

Murfield et al. (2017) stated that omnichannel customers are unique and that each of the three LSQ aspects (condition, availability, and timeliness) on customer satisfaction is distinct. Jain et al., (2021) looked at the mediating effect of shopping satisfaction among e-LSQ and all three LSQ dimensions. They disagreed, claiming that the most critical e-LSQ dimension is shipment condition and that the relationship between payment options, gender, and return experience affects shopping satisfaction. This contradicts the findings of Murfield et al. (2017), who found the timing to be an essential factor.

Ma (2017) investigated the relationship between the delivery time aspect of the LSQ with customer satisfaction and purchase intentions. The author concluded that customer satisfaction is influenced by delivery time. Nguyen et al. (2019) investigated delivery speed and delivery fees in online purchases and showed that delivery fees are important. This study considered three types of goods: convenience, shopping goods, and speciality goods, which are related to shipping fees and customer satisfaction. This study contradicted Ma (2017), who argued that timeliness is significant. These studies tried to understand the most important operational LSQ, timeliness, but gave completely different results. There is a need to understand the timeliness aspect of the OLSQ. Hüseyinoğlu et al. (2018) investigated the impact of LSQ on the omnichannel retailing context. The study aimed to understand the customer perception of delivery and return options. The study highlighted that availability is vital in LSQ. Their findings

resonated with Vasić et al. (2021), indicating that the availability of products is a strong link to customer satisfaction.

Based on the above arguments, there is inconsistency in the published literature regarding the OLSQ dimensions (condition, timeliness and availability) and their impact on customer satisfaction in online commerce. The literature has explored the B2B and B2C context, but the same has not yet been studied in SC. This study is an effort to plug this gap in the literature by exploring the operational dimensions of LSQ and its impact on customer satisfaction in SC.

2.10.2 Research Gap 2

The relational side of LSQ and its importance was highlighted by Stank et al. (1999) in B2B purchases in the US context. They claimed that the relational component of LSQ focuses on activities that improve organizations' proximity to consumers to understand their requirements and expectations better and establish appropriate processes. Authors argue that relational LSQ, namely responsiveness, assurance and empathy, help service providers to increase customer satisfaction. Moreover, Davis (2006) stated that relational LSQ helps a firm to create closer bonds with customers by understanding their expectations toward the firm's relational activities. They also highlighted that RLSQ is comprised of reliability, responsiveness and empathy.

Some authors tried to combine two different perspectives of LSQ, namely relational and operational, to understand customer satisfaction (e.g., Bouzaabia et al., 2013; Gil Saura & Ruiz-Molina, 2011). Bouzaabia et al. (2013) examined retailers' LSQ among Romanian and Tunisian customers and investigated which LSQ dimensions most impact customer satisfaction. They discovered that OLSQ was an antecedent of satisfaction in Tunisian consumers, while RLSQ was an antecedent of satisfaction in Romanian customers. The result of the study showed inconsistency in the region

concerning RLSQ. However, Gil Saura & Ruiz-Molina (2011) tried to understand LSQ with the advancement of information and communication technology and its effects on loyalty in B2B and B2C contexts. They found that apart from OLSQ, service providers should focus on customized information and reply to queries, i.e., the relational aspect (reliability and empathy) of LSQ, especially in the B2C context, to improve customer satisfaction.

Scholars such as Bienstock et al. (2008); Gil-Saura et al. (2008) and Gil-Saura et al. (2010) worked on RLSQ to understand its impact on customer satisfaction. Gil Saura et al. (2008) studied the LSQ and its effect on satisfaction among Spanish manufacturer companies (B2B). They found that customer contact personnel quality (empathy and responsiveness) significantly impacts customer satisfaction. However, Rita et al., (2019) focused their study on Indonesian consumers to understand the impact of service quality on customer satisfaction. They highlighted that personnel quality is not a significant factor in the Indonesian sample. The reason may be that not all customers need support in each transaction, so personnel quality is insignificant in the study. Apart from highlighting the insignificance of personnel quality, Rita et al. (2019) also urged future research to understand service quality in some other context.

Based on the above arguments, there is inconsistency in the published literature regarding the RLSQ dimensions and their relationship with customer satisfaction in the various contexts of online commerce. In the SC setting, close, real-time interaction is happening with buyers and sellers in an online environment, making RLSQ an important dimension. However, studies exploring the role of RLSQ in the SC setting are scarce. This study attempts to fill this gap in the literature by exploring the dimensions of relational aspects of LSQ and its impact on customer satisfaction in SC.

2.10.3 Research Gap 3

2.10.3.1 The Mediating Role of Trust

Jang et al. (2013) looked at the impact of the LSQ on customer loyalty in a B2B setting. The authors used trust to understand loyalty and commitment better, arguing that customer satisfaction does not guarantee retention. The study found that OLSQ increases satisfaction but has no effect on trust, whereas RLSQ increases satisfaction and trust. The impact of trust on LSQ and customer satisfaction needs to be studied more thoroughly.

Strong and long-term relationships are based on trust between the firm and its customers (Bozic, 2017). SC qualities can generate customer trust (Kim & Park, 2013), which can lead to customer satisfaction and repurchase intention (Ventre et al., 2021). According to published literature, one of the most significant success criteria for all types of e-tailers (e.g., pure e-commerce, omnichannel retailers, SC) is trust because online businesses must lessen customers' concern and confusion about the risk of online transactions (Kim & Park, 2013; Hallikainen & Laukkanen, 2018; Tandon et al., 2020). A lack of trust can impair existing connections, resulting in consumer dissatisfaction, diminished buying intention, and top and bottom line along with competitive advantage for a firm (Bozic, 2017). Customers are more likely to shop from a retailer they trust, which reduces their price-searching behaviour since they want to know if the retailer offers the best prices and services (Lin et al., 2020). In the context of SC, the benefits of LSQ can be reaped only if there is trust between the seller and buyers.

LSQ is one of the most critical factors in determining whether an online business venture succeeds or fails, as argued in research gaps one and two (Rao et al., 2011; Jain et al., 2021). LSQ will assist e-tailers in bridging the physical gap between customers and e-tailers, allowing them to deliver the correct products/services in the right

condition within the agreed-upon timeframe, resulting in increased customer satisfaction and loyalty. However, as previously stated, trust is critical in SC, but unfortunately, published research on LSQ and trust in SC is lacking. If e-retailers cannot gain consumers' trust, the expected benefits of LSQ will not be realized. Trust in SC settings will increase adoption, justify a price premium, be ready to rely on the e-tailer, and reduce uncertainty (Lu et al., 2016; Hajli et al., 2017; Lin et al., 2019). More precisely, trust will aid online vendors in persuading customers that any promises made or expectations outlined in the LSQ will be fulfilled.

Empirical research supports the differentiation in the role of trust across RLSQ dimensions. Studies have shown that trust significantly mediates the relationship between relational service quality dimensions and customer satisfaction, but its mediating effect in more operational and transactional contexts is less pronounced (Ganesan, 1994; Chu, Lee, & Chao, 2012). Therefore, the decision to focus on trust as a mediator between RLSQ and customer satisfaction, but not OLSQ and customer satisfaction, aligns with existing literature and theoretical underpinnings.

In summary, trust is a critical mediator in relational contexts where interactions are more subjective and reliant on personal judgment. For operational aspects, direct influences on satisfaction are more immediate and less dependent on trust. This distinction justifies the differential treatment of trust in mediating the effects of OLSQ and RLSQ on customer satisfaction in the context of Friend to Friend (Fr2Fr) social commerce. However, no research has looked into the catalytical role of trust in the link between the LSQ and customer satisfaction in the SC context. As a result, this research aims to bridge this knowledge vacuum.

2.10.3.2 Mediation Role of Customer Experience

Alderson (1957) and Abbott (1955) considered the broader picture and stated customers are looking for satisfying experiences rather than products. Emotions are an integral part of human beings, and their importance in purchase decision-making is highlighted by various scholars (Holbrook & Hirschman, 1982; Hirschman & Holbrook, 1982; Thompson et al., 1989).

A broader view of Schmitt, Brakus & Zarantonello, (2015) stated that every service exchange, irrespective of nature/form, creates a customer experience. One strand of the published literature on customer experience considers it holistic in nature, which incorporates the customer's cognitive, emotional, sensory, social, and spiritual dimensions (Bolton et al., 2014; Lemke et al., 2011). On the other hand, Meyer and Schwager (2007, p. 2) stated that customer experience is the internal and subjective response customers have to any direct or indirect contact with a company. The conceptualization of customer experience is continuously evolving, and with the rise in the experience economy, the attention to customer experience in SC has become even more paramount as it directly impacts customer satisfaction. OLSQ is an important touchpoint in the SC context as it induces various cognitive, emotional, sensory, and social responses impacting the customer experience, which ultimately leads to customer satisfaction. For example, the timeliness dimension of OLSQ will invoke the feeling of being valued, this experience will impact customer satisfaction. Therefore, customer experience plays a mediating role in the OLSQ to customer satisfaction relationship.

On the other hand, the decision not to include customer experience as a mediator in the RLSQ-customer satisfaction relationship is supported by existing literature that emphasizes the direct influence of relational quality dimensions on trust and satisfaction (Crosby, Evans, & Cowles, 1990; Gefen, 2002). Trust, in this context, plays a more

critical role as it directly correlates with how relational quality attributes are perceived and their impact on customer satisfaction. Including customer experience as an additional mediator might have diluted the specific relational dynamics and their direct link to satisfaction.

Empirical studies have highlighted that while operational factors impact immediate customer experiences, relational factors directly foster trust and long-term satisfaction (Ganesan, 1994; Chu et al., 2012). Therefore, the conceptual framework and empirical focus of this study are aligned with the predominant theoretical perspectives, supporting the direct mediation of trust in RLSQ and customer satisfaction.

Therefore, the choice to focus on customer experience as a mediator in the OLSQ-customer satisfaction relationship, while emphasizing trust in the RLSQ context, aligns with established theoretical and empirical evidence. This approach ensures a clear and focused analysis of how different components of logistics service quality uniquely influence customer satisfaction in Fr2Fr SC.

Moreover, Lemon and Verhof (2016) strongly recommended that researchers should go beyond the normal paths with regard to the antecedents of customer experience and assess the combined effects of the elements that make up the "raw data" of the customer experience (e.g., service quality attributes, price image, brand, loyalty programs, external environments). A study by Olsson et al. (2022), which focused on understanding customer experience dimensions in unattended home delivery, highlighted the need for a new way of thinking about delivery services in retail. It is recognized widely that retail managers should focus on customer experience and satisfaction. Consequently, managers use last-mile delivery as a means of differentiation to achieve competitive advantage. Offering consumer-centric delivery services requires an in-depth understanding of consumer expectations, experience and

satisfaction. Thus, distribution managers are encouraged to measure customer experience to gain better insights into the various dimensions. In a similar context, this study tries to investigate the relationship between OLSQ and customer satisfaction through the mediation effect of customer experience.

2.10.3.3 Moderation Role of Gender

Gender differences are pointedly found in ICT, the internet, and email usage (Kim et al., 2011). Women were shown to be more patient than men, with greater repurchase rates and satisfaction scores (Mittal & Kamukura, 2001). Women found shopping to be more gratifying and enjoyable than men (Chou et al., 2015). According to Hwang and Lee (2018), female customers pay greater visual attention than males to purchasing attitudes and information. Females exhibit a higher link than males between materialism, store environment, and impulsive purchases, implying that women are more materialistic shoppers (Atulkar & Kesari 2018).

Women reported a substantially higher positive relationship between service quality and satisfaction than males (Sharma et al., 2012). Functional utilities such as transaction speed, convenience, and efficiency are more important to men. Women are more concerned about a supermarket's experience or relationship utility than males (Mortimer & Clarke 2011). Gender has previously been studied as a moderating factor to understand the link between loyalty (behavioural and attitudinal) and service quality (Darley & Luethge, 2019). As a result, in SC, gender may modify the relationship between the LSQ and customer satisfaction. Females would have a more significant impact on the association between shipping conditions and customer satisfaction. Given the gender discrepancies documented in the literature, this study attempts to evaluate the role of gender in the LSQ and customer satisfaction in the SC scenario.

2.10.3.4 Moderation Role of Product Type

The retailing literature classifies products into multiple types using various criteria such as type, use, value, and involvement. Nelson (1974) classified products into two groups: search and experience goods. The first one refers to things that are examined thoroughly using publicly available information prior to purchase. While the "experience goods" necessitate individual interaction and familiarity with the product. Consumer preferences for online purchases are influenced by product type; according to Girard et al. (2002), when customers buy various things, they acquire numerous sorts of purchasing information. Furthermore, while purchasing search products, customers have even more objective information than when purchasing experience products, implying that product type may influence the purchase decision of SC consumers (Hsu et al., 2017). Consumer purchasing behaviour based on product types is likely to acquire traction in Indian markets as the SC market gets increasingly segmented by product and the sector grows with more competitors with product niches. Research to understand the link between LSQ and CS and their impact on product type is not available in SC literature. As a result, based on the rationale outlined above, this study would like to look into the role of product type in the LSQ and customer satisfaction in the SC context.

2.10.3.5 Moderation Role of Return Experience

SC's after-sales services include requests for cancellation/modification in shipment, product exchange/return, and refunds (Kalia, 2017; Javed & Wu, 2020). Even though e-tailers/online sellers offer product information, video, photo, virtual reality for trials and chat options (Grewal et al., 2004), e-tailing returns continue to be much higher. Returns are a significant source of concern for online retailers (Griffis et al., 2012). The returned goods offer an occasion of service recovery, which will help the firm attract new customers and help the firm gain profit (Mollenkopf et al., 2011). The perceived

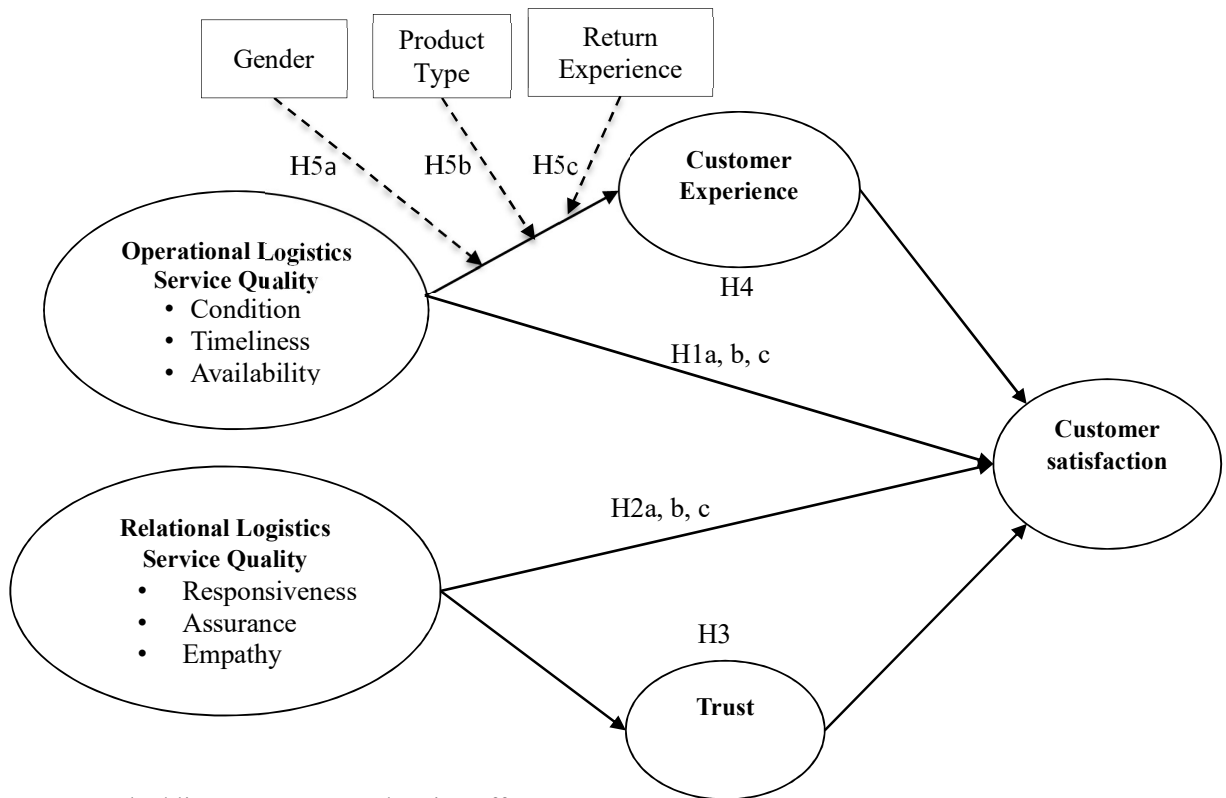
quality of return and fairness may influence satisfaction and buying intention (Jeng, 2017) and repurchase behaviour (Wang et al., 2019). Lack of logistical infrastructure can be the reason for greater returns in developing countries, which results in unpleasant customer service encounters. On the other hand, e-tailers have the opportunity to improve their customer service by providing an excellent return or replacement experience.

Returns and replacements are negative components of online shopping that affect logistics service perception (Lin et al., 2011). Lu and Zhang (2020) recommended that companies work toward a post-purchase settlement mechanism in their study to comprehend online buyer decisions in online marketplaces. If the customer has found/received a wrong product, experienced a discrepancy in product information, etc., they rely on the online marketplaces (middlemen) for fair discrepancy handling. Customers expect fair and effective discrepancy handling, and if the firm is unable to do customers lost trust in the marketplace. When online shoppers lose faith in a marketplace, they will stop shopping online or switch to another. As a result of our findings, online purchasers are more concerned about the post-sale method than the pre-sale system.

Returns or replacement experiences impact the relationship between the condition of the shipment and shopping satisfaction, increasing the degree of association between the two for consumers who have to deal with returns vs those who do not. Customers are more anxious about the condition of the shipment that has been delivered. However, published research argues that consumers will prefer replacing the products in SC due to the relationship and trust with the seller. This study investigates the role of return experience in the LSQ and customer satisfaction in the SC context based on earlier arguments.

2.11 CONCEPTUAL MODEL OF FR2FR SC AND CUSTOMER SATISFACTION

Based on the literature review, a conceptual model for Fr2Fr SC to understand the role of LSQ on customer satisfaction is formed as shown in figure 2.6. In the conceptual model the operational logistics service quality (condition, timeliness and availability), along with the relational logistics service quality (responsiveness, assurance and empathy) are the independent variables. Whereas the customer satisfaction is the dependent variable. There are two mediating and three moderating variables. More precisely, the customer experience and trust are proposed to be mediators while gender of the customer (male vs female), product type (utilitarian vs hedonic) and return experience (no vs yes) are moderators.



Note: Dashed line represents moderation effect

Source: Literature review

Figure 2.6: Conceptual Model Depicting Effect of Logistics Service Quality on Customer Satisfaction in Fr2Fr SC Customers

2.12 HYPOTHESES

2.12.1 Operational Logistics Service Quality to Customer Satisfaction

LSQ is measured in three ways: availability, timeliness, and condition. In an e-tailing setting, availability denotes inventory capabilities (Xing & Grant, 2006). Whereas timeliness refers to prompt delivery of products/services, and condition relates to the product ordered being delivered in good condition (Koufteros et al., 2014).

Consumer anticipates receiving a correct product in good condition within the agreed delivery time frame (Collier & Bienstock, 2006). Because customers cannot physically view product availability, SC players must guarantee product availability in their fulfilment centre matches what is shown on the website/app/social media apps. Furthermore, availability extends beyond the sheer presence of a product; it encompasses a diverse range of offerings. A wide variety of products gives customers more choices, allowing them to find items that precisely meet their preferences. This diversity contributes significantly to customer satisfaction, as it caters to the diverse needs and tastes of the Indian SC consumer base. The availability of a product is directly linked to the convenience it provides to customers (Gower & Hoberg, 2019). In the context of Indian SC, where consumers often rely on online sellers' communication, the easier it is for them to find and access a desired product, the more satisfied they are likely to be. Convenience is a key factor in shaping customer satisfaction, and availability plays a crucial role in this regard.

Any product disparity or shortage at the fulfilment centre may cause a shipment delay. The unavailability of desired products can lead to frustration among customers (Biraglia et al., 2021). Long waiting times or the inability to find specific items can negatively impact satisfaction levels. Ensuring a consistent and ample supply of products minimizes the chances of customer frustration, fostering a positive perception of the

social commerce platform. On the other hand, if the right product is available, the customer's order can be filled straight away, and the customer may be pleased to receive notification that their order has been packaged and dispatched. Customer satisfaction may improve as a result of this.

In summary, this study hypothesises that product availability is intricately linked to higher levels of customer satisfaction in the realm of Indian social commerce. It revolves around the principles of convenience, timely service, variety, reduced frustration, fostering loyalty, and leveraging positive customer testimonials to drive business growth. Therefore, the following hypothesis is proposed:

H1a: Availability is positively associated with customer satisfaction.

Timely delivery is the second criterion for LSQ. Timely delivery aligns with customer expectations, particularly in the fast-paced environment of Indian SC. When products are delivered within the stipulated timeframe, they not only meet but often exceed customer expectations (Kim et al., 2017), contributing to a positive perception of SC shopping. Furthermore, timely delivery is a key factor in building trust and reliability. In the context of SC, where reliability is crucial for customer retention, consistently delivering products on time establishes the trustworthiness of the shopping process. Customers are more likely to be satisfied when they can rely on the platform for timely order fulfilment. Timely delivery contributes to customer loyalty as well (Goutam et al., 2021). Satisfied customers who consistently receive their orders on time are more likely to become repeat buyers. Loyalty is a critical factor in the success of SC platforms, and timely delivery serves as a key driver in building and maintaining this loyalty.

To boost customer satisfaction, SC players must maintain delivery of the products on a promised timeline to their consumers. Sometimes, customers order products for special occasions and require product delivery on specific dates (anniversary, birthday,

festivities, etc.), and if it is not delivered on time, the customer considers the product to be of little value. Griffis et al. (2012) highlighted that customer satisfaction is significantly influenced by timely delivery. A firm can get loyal and satisfied customers if it can deliver the product on time (Murfield et al., 2017). As a result, timely delivery is critical in making happy and loyal customers. As a result, SC players must keep track of order shipments and provide timely order updates to customers.

H1b: Timeliness positively influences customer satisfaction.

The condition of products received by customers directly influences their perception of product quality. In the context of SC, where online transactions lack the physical touchpoint of traditional retail, the condition of the product upon delivery becomes a critical factor. Products arriving in pristine condition contribute positively to the perceived quality, enhancing customer satisfaction (Rita et al., 2019). The condition of products is closely linked to the trust customers place in the SC. When customers consistently receive products in good condition, it builds trust. Furthermore, the condition of the product upon delivery plays a crucial role in aligning these expectations with reality. Products arriving in the expected condition minimize discrepancies and ensure that customers receive what they anticipated. This alignment positively influences satisfaction levels.

Moreover, the customers expect the product to be in good condition and without damage; this makes the condition of the shipment very crucial. The ordered product may be damaged during transportation, packaging, or any other stage prior to delivery. SC players should focus on the delivery of the product as depicted on the website, as the consumer would be highly dissatisfied if the firm is unable to do so.

Attention to LSQ's 'condition' component helps SC gamers increase positive word-of-mouth, favourable review intentions, brand awareness, and so on, while reducing

return/exchange behaviour, resulting in improved economic and environmental performance. The expectancy-confirmation theory also claims that if the product/service does not meet expectations, it will lead to dissatisfaction. Furthermore, the existing literature indicates the tremendous impact of the condition on customer satisfaction (Kim et al., 2009; Koufteros et al., 2014). Based on the above support, the hypotheses will be:

H1c: Condition positively influences customer satisfaction.

2.12.2 Relational Logistics Service Quality to Customer Satisfaction

RLSQ is an external and market-oriented factor that indicates the firm's capacity to comprehend customer requirements and build a relationship via personalized and human service. According to Stank et al. (1999), these two conceptions are the co-varying antecedents of satisfaction. This indicates that more innovative companies in terms of operations are also more conscious of customer requirements and vice versa. Davis (2006) stated that RLSQ helps a firm create closer bonds with customers by understanding their expectations toward the firm's relational activities. RLSQ comprises Assurance, responsiveness, and empathy and has a direct bearing on customer satisfaction in the context of SC.

Assurance is a dimension of service quality, as established by the SERVQUAL model (Parasuraman et al., 1988). In the context of online sellers, assurance relates to the seller's ability to instill trust and confidence in customers regarding the quality and reliability of the products or services offered. Assurance involves effective communication and information transparency. According to Kim et al. (2008), transparent communication positively influences customer trust. When online sellers assure customers by providing clear and accurate information about products and transactions, it enhances customer satisfaction. Assurance contributes to the perceived

value of online transactions (Sweeney & Soutar, 2001). Customers who feel assured by the seller are more likely to perceive the overall value of the transaction positively, leading to higher satisfaction levels. Assurance plays a crucial role in building trust in online transactions (Gefen et al., 2003).

When online sellers provide assurance regarding the authenticity of products, secure payment methods, and transparent business practices, customers are more likely to trust the seller, leading to increased satisfaction.

H2a: Assurance of the SC salesperson positively influences customer satisfaction

The term "responsiveness" refers to how seriously businesses treat consumer feedback and how quickly they reply to their requests (Adivar et al., 2019; Zeithaml, 2000). Responsive online sellers are more likely to address customer queries and concerns promptly. In the context of SC, where communication is crucial, sellers who respond in a timely manner contribute to a positive customer experience. Responsiveness allows for more personalized interactions between sellers and customers. Whether addressing specific product preferences or resolving individual concerns, personalized interactions contribute to a sense of being valued as a customer. This personal touch enhances customer satisfaction by creating a more meaningful and positive buying experience. Furthermore, customers who receive quick and helpful responses during the buying process, from pre-purchase inquiries to post-purchase support, are more likely to have a positive perception of the platform. A positive customer experience, in turn, leads to higher levels of satisfaction.

Moreover, in the event of issues or conflicts, a responsive seller is better equipped to handle and resolve problems effectively. Quick and fair conflict resolution demonstrates a commitment to customer satisfaction and helps in maintaining a positive customer-seller relationship. This, in turn, contributes to overall customer satisfaction

with the social commerce platform. SC's interactive aspect help customers to receive prompt replies to their queries related to logistics and delivery of the product, which helps in nurturing a relationship between the seller and buyer (Wang et al., 2000). The timeliness of web-based services, in particular, is emphasized as a critical aspect for ensuring optimal service quality and user experience (Palese & Usai, 2018). Responsive SC sellers often provide timely updates on order status and shipping information. This proactive communication keeps customers informed and reduces anxiety about the status of their purchases. Providing order tracking and updates contributes to a smoother buying process, positively impacting the overall customer experience and satisfaction. Customers are more inclined to engage with SC players if they receive prompt and helpful solutions to their inquiries. This will lead to the following hypotheses:

H2b: Responsiveness of the SC salesperson positively influences customer satisfaction

Empathetic SC sellers are more likely to understand and appreciate the unique needs and preferences of their customers. In the context of an emerging market like India, the SC has diverse customer demographics and preferences. SC sellers who demonstrate empathy can tailor their services to meet individual customer requirements better. Understanding customer needs enhances overall satisfaction. Empathy fosters effective communication between SC sellers and customers. SC sellers who actively listen to customer inquiries, feedback, and concerns can respond in a way that addresses the emotional and practical aspects of the customer's experience. This effective communication contributes to a positive customer experience and satisfaction.

Empathy is linked to the quality of personnel communication (Devaraj et al., 2002; Mentzer et al., 2001) and information provided to the customer (Emerson & Grimm, 1996; Mentzer & Flint, 1997). During service contacts, empathy is related to the service

provider's ability to understand the perspective and feelings of customers (Hwang & Kim, 2018; Markovic et al., 2018), which will lead to favourable customer emotions. Empathy is a critical aspect of recognizing and satisfying consumer needs and meeting the expectations set by LSQ (Markovic et al., 2018). In the event of issues or conflicts, empathetic SC sellers approach problem resolution with sensitivity. Understanding and acknowledging the customer's perspective and expressing empathy in conflict resolution can turn negative situations into opportunities to enhance customer satisfaction. Empathetic problem resolution builds a positive perception of the platform. Empathy establishes a positive emotional connection between sellers and customers. Customers who feel emotionally connected to the seller are more likely to have a positive perception of the platform. This emotional connection contributes to customer satisfaction by creating a sense of trust, understanding, and shared values.

A service provider's ability to recognize consumer emotions, anticipate their needs and respond appropriately influences the development and coordination of appropriate interactive behaviours that customers appreciate and positively influence overall satisfaction. (Jones & Shandiz, 2015). An empathic service provider modifies their conduct toward unique consumers based on their needs, providing each customer with personalized support (Wieseke et al., 2012), leading to higher customer satisfaction. Furthermore, the empathic behaviour of service providers increases satisfaction and helps firms to develop a long-lasting relationship (Agnihotri & Krush, 2015; Itani & Inyang, 2015). This will lead to the following hypotheses:

H2c: Empathy of the SC salesperson positively influences customer satisfaction

2.12.3 Trust as Mediator

Relationship marketing posits that trust is important for customer satisfaction (Palmatier et al., 2006). Published literature argues that responsiveness (Kim et al.,

2009), empathy (Bahadur et al., 2020), and assurance will develop trust. According to academic literature, trust is linked to customer satisfaction and loyalty (e.g., Verhoef et al., 2002). As per Oliver (1997), trust directly impacts satisfaction and has been validated by the cognitive-emotive causal order. According to Andaleeb (1996), when the focused party trusts the source, it will feel safe because the source's actions will have positive outcomes, resulting in satisfaction. Consumers choose to trade with trustworthy sellers (Singh & Sirdeshmukh, 2000). As a result, consumer satisfaction is influenced positively by the trust. Various studies linked trust with customer satisfaction in buyer-seller relationships (e.g., Selnes, 1998). A trusting customer is more likely to be satisfied with the overall shopping experience, even if challenges arise, given the foundation of trust in the salesperson and the platform (Li et al., 2019). This trust may act as an important internal organism as per the S-O-R framework connecting the stimuli and response.

The S-O-R framework suggests that external stimuli (S) influence internal organisms (O), leading to responses (R). In the context of SC, RLSQ, encompassing aspects like personalized communication, order tracking, and conflict resolution, acts as a crucial stimulus. Research by Ivanov & Dolgui (2020) emphasizes the importance of RLSQ in shaping customer perceptions and experiences. Trust functions as the organism's (customer's) response to the stimulus of RLSQ. As customers experience high-quality logistics services characterized by transparency, responsiveness, and reliability, trust is likely to be formed. The organism (customer) responds to the stimulus (RLSQ) by developing trust in the SC salesperson, aligning with the S-O-R framework. Moreover, the existing literature, such as the research by Kim and Stoel (2004), supports the idea that trust mediates the relationship between service quality and customer satisfaction.

Finally, the published research in the context of e-commerce and SC has established the mediating role of trust in various relationships, including those involving service quality and customer satisfaction (Wang & Zhang, 2012). The work of Gefen et al. (2003) on the role of trust in electronic commerce supports the idea that trust plays a crucial mediating role in shaping customer perceptions and satisfaction.

Based on the above arguments, this thesis hypothesize that trust plays a significant mediating role in the association between RLSQ and customer satisfaction within the S-O-R framework. Specifically, this study proposes that the RLSQ acts as a stimulus, influencing the organism (customer) to form trust in the SC salesperson. This trust, in turn, affects the response (customer satisfaction). This hypothesis is rooted in the understanding that the quality of RLSQ fosters trust, which becomes a pivotal factor influencing customer satisfaction. Integrating trust as a mediator enhances the explanatory power of the S-O-R framework in the context of social commerce. It adds a nuanced layer to the understanding of how stimuli (relational logistics service quality) influence organisms (customers) and subsequently evoke responses (satisfaction), aligning with the dynamic nature of the social commerce environment (Huang & Benyoucef, 2013). Therefore, it has been proposed that:

H3: Trust mediates the relationship between RLSQ and customer satisfaction.

2.12.4 Customer Experience as Mediator

Customer experience is a comprehensive and multifaceted concept with both internal and external components (i.e., cognitive, emotional) and contextual (i.e., interactions with other actors, such as employees in the service encounter), which influence consumers' subjective reactions to the retail environment (Bustamante & Rubio, 2017). Customer experience is created not only by those elements which the retailer can control (e.g., service interface, retail atmosphere, assortment, price) but also by

elements that are outside of the retailer's control (e.g., the influence of others, the purpose of shopping)' (Verhoef et al., 2009, p. 32).

Meyer and Schwager (2007, p.2) define customer experience as “*the internal and subjective response customers have to any direct or indirect contact with a company*”.

Condition (a component of OLSQ) leads to positive feelings and fairness of social commerce firm/seller. Timeliness (a component of OLSQ) generates a feeling of the valued customer as well as the capability of the company to fulfil its promises. Availability (a component of OLSQ) components save time and smooth experience in the purchase journey (Peltola et al., 2015).

In the context of SC, OLSQ acts as a critical stimulus, encompassing aspects such as order fulfilment accuracy, delivery timeliness, and product condition upon arrival (Hassini et al., 2012). Studies by Ivanov and Dolgui (2020) underline the significance of OLSQ in shaping customer perceptions and experiences. Customer experience functions as the organism's (customer's) response to the stimulus of OLSQ quality. As customers encounter high-quality operational logistics services marked by efficiency and reliability, their overall experience is shaped positively (Verhoef et al., 2009). The organism (customer) responds to the stimulus (OLSQ) by forming a nuanced and multifaceted experience, aligning with the S-O-R framework. Moreover, published research, Verhoef et al. (2009), suggests that customer experience is a crucial mediator in the relationship between service quality and customer satisfaction.

Overall, the OLSQ is an important touchpoint in the SC context as it induces various cognitive, emotional, sensory, and social responses impacting the customer experience, which ultimately leads to customer satisfaction. Therefore, customer experience plays a catalytic role in the OLSQ to customer satisfaction relationship. Based on the above argument and the S-O-R framework, this study postulates that customer experience is

an alternate and prominent root to explain the impact of OLSQ on customer satisfaction.

This will lead to the following hypotheses

H4. Customer experience has a mediating effect on OLSQ and customer satisfaction

2.12.5 Gender as a Moderator

Significant gender disparity is found in using email and the internet (e.g., Awad & Ragowsky, 2008; Kim et al., 2011). Gender-related consumer behaviour theories, such as those proposed by Spence (1984) and Eagly (1987), suggest that gender differences may influence perceptions and preferences in a consumer context. Spence (1984) proposed the "gender identity theory," suggesting that individuals tend to conform to gender norms and expectations in their consumer behaviour. Eagly's social role theory (1987) posits that societal roles and expectations influence gender differences in various domains, including consumption behaviour. More specifically, gender differences may lead to varying perceptions and expectations regarding the importance of timeliness, product condition, and availability in the SC context. For example, research by Kim, Kim & Lennon (2011) and Jain et al. (2021) highlighted that the e-services qualities like e-LSQ differ by gender.

There is a stronger positive association between timeliness and satisfaction for male customers. The condition of the product upon arrival is expected to have different moderating effects based on gender. Research by Kim and Kim (2014) suggests that females may be more sensitive to product quality and condition. The hypothesis posits a stronger positive association between product condition and satisfaction for female customers, reflecting their heightened emphasis on product quality. Male customers may still value product conditions, but the moderation effect is anticipated to be less pronounced compared to females. Product availability is another dimension where

gender differences may come into play. The hypothesis anticipates a weaker association between product availability and satisfaction for male customers. For female customers, there is a stronger positive association between product availability and satisfaction, as availability may be a more critical factor in their purchasing decisions. Therefore, the relationship between OLSQ and customer satisfaction may be influenced by gender, leading to the following hypothesis:

H5a: Gender moderates the relationship between the OLSQ and customer experience

2.12.6 Product Type as a Moderator

The nature of the product, whether it caters to hedonic or utilitarian needs, may influence how customers perceive and value different dimensions of service quality. The consumer behaviour theory, especially the works of Solomon (1998) and Hirschman & Holbrook (1982) suggests that consumers approach hedonic and utilitarian products differently, with hedonic purchases driven more by emotional and experiential factors. For utilitarian products, timely delivery may hold heightened importance, as these products are often associated with practical and functional needs. For hedonic products, while timeliness is still important, the intervening effect is expected to be less pronounced compared to utilitarian products, given that the emphasis may shift towards experiential aspects. Therefore, a stronger positive association between timeliness and satisfaction for customers purchasing utilitarian products can be predicted.

The condition of the product upon arrival is anticipated to have different moderating effects based on product type. Utilitarian products may be more sensitive to the condition, given their practical nature. For hedonic products, while product condition remains important, the moderation effect is expected to be less pronounced compared

to utilitarian products, reflecting a potential emphasis on experiential value. Therefore, a stronger positive association between product condition and satisfaction for utilitarian products can be predicted.

Product availability is another dimension where product type may influence moderation effects. Utilitarian products may place greater importance on availability for fulfilling practical needs. The hypothesis anticipates a stronger positive association between product availability and satisfaction with utilitarian products. This may not be true for the hedonic products.

The consumer behaviour theory, particularly the differentiation between hedonic and utilitarian consumption (Solomon, 1998; Hirschman & Holbrook, 1982), provides theoretical support for the hypothesis. This theory suggests that consumers approach products with different motivations, where hedonic products are associated with experiential and emotional enjoyment, while utilitarian products are tied to practical needs and functionality. Therefore, this study postulated the moderating effect of product type on the OLSQ and customer satisfaction relations, as mentioned below:

H5b: Product type moderates the relationship between the OLSQ and customer experience

2.12.7 Return/Replacement Experience as a Moderator

SC's after-sales services include requests for cancellation/modification in shipment, product exchange/return, and refund (e.g., Kalia, 2017). Although e-tailers/online sellers offer product information, video, photo, virtual reality for trials and chat options (Grewal et al., 2004), e-tailing returns continue to be much higher. However, it has been observed that return behaviour is comparatively lower in the SC context, the primary reason being one-to-one interaction with the seller in the pre-, during and post-purchase

stages. Nevertheless, return/replacement behaviour still exists in the SC, like a typical shopping process.

The Service Recovery Paradox (McCole, 2004) provides theoretical support, suggesting that effective recovery processes can enhance customer satisfaction even after service failure. Service Recovery Paradox emphasizes the significance of how an organization handles service failures, including operational logistics challenges, in shaping customer perceptions and satisfaction. A positive return or replacement experience is expected to enhance customer satisfaction, acting as a moderator that mitigates potential negative effects of operational logistics challenges. An efficient and customer-centric process contributes to positive customer perceptions and satisfaction even in the face of initial logistical issues.

Returns are a significant source of concern for online retailers rather than a reasonable operating cost (Ramírez, 2012). However, the returned goods offer an occasion of service recovery, which will help a firm attract new customers and result in amplified profits for the business (Mollenkopf et al., 2011). The perceived quality of return and fairness may influence customer satisfaction. Returns or replacements are an unfavourable aspect of online buying that may influence buyers' expectations of OLSQ (Jain et al., 2021). Returns or replacement experiences may influence the relationship between the OLSQ and shopping satisfaction. A smooth and hassle-free process reflects positively on the platform's commitment to customer satisfaction. When customers perceive that the platform can efficiently address issues, it can mitigate the potential negative impact of any OLSQ issues, thereby influencing their overall satisfaction. The returns or replacement process plays a crucial role in building and maintaining customer trust. A transparent, responsive, and customer-centric returns or replacement experience fosters trust even in the face of logistical challenges. This trust-building

aspect is vital in shaping customer satisfaction, as it creates a perception of reliability and commitment to customer welfare.

The returns or replacement process is a critical touchpoint that directly interacts with customers. It serves as a moderating factor that can influence the strength and nature of the relationship between OLSQ and customer satisfaction. A well-handled returns or replacement process can enhance satisfaction even in cases where the initial logistics service may have faced challenges. Finally, Previous empirical research in the context of e-commerce and service industries has demonstrated the moderating role of returns or replacement processes on the relationship between service quality and customer satisfaction (Michel et al., 2009). Based on the above arguments, this study postulated the moderating effect of returns or replacement experience on the OLSQ and customer satisfaction relations, as mentioned below:

H5c: Return/replacement experience moderates the relationship between the OLSQ and customer experience

2.13 OPERATIONAL DEFINITION OF CONSTRUCTS

The operational definitions provide theoretical definitions as to how a construct can be measured. Table 2.12 provides the operational definitions of all the constructs used in this study.

Table 2.12: Operational Definition of Constructs

Construct	Operational Definition	Source
Availability	Availability measures the availability of a product during product purchase and information regarding the availability of a product if it is out-of-stock or substitute products on social media/social networking sites.	Xing et al. (2010)
Timeliness	Timeliness refers to whether products were delivered on time or not to social commerce customers.	Koufteros et al. (2014)
Condition	Condition refers to whether the product ordered actually arrived in the expected good condition to social commerce customers.	Parasuraman et al. (1985, 1988)
Responsiveness	Responsiveness refers to the effective handling of problems and reflects how seriously social commerce firms treat customer feedback and how quickly they reply to their requests	Adivar et al. (2019); Zeithaml (2000); Parasuraman et al. (2005)
Assurance	Knowledge and courtesy of social commerce seller and their ability to inspire trust and confidence among customers	Neo et al. (2004)
Empathy	Empathy is related to the social commerce firm's ability to understand the perspective and feelings of customers, and it is linked to the quality of personnel communication and information provided to the customer.	Hwang and Kim (2018); Markovic et al. (2018); Devaraj et al. (2002); Mentzer et al. (2001)
Customer Experience	The internal and subjective response customers have to any direct or indirect contact with social commerce firm/seller.	Meyer and Schwager, (2007)
Trust	Customer belief in social commerce firm's expertise to do job effectively and positive intention/generosity of firm.	Stephens (2004); Dash and Saji (2008), Ganesan (1994)
Customer satisfaction	Consumer satisfaction measures how likely a product or service is to leave a social commerce customer feeling happy.	Udo et al. (2010)

Source: Literature review

2.14 CHAPTER SUMMARY

A rigorous literature review of peer-reviewed journals, books, articles in periodicals and magazines, and research reports has been done to provide a strong theoretical foundation. The chapter elaborates on the evolution of shopping from offline to online to SC to Fr2Fr SC, LSQ and its two critical dimensions, customer experience and satisfaction in Fr2Fr SC and S-O-R model. It also explores the relationships among various factors that influence LSQ and customer satisfaction in the Fr2Fr SC context. Research gaps are justified on the basis of the rigorous review of the literature. The chapter ends with the development of a hypothesis and provides the operational definition of the various constructs used in this study. Chapter 3 elaborates on the research methodology adopted in the study.

CHAPTER 3
RESEARCH METHODOLOGY

CHAPTER 3

RESEARCH METHODOLOGY

3.1 CHAPTER OVERVIEW

This chapter intends to explain in detail the research methodology adopted for the study. The research paradigm and research approach are discussed (in terms of philosophy) in detail in section 3.2. Section 3.3 explains the type of reasoning applied in the present study. Section 3.4 elaborates in detail on the research method utilized in the study. The research design of the study, which was descriptive in nature, is elaborately discussed in Section 3.5. Section 3.6 provides a detailed overview of the data sources used in the study. Both primary and secondary data sources were used for the study. The data collection strategy for this research is elaborated in Section 3.7. In section 3.8, a brief overview of the period of study is given. Section 3.9 provides a summary of the research process. The details on the development of the research instrument and its sources are explained in Section 3.10. Section 3.11 elaborates on the study variables and their measurement level. The sampling design is explained in detail in section 3.12. Pilot study results are explained in detail in Section 3.13. Section 3.14 conceptually explains the tools used for the statistical analysis and interpretation with subsections dedicated to exploratory factor analysis reliability, Validity analysis and structural equation modelling (SEM). The chapter is summarized in section 3.15.

3.2 RESEARCH PARADIGM AND RESEARCH PHILOSOPHY

The word "Research Paradigm" was first used by Kuhn (1962), meaning a philosophical way of thinking. The term paradigm is used synonymously to describe a researcher's worldview (Mackenzie & Knipe, 2006). A strong research design is backed by a research paradigm that is compatible with the beliefs of the researcher and the nature of reality (Mills et al., 2006). The research paradigm guides a researcher in carrying out

research in a particular direction. It describes the approach or thinking of the research, the process of accomplishing it, and the implementation method (Gliner et al., 2016). The three research paradigms are positivist, constructivist and transformative (Mills et al., 2006).

The current study uses the positivist approach to analyze customer satisfaction among Fr2Fr SC shoppers. The study is structured systematically, and data was collected using questionnaires with zero interference from the researcher. Quantitative methods were used to analyze and interpret the data.

The research paradigms can be described by ontology, epistemology, methodology, and axiology (Lincoln & Guba, 2005). Ontology focuses on the philosophy of reality, whether the reality is objective or subjective. Epistemology is how we acquire knowledge about reality, whereas methodology identifies the tools to acquire the same knowledge. According to Gall et al. (1996), epistemology comprises the study of the nature of knowledge and how it can be acquired and communicated to others. The present study acquired knowledge or information through a structured questionnaire where all the social constructs were quantified. According to Grix (2004), the methodology provides guidance on how a particular research study has to be conducted by deciding the type of data required for the study and appropriate data collection techniques. In other words, it is the researcher's strategy, plan of action, process, or design of choice of research methods (Crotty, 2003).

The present study adopted a descriptive research method to gather primary data. The data was quantitative in nature, and appropriate statistical techniques were used to analyze it. The present study has adopted a positivist approach to analyze customer satisfaction among Fr2Fr SC shoppers. The positivist approach is applied as the current

study uses a structured research methodology like descriptive research to test the hypotheses.

3.3 TYPE OF REASONING

The type of reasoning used indicates how the present data and knowledge are being processed to conclude, make predictions or construct applications. There are three types of reasoning: a) Deductive reasoning- which uses a top-down approach, begins with the general and ends with the specific b) Inductive reasoning- which uses a bottoms-up approach, wherein theories are built based on various facts and interconnecting themes c) Abductive reasoning- it is synonymous to scenarios of decision making in case of partial information available. It is most commonly used in medical research.

The present study is based on deductive reasoning as it follows the method of developing hypotheses based on existing theories and designing a research strategy to test them.

3.3.1 Deductive Reasoning

Deductive reasoning begins with the general and ends with the specific. The current study used a deductive approach. The current study began with understanding customer satisfaction among Fr2Fr SC customers and the SOR model; accordingly, hypotheses were articulated to either support or contradict the data. The current study was initiated based on the extensive literature review on SOR Model (Kumar et al., 2022; Türkdemir et al., 2023), LSQ and customer satisfaction in electronic commerce (Rao et al., 2011; Jain et al., 2021), customer satisfaction in Fr2Fr SC (Gan & Wang, 2017; Ahn & Sura, 2020). Based on the literature review, the study tried to identify the factors that influence customer satisfaction in Fr2Fr SC and, subsequently, how operational and relational LSQ impacts customer experience, Trust and customer satisfaction. Hypotheses were constructed to either agree or refute the previous understanding of the

theory. The structured primary data collected was analyzed using quantitative techniques to test the hypotheses. Researchers using deductive reasoning and quantitative methods believe in a single reality that can be reliably measured and validated using scientific principles (Creswell & Clark, 2017).

3.4 RESEARCH METHODS

Research methods generally define the data collection and analysis process. The two major kinds of research methods are quantitative and qualitative; based on this broad classification, different techniques can be employed to collect the data further. The present study incorporated quantitative research methods. This decision is based on the objectives of the study, its urgency, the accessibility of sources of data and the cost of obtaining it (Zikmund et al., 2013). As the objectives in the current study are designed to test a hypothesis based on the SOR model and the primary data collected was structured data based on a research survey, quantitative research methods would be the most appropriate.

3.4.1 Quantitative Research Methods

Quantitative research methods involve a numerical or statistical approach; they generally use experiments and survey techniques and collect data based on pre-validated instruments that yield statistical data.

Descriptive research studies are focused on collecting numerical data based on observations of the different types of descriptive research methods, such as experimental research, case study, observational method, and survey research method.

The present study incorporates the survey research method.

The present study assessed the relevant factors of LSQ, namely operational and relational LSQ, and its impact on customer experience, trust and customer satisfaction among Fr2Fr SC. Quantitative methods were used to deduce the same. Data was

collected through a self-administered structured questionnaire based on the research objectives. The questionnaire was based on closed-ended questions, which is a characteristic of quantitative research. The primary data collected was analyzed using statistical techniques.

3.5 RESEARCH DESIGN

3.5.1 Descriptive Research Design

Research designs are strategic plans that answer the research question and the variance (Dulock, 1993). Descriptive research is more often used to describe the characteristics of a population or area of interest, and it also aids in assessing the associations or relationships among selected variables. A descriptive study does not manipulate the variables or does not identify the causes or why of the phenomenon. This study is considered to be descriptive as it attempts to describe or define the Fr2Fr SC shoppers' behaviour by answering questions like what the factors influencing customer satisfaction are, social commerce shoppers, and how these factors influence customer satisfaction. In the present study, the population of interest is the Fr2Fr SC shoppers who purchased through their primary or secondary friend circle using social media.

Descriptive research in the present study aids in assessing the relationship between operational LSQ (Condition, timeliness, availability), relational LSQ (Responsiveness, assurance, empathy), customer experience, trust and customer satisfaction. Generally, the findings of descriptive research act as the basis for further research. The present study adopted a descriptive research design, which is cross-sectional in nature. The study is cross-sectional in nature as the data was collected at a single point in time or during one specific time duration. The population characteristics of Fr2Fr SC were assessed. A research survey was used to collect information about the population. The study focused on relationships between influencing factors like operational LSQ

(Condition, timeliness, availability), relational LSQ (Responsiveness, assurance, empathy), customer experience, trust and customer satisfaction. The study further assessed the relationships between OLSQ and RLSQ and how they affect customer experience and trust, respectively, which leads to customer satisfaction.

3.6 DATA SOURCES

A research study can be based on primary and secondary data sources. In the current study, secondary data was used to build the conceptual framework and finalize the geographical location of Fr2Fr SC customers. Primary data based on the literature review was used to test the hypotheses.

3.6.1 Secondary Data

Secondary data refers to the readily available published data. It can be internally or externally sourced. The secondary data sources for the present study were all external, and there were no internal secondary data sources. Table 3.1 provides an overview of the different data sources used for the current study.

Table 3.1: Sources of Data

Academic Sources		Government sources	Industry sources	Internet sources
Books, published articles	Journals indexed in renowned databases like SCOPUS, ABDC, Web of Science etc	Census 2011, Government of India List of cities, Ministry of Finance, (2017) Government of India	Accenture Report 2022, Bain & Sequoia 2020, World Fact Book 2022, Global Web Index, Statista	News Websites, Blogs, Meesho

Source: Literature review

For the present study, the majority of the secondary data was referred from peer-reviewed and Scopus-indexed journals. Journals aided in creating the conceptual framework. Apart from the journals, many industry and internet sources like Accenture,

World Fact Book, and Global Web Index were referred to capture the latest trends and growth rates specific to the social commerce sector.

3.6.2 Primary Data

Primary data collection for the research study was the set of responses from self-administered structured questionnaires. The questionnaire was administered to shoppers of Fr2Fr SC who had recently purchased products from tier 2 cities in India.

3.7 RESEARCH STRATEGY

A researcher can achieve the research objectives by choosing an appropriate research strategy. The choice of research strategy depends on a researcher's preferred approach (positivist or interpretivist approach) (Baker, 2003). Research strategy is focused on the logic of inquiry and methods of execution of the project (Blaikie & Priest, 2009). The present study incorporated the survey method as a research strategy as it is ideal for deductive reasoning and a positivist research approach. According to Saunders et al. (2015), research strategy refers to a researcher's general plan to answer the research questions. The research onion process proposed by Saunders et al. (2015) spells out that research strategies include action research, experimental research, interviews, surveys, case study research, or a systematic literature review. The current study is a cross-sectional descriptive study for which a self-administered questionnaire was the most convenient tool. The questionnaire was administered through an offline and an online survey. An offline survey was used to collect responses; the questionnaires were administered to respondents in residential properties, workplaces, and educational institutions in Tier 2 cities. The surveys helped in providing immediate responses. This study used online mode to get more and more responses from social commerce customers. The questionnaire was administered through Google Forms. Online surveys improved the reach; however, there was a delay in responses (Zikmund et al., 2013).

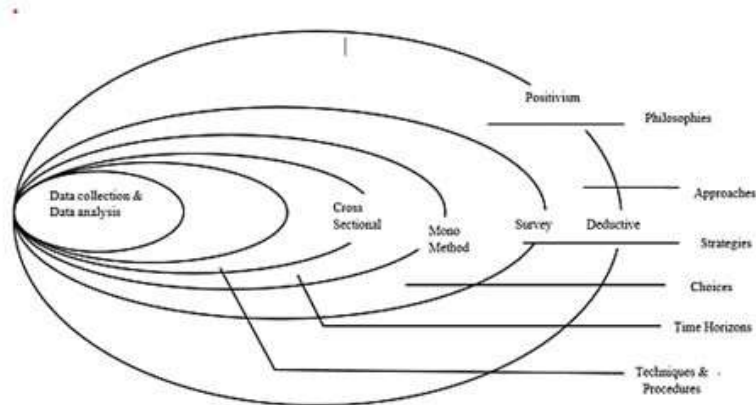
Constant follow-up was required to ensure respondents answered the questions. The survey method was incorporated successfully in studies that tried to assess online shopping behaviour (Workman & Lee, 2019; Tandon et al., 2020).

3.8 PERIOD OF STUDY

The primary collection was carried out during December 2022 and October 2023. The data was collected from individuals from Tier 2 and below cities of India. The data was collected through different modes. Structured questionnaires were administered to residential properties, workplaces, and educational institutions in Tier 2 cities. Google forms were circulated through personal and professional networks. A total of 880 responses were received after circulating the questionnaire to approximately 1100 SC customers.

3.9 SUMMARY OF THE RESEARCH PROCESS

The research process onion in Figure 3.1 depicts the research philosophies and paradigms used in the study



Source: Saunders et al. (2015)

Figure 3.1: Research Onion

The research process onion was proposed by Saunders et al. (2015); it describes the stages through which a researcher passes to achieve the research objectives. The study followed a positivist philosophy with deductive reasoning. The study adopted

descriptive research methods. The research tool used was a structured self-administered questionnaire. Quantitative methods were used to analyze the data to prove the research objectives.

3.10 RESEARCH INSTRUMENT

The survey research method was used to collect primary data in the present study. The survey research method was used to collect quantitative from a predetermined pool of respondents. A structured questionnaire with closed-ended questions was used as the research instrument. The self-administered questionnaire was administered through two modes: 1) offline method and 2) online mode. The study will consider the Likert scales for OLSQ, RLSQ, customer experience, trust and customer satisfaction. The first section of the questionnaire contains questions on the demographics of Indian SC consumers, which was necessary to generate the profile of the sample units. The second section of the questionnaire is related to SC experience, which was necessary to understand the SC experience of customers. The third section of questions in the research instrument deals with the effect of LSQ on satisfaction. The complete questionnaire is provided in Appendix 1. The measurement scales are condition, timeliness, availability, responsiveness, assurance, empathy, customer experience, trust and customer satisfaction. All the scales are taken from well-established literature that has high validity and reliability. The measurement items are provided in table 3.2:

Table 3.2: Measurement Items

Construct	Measurement Items	Source
Availability	<p>The seller accurately fulfilled my order in one and only one delivery attempt.</p> <p>All of the products I received in the first attempt were the ones I requested</p> <p>All the products I requested were delivered as promised.</p> <p>The seller always delivered all of the products I requested</p>	(Bienstock et al., 1997; Jain et al., 2021)
Timeliness	<p>The seller was timely in delivering all the products I requested</p> <p>The seller delivered all the products I requested on time.</p> <p>The seller delivered all the requested products in a given time.</p>	(Bienstock et al., 1997; Jain et al., 2021)
Condition	<p>All the products I requested were in good condition upon delivery after opening.</p> <p>All the products I received appeared to be in good condition.</p> <p>There was no problem with the condition of all the products that I received.</p> <p>All products received were in good condition.</p>	(Bienstock et al., 1997; Jain et al., 2021)
Responsiveness	<p>The seller made efforts to identify my needs.</p> <p>The seller was responsive to my needs, requirements and problems during the shopping.</p> <p>The seller was never too busy to answer my requests.</p> <p>The seller made recommendations for improvement on a continuous basis.</p>	<p>(Jang et al., 2013; Thai 2013)</p> <p>(Stank et al., 1999; Davis-Sramek et al., 2008; Bouzaabia et al., 2013)</p> <p>(Michalski & Montes-Botella, 2021; Parasuraman et al., 1985)</p> <p>(Davis-Sramek et al., 2008; Stank et al., 2003)</p>

Construct	Measurement Items	Source
Assurance	The seller was capable of handling my queries with sufficient product knowledge.	(Thai 2013; Bienstock et al., 2008; Bouzaabia et al., 2013)
	The seller helped me place the order in an efficient way.	(Davis-Sramek et al., 2008)
	The seller informed me ahead of time if my order was going to be delayed.	(Davis-Sramek et al., 2008)
Empathy	The seller's attitude and behaviour were satisfactory and courteous	(Thai 2013; Jang et al., 2013)
	The seller cooperated with me and made an effort to understand my situation in the shopping process.	(Stank et al., 2003; Bienstock et al., 2008; Jang et al., 2013; Bouzaabia et al., 2013)
	The seller was trying to develop long-term relationships	(Jang et al., 2013; Stank et al., 1999)
Customer Experience	My experience with the seller was better than I expected during the purchase.	(Bhattacharjee 2001; Roy et al., 2020)
	The service level provided by the seller was better than expected during the purchase.	(Bhattacharjee 2001; Roy et al., 2020)
	Overall, most of my expectations of using the seller service were confirmed/ Met.	(Vosset al., 2003; Roy et al., 2020)
	I think the experience is fun/exciting when I make a purchase with this seller.	(Voss et al., 2003; Roy et al., 2020)
	The seller's other customers consistently leave me with a good impression of the seller's services/ give good feedback/peers/colleagues.	(Brady & Cronin 2001; Arnold et al., 2005; Roy et al., 2020)
Customer Satisfaction	I am satisfied with the pre-purchase experience with the seller (e.g., consumer education, product search, quality of information about products, product comparison)	(Rose et al., 2012; Jain et al., 2021)
	I am satisfied with the during purchase experience with the seller (e.g., ordering, delivery date choice)	
	I am satisfied with the post-purchase experience with the seller (e.g., customer support, sales support, handling of returns/refunds, delivery care)	
Trust	The seller is trustworthy.	(Kim & Park 2013)
	This seller takes my best interests into consideration.	(Pavlou 2003)
	This seller fulfils his/her promises.	(Lin et al., 2018;
	I believe in the information provided by the seller.	Fan et al., 2019)
	This seller leaves people with the impression that he/she keeps his/her promises.	

Source: Literature review

3.11 MEASUREMENT SCALES

Constructs in a research study were studied by assigning numbers in a reliable or valid way (Zikmund et al., 2013). The study variables were either continuous or discrete. Discrete variables take a finite number of values, and most of the socio-demographic information is captured through discrete variables. When values are assigned on a scale corresponding to the intensity of a concept, it is known as a continuous measure. All the study constructs like operational LSQ (Condition, timeliness, availability), RLSQ (Responsiveness, assurance, empathy), customer experience, trust, and customer satisfaction are continuous measures.

Based on the type of variables, the levels of measurement are finalized. The levels of measurement act as a foundation for analysis. The different types of measurement scales are nominal, ordinal, interval, and ratio level scales.

Nominal scales are the most basic level of measurement that helps in identification or classification. For demographic variables like gender, product category, occupation, marital status, return experience and so on, the level of measurement is nominal.

When certain objects or things are arranged in a specific order or priority or criteria, it is called an ordinal or ranking scale. For the question pertaining to the most preferred social media/social network site(s), the level of measurement is ordinal. Interval scales are used when the order of the variables, as well as the difference between the variables, are known. The questions related to measuring study constructs like OLSQ, RLSQ, customer experience, and so on are interval scales. Table 3.3 represents the type of variables in the present study and the corresponding measurement level.

Table 3.3: Measurement Levels of Study Variables

Sr. No.	Variable	Type of variable	Level of measurement
1	Age	Continuous	Interval
2	Gender	Discrete	Nominal
3	City/Location	Discrete	Nominal
4	Highest Educational Qualification	Discrete	Nominal
5	Family Monthly Income	Continuous	Interval
6	Marital Status	Discrete	Nominal
7	Employment Status	Discrete	Nominal
8	Relationship with Social commerce seller (Primary contact/Secondary contact)	Discrete	Nominal
9	Product category	Discrete	Nominal
10	Return experience	Discrete	Nominal
11	Condition	Continuous	Interval
12	Timeliness	Continuous	Interval
13	Availability	Continuous	Interval
14	Responsiveness	Continuous	Interval
15	Assurance	Continuous	Interval
16	Empathy	Continuous	Interval
17	Customer experience	Continuous	Interval
18	Trust	Continuous	Interval
19	Customer satisfaction	Continuous	Interval

Source: Literature survey

All the study constructs were captured through a 7-point Likert scale. The scales for each construct were adopted from pre-validated measurement scales based on a rigorous literature review. As mentioned in table 3.2 the scale was modified to suit the current study.

3.12 SAMPLING DESIGN

The sampling design is a critical and distinct phase of the research design. The sample is a subset of a larger population that aims at drawing conclusions based on measurements of a portion of the population (Zikmund et al., 2013). Identifying and narrowing the population to the sample requires meticulous planning and execution.

The selection of participants was based on a screening question/filter question if they had made a SC purchase in the past six months via their primary/secondary contact of

social media network. Filter questions aid in screening out the participants for whom the study is not relevant (Saunders et al., 2019); in the present study, the questionnaire is not relevant to respondents who did not purchase through social commerce. It was noticed that the number of participants who had responded negatively to the screening question was low; however, such responses were excluded from the analysis.

3.12.1 Population of the Study

The population for the study constitutes those who make purchases through social commerce in India.

3.12.2 The Sample Frame

The population for the study is the Indian social commerce customers. As per BAIN and Sequoia Co. (2020), the majority of social commerce customers are from tier II cities. Hence, SC shoppers from tier II Indian cities were considered for the present study. The list of 87 cities excluding union territories spread across four zones are identified (Ministry of Finance, Government of India 2017) and is provided in Appendix 2.

3.12.3 Sampling Techniques

The sampling process of SC shoppers was a two-stage process.

Stage 1

The first stage comprised a selection of tier II cities. The revised list was created after referring to the National Family Health Survey 2019-21 report to understand internet penetration in states. The states/cities with more than or equal to 30% internet penetration were considered to collect data. After this, there were 76 cities to target making it a good sampling frame. Random sampling was used to select the final list of cities from the sampling frame. A lottery method was implemented to select tier II Indian cities from the sampling frame. Random numbers were assigned to each of the

cities in the sampling frame. The names of these cities were written on small paper chits of the same shape, size, and colour. They were folded and mixed up in a box. Thirty-nine cities were chosen. The selected sample constituted 51 per cent of the sampling frame (Table 3.4).

Table 3.4: Sample Frame- Zone Wise Classification of Tier II Cities

Sr. No.	Zone	Total number of City	In sample
1	East	6	3
2	West	21	11
3	North	26	13
4	South	23	12
Total		76	39

Stage 2

The second stage involved the selection of social commerce shoppers from the sample of tier II Indian cities mentioned in Table 3.5. Non-probability sampling was used to select the respondents due to the absence of a sampling frame. Convenience sampling was the non-probabilistic sampling method used for the selection of respondents. Convenience sampling is used when it is practically impossible to reach all the members of the target population (Chiang & Dholakia, 2003). This approach is in line with a recommendation from researchers in the online domain (Goldsmith & Horowitz, 2006; Amaro & Duarte, 2015; Alhaimer, 2021), who used convenience sampling to study consumer behaviour in online shoppers. According to Peterson & Merunka (2014), convincing empirical evidence showing the negative consequences of using convenience samples for theory testing is hard to find.

3.12.4 Sample Size Estimation

The population of SC shoppers is very large, so a sample that is representative of the larger population is considered (Table 3.5). It is essential to have an optimum sample size to generate accurate and statistically significant study results. In the present study,

the sample size was estimated based on the following criteria. The following equation can determine sample size using Slovin's formula: $n = N / (1 + Ne^2)$, where n = Number of samples, N = Total population, and e = Error tolerance level.

Based on a confidence level of 96 percent, the error tolerance level considered is 0.04 percent. On applying the formula to the current study, where $N = 45629953$, $e = \pm 0.04$
 $N = 45629953 / (1 + 45629953(0.04)^2) = 625$

Table 3.5: Target Population

Sr. No.	City Name	State	Region	Population
1	Durg- Bhilai Nagar	Chhattisgarh	East	2,68,679
2	Raipur	Chhattisgarh	East	1,122,555
3	Dhanbad	Jharkhand	East	1,161,561
4	Surat	Gujarat	West	2876374
5	Bhopal	Madhya Pradesh	West	1795648
6	Indore	Madhya Pradesh	West	1960631
7	Jabalpur	Madhya Pradesh	West	1054336
8	Ujjain	Madhya Pradesh	West	515215
9	Amravati	Maharashtra	West	646801
10	Aurangabad	Maharashtra	West	102520
11	Kolhapur	Maharashtra	West	3876001
12	Nagpur	Maharashtra	West	2405421
13	Sangli	Maharashtra	West	513862
14	Solapur	Maharashtra	West	872478
15	Ajmer	Rajasthan	North	542580
16	Bikaner	Rajasthan	North	644406
17	Jaipur	Rajasthan	North	3073350
18	Jodhpur	Rajasthan	North	1137000
19	Kota	Rajasthan	North	1001694
20	Aligarh	Uttar Pradesh	North	872575
21	Bareilly	Uttar Pradesh	North	169333
22	Firozabad	Uttar Pradesh	North	1645675
23	Jhansi	Uttar Pradesh	North	507293
24	Kanpur	Uttar Pradesh	North	2767031
25	Meerut	Uttar Pradesh	North	1309023
26	Moradabad	Uttar Pradesh	North	889810
27	Saharanpur	Uttar Pradesh	North	703345
28	Guntur	AP/Telangana	South	651382
29	Nellore	AP/Telangana	South	505258
30	Belgaum	Karnataka	South	4779661

Sr. No.	City Name	State	Region	Population
31	Gulbarga	Karnataka	South	533587
32	Hubli-Dharwad	Karnataka	South	943857
33	Mangaluru	Karnataka	South	484785
34	Mysore	Karnataka	South	351838
35	Kochi	Kerala	South	601574
36	Kozhikode	Kerala	South	432097
37	Thrissur	Kerala	South	315596
38	Madurai	Tamil Nadu	South	1016885
39	Tiruchirappalli	Tamil Nadu	South	846915
			Total	45629953

Source: Census-2011

The calculated sample size is 625. However, as a part of the analysis, structural equation modelling (SEM) is considered to test the model. According to Bentler and Chou (1987), the bottom-line ratio for the usage of structural equation modelling is 5:1 in the case of a normal and elliptical theory, where 5 is the sample size, and 1 is the independent parameter. In the case of arbitrary distributions, this ratio becomes 10:1. The generally acceptable thumb rule for obtaining the minimum sample size is the higher of either ten times the number of items for the most complex construct or the largest number of independent variables affecting a dependent variable (Chin, 1998; Gefen et al., 2003). In this study, customer experience and trust are the most complex constructs, with five items measuring the same. This implies that if we consider a sample size of 625, it is well above the acceptable value of ten times the number of items on the most complex scale.

Another frequently accepted rule of thumb among the researchers is ten observations per indicator variable (Nunnally, 1967). The current study has nine constructs, measured by 34 variables, making the sample size 340. As the sample size derived from Slovin's formula is greater than 340, we can consider the greater sample size for the study, which is 625.

3.13 PILOT TEST

A pilot study was conducted with the primary aim to test and validate the questionnaire. It was conducted to check if the respondents easily understood the items in the questionnaire. Is there any place where there was a need to simplify the wording of the questionnaire? And assess the amount of time needed on average to fill out a questionnaire. The questions measure what they are intended to measure, any redundant questions that can be removed and lastly, any question that gives a different meaning to the readers.

3.13.1 Pilot Study Data Collection

The pilot study was conducted from October 15, 2022, to November 16, 2022. The pilot study was conducted using a combination of both online and offline modes. The responses were collected using a convenience sampling technique. A convenience sampling technique is a non-probability sampling procedure and requires the selection of respondents who are best placed (most conveniently or advantageously placed) to provide the information they requested. The pilot study was conducted by surveying SC consumers residing in tier 2 cities of India in October 2022. The questionnaire was designed in three parts, namely, Part A, Part B and Part C. In part A, all the demographic data of respondents was recorded. In Part B, SC preference was recorded, and Part C consisted of measurement scales of all the variables considered for the study. The study adopted a Likert 7-point scale as the dimension strongly disagree 1.....strongly agree 7. The number of responses (N) was 41.

3.13.2 Results of the Pilot Study

The pilot study analysis was done in IBM SPSS 28. The details are as follows: The number of responses (N) was 41, with one as minimum and seven as maximum values. The study checked Kaiser-Meyer-Olkin (KMO) values for the adequacy of the sample

in the pilot study. The value for the KMO was more than .6 for all the factors which fall under the acceptable range (Spicer, 2005; Field, 2009). Second, the study performed a reliability analysis with Cronbach alpha, and composite reliability and average variance were extracted. Cronbach alpha assesses the consistency of the entire scale, which is more than .8 and falls under the acceptable range (Hair et al., 2014). Composite reliability is more than .7, and the average variance extracted is more than .5, which falls under the accepted range (Hair et al., 2014). Factor loading was checked for convergent validity, and it was performed to understand the underlying structure among the variables used in the analysis. Factor loading should be .5 or greater (Hair et al., 2014) and was observed in the pilot study result.

3.13.3 Reliability Assessment of the Survey Instrument

Composite reliability (CR) values and Cronbach's alpha values were calculated to check the reliability of the questionnaire. The Cronbach's alpha value for each construct was above 0.7 (Hair et al., 2006). The Cronbach's alpha value for the survey instrument was 0.954, which is considered acceptable and demonstrates that the instrument is reliable (Table 3.6). The CR values of each construct were found to be more than 0.7 (Carmines & Zeller, 1979), which is also acceptable. Thus, it was seen that the measurement instrument was reliable and had internal consistency.

Table 3.6: Reliability Assessment of The Survey Instrument

Variable	Cronbach Alpha
Condition	.855
Timeliness	.860
Availability	.905
Responsiveness	.886
Assurance	.849
Empathy	.907
Customer Experience	.935
Customer Satisfaction	.854
Trust	.905

Source: Pilot study

3.13.4 Validity of the Survey Instrument

The validity of the scale was done in two ways: a) face validity and b) convergent validity. The details are presented below.

Face validity: This study adopts measurement scales that are already available in the SC and LSQ literature. This fulfils the face validity criteria.

Convergent validity: Convergent validity of the survey instrument was assessed by examining two values: a) factor loadings and b) average variance extracted (AVE). Each construct's factor loading was above the threshold limit of 0.7 (Hair, Ringle & Sarstedt, 2013). The AVE values were above the acceptable limit of 0.5 (Fornell & Larcker, 1981). This fulfils the convergent validity criteria (Table 3.7).

Table 3.7: Validity of the Survey Instrument

Variable	Composite reliability	Average variance extracted
Condition	0.975	0.753
Timeliness	0.966	0.708
Availability	0.958	0.688
Responsiveness	0.940	0.642
Assurance	0.824	0.635
Empathy	0.972	0.731
Customer Experience	0.938	0.637
Customer Satisfaction	0.963	0.701
Trust	0.971	0.732

Source: Pilot study

Overall, the pilot study results indicated that the respondents easily understood the items in the questionnaire. The wording of the questionnaire needed no further simplification. On average, each respondent took 10 to 15 minutes to complete the questionnaire. The pilot study analysis showed that each item contributed to measuring the construct they intended to measure.

Hence, the questionnaire was tested and validated, and all the items were retained as earlier.

3.14 DATA ANALYSIS

The data analysis comprised two stages. The first stage was a summary of the sample characteristics based on measures like mean, median, frequency, and standard deviation. SPSS 28 was used for the same. The socio-demographic characteristics like age, gender, education, income, and so on were assessed for the given sample. Further, the descriptive statistics aided in understanding the measures of the central tendency of the study constructs. In the second stage of analysis, hypotheses were tested, which aimed to generalize the findings from a sample to a population of interest (Allua & Thompson, 2009). In the present study, Structural Equation Modeling (SEM) was used to test the hypotheses.

3.14.1 Exploratory Factor Analysis

According to Bandalos (2016), factor analysis is used to identify the factor structure or model for a set of variables. The generation of theory generally accompanies exploratory factor analysis (EFA). In the present study, EFA was used to refine measures. However, it can be used to evaluate construct validity and, at times, test hypotheses (Conway & Huffcutt, 2003). PCA (Principal Component Analysis) was implemented with varimax rotation in order to identify the latent factors across the 34 items. The threshold value of 0.5 was considered; all factor loadings below this value were not considered (Hair et al., 2016). The Kaiser-Meyer-Olkin (Measure) of sampling adequacy and Bartlett's test of sphericity were conducted to measure sampling adequacy and suitability of data for factor analysis. To proceed with the data analysis, the expected sampling adequacy has to be 0.5 (Hutcheson & Sofroniou, 1999).

3.14.2 Reliability Analysis

According to Easterby-Smith et al. (2002), reliability is the extent to which data collection procedures or analysis procedures give consistent findings. This study

measured the internal consistency or reliability using Cronbach's alpha and Composite reliability. The reliability of multi-item scales is generally measured using Cronbach's alpha (DeVellis, 2005). In the current study, the reliability was assessed by comparing the amount of shared variance among the items that are part of an instrument to the amount of overall variance. The critical value considered for Cronbach's alpha was 0.7 (Nunnally, 1978; Hair et al., 2016). Any construct having a value below the same will be considered only after making suitable amendments.

Composite Reliability (CR) was calculated as a part of SEM. It is equal to the total amount of true score variance relative to the total score variance (Brunner & Martin Süß, 2005). For an instrument to have acceptable reliability, Fornell & Larcker (1981) recommended CR scores to be above 0.7

3.14.3 Validity Analysis

The question of whether the researcher is measuring accurately what he/she is supposed to measure is answered by validity. Validity is the accuracy of the measure or the extent to which a score truthfully represents a concept (Zikmund et al., 2013). There are different ways of measuring construct validity. The first step a researcher takes toward assessing validity is through content validity. Generally, content validity indicates if there is adequate coverage of investigative questions. In the present study, content validity was established by a rigorous literature review that considered scales or measurement items that were already prevalidated. Validity was further measured through convergent and discriminant validity. The extent to which each measurement item was related to its theoretical construct was assessed using convergent validity. A scale is said to possess convergent validity if more than 50 per cent of its variance is explained by its underlying construct, i.e., the mean of the squared multiple correlations should be at least 0.50 (Fornell & Larcker, 1981).

Discriminant validity indicates the extent to which the items of a construct are different from those of other constructs. In the present study cross loading indicator method and Fornell & Larcker criterion were used to measure discriminant validity. In the cross-loading method, factor loadings of the indicators on the assigned construct have to be higher than the loadings on other constructs. For an instrument to possess discriminant validity, each indicator loading should be greater than all of its cross-loadings (Barclay et al., 1995; Chin, 1998). The factor loadings of the items of the assigned construct should be higher than 0.7 (Hair et al., 2016).

3.14.4 Structural Equation Modeling

In the present study, SEM was used to analyze the data and test the study hypotheses. SEM was preferred because it can evaluate complex measurement models and structural models. SEM is a multivariate analytical approach applied for concurrent testing and appraising complex causal relationships among variables, even when the relationships are hypothetical (Vandenberg et al., 2009). Concurrently combining linear regression and factor analysis, SEM directly measures the observable indicator variables and statistically evaluates their interactions with theoretical latent variables (Hair et al., 2014). There are two major approaches to SEM -Co-variance-based SEM (CB-SEM) and Variance-based SEM (PLS-SEM). The biggest difference between CB-SEM and PLS-SEM is that the focus of the former is on accurately estimating the observed covariance matrix, whereas the latter focuses on explaining the variance in the endogenous constructs (Hair et al., 2014). CB-SEM follows a maximum likelihood (ML) estimation procedure with the intention of reproducing the covariance matrix (minimizing the difference between the observed and estimated covariance matrix) without concentrating on the explained variance (Hair et al., 2011).

SEM is composed of two sub-models: the measurement model and the structural model (Byrne, 2010). A measurement model is mainly used to assess the construct's validity and reliability, whereas the structural model is used to check the hypothesized relationships (Byrne, 2010). A measurement model also describes the links between the latent variables and observed measures. In the current study, the measurement model aided in the analysis of the intercorrelation within the study constructs, namely condition, timeliness, availability, responsiveness, assurance, empathy, trust, customer experience, and customer satisfaction. Analysis of Moment Structures 28 (AMOS 28) was used to perform structural Equation Modeling. AMOS is generally considered superior for confirmatory research due to its theory-driven approach, robust fit indices, and ability to handle complex models. Using AMOS for data analysis in a study can significantly enhance the rigor and clarity of your research findings. AMOS is a powerful statistical software that excels in SEM, providing a comprehensive way to examine complex relationships between observed and latent variables. By leveraging AMOS, researchers can validate theoretical models, assess the fit of data to proposed structures, and explore causal pathways with precision. Its user-friendly interface, combined with robust analytical capabilities, makes AMOS an invaluable tool for delivering compelling, empirically grounded insights in academic research, ultimately bolstering the credibility and impact of the study.

The structural model was used to test the relationship between independent variables (condition, timeliness, availability, responsiveness, assurance, empathy) and dependent variables (trust, customer experience, customer satisfaction). The most commonly used model fit measures used to assess the model's overall goodness of fit are the ratio of χ^2 to degrees-of-freedom (d.f.), comparative fit index (CFI), goodness-of-fit index (GFI), normalized fit index (NFI) and root mean square error of approximation (RMSEA). The

study resulted in developing a single model that provides the influence of independent variables, namely condition, timeliness, availability, responsiveness, assurance, and empathy, on customer satisfaction. The model also predicted the influence of trust and customer experience.

3.15 CHAPTER SUMMARY

Chapter 3 provided detailed insights into the various aspects of research methodology encompassing of the philosophy, paradigm, approach, methods and design of research and data sources involved. The research instrument development, along with the sources, was extensively discussed. The sampling methodology and justification for the same were discussed in detail. A pilot study and its findings have been highlighted. A small snapshot of various statistical tools used for analysis was discussed in the chapter.

CHAPTER 4
DATA ANALYSIS AND
INTERPRETATIONS

CHAPTER 4 DATA ANALYSIS AND INTERPRETATIONS

4.1 CHAPTER OVERVIEW

Data analysis and interpretation of results are presented in chapter 4. Section 4.2 explains data preparation for analysis through data editing, coding, and screening. Sociodemographic information is compiled and analyzed in detail in section 4.3. Consumer preferences based on Fr2Fr SC shopping are covered in section 4.4. Descriptive statistics of the primary data collected are provided in section 4.5. The factor analysis, along with the reliability measures, are explained in section 4.6. The measurement model for the study is portrayed in section 4.7 through confirmatory factor analysis (CFA) along with validity measures. The different tests of validity are explained in section 4.8. In section 4.9, the hypotheses of the conceptual framework are tested using the structural equation modelling detailing various fit indices to test the model fit. Section 4.10 explain and provide result for common method bias. Section 4.11 provides results and interpretation of hypothesis testing. A chapter summary is provided in section 4.12.

4.2 DATA PREPARATION FOR ANALYSIS

A few steps in data preparation were required to analyze the data accurately. Data preparation is typically an iterative process of converting unorganized data into a more organized format. The data collected was a bit unorganized, and missing data issues were noticed. There could be some missing data either because the respondent needed help understanding the question or missed the question by mistake (De Vaus, 2002). Instances of missing data were handled by the listwise deletion method. According to this method, all the instances of missing data were deleted. This method is ideal for large sample sizes (Hair et al., 2010).

A total of approx. One thousand one hundred questionnaires were distributed, of which 880 responded to the questionnaire. However, after a diligent check, 48 responses were excluded due to missing data, owing to which 832 responses were considered.

4.2.1 Data Coding for SPSS

The data coding was initiated in the variable view of SPSS by appropriately choosing if the variable was categorical or quantitative. Based on the same, the variables were tagged based on whether they were string or numeric. For the socio-demographic information, the options for multiple-choice questions were coded using numbers 1-5. Similarly, the constructs which were measured using the Likert scale were coded from 1 to 7.

4.3 SOCIO-DEMOGRAPHIC PROFILE OF FRIEND-TO-FRIEND SOCIAL COMMERCE CUSTOMERS

After collecting data through online and offline modes, 832 responses from Fr2Fr SC consumers were recorded for further data analysis. The demographic distribution of the respondents is provided in Table 4.1. Of these, 48.3% of Fr2Fr SC respondents were males (N=402), and 51.6% were females (N=430). The preference for SC shopping can vary among individuals and is influenced by many factors, including convenience, preferences, and societal expectations. It is important to note that preferences for online shopping are diverse, and gender has an important role. The focus on male and female SC shoppers was the same, as evidenced by the 48:51 male-to-female ratio. It is evident from the published literature on online shopping behaviour that age plays a significant role in studying social commerce shopping behaviour (e.g., Thaichon, 2017). Different age groups have distinct motivations, preferences, and behaviours regarding SC shopping. However, the general trend shows that SC consumers are dominated by young (<35 years). Table 4.1 also captured the SC consumers across different age

brackets. 10.3% of respondents were below the age group of 24; 12.9 % of respondents were in the age group of 25 to 35; 40.8% of respondents were in the age group of 36 to 45, 24.7% of respondents were in the age group of 46 to 55 and 11 % of respondents were more than 56 years old. This shows that Fr2Fr Sc is mostly used by people belonging to the 36-55 age bracket.

Table 4.1: Demographic Distribution of the Respondents

Demographic variable	Frequency	Per cent
Gender		
Male	402	48.3
Female	430	51.6
Age Group		
18-24	86	10.3
25-35	108	12.9
36-45	340	40.8
46-55	206	24.7
56 and above	92	11
Marital Status		
Married	642	68.8
Unmarried	127	13.6
Other	63	6.7
Employment status		
Employed	324	38
Homemaker	275	33
Student	64	7.6
Retired	55	6.6
Self-employed	114	13.7
Family monthly income (INR)		
50,000 and below	525	63.1
Between 50001- 1,00,000	244	29.3
Above 1,00,000	63	7.57
Educational Qualification		
Up to 10 standards	208	25
11 to 12 standards	125	15
Graduate	323	38.8
Postgraduate	167	20
PhD	9	1

Source: Data Analysis

Post-graduates formed a major chunk of the respondents with 55 per cent, followed by graduates at 38.8 per cent. The profile of the respondents indicates that a considerable

number of respondents are well-educated. 63.1 per cent of the shoppers had a monthly income of 50,000 ₹ and below, followed by 29.3 of the respondents who earned 50,001-1,00,000 ₹ a month. 7.57 per cent of the respondents were in the income bracket above 1,00,000.

Salaried employees were the highest in number and accounted for 38 per cent of the respondents, 33 per cent of the respondents were homemakers, and 13.7 per cent ran their own businesses. The majority of the respondents, 68.8 per cent, were married, and 13.6 per cent were unmarried.

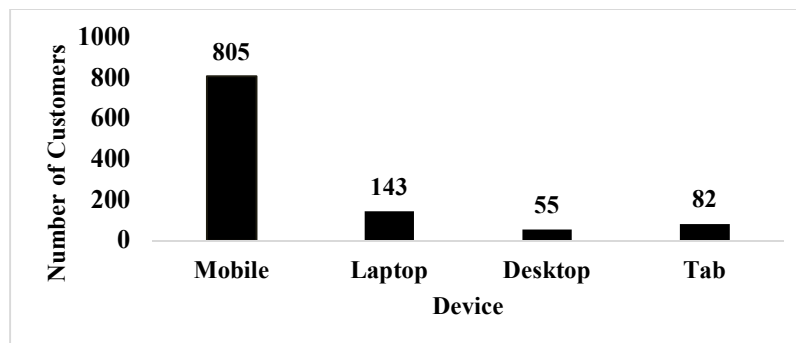
Based on the socio-demographic information in Table 4.1, it is evident that the majority of the respondents were in the age group of 36-55 years, well-educated, and with middle-income levels.

4.4 Fr2Fr SOCIAL COMMERCE CUSTOMERS' PREFERENCE

This study has considered SC preference based on preferred devices and social media/social networking site(s).

4.4.1 Preferred Device in Fr2Fr SC

The pictorial representation of the preferred device of the Fr2Fr SC consumers is shown in Figure 4.1. The majority of Fr2 Fr SC consumers use mobile devices, followed by laptops, tablets, and desktops, for purchase in Fr2Fr social commerce. The reason for mobile device preference may be the ease and convenience of use at any time.

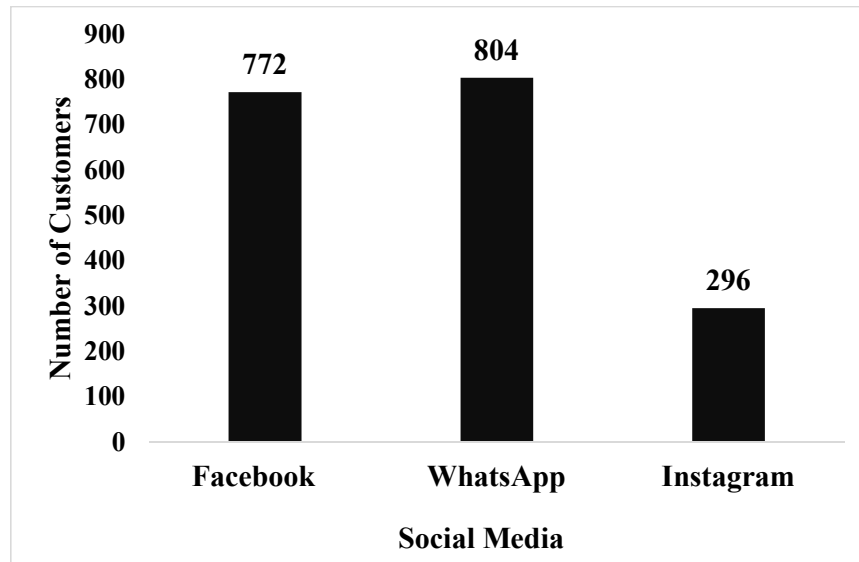


Source: Data Analysis

Figure 4.1: Preferred Device in Fr2Fr SC

4.4.2 Preferred Social Media/Social Networking Site(s)

The pictorial representation of the preferred SNS by Fr2Fr SC consumers is shown in Figure 4.2. It is evident that most respondents use WhatsApp, followed by Facebook and Instagram, to make purchases in Fr2Fr social commerce. The reason for WhatsApp's preference may be because of its simple, straightforward nature.



Source: Data Analysis

Figure 4.2: Preferred Social Media/Social Networking Site(s)

4.5 DESCRIPTIVE STATISTICS

Descriptive statistics were used to summarize the data using measures of central tendency (Table 4.2). Mean is also called a measure of central tendency, as it describes a dataset by identifying the central position within that set of data. Standard deviation indicates the spread of data. Generally, the mean and standard deviation are used in conjunction to summarize continuous data. Further, skewness can help one understand the location and variability of the data. Understanding skewness is essential for a comprehensive analysis of data distributions, allowing researchers and analysts to make more informed decisions and draw meaningful conclusions from their datasets. Hence, the skewness of the responses was calculated.

Table 4.2: Mean, Standard Deviation and Skewness

Variable	Items	Mean	Standard Deviation	Skewness
Condition	CND1	5.66	1.202	-1.905
	CND2	5.69	1.144	-1.701
	CND3	5.47	1.263	-1.461
	CND4	5.49	1.274	-1.567
Timeliness	TML1	5.80	1.138	-2.355
	TML2	5.60	1.186	-1.857
	TML3	5.66	1.222	-2.016
Availability	AVA1	5.73	1.104	-1.932
	AVA2	5.65	1.195	-1.923
	AVA3	5.71	1.165	-2.049
	AVA4	5.64	1.174	-1.963
Responsiveness	RES1	5.95	1.079	-3.097
	RES2	5.89	1.078	-3.148
	RES3	5.87	1.133	-2.752
	RES4	5.89	1.106	-2.853
Assurance	ASR1	3.08	1.675	0.659
	ASR2	2.96	1.559	0.789
	ASR3	3.05	1.647	0.651
Empathy	EMP1	2.99	1.563	0.773
	EMP2	3.10	1.661	0.675
	EMP3	3.01	1.633	0.754
Customer Experience	CE1	3.87	1.715	0.049
	CE2	4.85	1.600	-0.762
	CE3	3.65	1.755	0.183
	CE4	4.01	1.793	-0.085
	CE5	4.04	1.814	-0.116
Trust	TR1	3.17	1.676	0.596
	TR2	2.91	1.477	0.744
	TR3	3.00	1.605	0.667
	TR4	2.93	1.498	0.772
	TR5	3.15	1.597	0.585
Customer Satisfaction	CS1	5.89	1.101	-2.230
	CS2	5.82	1.109	-2.200
	CS3	5.81	1.136	-1.943

Source: Data Analysis

Table 4.2 shows the mean, standard deviation and skewness of constructs used in this study. OLSQ has three dimensions: condition, availability and timeliness. Condition has four items and mean ranges from 5.47 to 5.69, timeliness has three items and mean ranges from 5.60 to 5.80, availability has four items and mean ranges from 5.64 to 5.73. RLSQ has three dimensions: responsiveness, assurance and empathy. Responsiveness

has four items and mean ranges from 5.87 to 5.95, assurance has three items and mean ranges from 2.96 to 3.08, empathy has three items and mean ranges from 2.99 to 3.10. Customer experience and trust has five items each and their mean ranges from 3.65-4.85 and 2.91-3.17 respectively. Finally, customer satisfaction has three items whose mean ranges from 5.81 to 5.89.

Trust has relatively low scores on mean values and there are few reasons for it. Firstly, trust is a critical but complex construct in online transactions, and its formation can be significantly influenced by the nature of the relationship between the parties involved. In Fr2Fr social commerce, trust dynamics are inherently different from traditional e-commerce due to the social nature of the interactions. Published research emphasizes that while social ties can enhance trust, they can also complicate trust formation due to the dual roles of social and transactional relationships. Customers might feel hesitant to fully trust their friends in a commercial context, fearing potential damage to their personal relationships should the transaction not meet their expectations. Moreover, the relative novelty of Fr2Fr SC can also impact trust levels. As this form of commerce is still emerging, customers may not yet be fully comfortable or familiar with its mechanisms, leading to lower trust scores. According to Pavlou and Gefen (2004), trust in online marketplaces grows with increased familiarity and usage. Thus, the low mean score for Trust might reflect an early stage in the adoption of Fr2Fr SC, where customers are still acclimatizing to this new mode of purchasing.

Another aspect to consider is the perceived risk associated with Fr2Fr transactions. In the case of Fr2Fr SC, even though the transactions occur within a familiar social network, the perceived risk could be heightened due to potential issues like accountability and return policies, which are less clear-cut than in traditional e-commerce settings. Lastly, the operational components of LSQ—product availability,

condition, and timeliness—though crucial, may not be sufficient on their own to foster high levels of trust if relational aspects (responsiveness, assurance, and empathy) are perceived as lacking. As noted by Yen and Lu (2008), trust in online vendors is significantly influenced by relational quality factors. If the RLSQ dimensions are perceived as inadequate, it could lead to overall lower trust scores despite strong operational performance.

Therefore, the relatively low mean score for Trust in our study can be attributed to the unique dynamics of Fr2Fr social commerce, including the dual role of social relationships, the novelty of the commerce model, perceived risks, and the interplay between operational and relational quality dimensions. These factors highlight the complexity of trust formation in Fr2Fr SC and suggest avenues for future research to explore ways to enhance trust in this emerging context. Overall, the mean of constructs used in the study ranged from 2.91 to 5.95, indicating a central tendency of the respondents between average to a good level perception.

Standard deviation and important measure of variation has also been reported in Table 4.2. For condition it ranged from 1.14 to 1.27, for timeliness it ranges from 1.13 to 1.22 and for availability it is from 1.10 to 1.19. Standard deviation for responsiveness range from 1.07 to 1.13, for assurance it is 1.55 to 1.67 and for empathy it ranges from 1.56 to 1.66. Customer experience and trust has standard deviation range of 1.60-1.81 and 1.47-1.67 respectively. Finally, customer satisfaction has standard deviation range from 1.10 to 1.13. Overall, the standard deviation of constructs used in the study ranged from 1.07 to 1.81.

As shown in Table 4.2, skewness values are in the acceptable range, thus implying the normality of the data in this research. Skewness values were used to demonstrate the univariate normality of scales (Duong, 2021; Doan et al., 2021). Results showed that

all scales were found in expected values when skewness was lower than 3 (Hair et al., 2010), which indicates the suitability of the data for factor analysis.

4.6 FACTOR ANALYSIS & RELIABILITY OF STUDY CONSTRUCTS

4.6.1. Factor Analysis

Exploratory factor analysis was first practically utilized by Spearman (1904). Eventually, it became a preferred tool in evaluating theories and validating measurement instruments (Haig, 2014; Izquierdo et al., 2014). Factor analysis is based on the rudimentary assumption that for an aggregation of observed variables, there is a set of underlying variables called factors (smaller than the observed variables) that can explain the interrelationships among those variables. SPSS 28.0 was used for factor analysis. Factor analysis was applied to all nine constructs namely condition, timeliness, availability, responsiveness, assurance, empathy, customer experience, trust and customer satisfaction. The sampling adequacy was checked using the Kaiser- Meyer-Olkin (KMO) measure of sampling adequacy. All the values were above the acceptable threshold for all the study constructs. The trust had the highest KMO-measure of sampling adequacy of 0.887, followed by customer experience with a value of 0.871.

4.6.2 Reliability Analysis of Study Constructs

The present study uses Covariance-based Structural Equation Modeling (CB-SEM) to test the study hypotheses. SEM consists of two sub-models: the measurement and structural models (Byrne, 2010). The measurement model is used to test the relations between the latent variables, i.e., condition, timeliness, availability, responsiveness, assurance, empathy, customer experience, trust, customer satisfaction. On the other hand, a structural model depicts the links between the latent variables, i.e., condition, timeliness, availability, responsiveness, assurance, empathy, customer experience, trust,

and customer satisfaction (Byrne, 2010) and is used to check the hypothesized relationships.

The measurement model in CB-SEM involves testing for reliability and validity. The reliability of the study constructs is measured by Cronbach's alpha and composite reliability.

4.6.2.1 Cronbach's Alpha

The internal consistency or reliability of the constructs was measured using Cronbach's alpha. A research instrument is considered to be reliable based on the extent to which it is consistently able to measure the study concept. Cronbach's alpha is one way of measuring the strength of that consistency. The Cronbach's alpha value ranges from 0 to 1. A higher α coefficient indicates that the majority of the items are covariant and a possible redundancy in measuring the concepts. The Cronbach's alpha for all the constructs: condition, timeliness, availability, responsiveness, assurance, empathy, customer experience, trust, and customer satisfaction was above 0.7, which is considered good and acceptable (Nunnally, 1978; Hair et al., 2016).

4.6.2.2 Composite Reliability

Composite reliability is an indicator of the shared variance among the observed variables used as an indicator of an underlying construct (Fornell & Larcker, 1981). Composite reliability values are calculated for each of the study constructs and compared with the cutoff value of 0.6 (Bagozzi & Yi, 1988). Higher composite reliability values are an indication that all measures consistently represent the same latent variable (Fornell & Larcker, 1981; Hair et al., 2009). In the present study, all the constructs (condition, timeliness, availability, responsiveness, assurance, empathy, customer experience, trust, and customer satisfaction) have a composite reliability value greater than the acceptable cut-off value of 0.6, indicating that the measurement

scales have adequate internal consistency and reliability. The construct of responsiveness had the highest composite reliability with a value of 0.939, followed by trust with a value of 0.931.

4.6.3 Factor Loading and Sampling Adequacy

The KMO measure of sampling adequacy and Bartlett's test of sphericity were conducted to measure sampling adequacy and suitability of data for factor analysis. The KMO test is also conducted to measure the construct validity and to demonstrate the existence of latent factors. SPSS 28 was used to determine the factor validity of the study constructs. The KMO measure of sampling adequacy values ranged from 0.7 to 0.9 for all the constructs, which indicates the suitability of the data for factor analysis (Hutcheson & Sofroniou, 1999). PCA (Principal Component Analysis) was implemented with varimax rotation to identify the latent factors across the 34 items. The factor loadings for all the items (condition, timeliness, availability, responsiveness, assurance, empathy, customer experience, trust, and customer satisfaction) were above the acceptable value of 0.4 (Malhotra, 2004). Bartlett's test of sphericity was significant with $p < 0.05$ across all the constructs, which indicated the suitability of factor analysis (Hair et al., 1998).

4.6.4 Condition

i. Reliability

The condition was measured using a scale of 4 items. The Cronbach's alpha and composite reliability (CR) were 0.887 and 0.923, respectively. It is well above the acceptable threshold of 0.7 and indicates that the constructs exhibit sufficient internal consistency and reliability.

ii. Factor Analysis

The KMO value and Bartlett's test of sphericity values are given in Table 4.3:

Table 4.3: KMO & Bartlett's Test of Sphericity for Condition

KMO		.838
Bartlett's Test of Sphericity	Approx. Chi-Square	937.243
	df	6
	Sig.	<.001
	% of Total Variance Explained	75.029

Source: Data analysis

The KMO measure of sampling adequacy and Bartlett's test of sphericity were significant, with an acceptable threshold of 0.7 and $p < 0.05$, respectively, which shows the suitability of the data for factor analysis. The factor loadings mentioned in Table 4.4 were above the acceptable value of 0.4 for all items, indicating that the data is suitable for further analysis like Structural Equation Modeling (SEM). All the factors put together were able to explain 75.029 per cent of the variance. The value is above 50 per cent and acceptable.

Table 4.4: Factor Analysis for Condition

Construct	Items	Factor Loading
Condition	CND1	0.867
	CND2	0.897
	CND3	0.817
	CND4	0.881

Source: Data analysis

4.6.5 Timeliness

i. Reliability

Timeliness was measured using a scale of 3 items. The Cronbach's alpha and CR were 0.827 and 0.897, respectively. It is well above the acceptable threshold of 0.7 and indicates that the constructs exhibit sufficient internal consistency and reliability.

ii. Factor Analysis

The KMO value and Bartlett's test of sphericity values are given in Table 4.5.

Table 4.5: KMO & Bartlett's Test of Sphericity for Timeliness

KMO		.720
Bartlett's Test of Sphericity	Approx. Chi-Square	460.456
	df	3
	Sig.	<.001
	% of Total Variance Explained	74.345

Source: Data Analysis

The KMO measure of sampling adequacy and Bartlett's test of sphericity were significant, with an acceptable threshold of 0.7 and $p < 0.05$, respectively, which shows the suitability of the data for factor analysis. The factor loadings mentioned in Table 4.6 were above the acceptable value of 0.4 for all items, indicating that the data is suitable for further analysis like SEM. All the factors put together were able to explain 74.345 per cent of the variance. The value is above 50 per cent and acceptable.

Table 4.6: Factor Analysis for Timeliness

Construct	Items	Factor Loading
Timeliness	TML1	0.867
	TML2	0.897
	TML3	0.817

Source: Data analysis

4.6.6 Availability

i. Reliability

Availability was measured using a scale of 4 items. The Cronbach's alpha and CR were 0.896 and 0.929, respectively. It is well above the acceptable threshold of 0.7 and indicates that the constructs exhibit sufficient internal consistency and reliability.

ii. Factor Analysis

The KMO value and Bartlett's test of sphericity values are given in Table 4.7.

Table 4.7: KMO & Bartlett's Test of Sphericity for Availability

KMO		.836
Bartlett's Test of Sphericity	Approx. Chi-Square	994.183
	df	6
	Sig.	<.001
	% of Total Variance Explained	76.400

Source: Data Analysis

The KMO measure of sampling adequacy and Bartlett's test of sphericity were significant, with an acceptable threshold of 0.7 and $p < 0.05$, respectively, which shows the suitability of the data for factor analysis. The factor loadings mentioned in Table 4.8 were above the acceptable value of 0.4 for all items, indicating that the data is suitable for further analysis like SEM. All the factors put together were able to explain 76.400 per cent of the variance. The value is above 50 per cent and acceptable.

Table 4.8: Factor Analysis for Availability

Construct	Items	Factor Loading
Availability	AVA1	0.894
	AVA2	0.891
	AVA3	0.845
	AVA4	0.866

Source: Data analysis

4.6.7 Responsiveness

i. Reliability

Responsiveness was measured using a scale of 4 items. The Cronbach's alpha and CR were 0.914 and 0.940 respectively. It is well above the acceptable threshold of 0.7 and indicates that the constructs exhibit sufficient internal consistency and reliability.

ii. Factor Analysis

The KMO value and Bartlett's test of sphericity values are given in Table 4.9.

Table 4.9: KMO & Bartlett's Test of Sphericity for Responsiveness

KMO		.851
Bartlett's Test of Sphericity	Approx. Chi-Square	1143.506
	df	6
	Sig.	<.001
% of Total Variance Explained		79.521

Source: Data analysis

The KMO measure of sampling adequacy and Bartlett's test of sphericity were significant, with an acceptable threshold of 0.7 and $p < 0.05$, respectively, which shows

the suitability of the data for factor analysis. The factor loadings mentioned in Table 4.10 were above the acceptable value of 0.4 for all items, indicating that the data is suitable for further analysis like SEM. All the factors put together were able to explain 79.521 per cent of the variance. The value is above 50 per cent and acceptable (Hair et al., 2016).

Table 4.10: Factor Analysis for Responsiveness

Construct	Items	Factor Loading
Responsiveness	RES1	0.883
	RES2	0.892
	RES3	0.879
	RES4	0.912

Source: Data analysis

4.6.8 Assurance

i. Reliability

Assurance was measured using a scale of 3 items. The Cronbach's alpha and CR were 0.796 and 0.881, respectively. It is well above the acceptable threshold of 0.7 and indicates that the constructs exhibit sufficient internal consistency and reliability.

ii. Factor Analysis

The KMO value and Bartlett's test of sphericity values are given in Table 4.11.

Table 4.11: KMO & Bartlett's Test of Sphericity for Assurance

KMO	.701
Bartlett's Test of Sphericity	Approx. Chi-Square 389.060
	df 3
	Sig. <.001
	% of Total Variance Explained 71.237

Source: Data analysis

The KMO measure of sampling adequacy and Bartlett's test of sphericity were significant, with an acceptable threshold of 0.7 and $p < 0.05$, respectively, which shows the suitability of the data for factor analysis. The factor loadings mentioned in Table

4.12 were above the acceptable value of 0.4 for all items, indicating that the data is suitable for further analysis like SEM. All the factors put together were able to explain 71.237 per cent of the variance. The value is above 50 per cent and acceptable.

Table 4.12: Factor Analysis for Assurance

Construct	Items	Factor Loading
Assurance	ASR1	0.815
	ASR2	0.868
	ASR3	0.848

Source: Data analysis

4.6.9 Empathy

i. Reliability

Empathy was measured using a scale of 3 items. The Cronbach's alpha and CR were 0.880 and 0.926 respectively. It is well above the acceptable threshold of 0.7 and indicates that the constructs exhibit sufficient internal consistency and reliability.

ii. Factor Analysis

The KMO value and Bartlett's test of sphericity values are given in Table 4.13.

Table 4.13: KMO & Bartlett's Test of Sphericity for Empathy

KMO		.737
Bartlett's Test of Sphericity	Approx. Chi-Square	673.145
	df	3
	Sig.	<.001
	% of Total Variance Explained	80.730

Source: Data analysis

The KMO measure of sampling adequacy and Bartlett's test of sphericity were significant, with an acceptable threshold of 0.7 and $p < 0.05$, respectively, which shows the suitability of the data for factor analysis. The factor loadings mentioned in Table 4.14 were above the acceptable value of 0.4 for all items, indicating that the data is suitable for further analysis like SEM. All the factors put together were able to explain 80.730 per cent of the variance. The value is above 50 per cent and acceptable.

Table 4.14: Factor Analysis for Empathy

Construct	Items	Factor Loading
Empathy	EMP1	0.909
	EMP2	0.876
	EMP3	0.910

Source: Data analysis

4.6.10 Customer Experience

i. Reliability

Customer experience was measured using a scale of 5 items. The Cronbach's alpha and CR were 0.872 and 0.907 respectively. It is well above the acceptable threshold of 0.7 and indicates that the constructs exhibit sufficient internal consistency and reliability.

ii. Factor Analysis

The KMO value and Bartlett's test of sphericity values are given in Table 4.15.

Table 4.15: KMO & Bartlett's Test of Sphericity for Customer Experience

KMO		.871
Bartlett's Test of Sphericity	Approx. Chi-Square	950.229
	df	10
	Sig.	<.001
	% of Total Variance Explained	66.204

Source: Data analysis

The KMO measure of sampling adequacy and Bartlett's test of sphericity were significant, with an acceptable threshold of 0.7 and $p < 0.05$, respectively, which shows the suitability of the data for factor analysis. The factor loadings mentioned in Table 4.16 were above the acceptable value of 0.4 for all items, indicating that the data is suitable for further analysis like SEM. All the factors put together were able to explain 66.204 per cent of the variance. The value is above 50 per cent and acceptable.

Table 4.16: Factor Analysis for Customer Experience

Construct	Items	Factor Loading
Customer Experience	CE1	0.797
	CE2	0.786
	CE3	0.806
	CE4	0.827
	CE5	0.851

Source: Data analysis

4.6.11 Trust

i. Reliability

Trust was measured using a scale of 5 items. The Cronbach's alpha and CR were 0.907 and 0.931 respectively. It is well above the acceptable threshold of 0.7 and indicates that the constructs exhibit sufficient internal consistency and reliability.

ii. Factor Analysis

The KMO value and Bartlett's test of sphericity values are given in Table 4.17.

Table 4.17: KMO & Bartlett's Test of Sphericity for Trust

KMO		.887
Bartlett's Test of Sphericity	Approx. Chi-Square	1286.476
	df	10
	Sig.	<.001
	% of Total Variance Explained	72.995

Source: Data analysis

The KMO measure of sampling adequacy and Bartlett's test of sphericity were significant, with an acceptable threshold of 0.7 and $p < 0.05$, respectively, which shows the suitability of the data for factor analysis. The factor loadings mentioned in Table 4.18 were above the acceptable value of 0.4 for all items, indicating that the data is suitable for further analysis like SEM. All the factors put together were able to explain 72.995 per cent of the variance. The value is above 50 per cent and acceptable.

Table 4.18: Factor Analysis for Trust

Construct	Items	Factor Loading
Trust	TR1	0.827
	TR2	0.846
	TR3	0.861
	TR4	0.854
	TR5	0.882

Source: Data analysis

4.6.12 Customer Satisfaction

i. Reliability

Satisfaction was measured using a scale of 3 items. The Cronbach's alpha and CR were 0.816 and 0.891 respectively. It is well above the acceptable threshold of 0.7 and indicates that the constructs exhibit sufficient internal consistency and reliability.

ii. Factor Analysis

The KMO value and Bartlett's test of sphericity values are given in Table 4.19.

Table 4.19: KMO & Bartlett's Test of Sphericity for Customer Satisfaction

KMO		.706
Bartlett's Test of Sphericity	Approx. Chi-Square	438.080
	df	3
	Sig.	<.001
% of Total Variance Explained		73.187

Source: Data analysis

The KMO measure of sampling adequacy and Bartlett's test of sphericity were significant, with an acceptable threshold of 0.7 and $p < 0.05$, respectively, which shows the suitability of the data for factor analysis. The factor loadings mentioned in Table 4.20 were above the acceptable value of 0.4 for all items, indicating that the data is suitable for further analysis like SEM. All the factors put together could explain 73.187 per cent of the variance. The value is above 50 per cent and acceptable.

Table 4.20: Factor Analysis for Customer Satisfaction

Construct	Items	Factor Loading
Satisfaction	SS1	0.853
	SS2	0.882
	SS3	0.830

Source: Data analysis

4.6.13 Reliability Analysis Summary

A summary of all the reliability measures used for testing the internal consistency of the research instrument is shared in Table 4.21. The Cronbach alpha values ranged from 0.816 to 0.914, and the CR values varied from 0.881 to 0.940. All the values are above the acceptable threshold, indicating that the research instrument has adequate internal consistency and reliability.

Table 4.21: Reliability Analysis: Study Constructs

Study constructs	No. of Items	Cronbach alpha	CR
Condition	4	0.887	0.923
Timeliness	3	0.827	0.897
Availability	4	0.896	0.929
Responsiveness	4	0.914	0.94
Assurance	3	0.796	0.881
Empathy	3	0.88	0.926
Customer Experience	5	0.872	0.907
Customer Satisfaction	3	0.816	0.891
Trust	5	0.907	0.931

Source: Data analysis

4.7 CONFIRMATORY FACTOR ANALYSIS

In this thesis, Confirmatory factor analysis (CFA) is performed to confirm the factor structure extracted from EFA. The data were analyzed using AMOS 28.0 using a two-step maximum likelihood structural equation model (SEM). Confirmatory Factor Analysis (CFA) was conducted on the data set to assess the measurement model. CFA is a statistical technique that confirms if the number of factors (or constructs) and the loadings of observed (indicator) variables on them conform to what is expected based

on theory (Malhotra et al., 2007). CFA mainly contributes to determining the scale validation and confirming the multidimensionality of the theoretical construct (Byrne, 2010). According to Anderson and Gerbin (1988), the assessment and refinement of confirmatory measurement models is a prerequisite to testing structural equation models. In CFA standardized factor loadings for each indicator are available. The standardized loading factor (regression weight) indicates the contribution of each indicator to the respective variable. Acceptable standardized factor loading is 0.5 and ideally 0.7 or higher Hair et al., (2006). Unlike EFA, CFA is dependent on not just factor loadings but also fitness indices.

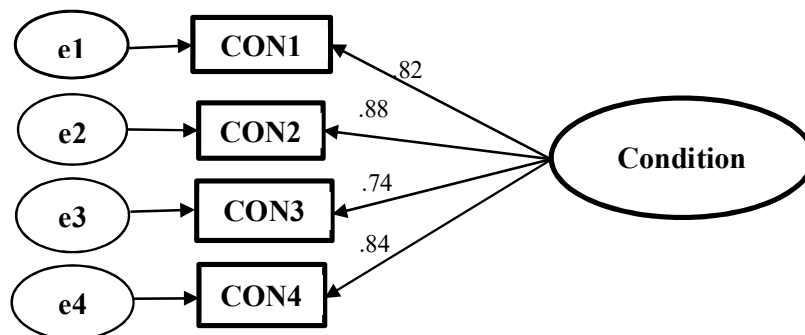
Composite Reliability (CR): CR measures were used to measure the constructs' internal consistency (Hair et al., 2009). All the latent variables (condition, timeliness, availability, responsiveness, assurance, empathy, customer experience, trust, and customer satisfaction) had a CR value of more than 0.70, as suggested by Hair et al. (2009). Composite reliability is an indicator of the shared variance among the observed variables used as an indicator of an underlying construct (Fornell & Larcker, 1981). Composite reliability values are calculated for each of the study constructs and compared with the cutoff value of 0.6 (Bagozzi & Yi, 1988). Higher composite reliability values are an indication that all measures consistently represent the same latent variable (Fornell & Larcker, 1981; Hair et al., 2009). In the present study, all the constructs: condition, timeliness, availability, responsiveness, assurance, empathy, customer experience, trust, and customer satisfaction have a composite reliability value greater than the acceptable cut-off value of 0.6, indicating that the measurement scales have adequate internal consistency and reliability.

Average Variance Extracted (AVE): AVE measures were used to assess convergent validity. AVE is closely related to construct validity. Higher AVE values suggest that

the latent construct is responsible for a significant proportion of the observed variance, supporting the idea that the construct is valid. If the AVE is below an acceptable threshold, researchers may consider revising their measurement model. This could involve modifying or removing indicators to enhance the convergent validity of the latent construct. All the latent variables (condition, timeliness, availability, responsiveness, assurance, empathy, customer experience, trust, and customer satisfaction) had an AVE value of more than 0.5, as Fornell and Larcker (1981) suggested. Measuring what is intended to be measured is construct validity (Field, 2005). Validity is measured using different methods, such as face or content validity, convergent validity, and discriminant validity. Content validity is generally used in developing a new instrument, including all essential items and eliminating undesirable items (Lewis et al., 1995). However, for the present study, the content validity is not measured as all the items to measure the study constructs are from pre-validated scales. Convergent and discriminant validity are used to assess the validity of the research instrument.

4.7.1 Confirmatory Factor Analysis for Condition

CFA for all condition indicators is exhibited in Figure 4.3. The factor loadings were in the range of 0.74 -0.88, above the acceptable threshold of 0.5 (Awang, 2014; Hair et al., 2006).

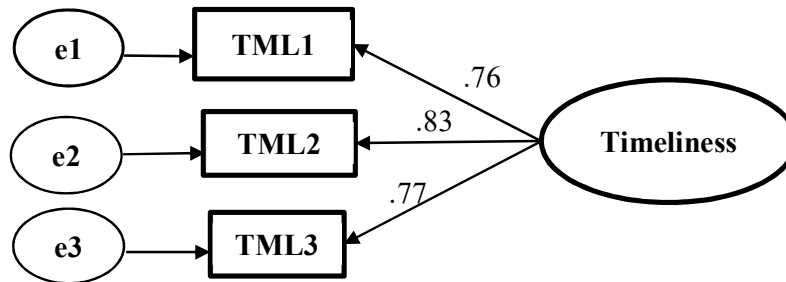


Source: Data analysis

Figure 4.3: CFA for Condition

4.7.2 Confirmatory Factor Analysis for Timeliness

CFA for all timeliness indicators is exhibited in Figure 4.4. The factor loadings were in the range of 0.76 -0.83, above the acceptable threshold of 0.5 (Awang, 2014; Hair et al., 2006).

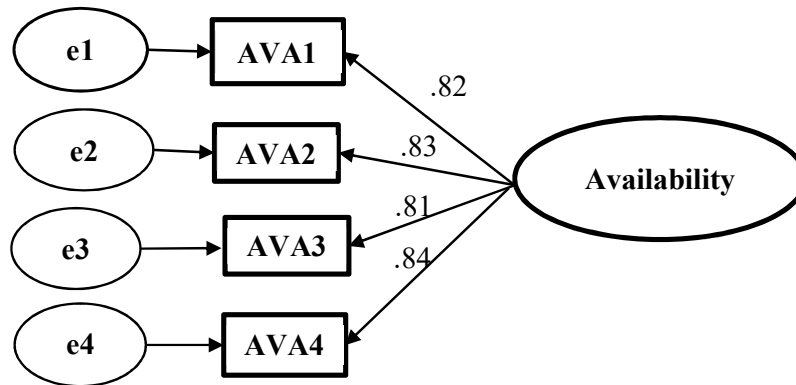


Source: Data analysis

Figure 4.4: CFA for Timeliness

4.7.3 Confirmatory Factor Analysis for Availability

CFA for all availability indicators is exhibited in Figure 4.5. The factor loadings were in the range of 0.81 -0.84, above the acceptable threshold of 0.5 (Awang, 2014; Hair et al., 2006).

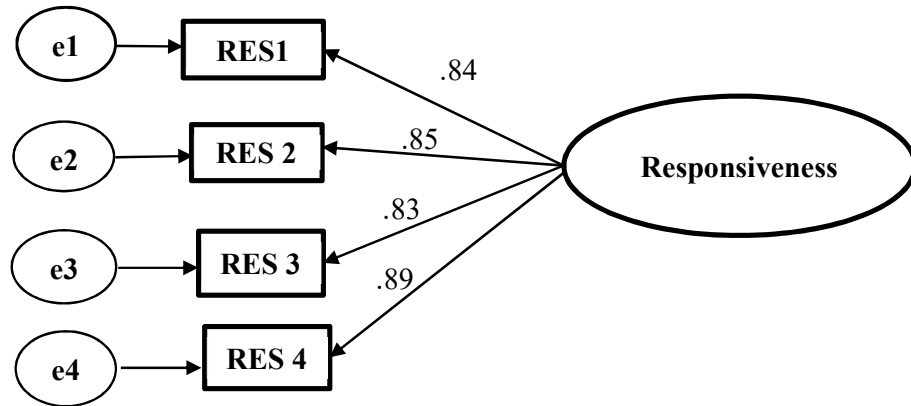


Source: Data analysis

Figure 4.5: CFA for Availability

4.7.4 Confirmatory Factor Analysis for Responsiveness

CFA for all responsiveness indicators is exhibited in Figure 4.6. The factor loadings were in the range of 0.83 -0.89, above the acceptable threshold of 0.5 (Awang, 2014; Hair et al., 2006).

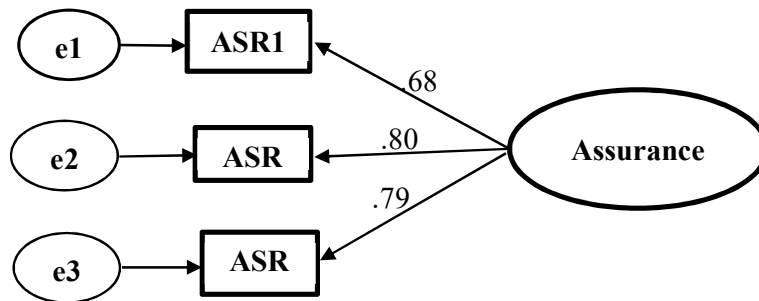


Source: Data analysis

Figure 4.6: CFA for Responsiveness

4.7.5 Confirmatory Factor Analysis for Assurance

CFA for all assurance indicators is exhibited in Figure 4.7. The factor loadings were in the range of 0.68 -0.80, above the acceptable threshold of 0.5 (Awang, 2014; Hair et al., 2006).

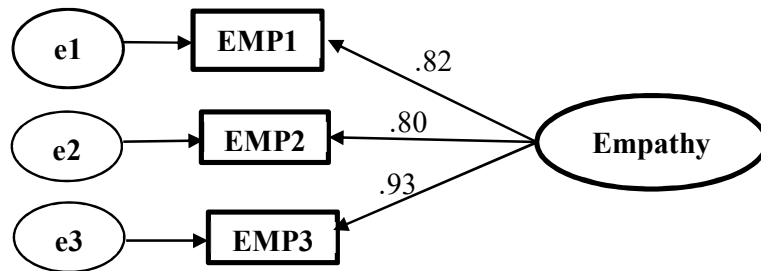


Source: Data analysis

Figure 4.7: CFA for Assurance

4.7.6 Confirmatory Factor Analysis for Empathy

CFA for all empathy indicators is exhibited in Figure 4.8. The factor loadings were in the range of 0.80 -0.93, above the acceptable threshold of 0.5 (Awang, 2014; Hair et al., 2006).

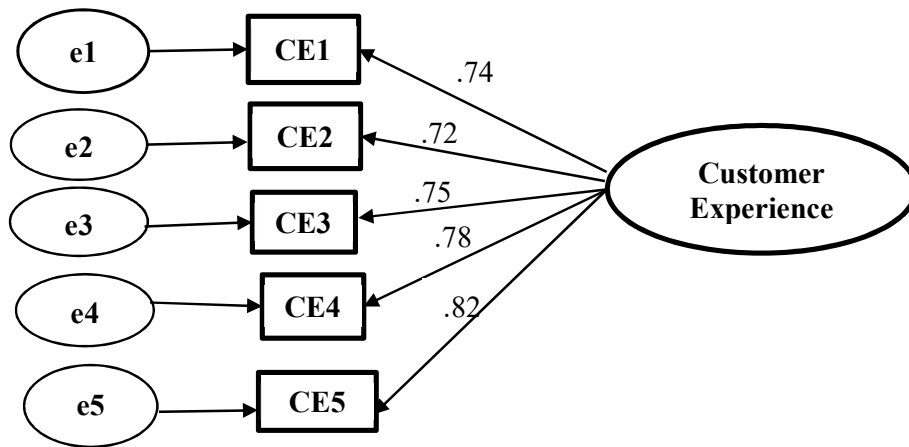


Source: Data analysis

Figure 4.8: CFA for Empathy

4.7.7 Confirmatory Factor Analysis for Customer Experience

CFA for all customer experience indicators is exhibited in Figure 4.9. The factor loadings were in the range of 0.72 -0.82, above the acceptable threshold of 0.5 (Awang, 2014; Hair et al., 2006).

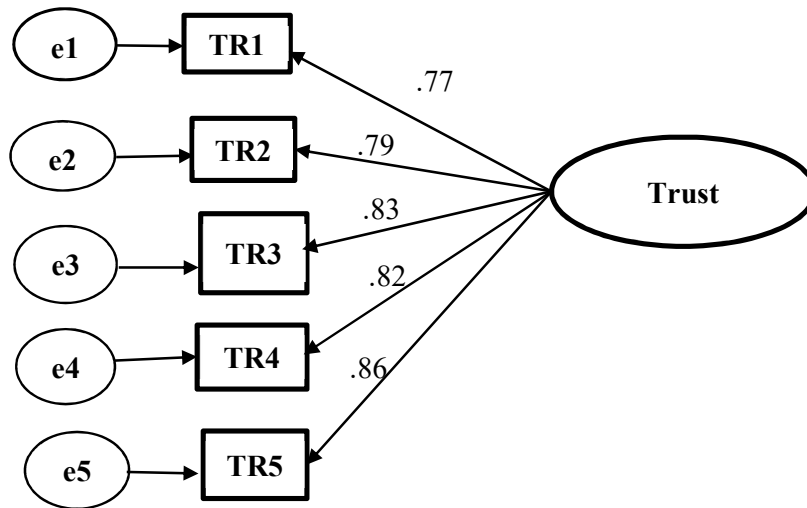


Source: Data analysis

Figure 4.9: CFA for Customer Experience

4.7.8 Confirmatory Factor Analysis for Trust

CFA for all trust indicators is exhibited in Figure 4.10. The factor loadings were in the range of 0.77 -0.86, above the acceptable threshold of 0.5 (Awang, 2014; Hair et al., 2006).



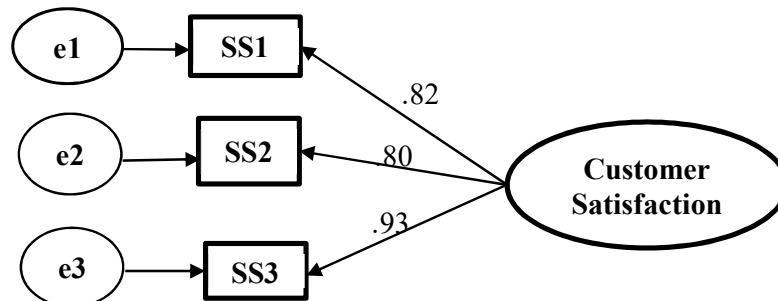
Source: Data analysis

Figure 4.10: CFA for Trust

4.7.9 Confirmatory Factor Analysis for Customer Satisfaction

CFA for all customer satisfaction indicators is exhibited in Figure 4.11. The factor loadings were in the range of 0.80 -0.93, above the acceptable threshold of 0.5

(Awang, 2014; Hair et al., 2006).



Source: Data analysis

Figure 4.11: CFA for Customer Satisfaction

A brief summary of Confirmatory Factor Analysis is provided in Table 4.22.

Table 4.22: Confirmatory Factor Analysis Results

Variable	Items	Factor Loading	AVE	CR
Condition	CON1	0.814	0.670176	0.89005
	CON2	0.877		
	CON3	0.736		
	CON4	0.841		
Timeliness	TML1	0.758	0.615594	0.827495
	TML2	0.827		
	TML3	0.767		
Availability	AVA1	0.822	0.684863	0.896817
	AVA2	0.833		
	AVA3	0.814		
	AVA4	0.841		
Responsiveness	RES1	0.838	0.727611	0.914373
	RES2	0.854		
	RES3	0.833		
	RES4	0.886		
Assurance	ASR1	0.68	0.571786	0.799457
	ASR2	0.794		
	ASR3	0.789		
Empathy	EMP1	0.817	0.709771	0.87976
	EMP2	0.804		
	EMP3	0.903		
Customer Experience	CE1	0.739	0.57872	0.872697
	CE2	0.718		
	CE3	0.751		
	CE4	0.777		
	CE5	0.815		
Trust	TR1	0.772	0.663172	0.907672
	TR2	0.792		
	TR3	0.829		
	TR4	0.817		
	TR5	0.859		
Customer Satisfaction	SS1	0.754	0.602413	0.819107
	SS2	0.841		
	SS3	0.729		

CND=Condition, TML= Timeliness, AVA=Availability, RES=Responsiveness, ASR=Assurance, EMP=Empathy, TR=Trust, CE=Customer Experience, CS=Customer Satisfaction

Source: Data Analysis

4.8 VALIDITY TEST OF STUDY CONSTRUCTS

Measuring what is intended to be measured is construct validity (Field, 2005). Validity is measured using different methods, such as face or content validity, convergent validity, and discriminant validity. Content validity is generally used in developing a new instrument, including all essential items and eliminating undesirable items (Lewis et al., 1995). However, for the present study, the content validity is not measured as all the items to measure the study constructs are from pre-validated scales. Convergent and discriminant validity are used to assess the validity of the research instrument.

4.8.1 Convergent Validity

Convergent validity involves considering two measures that are supposed to be measuring the same construct and show that they are related. Strong correlations between a set of measures representing a given construct indicate that they adequately capture it (Carlson & Herdman, 2012). Table 4.23 provides the AVE values for the study variables.

Table 4.23: AVE Values of the Study Constructs

Study Constructs	CND	TML	AVA	RES	ASR	EMP	CE	TR	CS
AVE values	.750	.743	.764	.795	.712	.807	.662	.730	.731

CND=Condition, TML= Timeliness, AVA=Availability, RES=Responsiveness, ASR=Assurance, EMP=Empathy, TR=Trust, CE=Customer Experience, CS=Customer Satisfaction

Source: Data analysis

The extent to which each measurement item was related to its theoretical construct was assessed using convergent validity. A scale is said to have convergent validity if its underlying construct explains more than half of its variance, i.e., the mean of the squared multiple correlations should be at least 0.50 (Fornell & Larcker, 1981). As all the AVE (Average Variance Extracted) values for the present study are above the

acceptable threshold of 0.5 (Hair et al., 2010), the constructs do exhibit convergent validity.

4.8.2 Discriminant Validity

Discriminant validity indicates the extent to which a construct's items differ from those of other constructs. The goal of discriminant validity is to ensure one can discriminate dissimilar constructs. In the present study, we use the cross-loading indicator method and the Fornell & Larcker criterion (Fornell & Larcker, 1981). This method compares the Average Variance Extracted (AVE) square root to the latent constructs' correlation. The latent construct is expected to explain the variance of its own indicators rather than the variance of the other latent constructs. In Table 4.24, it is evident that AVE values across the diagonal are greater than the squared latent variable correlations, indicating that the discriminant validity assumption is supported.

Table 4.24: Discriminant Validity Test (Fornell-Larcker Criteria)

Study Construct	ASR	AVA	CE	CON	EMP	RES	SS	TML	TR
ASR	0.832								
AVA	0.198	0.874							
CE	0.225	0.231	0.813						
CON	0.190	0.400	0.294	0.866					
EMP	0.824	0.179	0.207	0.227	0.895				
RES	0.027	0.113	0.151	0.202	0.071	0.891			
SS	0.218	0.335	0.254	0.555	0.214	0.148	0.855		
TML	0.179	0.854	0.287	0.465	0.165	0.144	0.421	0.858	
TR	0.185	0.178	0.323	0.25	0.139	0.129	0.191	0.249	0.854

Note: The bold diagonal values are the square root of AVE values. Correlations between the constructs are below the diagonal.

Source: Data analysis

4.9 STRUCTURAL EQUATION MODELING

The use of structural equation modelling (SEM) across various branches of management has considerably increased (Chin et al., 2008; Hair et al., 2011). Covariance-based SEM was used to understand the multivariate relationships in the study. This is ideal for theory testing and studies involving reflective measures.

SEM is composed of two sub-models: the measurement model and the structural model (Byrne, 2010). A measurement model is mainly used to assess the construct's validity and reliability, whereas the structural model is used to check the hypothesized relationships (Byrne, 2010). A measurement model also describes the links between the latent variables and observed measures. Analysis of Moment Structures 23 (AMOS 28) was used to perform structural Equation Modeling.

4.9.1 Measurement Model

Based on CFA, it is observed that the values of the factor loadings in Table 4.22 are significant and well above the acceptable threshold of 0.5, and hence we can proceed with the path model to test the relationship between the variables. Then, the commonly used Goodness-of-Fit tests are chi-square, the Minimum Sample Discrepancy Function divided by df (CMIN/df), Comparative Fit Index, Goodness of Fit Index, Adjusted Goodness of Fit Index, Normed Fit Index, and Tucker Lewis Index, Incremental Fit Index and Root Mean Square Error (Hair, Gabriel & Patel, 2014) were analysed.

Chi-squared test (χ^2): The chi-squared test (χ^2) specifies the difference between observed and anticipated covariance matrices. The alternate hypotheses are proposed to indicate if there is a variance between the proposed model and the data structure (Gunzler & Morris, 2015). The smaller the difference, the better the fit and vice versa.

Comparative Fit Index (CFI): Unlike the RMSEA, which is an absolute fit index, CFI is an incremental index used to compare a hypothesized model and a baseline model (model with the worst fit) on fit. According to Bentler (1990), CFI measures the relative improvement in fit starting from the baseline model to the postulated model. CFI is a normed fit index, ranging from 0 to 1, with 0.95 being considered a threshold for good fit (Hu & Bentler, 1999).

Goodness of Fit Index (GFI): The goodness of fit index provides for perfect fit and estimation using the maximum likelihood method. A GFI value of 1 or a value very close to 1 is considered to be a good fit for the model. A GFI value of 0.90 is assumed to be an acceptable cut-off. There is consensus among several researchers that a GFI value closer to 1 indicates an acceptable fit (Hu & Bentler, 1999; Hwang & Takane, 2014; McDonald & Ho, 2002).

Adjusted Goodness of Fit Index (AGFI): AGFI is an adjusted version of the Goodness of Fit Index (GFI) that considers the complexity of the model by considering the number of estimated parameters. It measures how well the model fits the observed data while penalizing for model complexity. AGFI values closer to 1 suggest a good fit while accounting for the model's complexity. A commonly used threshold for AGFI is 0.80 or higher, indicating a good fit.

Normed Fit Index (NFI): NFI, also known as Bentler-Bonett Normed Fit Index, is used to scrutinize incongruity between the proposed model's chi-squared value and the null model's chi-square value.

NFI values greater than or equal to 0.95 are considered to be very good, the values between 0.9 and 0.95 are considered to be good, whereas values between 0.8 and 0.9 are considered to be suffering, and values are considered to be bad if less than 0.8.

Tucker-Lewis Index (TLI): The TLI was proposed by Tucker and Lewis (1973) mainly for exploratory factor analysis. Bentler and Bonnett (1980) later extended it to covariance structure analysis and labelled it as the non-normed fit index. The TFI values over 0.90 are considered acceptable (Hu & Bentler, 1999).

Incremental Fit Index (IFI): It is one of the fit indices that provide information about how well the estimated model reproduces the observed data. The IFI values range from

0 to 1, with higher values indicating better fit. A common threshold is 0.90 or higher, indicating a good fit.

Root Mean Square Error of Approximation (RMSEA): RMSEA, considered to be one of the most edifying fit indices, was developed by Steiger and Lind (1980). RMSEA is considered to be one of the most informative fit indices (Diamantopoulos & Siguaw, 2000) due to its sensitivity to the number of estimated parameters in the model. Based on consensus, an RMSEA value of less than 0.06 is considered to be more acceptable (Hu & Bentler, 1999).

The goodness of fit measures for the measurement model is given in Table 4.25. The CMIN/DF value is < 3 (Kline, 1998) and hence can be considered acceptable. Similarly, the GFI, AGFI, NFI, CFI, and IFI values are in an acceptable range, which indicates a good fit. The RMSEA value is just below the acceptable threshold of 0.05. The TLI is 0.96, which indicates a good fit. The regression weights of the CFA model suggest the fulfilment of minimum criteria for accepting or rejecting observed variables considered for further statistical analysis.

Table 4.25: Measurement Model Fit

Fit Indices	Calculated Value	Criteria for a good model fit
CMIN/DF	1.547	<3
The goodness of Fit Index (GFI)	.873	>0.8
Adjusted Goodness of Fit Index (AGFI)	.852	≥0.80
Incremental Fit Index (IFI)	.954	≥0.90
Normed Fit Index (NFI)	.901	≥0.90
Tucker Lewis Index (TLI)	.96	≥0.95
Comparative Fit Index (CFI)	.953	≥0.90
Root Mean Square Error (RMSE)	.038	≤0.05

Source: Data analysis

As all the parameters and fit indices for all the constructs were above the acceptable threshold (Hair, Ringle & Sarstedt, 2013), the model is fit for further advanced analysis

like Structural Equation Modeling (SEM). The measurement model fit run in the AMOS is provided in the Appendix 3.

The relationship between all the study constructs and measurement items is shown in the figure below. Correlations are represented by double-headed arrows. Covariance determines only the direction between variables, and it is the measure of correlation. Correlation calculates the strength and direction of linear relationships among two variables. The p-values associated with all constructs, i.e. were below 0.01, indicating that they are significant (Byrne, 2010).

4.9.2 R² Values

The coefficient of determination, denoted as R², measures the extent to which the independent variable and other predictors incorporated in the model account for the variability observed in the dependent variable. The structural equation modeling analysis using AMOS yielded an R² value of 0.460, indicating that around 46% of the variability in customer satisfaction can be accounted for by the OLSQ. The result suggests a significant correlation between OLSQ and customer satisfaction, ranging from moderate-to-strong (Cohen, 1988). The results indicate that the augmentation of OLSQ has the potential to result in enhanced levels of customer satisfaction. This R² value highlights the significance of SC management placing emphasis on investments and efforts that are designed to improve OLSQ in order to achieve or surpass customer expectations.

In terms of RLSQ as an independent variable, the structural equation modelling analysis yielded an R² value of 0.10, suggesting that around 10% of the variability in customer satisfaction is accounted for by RLSQ in the specific context of Fr2Fr social commerce in India. The low R² value suggests that only a small amount of the variation in customer satisfaction can be explained by the RLSQ. Due to the restricted ability of

RLSQ to explain customer satisfaction, it is necessary to do further study to investigate other factors that influence consumer satisfaction in Fr2Fr social commerce environments. This may entail examining the impact of variables such as perceived value, online community involvement, SC platforms, and cultural issues that are unique to the social commerce environment in India. Although the influence of RLSQ on customer satisfaction may be minimal, it is important for managers and practitioners to not disregard its significance. Improving RLSQ, including factors such as assurance, responsiveness, and empathic interactions, can still have a positive impact on customer satisfaction.

4.9.3 Structural Model

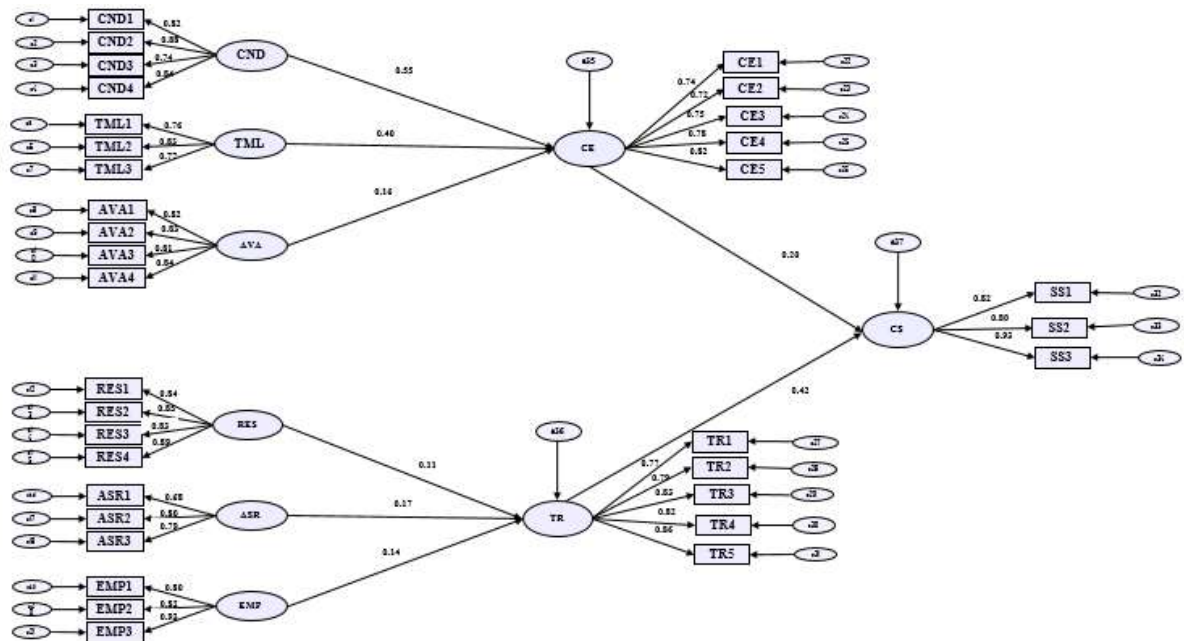
In SEM, the structural model represents the relationships among latent constructs and the observed variables, capturing the underlying theoretical framework of the study. The structural model is one of the key components of SEM, along with the measurement model. After the completion of the measurement model, reliability analysis, and validity analysis, structural equation modelling was used to assess the statistical significance of hypothesized relationships. The SEM model was used to calculate the goodness of fit measures and the strength of relationships between the endogenous and exogenous constructs. The hypothesized relationships between the constructs of OLSQ (Condition, timeliness and availability), RLSQ (responsiveness, assurance and empathy), customer experience, trust and customer satisfaction were tested. The β coefficients were evaluated and indicated the strength of the relationship. The squared correlation values were used to assess the explanatory power of the model. Fit indices for the structural model ($p = 0.000$, $CMIN/DF = 1.974$, $RMSEA = 0.048$, $GFI = .882$, $AGFI = .861$, $NFI = .902$, $CFI = .947$, $TLI = .95$ and $IFI = .948$) were all above the acceptable threshold (Table 4.26). Figure 4.12 depicts the structural model pictorially.

The current study tested the research model with a bootstrapping procedure to acquire the path estimates and T values, which were used to test the hypotheses. The stated hypotheses were tested by viewing the significance, signs, and magnitude of the computed coefficients. The hypothesis is accepted if the p-value ≤ 0.05 and the critical ratio (CRR) or T value ≥ 1.96 .

Table 4.26: Structural Model Fit

Fit Indices	Calculated Value	Criteria for a good model fit
CMIN/DF	1.974	<3
The goodness of Fit Index (GFI)	.882	>0.8
Adjusted Goodness of Fit Index (AGFI)	.861	≥ 0.80
Incremental Fit Index (IFI)	.948	≥ 0.90
Normed Fit Index (NFI)	.902	≥ 0.90
Tucker Lewis Index (TLI)	.95	≥ 0.95
Comparative Fit Index (CFI)	.947	≥ 0.90
Root Mean Square Error (RMSEA)	.048	≤ 0.05

Source: Data analysis



Source: Data Analysis

Figure 4.12: Structural Model

4.10 COMMON METHOD BIAS

Common Method Bias (CMB) refers to the distortion of results caused by the measurement method used rather than the actual constructs being measured. This bias can occur when data are collected from a single source, especially using self-report surveys, potentially leading to inflated relationships between variables (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). CMB can arise from various sources such as social desirability, consistency motif, and common rater effects, which can affect the validity and reliability of research findings (Podsakoff et al., 2012).

To address CMB in our study examining the impact of Logistics Service Quality (LSQ) on customer satisfaction in the context of Friend to Friend (Fr2Fr) social commerce, we implemented several procedural and statistical remedies as recommended in the literature.

First, we ensured the anonymity of respondents to reduce social desirability bias and encourage honest responses. Additionally, the survey items were carefully designed to be clear and concise, minimizing the potential for ambiguous interpretations that could contribute to measurement errors (MacKenzie & Podsakoff, 2012).

Second, we employed Harman's single-factor test as a diagnostic tool to check for CMB. This involved conducting an exploratory factor analysis (EFA) of all the survey items to see if one factor accounted for the majority of the variance. In our study, the results indicated that no single factor accounted for 23% which is less than 50% of the total variance, suggesting that CMB was not a significant issue (Podsakoff et al., 2003).

Furthermore, we used the marker variable technique, which involves including a theoretically unrelated variable to the primary constructs in the survey. This technique helps in assessing the extent to which CMB may influence the relationships among the primary variables. The inclusion of this marker variable in our analysis revealed no

substantial correlation with the primary constructs, further indicating that CMB was not significantly affecting our results (Lindell & Whitney, 2001).

Lastly, we applied statistical controls in our analyses. For instance, we used confirmatory factor analysis (CFA) to validate the measurement model, ensuring that the items loaded on their respective constructs as expected. Additionally, we employed a common latent factor in the structural equation modeling (SEM) to account for any potential CMB. This approach involves modeling a latent factor that is connected to all observed variables, capturing the common variance among them (Podsakoff et al., 2003).

By employing these procedural and statistical techniques, this study has taken comprehensive steps to mitigate the impact of Common Method Bias, thereby enhancing the validity and reliability of our study's findings.

4.11 HYPOTHESES TESTING

The list of hypotheses for this study are summarized in the following Table 4.27.

Table 4.27: List of Hypotheses

Hypothesis #	Statement
H1a	Availability is positively associated with customer satisfaction.
H1b	Timeliness positively influences customer satisfaction.
H1c	Condition positively influences customer satisfaction.
H2a	Assurance of the SC salesperson positively influences customer satisfaction.
H2b	Responsiveness of the SC salesperson positively influences customer satisfaction.
H2c	The empathy of the SC salesperson positively influences customer satisfaction.
H3	Trust mediates the relationship between RLSQ and customer satisfaction.
H4	Customer experience has a mediating effect on OLSQ and customer satisfaction.
H5a	Gender moderates the relationship between the OLSQ and customer experience.
H5b	Product type moderates the relationship between the OLSQ and customer experience.
H5c	Return/replacement experience moderates the relationship between the OLSQ and customer experience.

Source: Literature review

H1a: Availability is positively associated with customer satisfaction.

The hypothesis testing for the specific hypothesis H1a that product availability, a key aspect of operational LSQ, has a direct and positive impact on customer satisfaction in Fr2Fr SC aligns with established knowledge in e-commerce research. However, it also offers a specific contribution within the unique context of Fr2Fr SC interactions. With p-values consistently less than 0.01 and CRR value 3.929, the evidence strongly supports the availability relationship with customer satisfaction (Table 4.28). The beta coefficient of 0.331 further indicates the strength and direction of this relationship, specifically showcasing the impact of product availability on customer satisfaction. The individual factor loadings of the items indicates that customer value the product availability of all the products he/she wanted and expects them to be received in the first attempt with a factor loading of 0.894. Followed by the accurately fulfilling the order in one attempt with a factor loading of 0.89, making product availability an integral dimension of customer satisfaction.

This finding resonates with prior studies that highlight the significance of product availability for customer satisfaction in online retail environments (Peterson et al., 1997; Okamoto, 2016; Mikalef et al., 2017).

Peterson et al. (1997) was an early study to explore the online selling and they concluded that product availability leads to consumer involvement and eventually purchase. Their study was comparing online vs offline shopping and stressed on importance of product availability dimension as a core element of purchase decision. Okamoto (2016) while studying young consumers business to consumer transaction, opined that product availability is core reason for offline shoppers to convert to online mode of shopping and is a critical element for customer satisfaction. In terms of the SC, context, Mikalef et al. (2017) proved that large selection of products available on SC

sites has a positive effect on purchase intention and positive word of mouth. This study was conducted on young SC consumers (i.e. students) and did not consider individual SC platforms.

Table 4.28: Hypotheses Testing Results

Hypothesis	Path	Estimate (Beta)	T Value	P value	Decision
H1a	AVA->CS	0.331	3.929	***	Supported
H1b	TML->CS	0.322	4.250	***	Supported
H1C	CON->CS	0.344	4.716	***	Supported
H2a	ASR->CS	0.234	3.850	***	Supported
H2b	RES->CS	0.151	2.429	***	Supported
H2c	EMP->CS	0.231	3.945	***	Supported

*** p < 0.01

Source: Data analysis

Customers across various e-commerce platforms expect products to be readily available for purchase, and stockouts can lead to disappointment and dissatisfaction (Rashid & Rasheed, 2024). This finding also aligns with seminal studies by Rao et al. (2011) and Rao et al. (2014), who emphasize the pivotal role of LSQ in shaping customer perceptions and satisfaction levels in a typical online retail environment. Additionally, this finding resonates with research by Lin et al. (2023), which highlights the importance of timely and reliable product availability in enhancing overall customer experience and loyalty on online selling platforms. However, this study also unveils nuances that enrich the understanding of LSQ dynamics in Fr2Fr SC.

Furthermore, this finding also aligns with the S-O-R model, where the unavailability of a desired product (stimulus) creates a negative customer response, ultimately impacting satisfaction (Huo et al., 2023). While confirming the general importance of product availability, our research adds value by focusing on Fr2Fr SC. Unlike traditional platforms with centralized inventory management, product availability in Fr2Fr SC depends on individual resellers.

In continuation of the above stockout point angle, this finding is in contrast with the stream of literature where product shortage is used as a sales tactic (e.g., Peterson et al., 2020; Calvo et al., 2023). But there is a flip side to using this sales tactic. As per Calvo et al. (2023), the product shortage can drive sales in the short term, and online retailers can witness higher sales and revenues, but there will be a significant amount of product returns, leading to an overall decline in profits. In today's age of adverse climate change and global warming, forcing consumers to buy more and ultimately asking them to return is not a sustainable practice. Moreover, this product shortage policy works with pure online retail, where the salesperson is not present for one-to-one interaction. This is the area where Fr2Fr SC can make a significant impact and reduce the return/replacement proportions. The interaction with the salesperson can help the SC player to reveal the correct product availability and sell the right product at the right time and with a very low possibility of product return.

H1b: Timeliness positively influences customer satisfaction.

The hypothesis testing outcomes illuminate a significant positive relationship between the timely delivery of the products and customer satisfaction in Fr2Fr SC in India (hypothesis H1b). The exceptionally low p-value (less than 0.01) along with CRR value of 4.250, underscores the robust statistical significance for H1b. The beta coefficient of 0.322 provides a quantifiable measure of the strength and direction of this relationship, affirming positive relationship among timeliness and customer satisfaction (Table 4.28). The individual factor loadings of the items indicates that the seller's on time delivering all the products with a factor loading of 0.875 and the delivering all the products in a given time with a factor loading of 0.845 are significant to impact the customer satisfaction.

This finding resonates with prior studies that highlight the critical role of delivery timeliness in shaping customer satisfaction across various online retail platforms (Roy Dholakia & Zhao, 2010; Lin et al., 2011; Maia et al., 2018; Harter et al., 2024; Rashid & Rasheed, 2024). Customers generally expect prompt deliveries, and delays can lead to frustration, negative perceptions of service quality, and, ultimately, lower satisfaction (Abdul-Muhmin, 2010; Lei et al., 2022).

Delivery issues are the most commonly reported issue with online purchases, and fulfillment failures accounted for 64.2% of unsatisfactory instances, according to Holloway and Beatty (2003). According to Roy Dholakia & Zhao (2010), order fulfillment variables—specifically, on-time delivery—dominate the effects on overall customer satisfaction and ratings in the context of online buying. According to Lin et al. (2010), among Taiwanese university undergraduates with prior online purchasing experience, delivery quality was the most significant element in online consumer satisfaction. Maia & Associates (2018). Furthermore, Harter et al. (2024) demonstrated that early deliveries lengthen interpurchase intervals in the setting of fast commerce utilizing a sizable customer-level data on transactions set from a Western European delivery service for food and a controlled online experiment.

This finding also aligns with the S-O-R model, where delayed deliveries (stimulus) create a negative response in customers, impacting their overall satisfaction (Aggarwal & Rahul, 2017). Previous research suggests timely deliveries can enhance customer loyalty and repurchase intentions in e-commerce settings (Jain et al., 2021).

While confirming the general importance of delivery timeliness, this finding adds value by focusing on Fr2Fr SC. Unlike traditional platforms with established logistics infrastructure, on-time deliveries in Fr2Fr SC can be influenced by factors beyond the SC platform's direct control. These factors might include resellers' reliance on personal

couriers or dependence on third-party logistics providers with varying delivery timeframes.

However, our result contrasts with the stream of literature on aggressive delivery estimates (e.g., Cui et al., 2023) or tweaked delivery dates (i.e. deliver early and promise late) by an online retailer to boost sales. Using the aggressive delivery estimate strategy, the online retailer may boost sales in the short term by promising a speedy delivery without having the necessary infrastructure. This will lead to an increase in sales in the short term, but customer satisfaction will take a hit as the products will be delivered late, resulting in a higher level of returns. In the strategy of tweaked delivery, the satisfaction may go up, but in the long run, the customer may form expectations of early delivery. And if these expectations are not met, it may lead to dissatisfaction. An approach proposed by Cui et al. (2023) works better, i.e., a data-driven model that uses the estimated parameters to optimize delivery promises to maximize customer lifetime value. Ultimately, it boils down to the timely delivery of products.

H1c: Condition positively influences customer satisfaction

The results of hypothesis testing unveil a compelling positive relationship between the condition of the product upon delivery and customer satisfaction within the Fr2Fr SC India (H1c). The p-value, consistently below 0.01 along with CRR value of 4.716 underscores the statistical significance of this association, providing strong support for H1c. The beta coefficient of 0.344 quantifies the strength and direction of the relationship, affirming that positive relationship among product condition and customer satisfaction (Table 4.28). The items related to receiving products in good condition regarding the appearance (factor loading of 0.891), packing with a factor loading of 0.881 and actual product condition with a factor loading of 0.867 influence the customer satisfaction.

This finding resonates with prior studies that highlight the significance of product condition upon arrival for customer satisfaction in online retail environments (Stock & Lambert, 2001; Chen et al., 2017; Jain et al., 2021; Ampadu et al., 2022; Rashid & Rasheed, 2024).

In the context of SC, Chen et al. (2017) asserted that product condition influences buying decisions. Jain et al. (2021) demonstrated through their investigation of the Indian online shopping context that subpar shipments result in customer discontent and may even prompt product returns. In the case of Chinese online shoppers, Ampadu et al. (2022) have suggested that product condition has a beneficial impact on customer satisfaction. While examining the LSQ dimensions in Pakistani consumers' e-commerce, Rashid and Rasheed (2024) contended that product condition was discovered to have a significant and positive effect on satisfaction.

Customers expect products to match online descriptions and arrive free from defects. Receiving damaged or incorrect items can lead to disappointment, feelings of being misled, and, ultimately, lower satisfaction (Ahmad, 2002; Fan et al., 2013; Jafarzadeh et al., 2021). This aligns with the S-O-R model, where receiving a product in poor condition (stimulus) creates a negative response in customers, impacting their overall satisfaction (Zhu et al., 2020). Notably, this finding of the study does not contradict any research stream available in the literature.

While confirming the general importance of product condition, this finding adds value by focusing on Fr2Fr SC. Unlike traditional online platforms with standardized quality control measures, product conditions in Fr2Fr SC might depend on individual resellers' practices. This highlights the need for Fr2Fr SC platforms to consider implementing mechanisms to ensure accurate product descriptions and quality checks, potentially through reseller training or product verification procedures.

Therefore, by combining H1a, b, and c, this study concludes that operational LSQ has a positive association with Fr2Fr SC customer satisfaction. This result addresses and partially accomplishes the research question 1 and fully accomplishes the research objective 1. This result is in synchronous with the published research stating the positive impact of overall OLSQ on customer satisfaction (Rao et al., 2011; Cotarelo et al., 2021; Jain et al., 2021; Gupta et al., 2023)

H2a: Assurance of the SC salesperson positively influences customer satisfaction

The hypothesis testing of H2a outcomes shed light on a compelling positive relationship between seller assurance and customer satisfaction in the context of Fr2Fr SC in India. With a low p-value below 0.01 along with CRR value of 3.850, the statistical significance of this association is robust, providing strong grounds for supporting the H2a. The beta coefficient of 0.344 quantifies the strength and direction of the relationship, indicating with an increased assurance provided by sellers leading to heightened customer satisfaction (Table 4.28). In terms of factor loading scores, the items related to seller helping the customer placing an online order in an efficient way got the highest factor loading of 0.868. Followed by the seller proactively sharing information about orders with a factor loading of 0.848 and the queries handling with sufficient product knowledge with a factor loading of 0.815 are important aspects of assurance leading to customer satisfaction.

This finding underscores the pivotal role of customer satisfaction in shaping the level of assurance extended by sellers, contributing valuable insights to the to the Fr2Fr SC literature. This finding resonates with prior studies that highlight the importance of seller assurance, encompassing aspects like trust, communication, and risk mitigation, for customer satisfaction in online retail environments (Kassim & Abdullah, 2010; Mpinganjira, 2014; Xu et al., 2016; Ertekin et al., 2020).

Mpinganjira (2014) contended that a number of relationship-building-related factors, such as assurance, ease of communication, and personalization, have a positive impact on customer satisfaction with an online retailer. This was observed while studying the behavior of South African online customers from a relationship marketing perspective. According to Kassim and Abdullah (2010), assurance affects customer happiness since a satisfied consumer would feel safe and at ease during the transaction. According to Xu et al. (2016), in a general buyer-seller interaction, assurance demonstrated by competence and kindness is a higher predictor of satisfaction and purchase behavior. This finding aligns with the S-O-R model, where positive seller interactions (stimulus) create trust and confidence in customers, ultimately leading to higher satisfaction (Lee & Gan, 2020; Zhu et al., 2020). Notably, this finding of the study does not contradict any research stream available in the literature.

H2b: Responsiveness of the SC salesperson positively influences customer satisfaction

The results of the hypothesis testing of H2b reveal a robust positive relationship between seller responsiveness and customer satisfaction within the framework of Fr2Fr SC in India. With a p-value of less than 0.01 and CRR value of 2.42, the statistical significance of this association is compelling, providing strong support for H2b. The beta coefficient of 0.234 quantifies the strength and direction of the relationship, indicating positive relationship among responsiveness and customer satisfaction (Table 4.28). With the factor loading of 0.912 the recommendations made by seller on a continuous basis is critical aspect of responsiveness construct. This is followed by the responsiveness to customers' needs, requirements and problems during the shopping with a factor loading of 0.892 and the seller efforts to identify customer needs with a factor loading of 0.883. Finally, the impression given by the seller about being available

and never too busy to answer customer requests with a factor loading 0.879 was a crucial item that leads to customer satisfaction.

This finding reverberates with prior studies that highlight the significance of seller responsiveness, encompassing aspects like timely communication, addressing inquiries efficiently, and providing clear product information, for customer satisfaction in online retail environments (Subramanian et al., 2014; Ferguson et al., 2021; Negassa & Japee, 2023).

In a business-to-consumer (B2C) context, Ferguson, Gironda, and Petrescu (2021) investigated the salesperson-customer orientation features of digital era customers and came to the conclusion that the salesperson's responsiveness dimension is crucial to customer satisfaction. When researching the global banking context, Negassa and Japee (2023) believed that responsiveness and communication among employees directly affect consumer satisfaction. According to a study by Agnihotri et al. (2016), social media use by salespeople in business-to-business (B2B) sales facilitates faster information sharing and increases customer responsiveness. Customers may be happy as a result, particularly if the information supplied is relevant to them. Subramanian et al. (2014) found that responsiveness, along with other aspects of the service quality and purchase experience in e-service quality, have a significant influence on customer satisfaction using an empirical survey from an adolescent Chinese population. Customers who perceive sellers as readily available to answer questions, address concerns promptly, and provide helpful communication throughout the purchase process are more likely to be satisfied with their overall shopping experience (Li et al., 2024).

This finding aligns with the S-O-R model, where positive and responsive seller interactions (stimulus) create trust and satisfaction in customers (Arora, Parida &

Sahney, 2020; Zhu, Kowatthanakul & Satanasavapak, 2020). Recent research even suggests that effective seller communication can enhance customer loyalty and encourage repeat purchases (Curatman & Suroso, 2022).

H2c: Empathy of the SC salesperson positively influences customer satisfaction

Finally, the hypothesis testing results underscore a significant positive relationship between seller's empathy and customer satisfaction within the context of Fr2Fr SC in India. With a low p-value of less than 0.01 and CRR value of 3.945, the statistical significance of this relationship is robust, providing compelling strong support to H2c. The beta coefficient of 0.231 indicates the strength and direction of the association, revealing positive impact on empathy of the SC salesperson on customer satisfaction (Table 4.28). In terms of factor loadings of the items of assurance constructs, seller helping customer for placing the order in an efficient way received the highest factor loading of 0.867. This is followed by seller's sharing information to customer ahead of time if the order was going to be delayed with a factor loading 0.848 and the seller was capability in handling customer queries with sufficient product knowledge with a factor loading 0.815.

This result resonates with prior studies that highlight the significance of seller empathy, encompassing understanding customer needs, demonstrating emotional intelligence, and providing personalized attention, for customer satisfaction in online retail environments (Aggarwal et al. 2005; Anaza, 2014; Anaza et al., 2018; Delpechitre et al., 2019).

According to Aggarwal et al. (2005), a salesperson's ability to listen and show empathy has a beneficial effect on client satisfaction. Delpechitre et al. (2019) investigated the effects of affective and cognitive empathy in salespeople on the relationship outcomes between business-to-business buyers and salespeople. The authors came to the

conclusion that a customer's commitment to the salesperson, information communication skills, and level of pleasure with the salesperson were all positively correlated with cognitive empathy. Anaza (2014) investigated the psychological method by which customer citizenship behaviors are predicted and shown that, in online sales, both customer satisfaction and customer citizenship behaviors are predicted to be impacted by empathic responses. In a business-to-business setting, Anaza et al. (2018) investigated salesperson empathy and the moderating influence of good and negative affect on a salesperson's listening and adaptive selling practices. The study's findings demonstrate how empathy and the moderating influence of pleasant affect promote the listening and adaptive selling behaviors that are desirable for salespeople and ultimately improve their performance and happiness. Customers who perceive sellers as empathetic, understanding, and willing to go the extra mile are more likely to feel valued and satisfied with their shopping experience (Delpechitre et al., 2018). This aligns with emotional labour theory, where sellers' ability to manage emotions and display empathy positively impacts customer perceptions and satisfaction (Lee et al., 2019).

This finding aligns with the S-O-R model, where empathetic seller interactions (stimulus) create trust and satisfaction in customers (Lian, 2021; Hossain & Rahman, 2022). Notably, this finding of the study does not contradict any research stream available in the literature.

The application of the Stimulus-Organism-Response (S-O-R) framework provides a theoretical lens through which to interpret and contextualize these results. Therefore, by combining H2a, b, and c, this study concludes that relational LSQ has a positive association with customer satisfaction. This result addresses and fully accomplishes the research question 1 and accomplishes the research objective 2.

In summary, all the hypotheses are accepted and are within the threshold limit of the p-value. All the LSQ components are linked with customer satisfaction. Specifically, the condition with a standardized estimate of 0.344 had a stronger influence on OLSQ than the other OLSQ constructs. Availability was the next best factor that influenced OLSQ, followed by timeliness. In an aspect of RLSQ, specifically assurance with an estimate of .234, followed by empathy and responsiveness. This result is in parallel with the published research stating the positive impact of overall RLSQ on customer satisfaction (e.g., Bienstock et al., 2008; Gil-Saura et al. 2008; 2010).

4.11.1 Mediation Effect

Mediation analysis is a crucial statistical technique employed in research to unravel the underlying mechanisms through which an independent variable (Relational LSQ and Operational LSQ) influences a dependent variable (Customer satisfaction). Mediation analysis helps delve deeper into the complex relationships between OLSQ - customer satisfaction and RLSQ - customer satisfaction by exploring the role of intermediate variables, known as mediators (Customer experience and Trust). The primary objective is to understand and quantify the indirect effect of the independent variable, OLSQ and RLSQ, on customer satisfaction through the customer experience and trust, respectively. The mediation process involves two key steps:

Step 1: Initially, significant association between the independent and dependent variables examined.

Step 2: Introduction of mediator to the model, to understand its impact on the relationship between the independent and dependent variables.

Statistical tests, such as Sobel tests or bootstrapping, are often employed to assess the significance of the indirect effect. Following Hayes (2013), this study assessed the developed mediation model and tested the research hypotheses by conducting

bootstrapping with 2000 replications Hayes (2013). This study did mediation analysis using direct, indirect and total effect, and it can be seen from table 4.29 that the test is significant in all three effect which shows partial mediation in the path.

4.11.1.1 Trust as a Mediator

H3: Trust mediates the relationship between RLSQ and customer satisfaction.

The association between RLSQ and customer satisfaction establishes a direct link, affirming the initial hypothesis (H2a, H2b and H2c). However, the introduction of trust into the model adds additional understanding of the relationship.

The total effect of RLSQ on customer satisfaction was significant (Total effect = 0.204, $p < 0.05$) with the inclusion of the mediator, the effect of RLSQ (Direct effect: = $p < 0.10$, Indirect effect = $p < 0.05$) on customer satisfaction was still significant (Table 4.29). The signify partial mediation by trust. Trust partially mediates the relationship, indicating that a substantial portion of the effect of relational logistics service quality on customer satisfaction is channeled through the lens of trust.

Table 4.29: Mediation Effect of Customer Experience and Trust

Hypothesis	Path	Total effect	Indirect effect	Direct effect	Decision
H3	RLSQ->Trust->Sat	0.204**	Significant**	Significant*	Partial Mediation
H4	OLSQ->CE->Sat	0.428***	Significant**	Significant***	Partial mediation

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Source: Data analysis

This finding that trust mediates the relationship between RLSQ and customer satisfaction in Fr2Fr SC aligns with research on the significance of trust in e-commerce. However, it offers a unique perspective within the context of SC driven by Fr2Fr interactions. While analyzing this result from the factor loading point of view, the trust is important and SC players must pay attention to it in order to increase the customer

satisfaction. The seller should be trustworthy with a factor loading of 0.82 and should keep best interests of customers into consideration while dealing with SC customers with a factor loading of 0.84. The Fr2Fr SC seller should always fulfill his/her promises with a factor loading of 0.86. Trust if exhibited properly will help SC consumers to believe in the information provided by the SC seller with a factor loading of 0.86 as they know that the seller tries his/her level best to keep his/her promises with a factor loading of 0.88. Overall, trust provides an alternative route through which RLSQ impacts the customer satisfaction in Fr2Fr SC.

This result resonates with prior studies that highlight the crucial role of trust as a mediator between LSQ dimensions and customer satisfaction in online retail environments (Churchill, 1999; Aggarwal et al., 2005; Kim & Park, 2013; Maia et al., 2018; Li, 2019; Trivedi & Yadav, 2020).

Churchill (1999) established a noteworthy correlation between trust and consumers' behavioral intention, emphasizing the significance of fostering both original and repurchase intention, as well as promoting word-of-mouth referrals. Aggarwal et al. (2005) contended that while the empathy and listening abilities of salespersons have a beneficial influence on client satisfaction, trust serves as the foundation for all subsequent transactions. According to Li's (2019) findings, the social presence of salespersons, as well as their provision of informational support and closeness, have the potential to influence consumer trust perceptions. Moreover, the level of confidence in product suggestions has a direct influence on users' willingness to engage in social shopping. In their study, Maia et al. (2018) employed a mixed methodological approach to investigate the primary elements influencing user satisfaction in the context of social computing. They posited that confidence in the website serves as the primary predictor and plays a crucial role in improving user engagement and satisfaction. In their study

on the rapid expansion of s-commerce in Korea, Kim and Park (2013) found that several supply chain features, such as information quality, transaction safety, and communication, had a substantial impact on trust. Furthermore, trust was found to have a significant influence on outcome variables such as buy intentions and word-of-mouth (WOM) intentions.

Customers who perceive a platform or seller as reliable, competent, and secure are more likely to be satisfied with their overall shopping experience (Jun et al., 2004; Lăzăroiu et al., 2020). As identified in this study, RLSQ dimensions like responsiveness, assurance, and empathy contribute to building customer trust (Murray et al., 2019; Le et al., 2023). This aligns with social exchange theory, where positive interactions and fulfilment of expectations (RLSQ) foster trust, ultimately leading to higher customer satisfaction (Shiau & Luo, 2012; Kim, 2012).

Moreover, this result also sheds light on the role of trust as an 'organism' in the S-O-R model. This is a novelty in the Fr2Fr SC context. This study has used the RLSQ as a dimension of LSQ and modelled it as the stimulus. Moreover, trust and customer satisfaction have been modelled as organism and response. Simultaneously, Relationship Marketing Theory underscores the crucial role of trust in fostering enduring relationships in the unique Fr2Fr SC context. The result shows that trust partially mediates the relationship between RLSQ and customer satisfaction. Hence, H3 was supported. This result partially accomplishes the research question 2 and fully accomplishes the research objective 3.

4.11.1.2 Customer Experience as a Mediator

H4: Customer experience has a mediating effect on OLSQ and customer satisfaction.

The association between OLSQ and customer satisfaction establishes a direct link, affirming the initial hypothesis (H1a, H1b and H1c). However, the introduction of customer experience into the model adds additional understanding of the relationship.

This study explores the effects of mediation within the theoretical frameworks of the Stimulus-Organism-Response (S-O-R) model and Relationship Marketing Theory.

The total effect of operational LSQ on customer satisfaction was significant (Total effect = 0.428, $p < 0.01$) with the inclusion of the mediator, the effect of OLSQ (Direct effect: = $p < 0.05$, Indirect effect = $p < 0.01$) on customer satisfaction was still significant.

The signify partial mediation by customer experience. Customer experience partially mediates the relationship, indicating that a substantial portion of the effect of operational logistics service quality on customer satisfaction is channelled through the lens of customer experience. Hence, H4 was supported (Table 4.29). Customer experience impacts all the three phases of the purchase cycle, pre, during and post purchase. Customers have expectations from the SC seller before doing the transactions and therefore the service level provided by the seller was better than expected during purchase with a factor loading of 0.78. The seller should try his/her level best to meet the expectations with a factor loading of 0.80. This will lead to overall pleasant and fun/exciting experience of the shopping process with factor loadings of 0.79 and 0.82. Ultimately this will lead to positive word of mouth and the review intention with a factor loading of 0.85.

This result resonates with prior studies that highlight the significance of customer experience as a mediator between OLSQ dimensions and customer satisfaction in

online retail environments (Russell & Pratt, 1980; Darden & Babin, 1994; Carù and Cova, 2003; Srivastava & Kaul, 2014; Pham & Yazdani, 2021).

Darden and Babin (1994) reaffirm in their research that the assessment made by consumers regarding a retail store is not just determined by its functional attributes, but is also influenced by the emotional-induced qualities associated with the retail environment, as proposed by Russell and Pratt (1980). In the context of offline purchasing, Srivastava and Kaul (2014) expressed the view that retail convenience has an impact on customer satisfaction, with the customer experience playing a mediating role in this relationship. The study conducted by Li (2019) examined the impact of social media platforms on customers' virtual experiences and their purchase inclinations. The author's conclusion is that social capital (SC) has a significant influence on both cognitive and affective social interactions, resulting in a distinct customer experience. In their study, Pham & Yazdani (2021) identified customer experience as a mediating factor in the association between many factors of online buying, including delivery procedure, poor product quality, technological problems (aspects of OLSQ), and customer satisfaction among Vietnamese online customers following the Covid-19 epidemic. Consumption experiences are boundless in both the pre and after purchasing processes. Nevertheless, this activity possesses significant influence in shaping client behavior and intention (Carù & Cova, 2003).

Customer experience encompasses a customer's overall perception of their interaction with a platform or seller, including aspects like product availability, order fulfilments, and delivery (Bilgihan et al., 2016). When OLSQ dimensions like product availability, timely delivery, and product condition function effectively, it contributes to a positive customer experience, ultimately leading to higher satisfaction (Jain et al., 2021). This aligns with service-dominant logic, where value is co-created through customer

experience, and efficient operational logistics practices contribute positively to that experience (Wu et al., 2014).

The S-O-R framework provides a theoretical foundation for understanding this mediation effect. The OLSQ, serving as a stimulus, influences the organism (customer experience), which, in turn, shapes the response (customer satisfaction). Moreover, the lens of Relationship Marketing Theory adds depth, emphasizing the significance of building enduring relationships between sellers and buyers within the unique social commerce setting.

The result shows that customer experience partially mediates the relationship between OLSQ and customer satisfaction. Hence it fully accomplishes the research question 2 and research objective 4.

4.11.2 Moderation Effect

Moderation analysis is a pivotal statistical technique employed in research to explore the conditional nature of the relationship between two variables. In this study, moderation analysis allowed us to investigate whether the strength or direction of the association between an independent variable (operational LSQ) and a dependent variable (customer experience) is contingent upon the levels of a third variable, known as the moderators (namely gender, product type and return experience).

The process of moderation analysis involves testing interaction effects, typically through the inclusion of interaction terms in regression models. The statistical significance of these interaction terms provides insights into whether the moderator plays a significant role in shaping the relationship between the independent (operational LSQ) and dependent variables (customer experience).

A multi-group analysis was conducted to study if gender, product type and return experience had a moderating effect on the outcome variables of the study. From table

4.30, it can be seen that gender, product type and return experience moderate the relationship between OLSQ and customer satisfaction. There are three moderators, namely, gender of the customer, product type and return experience. While coding the data, 1 was used as gender = male; 2 is used for Gender = Female; 1 was used for Product type = hedonic and 2 was used for product type = utilitarian; finally, 1 was used as return experience =Yes and 2 was used as return experience as No. This coding has helped to create different groups for running the moderation analysis. The details of the subgroup are male (402), female (430); hedonic product (420), utilitarian product (412); return experience (438), no return experience (394).

Table 4.30: Moderation Effect of Gender, Product Type and Return Experience

Hypothesis	P value	Standardize Regression Weight
Gender (Male vs Female)	***	.227***
Product type (Utilitarian vs hedonic)	**	.310***
Return experience (No vs Yes)	***	.163***

* p<0.10, ** p<0.05, *** p<0.01

Source: Data analysis

4.11.2.1 Gender as a Moderator

H5a: Gender moderates the relationship between the OLSQ and customer experience.

In the context of Fr2Fr SC in India, moderation analysis was conducted to understand the influence of gender on the relationship between OLSQ and customer experience.

The results (Table 4.30) reveal a significant moderation effect of gender on the relationship between OLSQ and customer experience. Specifically, females (Standardize regression weight = 0.669, p<0.01) exhibit a more pronounced impact than males (Standardize regression weight = 0.227, p<0.01), indicating that the influence of

OLSQ on customer experience is heightened among female participants in the Fr2Fr social commerce setting. The change in R^2 value was 0.0186 ($p < 0.001$).

This study's finding that gender moderates the relationship between OLSQ and the customer experience in Fr2Fr SC offers a novel perspective on the topic. At the same time, prior research highlights the overall importance of OLSQ for customer satisfaction in e-commerce (Karatepe, 2011; Sharma et al., 2012; Wu et al., 2017; Roozen, & Katidis, 2019; Jain et al., 2021; Manyanga et al., 2022). The result suggests a potential gender difference in how Fr2Fr SC customers perceive the influence of OLSQ on their overall experience. Indeed, existing literature posits that men and women often exhibit differential inclinations towards various facets of logistical service provision (Rodgers & Harris, 2003; Jain et al., 2021). While some individuals may prioritize expediency and efficiency in the delivery process, others may place greater emphasis on interpersonal communication and personalized interactions. These variances in preferences are frequently attributed to entrenched gender norms and societal expectations, which shape individuals' perceptions and attitudes towards service encounters (Snipes et al., 2006). Consequently, such gender-based nuances are accentuated within the context of Fr2Fr SC, where relational dynamics and social capital are pivotal in driving transactional outcomes. For instance, empirical studies suggest that women may attach greater significance to personalized gestures, such as handwritten notes accompanying their purchases, as manifestations of care and attention to detail (Nyikos, 1990). In contrast, men may exhibit a predilection towards seamless and expedited delivery processes, prioritizing efficiency and convenience (Rodríguez-Torrico et al., 2020).

However, it is important to acknowledge that research on gender differences in online shopping experiences can be mixed. While some studies suggest women are more

sensitive to factors like website aesthetics and ease of use (e.g., Venkatesh & Morris, 2000, Hasan, 2010; Sharma et al., 2012; Agarwal & Bhati, 2016; Jeljeli et al., 2022), others find no significant gender differences in response to service quality (e.g., Cyr & Bonanni, 2005). Jain et al. (2021) while exploring the e-tailing in India argued that gender acts a moderate on the relationship among the product condition and shopping satisfaction. Their study was in the context of typical e-commerce context and focused on young consumers. The results of this study make a valuable contribution to the existing body of literature, while also presenting an opportunity for management of SC players to prioritize their attention towards female customers.

This research sheds light on a potential gap in existing knowledge by demonstrating that the impact of OLSQ on customer experience might be stronger for female customers compared to males in the Fr2Fr SC context. This is particularly interesting because Fr2Fr SC leverages social connections, which can influence customer expectations and perceptions. It is possible that females in this context place a greater emphasis on aspects of condition, timeliness and availability (potentially influenced by OLSQ) when forming their overall CX with a seller they might be socially connected to.

4.11.2.2 Product Type as a Moderator

H5b: Product type moderates the relationship between the OLSQ and customer experience.

In the context of Fr2Fr SC in India, moderation analysis was conducted to understand the influence of product type on the relationship between OLSQ and customer experience. The results (Table 4.30) reveal a significant moderation effect of product type on the relationship between OLSQ and customer experience. Specifically, hedonic products (Standardize regression weight = 0.558, $p < 0.01$) exhibit a more pronounced

impact than utilitarian products (Standardize regression weight = 0.310, $p < 0.01$), change in R^2 value was 0.007 ($p < 0.001$) indicating, hedonic products exhibit a more substantial impact compared to utilitarian products, suggesting that the association between OLSQ and customer experience is heightened when users engage in the pursuit of hedonic, rather than purely utilitarian, products within the Fr2FrSC setting.

While prior research highlights the importance of LSQ for customer satisfaction in e-commerce (Rao et al., 2011; Jain et al., 2021), this result suggests a distinction between how OLSQ impacts customer experience based on whether the product is hedonic or utilitarian.

This research demonstrates that customers purchasing hedonic products (experience-oriented, emotionally driven) in Fr2Fr SC settings might be more sensitive to variations in OLSQ compared to those purchasing utilitarian products (functional, problem-solving oriented). This aligns with research on product type and online shopping motivations (Khan & Dhar, 2010; Singh & Srivastava, 2018; Filieri et al., 2018; Arul Rajan, 2020; Ko, 2020; Hu et al., 2022).

The research conducted by Khan and Dhar (2010) on purchasing behavior has demonstrated that hedonic and utilitarian incentives are distinct and have an impact on shopping activities. Furthermore, Arul Rajan (2020) did a study to investigate the impact of various hedonic and utilitarian products on online purchase behavior within the urban area of Coimbatore. The research centered on various dimensions, including social media, marketing tactics, technological factors, and the convenience of buying. The conclusion drawn by the author suggests that the nature of the product plays a moderating role, underscoring the significance for marketers to take into account hedonic/utilitarian product categories throughout the development of online enterprises. Singh & Srivastava (2018) found that product kinds had a moderating effect on online

purchase behavior in the Indian online marketplace. The study conducted by Ko (2020) examined the reasons and probable influence pathways that contribute to the coexistence of experiential browsing and goal-directed purchase intentions on social commerce websites. The research was based on the model of goal-directed behavior among Taiwanese consumers. The findings indicate that consumers exhibit more social and hedonic motivations and social desire compared to utilitarian motivation when utilizing s-commerce websites. This, in turn, can result in a greater intention to engage in experience browsing. Consumers seeking hedonic gratification might prioritize aspects like timely delivery and product condition to a greater extent, as these factors can influence the overall enjoyment and emotional experience associated with acquiring the product (Huang et al., 2024). Conversely, for utilitarian purchases, efficient fulfilment of core product needs might be the primary concern, potentially making customers less sensitive to minor variations in OLSQ.

While some studies support the notion that consumers prioritize aspects like delivery speed more for hedonic products (e.g., Qin et al., 2021; Hu et al., 2022), others suggest utilitarian considerations like product availability might be equally important across product types (e.g., Shao & Li, 2021). By investigating in product type, scholars and managers can gain a deeper understanding of how product type interacts with OLSQ and customer experience within the Fr2Fr SC landscape.

4.11.2.3 Return Experience as a Moderator

H5c: Return/replacement experience moderates the OLSQ and customer experience relationship.

In the context of Fr2Fr SC in India, moderation analysis was conducted to understand impact of return experience—categorized as Yes or No—on the relationship between OLSQ and customer experience. The results (Table 4.30) reveal a significant moderation effect of users who have experienced returns (Standardize regression

weight = 0.749, $p < 0.01$) demonstrate a more pronounced impact on the association compared to those without return experience (Standardize regression weight = 0.163, $p < 0.01$) and change in R^2 value was 0.265 ($p < 0.001$). This suggests that the quality of operational logistics services has a heightened influence on customer experience, particularly when users have encountered and navigated the return process within the Fr2Fr SC setting. While prior research highlights the importance of LSQ for customer satisfaction in e-commerce (e.g., Akil & Ungan, 2022; Dhaigude & Mohan, 2023a; Rashid & Rasheed, 2024), our results suggest that encountering a return process can heighten the impact of OLSQ on a customer's overall experience in the Fr2Fr context. This research emphasizes the potential psychological impact of navigating returns within Fr2Fr SC. Customers who have previously dealt with returns might be more attuned to the potential service disruptions caused by issues in OLSQ (e.g., delayed delivery, damaged product). This increased awareness could make the adverse impacts of poor OLSQ on their total customer experience worse than for customers who haven't yet returned something. This aligns with research on service recovery experiences, which suggests that effective handling of returns can mitigate customer dissatisfaction (Jiang & Rosenbloom, 2005; Mollenkopf et al., 2007; Rao et al., 2014; Ambilkar et al., 2022; Rao et al., 2022). Conversely, a negative return experience can potentially erode trust and negatively impact future purchase behaviour (Griffis et al., 2012; Walsh et al., 2016; Nguyen et al., 2018; Hjort et al., 2019; Xie et al., 2023).

While research on returns in e-commerce is vast, the Fr2Fr SC context presents unique considerations. Studies suggest that customers might be more forgiving of minor service issues in online transactions with friends or acquaintances (Caldieraro et al., 2018). However, this might be contingent upon the quality of the return experience facilitated by the reseller and/or platform.

Whether characterized by smooth and efficient returns or fraught with complications, the return process serves as a critical touch point that influences overall customer perceptions. This result highlights the importance of addressing logistical service quality not only in initial transactions but also in facilitating seamless return experiences to enhance overall customer satisfaction in Fr2Fr SC platforms. To conclude, it can be seen that female consumers, hedonic product type and return experience are likely to be influenced more by OLSQ factors. These results accomplish the research question 3 and research objective 5.

4.12 CHAPTER SUMMARY

Chapter 4 dealt with data analysis of primary data collected through a structured questionnaire and interpretation of the analysis. Analysis was done using SPSS (28.0) and AMOS. The analysis begins with socio-demographic profiling of the primary data, followed by descriptive analysis. The EFA was conducted. Followed by CFA. Tests were conducted to assess the validity and reliability of the research instrument. Post-affirmation of the same, the structural model was used to test the hypotheses of the conceptual framework. Various model fit criteria were used to assess if the model fit was good for the data. The results of the various tests have been interpreted vividly in this chapter. Last but not least, the interpretation and comparison of the hypothesis testing results with the extant literature have been carried out.

CHAPTER 5
FINDINGS AND
CONCLUSIONS

CHAPTER 5

FINDINGS AND CONCLUSIONS

5.1 CHAPTER OVERVIEW

Chapter 5 covers the conclusions drawn based on the analysis details in Chapter 4. All major findings of the study are detailed in section 5.2. Section 5.3 provides detailed conclusion. Based on the conclusions and findings, recommendations are drawn in section 5.4. The theoretical implications are described in section 5.5. The practical implications of the study are elaborated in section 5.6. Section 5.7 lists the limitations of the study. Directions for future research are provided in section 5.8. Concluding note of thesis is provided in section 5.9.

In the current study, the positivist research paradigm was used in an effort to generalize the findings. Both deductive and inductive reasoning are used in the research methodology for this study. In order to ascertain the real picture of consumer satisfaction resulting from the impact of the LSQ through consumer experience and trust, the study employed a descriptive methodology. In order to determine the efficacy of the LSQ in the context of Indian Fr2Fr SC, the study used a survey as a research technique under quantitative research methods. An analysis of the correlation between several LSQ variables and customer satisfaction has been conducted. Eleven hypotheses were formulated and put to the test empirically in order to carry out the study objectives. The cross-sectional study used data gathered from SC consumers in tier II cities around India. The acquired data was taken into consideration when doing multivariate data analysis and interpretation.

A few theoretical models, including the S-O-R model and the relationship marketing theory, were included in the study as the theoretical foundation. The measurement model's construct validity is being evaluated using the SPSS-AMOS program. With

regard to every concept taken into consideration for the study, SPSS-AMOS encompasses a comprehensive evaluation of confirmatory factor analysis, construct reliability, convergent validity, and discriminant validity. In order to evaluate the predictive ability and strength of the linkages between the exogenous (consumer satisfaction) and endogenous (LSQ), intervening (customer experience and trust), and exogenous variables (customer satisfaction), an assessment of the structural model has been conducted during the hypothesis testing phase.

The crucial ratio values and significance level are part of the structural model assessment. For the Indian Fr2Fr SC consumers, the analysis supported study measures that included a structural model and successfully created LSQ impacting consumer satisfaction.

5.2 MAJOR FINDINGS OF THE STUDY

The primary data collected was analyzed through relevant data analysis techniques to arrive at the findings of the study. A practical approach to discuss and recapitulate the findings is to revisit the research objectives and relate the results to them.

5.2.1 Findings on Testing of Hypotheses

The findings of all the hypotheses are presented in this section. Also explicates each hypothesis with path estimates (β) and significant level (p).

5.2.1.1 Operational Logistics Service quality and Customer Satisfaction

Availability of product had a positive and significant influence on customer satisfaction with $CRR = 3.929$, $\beta = 0.331$ at $p < 0.01$; thus, H1a was supported. This indicates that availability of the product has a positive influence on the customer satisfaction of Indian Fr2Fr SC consumers.

It was evident that there was a significant positive influence of timeliness of product delivery on customer satisfaction with $CRR = 4.250$, $\beta = 0.322$ at $p < 0.01$; thus, H1b

was supported. It implies that timeliness had a positive influence on the customer satisfaction of Indian Fr2Fr social commerce consumers.

Condition of the product upon arrival had a significant and positive influence on customer satisfaction with $CRR = 4.716$, $\beta = 0.344$ at $p < 0.01$; thus, H1c was supported. It indicates that condition has a positive influence on the customer satisfaction of Indian Fr2Fr social commerce consumers.

It is evident that condition of the product upon arrival ($CRR = 4.716$, $\beta = 0.344$ at $p < 0.01$) has the strongest influence, followed by availability of product ($CRR = 3.929$, $\beta = 0.331$ at $p < 0.01$) and timely delivery of product ($CRR = 4.250$, $\beta = 0.322$ at $p < 0.01$) on Indian Fr2Fr SC consumers.

5.2.1.2 Relational Logistics Service quality and Customer Satisfaction

Assurance from seller/reseller had a positive and significant influence on customer satisfaction with $CRR = 3.850$, $\beta = 0.234$ at $p < 0.01$; thus, H2a was supported. This indicates that assurance has a positive influence on the customer satisfaction of Indian Fr2Fr social commerce consumers.

It was evident that there was a significant positive influence of responsiveness toward customers query/problems on customer satisfaction with a $CRR = 2.429$, $\beta = 0.151$ at $p < 0.01$; thus, H2b was supported. It implies that responsiveness had a positive influence on the customer satisfaction of Indian Fr2Fr social commerce consumers.

Empathy toward customers had a significant and positive influence on customer satisfaction with $CRR = 3.945$, $\beta = 0.231$ at $p < 0.01$; thus, H2c was supported. It indicates that empathy has a positive influence on the customer satisfaction of Indian Fr2Fr SC consumers.

It is evident that assurance of the product upon arrival ($CRR = 3.850$, $\beta = 0.234$ at $p < 0.01$) has the strongest influence, followed by empathy ($CRR = 3.945$, $\beta = 0.231$ at $p <$

0.01) and responsiveness (CRR =2.429, $\beta = 0.151$ at $p < 0.01$) on Indian Fr2Fr social commerce consumers. Overall, sellers' helpfulness during order placement process and proactively sharing information can influence the customer satisfaction.

5.2.1.3 Trust, Customer Experience and Customer Satisfaction

The total effect of RLSQ ($\beta = 0.204$, $p < 0.05$) on customer satisfaction was significant; with the inclusion of the trust as mediator, the effect of RLSQ on customer satisfaction was still significant. It indicates partial mediation and shows effect of relational logistics service quality on customer satisfaction is channeled through the lens of trust. Hence H3 was supported and indicate that trust is a medium through with RLSQ lead to customer satisfaction.

The total effect of OLSQ ($\beta = 0.428$, $p < 0.01$) on customer satisfaction was significant; with the inclusion of the customer experience as mediator, the effect of OLSQ on customer satisfaction was still significant. It indicates partial mediation and shows effect of operational logistics service quality on customer satisfaction is channeled through the customer experience. Hence H4 was supported and shows influence of customer experience between OLSQ and customer satisfaction.

To summarize, this result implies that while high-quality operational logistics directly contribute to customer satisfaction, a substantial portion of this satisfaction is also influenced by the broader customer experience provided by the SC seller.

5.2.1.4 Gender, Product type, Return Experience, Operational LSQ and Customer Experience

Gender moderates the relationship between operational LSQ and customer experience. Females (Standardize Regression Weight = .669, $p < 0.01$) are likely to be influenced more by OLSQ factors compare to men (Standardize Regression Weight = .227,

$p < 0.01$). Hence H5a is supported and shows females are more likely to be influenced by OLSQ factor than Men in Indian Fr2Fr Social commerce shopping.

Product type moderate the relationship between operational LSQ and customer experience. Customers looking for hedonic products (Standardize Regression Weight = .558, $p < 0.05$) are likely to be influenced more by OLSQ factors compare to utilitarian products (Standardize Regression Weight = .310, $p < 0.05$). Hence H5b is supported and shows consumers who are shopping for hedonic products are more likely to be influenced by OLSQ factor than Consumers of utilitarian products in Indian Fr2Fr Social commerce.

Return Experience moderate the relationship between operational LSQ and customer experience. Consumers with return experience (Standardize Regression Weight = .749, $p < 0.01$) are likely to be influenced more by OLSQ factors compare to consumers with no return experience (Standardize Regression Weight = .163, $p < 0.01$). Hence H5c is supported and shows customers with return experience are more likely to be influenced by OLSQ factor than customer with no return experience in Indian Fr2Fr SC shopping.

5.2.1.5 Other Findings

Socio-demographic variables were analysed to know the socio-demographic profile of samples and their preferences for Indian Fr2Fr Social commerce shoppers. The percentage of females (51.6%) is higher compared to the male population (48.3 %). The respondents for the study aged from 18 (in years) to 60 (in years) of which 40.8% belong to the age group 36-45 (in years). The employment status recorded that the majority of the respondents are employed forming 38 percent. Nearly 64% of respondents belong to the income level Rs.50,000 and below.

The majority of Fr2Fr SC consumers use mobile devices (96.7%), followed by laptops, tablets, and desktops, for purchase in Fr2Fr social commerce. It is evident that most

respondents use WhatsApp (96.6%), followed by Facebook and Instagram, to make purchases in Fr2Fr social commerce.

5.3 CONCLUSION

5.3.1 The Impact of Operational LSQ on Fr2Fr SC Customer Satisfaction

Operational logistics service quality for the study consists of three dimensions namely, availability, timeliness and condition. The influence of operational logistics service quality on Indian Fr2Fr social commerce consumers' customer satisfaction was undertaken in the study.

Consumers recognize product availability by how quickly and correctly the products are delivered. If the seller is taking multiple attempts to deliver the products the customer satisfaction will take a negative hit. Accuracy of order delivery along with different range of product is essential for SC. Customer distinguish timeliness with consistency in delivery of product, accuracy of order within the promised time. Timeliness or delivery time significantly impacts LSQ. Sometimes customers' order products for special occasion like birthday, anniversary etc. If the product is not delivered on time, it can lead to customer dissatisfaction. On-time delivery is crucial for customer satisfaction, and delays can lead to dissatisfaction and negative perceptions.

Condition of the product identified through delivery package appearance and condition of product after opening. Customers place high importance on receiving products in good condition, and damage or defects can significantly impact their satisfaction.

All the components of operational LSQ considered for this study (availability, timeliness and condition) influenced positive customer experience and customer satisfaction.

5.3.2 The Impact of Relational LSQ on Fr2Fr SC Customer Satisfaction

Relational logistics service quality for the study consists of three dimensions namely, assurance, responsiveness and empathy. The influence of relational logistics service quality on Indian Fr2Fr social commerce consumers' customer satisfaction was undertaken in the study.

Consumers recognize assurance with the ability of sellers to handle queries, product knowledge of seller, and help offered during order placement. Customers' belief in the accuracy of information, reliability in service delivery, and the overall professionalism of Fr2Fr SC seller positively impact overall customer satisfaction. Customer differentiate responsiveness with seller's effort to understand customer needs, help offered while placing the orders. Immediate and efficient responses to customer inquiries, complaints, or changes in demand are key contributors to customer satisfaction. Empathy perceived through seller's positive attitude and behavior, and seller's effort to make long term relationship. Understanding and addressing individual customer needs, showing empathy in issue resolution, and offering customized services are identified as crucial contributors for positive customer satisfaction.

All the components of relational LSQ considered for this study (assurance, responsiveness and empathy) influenced trust and customer satisfaction.

5.3.3 OLSQ and Customer Experience

Operational LSQ is crucial determinant of positive customer experience. Out of the three OLSQ dimensions condition has the highest influence on customer experience followed by availability and timeliness. Factors like good condition of the package and undamaged product is critical for enhancing the customer experience. When products arrive in good condition, meeting or exceeding customer expectations, it contributes positively to the overall shopping experience. Moreover, poor product condition can

result in additional inconveniences for customers, such as the need to initiate returns or exchanges, further detracting from their overall experience. Therefore, ensuring the pristine condition of products upon arrival is crucial for cultivating positive customer experiences.

Secondly, correctly fulfilling the products demanded every time impacts the customer experience positively. When customers perceive that the seller accurately fulfills their orders in one delivery attempt and delivers all requested products as promised, it enhances their confidence in the retailer's ability to meet their needs effectively. Conversely, instances where customers receive incomplete orders or products different from what they requested can lead to frustration and dissatisfaction. Therefore, ensuring consistent and accurate product availability is paramount for fostering positive customer experiences.

Finally, the timely delivering the products in the promised time plays important role in enhancing the customer experience. When customers receive their orders promptly, meeting or exceeding delivery expectations, it not only enhances their overall shopping experience but also make them feel important. On the contrary, delays in product delivery can lead to frustration, disappointment, and a negative feeling of injustice resulting in bad experience. Furthermore, timely delivery is essential for meeting customer needs and expectations, particularly in cases where purchases are time-sensitive or urgently required.

5.3.4 RLSQ and Trust

Relational LSQ is crucial determinant of positive customer experience. Out of the three RLSQ dimensions assurance has the highest influence on customer experience followed by empathy and responsiveness. When customers perceive salespersons as capable of handling queries with sufficient product knowledge and efficient in facilitating the

ordering process, it instills trust in the salesperson's expertise and professionalism. Additionally, proactive communication, such as informing customers in advance about potential delays in their orders, demonstrates transparency and a commitment to customer, further strengthening trust.

Secondly, empathy shown by the salespersons significantly influences trust levels in SC, playing a crucial role in shaping customer behavior. In SC it is necessary to pay heed to factors such as the seller's attitude, behavior, and efforts to understand the customer's situation in building trust in online shopping. When customers perceive salespersons as exhibiting satisfactory and courteous behavior, along with cooperating and making efforts to understand their individual needs and preferences in the shopping process, it fosters a sense of connection and trust. Additionally, when salespersons are perceived as striving to develop long-term relationships with customers, it signals a commitment to mutual benefit by building trusting relationships. This empathetic approach not only enhances trust in the retailer but also increases the likelihood of repeat purchases and positive word-of-mouth referrals.

Finally, the responsiveness aspect of RLSQ impact on trust needs to be considered in the SC context. More precisely, factors such as the seller's ability to identify and address customer needs, responsiveness to inquiries and issues, and proactive engagement in continuous improvement efforts help in building and nurturing trust in SC setting. When customers perceive salespersons as making genuine efforts to identify their needs and being responsive to their inquiries, requirements, and problems during the shopping process, it fosters a sense of attentiveness and care. Additionally, when salespersons are consistently available and willing to address customer requests without delay, it demonstrates a commitment to customer satisfaction and builds confidence in the retailer's reliability. Moreover, when salespersons actively make recommendations for

improvement based on customer feedback and evolving preferences, it showcases a dedication to fostering long-term relationships.

5.3.5 Gender, Product Type and Return Experience

The moderating role of gender (male vs female), product type (utilitarian vs hedonic) and return experience (no vs yes) has been investigated on the OLSQ to customer experience relationship.

Impact of OLSQ on customer experience will be stronger for female customers compared to males in the Fr2Fr SC context. Females place a greater emphasis on aspects of condition, timeliness and availability when forming their overall customer experience. Hedonic products exhibit a more substantial impact compared to utilitarian products. Operational logistics services have a heightened influence on customer experience, particularly for customers who have encountered return process. In order of importance among three intervening variable customers with return experience is most significant followed by female SC customers and hedonic product type.

5.4 RECOMMENDATION

The findings of this can be used to carve out unique recommendations for social commerce managers and decision makers aiming to enhance customer satisfaction through improved LSQ. More precisely, recognizing the positive impact of both operational and relational LSQ on customer satisfaction underscores the importance of investing in comprehensive LSQ strategies. This entails not only optimizing operational processes to ensure product condition, availability and timely delivery but also prioritizing relational aspects such as assurance, responsiveness, and empathy-based customer interactions. Additionally, understanding the mediating roles of customer experience and trust in the relationships between LSQ dimensions and customer satisfaction highlights the importance of cultivating positive customer experiences and

fostering trust among users. Managers can leverage these insights to design and implement targeted interventions aimed at enhancing customer experiences and building stronger relationships with consumers. Furthermore, the investigation of moderating factors such as gender, product type, and return experience emphasizes the need for tailored approaches that take into account the diverse preferences and behaviors of customers in social commerce settings. By considering these moderating factors in marketing and service strategies, managers can better address the unique needs and preferences of different customer segments, ultimately leading to improved customer satisfaction in social commerce.

1. Operational LSQ dimension especially condition had the strongest influence followed by availability and timeliness. Social commerce firm needs to ensure Products are delivered in good condition. For availability SC firm should ensure variety of products available on social media/website, focus on product assortment and minimize stock outs. And on time delivery as well as transparency in delivery time is the critical for customer satisfaction.
2. Relational LSQ dimension especially assurance had the strongest influence followed by empathy and responsiveness. Social commerce firm needs to focus on assurance aspect first, as it is the most influential to generate trust, empathy to understand customer need. For Assurance firm needs accurate product descriptions, ability to address customer inquiries/concerns effectively. For empathy firm should able to understand need of customer and offer personalized recommendations.
3. Among customer experience and trust, customer experience is the most significant followed by trust. Hence firm needs to focus on OLSQ factors first for positive customer experience and then RLSQ factors to generate trust.

4. Female customers are influenced by OLSQ dimension (condition, availability and timeliness) compare to male, hence firm needs to be careful while delivering products to them. Ensure all dimension of OLSQ taken care in the delivery process. Hedonic products exhibit a more substantial impact compared to utilitarian products. Hence SC firms need to focus OLSQ dimension for hedonic products delivery. Operational logistics services have a heightened influence on customer experience, particularly for customers who have encountered return process. Hence SC firms need to pay more attention while handling return/and these set of customers.

5.5 THEORETICAL IMPLICATIONS

Social commerce is the future of e-tailing, and formats like Fr2Fr SC will open new doors and opportunities for marketers. This research contributes to the existing body of knowledge by expanding the theoretical understanding of the correlation between OLSQ and customer satisfaction in the specific domain of Fr2Fr social commerce. The study seeks to resolve the current contradictions in the literature regarding components of OLSQ: condition, timeliness, and availability. This research addresses a significant gap in the existing literature and is one of the initial studies to utilize OLSQ in Fr2Fr social commerce. The significance of OLSQ in influencing customer satisfaction highlights the crucial role of OLSQ in Fr2Fr social commerce contexts. Furthermore, the recognition of condition as the primary determinant of OLSQ, with availability and timeliness following suit in influencing customer satisfaction.

Moreover, this research enhances the theoretical understanding of the influence of RLSQ on customer satisfaction in the realm of Fr2Fr social commerce. The research resolves the current contradictions in the literature regarding the impacts of RLSQ by analyzing the its components: assurance, empathy, and responsiveness. This research

is one of the first to utilize RLSQ in the context of Fr2Fr social commerce. The finding that RLSQ influences customer satisfaction, followed by OLSQ, highlights the importance of relational factors in the Fr2Fr SC setting. Furthermore, recognizing assurance as the primary determinant of RLSQ, followed by empathy and responsiveness, highlights the significance of interpersonal engagements in cultivating customer satisfaction.

Furthermore, this study contributes to the existing body of knowledge by examining the mediating effects of customer experience and trust in this LSQ-customer satisfaction relationship. More specifically, this study examines the mediating role of customer experience in the relationship between OLSQ and customer satisfaction and the mediating role of trust in the relationship between RLSQ and customer satisfaction. The findings indicate that both customer experience and trust partially mediate the relationship, with customer experience having a more significant influence on satisfaction than trust. Improving OLSQ has the potential to promote customer satisfaction by improving the overall customer experience. Similarly, developing trust through RSLQ can also contribute to boosting customer satisfaction.

Regarding moderating variables, the impact of OLSQ on customer experience will be stronger for female customers than males in the Fr2Fr SC context. Females place a greater emphasis on condition, timeliness and availability dimensions of OLSQ, when forming their overall customer experience. Secondly, hedonic products exhibit a more substantial impact compared to utilitarian products. Thirdly, the OLSQ significantly influences customer experience, particularly for customers who have encountered the return process. In order of importance among the three moderating variables, customers with return experience are most significant, followed by female (gender) and hedonic products (product type).

Finally, this study by employing the S-O-R model sheds light on the psychological processes underlying customer satisfaction in Fr2Fr SC. The model effectively captures how LSQ dimensions act as stimuli, influencing customer experience and trust (internal responses), which ultimately lead to satisfaction as the outcome. This application strengthens the understanding of consumer behaviour within the S-O-R framework in the context of Fr2Fr social commerce. The details about the theoretical implications are mentioned below:

5.5.1 Expanding the Scope of Stimuli in Fr2Fr SC

The S-O-R model traditionally focuses on marketing stimuli such as advertising or product features. This study broadens this concept in the context of Fr2Fr SC by highlighting logistics service quality (LSQ) as a critical stimulus influencing customer satisfaction. It emphasizes that product characteristics and aspects like delivery speed, product condition on arrival, and the overall fulfilment experience play a significant role in shaping customer perception. Furthermore, this study differentiates between operational LSQ (availability, timeliness, condition) and relational LSQ (responsiveness, assurance, empathy). This adds nuance to the S-O-R model by acknowledging the social nature of Fr2Fr interactions. How resellers handle inquiries, build trust and demonstrate empathy become additional stimuli that impact customer experience and satisfaction (Lee & Chen, 2021). This highlights the model's adaptability to capture the social and service-oriented aspects of Fr2Fr SC.

5.5.2 Internal Responses: Mediating the Stimulus-Satisfaction Relationship

This study underscores the crucial role of customer experience and trust as mediating variables in the S-O-R model within Fr2Fr SC. It suggests that LSQ (operational and relational) does not directly lead to satisfaction. Instead, it influences internal customer responses like positive experiences with order fulfilment or feelings of trust towards

the reseller. These internal responses then translate into the outcome of customer satisfaction. This finding strengthens the S-O-R model by emphasizing the cognitive and emotional processes that occur within customers in response to the stimuli (LSQ) in the Fr2Fr SC environment. It highlights the importance of understanding the external factors and the internal mechanisms that shape customer satisfaction. This aligns with existing research that emphasizes the role of emotions and subjective experiences in consumer behaviour (Penz & Hogg, 2011; Manthiou et al., 2020; Chero-Martínez & Vázquez-Casielles, 2021).

5.5.3 Moderating the S-O-R Model for Fr2Fr SC

This study introduces the concept of moderating variables like customer gender, product type (hedonic vs functional), and return experience within the S-O-R model for Fr2Fr SC. These variables influence the strength of the relationship between the stimuli (LSQ) and the mediating internal responses (customer experience). For instance, this study suggests that gender might influence how customers perceive and value aspects of operational LSQ, potentially leading to different experiences. Similarly, the type of product purchased (hedonic or functional) might moderate the impact of LSQ on customer experience. Prior negative return experiences can also weaken the positive influence of efficient order fulfilment on customer perception. By incorporating these moderators, this research expands the applicability of the S-O-R model in Fr2Fr SC. It highlights the need to consider individual and contextual factors that can influence how customers respond to the stimuli presented by the platform and the reseller's service quality. This aligns with recent calls for extending the S-O-R model to account for situational and individual differences in consumer behaviour (Kimiagari & Malafe, 2021).

In conclusion, this study offers valuable theoretical implications by applying and extending the S-O-R model to the context of Fr2Fr SC. It highlights the importance of LSQ as a stimulus, the mediating role of customer experience and trust, and the influence of moderating variables on customer satisfaction. This enriched understanding of the S-O-R model can guide future research efforts and inform platform strategies to create a more satisfying customer experience in the dynamic world of Fr2Fr social commerce.

5.6 PRACTICAL IMPLICATIONS

This paper contributes to the body of knowledge of SC by demonstrating the links between LSQ, customer experience, and customer satisfaction among Fr2Fr SC customers but also to practice. The rise of Fr2Fr SC presents unique challenges and opportunities for businesses of all sizes. While the power of social influence can drive sales and brand awareness, a critical factor for success lies in LSQ. LSQ encompasses the entire customer experience from order placement to delivery, impacting areas like staff training, returns management, and customer service.

This study provides crucial implications for social commerce companies aiming to improve customer satisfaction by efficiently managing logistics service quality (LSQ). The results emphasize the significance of the two primary aspects of LSQ in social commerce: Operational and Relational LSQ. Although both dimensions have the potential to impact customer satisfaction, the study proposes that OLSQ should be given priority. The most influential aspect of customer satisfaction is operational LSQ, with the condition having the most significant impact, followed by availability and timeliness. Therefore, SC companies should prioritize ensuring the timely delivery of items, keeping a wide range of products to increase availability, and avoiding stock shortages to meet customer expectation. Furthermore, ensuring transparency in

delivering products or services is essential for fulfilling customer expectations thereby increasing satisfaction.

The significance of prioritizing dimensions of RLSQ in order to improve customer satisfaction and cultivate trust in social commerce firms is emphasized in this study. The results highlight the importance of RLSQ as a significant driver for customer satisfaction, emphasising organizations' need to prioritize aspects such as assurance, empathy, and responsiveness. Among the three dimensions examined, assurance is identified as the primary determinant in development of trust, with empathy and responsiveness following suit. Therefore, SC firms must give precedence to assurance elements by providing accurate product descriptions and efficiently resolving customer inquiries and concerns to establish a sense of confidence with their consumers. In addition, cultivating empathy by understanding and addressing customer requirements through personalized suggestions will further increase trust and satisfaction. SC enterprises may enhance their competitive position and promote growth in the dynamic marketplace by prioritizing RLSQ aspects, which help build customer trust and satisfaction.

Furthermore, the findings underscore the critical role of customer experience and trust as intervening variables in achieving customer satisfaction. Managers should prioritize delivering products on time and in good condition, as promised to customers, to ensure a positive customer experience. Transparency regarding product availability, specifications, delivery timelines, and return policies is essential for building customer trust. Among customer experience and trust, customer experience emerges as the most significant factor, followed by trust. Therefore, managers should focus on OLSQ factors initially to ensure a positive customer experience and then concentrate on RLSQ factors to generate trust. Engaging with customers and developing trust over time is

crucial for fostering long-term relationships and operationalizing RLSQ. Preferentially emphasizing assurance and empathy can help generate trust among social commerce consumers, ultimately increasing customer satisfaction.

The managerial implications of three moderating variables are also valuable from a practical point of view. Female customers, for instance, are shown to be mainly influenced by OLSQ dimensions compared to males, suggesting that firms must prioritize these dimensions in product delivery processes to cater to female customers effectively. Similarly, given the stronger impact of OLSQ on hedonic products compared to utilitarian products, firms should focus their efforts on enhancing OLSQ dimensions for the delivery of hedonic products to maximize customer satisfaction. Additionally, the heightened influence of OLSQ on customer experience, especially for customers involved in the return process, underscores the importance of careful handling and management of returns to ensure a positive customer experience. By considering these moderating variables and tailoring their strategies accordingly, SC firms can better meet their customers' diverse needs and preferences, ultimately enhancing customer experience and satisfaction. These critical managerial implications that emerge from this study are listed below:

5.6.1 Transparency in Delivery Timelines

Maintain complete transparency regarding delivery timelines and costs. Price-sensitive customers might be willing to wait a bit longer for a better deal, but clear communication builds trust and avoids negative customer experiences.

5.6.2 Inventory Management

Efficient inventory management is paramount to ensure timely order fulfilment and minimize stockouts. This is particularly relevant for Fr2Fr SC, where fast and reliable delivery is crucial for maintaining positive social interactions. Product availability

through the inventory management strategies should be considered for geographically dispersed vendor locations to expedite deliveries and enhance customer satisfaction (Aanyu, 2019).

5.6.3 Simplified Returns Policy

Offer a clear, hassle-free returns policy for purchases made through the Fr2Fr network. This minimizes risk perception and incentivizes purchases from price-sensitive customers. Returns management becomes even more critical in Fr2Fr SC, with clear policies and efficient processes influencing customer trust and repurchase intention. Emerging market consumers might be hesitant to purchase online due to return concerns. SC platforms can collaborate with vendors to establish clear, simplified return policies with minimal fees or hassle. This can incentivize purchases and build trust among Fr2Fr buyers. By implementing appropriate returns management strategies, SC platforms can create a win-win situation for both seller/reseller and customers. Seller/reseller benefit from increased sales, while customers enjoy seamless shopping experience with strong LSQ.

5.6.4 Empathetic sellers

Empathy allows resellers to build trust and rapport with their network. By actively listening to concerns, addressing questions with patience, and offering personalized recommendations, resellers can create a positive social experience that fosters customer loyalty (Delpechitre et al., 2019). This is particularly important in Fr2Fr SC, where negative experiences can quickly spread through social circles and damage a reseller's reputation. Empathy allows resellers to navigate the complexities of social dynamics. Friends might hesitate to express concerns about product quality or delivery delays for fear of causing offence. An empathetic reseller can pick up on these subtle cues and proactively address potential issues, ensuring a smooth customer journey within the

social network (Limbu et al., 2016). Empathy allows resellers to manage customer expectations effectively. Transparency regarding product limitations, delivery timelines, and return policies is crucial. An empathetic reseller can communicate these details in a way that is sensitive to the customer's perspective, fostering trust and reducing the likelihood of post-purchase dissatisfaction. This directly impacts LSQ, as clear communication minimizes confusion and sets realistic expectations around delivery and returns.

5.6.5 Assurance and Responsiveness-based Selling

Fr2Fr SC transactions occur within a social network of friends and acquaintances. Here, trust is paramount. Assurance refers to the customer's confidence in the reseller's ability to deliver a positive experience. This encompasses aspects like product quality, accurate product descriptions, and adherence to promised delivery timelines (Min, 2015). Responsiveness refers to the reseller's ability to address customer inquiries and concerns promptly and effectively. By demonstrating both assurance and responsiveness, resellers build trust in their network, fostering positive word-of-mouth and repeat purchases. This is especially important in Fr2Fr SC, where negative experiences can quickly spread through social circles and damage not only the reseller's reputation but also the platform's credibility.

By implementing these marketing and customer acquisition strategies, SC players can leverage social media to attract price-sensitive customers through the power of Fr2Fr connections. Building trust through social proof, targeted advertising, and a focus on value can lead to sustainable customer acquisition and platform growth.

In conclusion, LSQ is a critical differentiator for success in the dynamic world of Fr2Fr SC. SC businesses prioritizing efficient LSQ, building trust and providing good customer experience for enhancing the overall customer satisfaction.

5.7 LIMITATIONS OF THE STUDY

Every social science research work is exposed to certain shortcomings. The present study is also likely to comprise a few limitations. The limitations of the study are listed as:

1. The study considered the members of the social media/network who are active in the social group/community formed using SNS.
2. The study is focused on Fr2Fr SC consumers primarily situated in tier II cities in India.
3. This study specifically focuses on the effect of operation LSQ and relational LSQ on customer satisfaction via customer experience.
4. This study is cross-sectional in nature.
5. This study cannot establish cause-and-effect relationships due to its snapshot nature, limiting the ability to infer temporal sequences or the direction of relationships between variables.
6. This study fails to account for changes over time, as it only provides data from a single time point, making it challenging to understand trends or the evolution of phenomena.
7. Cross-sectional designs can struggle to control for confounding variables, which can obscure the true relationship between the variables of interest used in this study.
8. There is a risk of response bias, where participants may provide socially desirable answers rather than truthful responses, potentially skewing the results.
9. SC platforms and user behaviors evolve rapidly, making it difficult for a cross-sectional study to capture the ongoing changes and trends in online shopping behavior.

10. SC platforms have unique features and user bases, which may lead to platform-specific behaviors that a cross-sectional study might not fully differentiate or generalize.

5.8 SCOPE FOR FUTURE RESEARCH

Finally, a few leading questions that may develop this research stream even further.

First, the generalizability of our findings may be constrained because most of the sample data we used were from young Fr2Fr SC users primarily situated in rural locations. The sample size and variation can be expanded in future studies, and the study can be repeated with various groups.

Secondly, this study specifically focuses on the effect of operation LSQ and relational LSQ on customer satisfaction via customer experience. Future research might include few mediating variables that may advance the LSQ and customer satisfaction association. Thirdly, this study did not deliberate the constructs/variables that can moderate the operation LSQ and relational LSQ and customer satisfaction relationship. Future studies might include moderating variables at individual, product and policy levels, such as gender, product type, price, and return policy leniency. Finally, our study is cross-sectional and does not consider the longitudinal data. Analyzing the longitudinal data over a period of time will unearth a fresh perspective of LSQ in SC.

Finally, few leading questions on that may develop this research stream even further are listed below:

This study opens doors for further research exploring the nuances of product availability in Fr2Fr SC. Investigating how factors like product type (perishable vs. non-perishable), reseller characteristics (experience level), and platform inventory management strategies influence customer response to availability issues can provide valuable insights for optimizing the Fr2Fr SC experience.

Reseller location and logistics choices: Do resellers located farther away from customers experience higher delays? Do their choices of couriers or logistics providers impact delivery timeliness?

Platform intervention strategies: Can Fr2Fr SC platforms implement features that provide transparent delivery estimates based on reseller location and logistics partners? Could they offer incentives for resellers who consistently meet timeliness expectations?

Communication and customer expectations: How can platforms and resellers effectively manage customer expectations regarding delivery timelines, especially in cases of potential delays due to unforeseen circumstances?

Reseller quality control practices: Do resellers with a history of delivering products in good condition experience higher customer satisfaction ratings? How can platforms encourage or incentivize resellers to implement quality control measures?

Platform intervention strategies: Can Fr2Fr SC platforms facilitate a system for product returns or exchanges due to condition issues? Could they offer features that allow customers to review product condition based on previous purchases from a particular reseller?

Standardization and transparency: Can platforms establish minimum quality standards for products sold on their platform, even within the Fr2Fr model? How can they ensure transparency regarding product condition through clear descriptions and customer reviews?

The role of social network analysis: Does the strength of a customer's social connection to the reseller influence their perception of assurance?

Platform intervention strategies: Can Fr2Fr SC platforms implement training programs or review systems to ensure consistent and reliable communication practices among resellers?

The impact of seller characteristics: Do factors like a reseller's experience level or past customer reviews influence perceptions of assurance and ultimately, customer satisfaction?

The impact of platform intervention strategies: Can Fr2Fr SC platforms implement features that incentivize timely responses from resellers, or provide communication tools that streamline buyer-seller interactions?

The role of social network analysis: Does the strength or nature of a customer's social connection to the reseller influence their expectations and perceptions of responsiveness?

Standardization and training: Can Fr2Fr SC platforms introduce standardized communication protocols or training programs to ensure consistent and professional communication practices among resellers?

The impact of platform reputation on trust: Does the overall reputation of the Fr2Fr SC platform influence customer trust in resellers, even when social connections are present?

Strategies for building trust in Fr2Fr SC: Can Fr2Fr SC platforms implement mechanisms like seller reviews, escrow services, or standardized communication protocols to further strengthen trust between resellers and customers?

The role of social network analysis: How does the strength or type of social connection between a customer and reseller influence the level of trust established and its impact on satisfaction?

The impact of platform intervention strategies: Can Fr2Fr SC platforms implement mechanisms like seller training programs or quality control measures to ensure consistent product availability and condition across resellers?

The role of social network analysis: Does the strength or nature of a customer's social connection to the reseller influence their expectations and perceptions of the customer experience?

Measuring customer experience in Fr2Fr SC: Can researchers develop a reliable methodology to capture and quantify the various aspects of customer experience specific to the Fr2Fr SC context?

Hope the scholars will find these questions interesting and take them to develop the Fr2Fr SC platform even further.

5.9 CONCLUDING NOTE

“Social commerce is the future of selling because of the many advantages that it offers to the customers from trust to ample selection, to instant feedback.”

Mr. Vidit Aatrey
Founder and CEO of Meesho (a successful Indian SC platform)

While talking about the SC global giants like China's Pinduoduo who focused on low prices and WeChat to concur China's rural communities thereby challenging the mainstream e-tailer like Alibaba. By capturing the essence of SC, Pinduoduo's unique positioning of '*Together, More savings, More fun*' is a big success. This signifies the relevance of SC in online retailing in global and Indian markets.

This study identifies operation LSQ and relational LSQ as two main dimensions of LSQ of Fr2Fr SC and explores their impact on customer experience and customer satisfaction. The key dimensions of operation LSQ are condition, availability and timeliness, whereas the dimensions of relational LSQ are assurance, responsiveness and empathy. This study empirically corroborates the impact of operation LSQ and relational LSQ on customer satisfaction and explores the mediating role of customer experience. These results provide crucial empirical support for LSQ dimensions in the context of Fr2Fr SC and provide conceptual clarity. Our findings will also help SC e-

tailers and their resellers develop and design a high-level logistics service strategy to enhance SC users' customer experience and satisfaction.

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APPENDIX

Appendix 1: Survey Questionnaire

I am Soma Amol Dhaigude from the School of Management, National Institute of Technology (NIT) Karnataka, Surathkal. I am doing this as part of my PhD thesis on “*Logistics Service Quality in Social Commerce*”. Be assured that all the information you provide will be kept strictly confidential and used for academic purposes only. The data will only be used in aggregate without any individually identifiable information. Your participation is entirely voluntary, and you can withdraw from this study at any point in time. I will be very much grateful for the valuable time and effort you will put into filling out the questionnaire.

Social commerce is an upcoming form of online shopping where buying and selling happen through social media/social network site(s) like WhatsApp, Facebook, Instagram, Twitter, Pinterest, Flickr, Google + and YouTube. The sellers can be your friends/relatives/known & unknown community members, or firms' employees that approach you through social media/social networking site(s) and help you in the purchase process.

Part A: Socio-demographic Information

1. Your name (Optional): _____
2. Location (Optional): _____
3. Gender: Male Female Other
4. Age Group 18-24 years 25-35 years 36-45 years
 46-55 years 56 years and above
5. Marital Status: Married Unmarried Other
6. What is your occupation?
 Employed Homemaker Student Retired Self Employed
7. Family monthly income (in INR)
 50,000 and below Between 50,001- 1,00,000 Above 1,00,000
8. What is your highest level of education?
 Upto10th grade 11th to 12th Graduate Postgraduate
 PhD

Part B: Social Commerce Preference

9. Select the social media/social network site(s) where you have purchased any product(s)/services. (Can tick (✓) more than one)

- Facebook WhatsApp Twitter Pinterest Google +
 LinkedIn Instagram Flickr Tumblr YouTube
 Any other (Please Specify) _____

10. Your preferred device for using social media/social network site(s)?

- Mobile Phone Laptop Desktop Tab
 Any Other (Please Specify) _____

11. Who was the social commerce seller in your most recent purchase?

- A close friend A relative A known member of my online community
 Unknown Individual A well-known firm Any Other (Please Specify) _____

12. What products did you purchase from social media/social network site(s)?

(Can tick (✓) more than one)

- Beauty/Grooming Grocery Books
 Fashion (Clothing, Footwear, Bags, Watches, Accessories etc.)
 Electronics (Mobile, Laptop, Desktop, Speaker, Camera etc.)
 Home Furnishing (Furniture, Décor etc.)
 Others (Please Specify): _____

13. Have you returned any product(s) purchased from social media/social network site(s)?

- Yes No

PART C

While considering your recent purchases using the social media/social networking site/s, to what extent do you agree with different aspects of the products and services offered by *the seller/s that you have interacted on social media/social networking site/s?* Please select your answer on 7-point rating scale, where 1 stand for strongly disagree (SD), 2 for fairly disagree (FD), 3 for disagree, 4 for neutral, 5 for agree, 6 for fairly agree (FA) and 7 strongly agree (SA).

Q. No	Questions	SD	FD	Disagree	Neutral	Agree	FA	SA
1	The seller was responsive to my needs, requirements and problems during the shopping	1	2	3	4	5	6	7
2	The seller was capable in handling my queries with sufficient product knowledge	1	2	3	4	5	6	7
3	The seller's attitude and behavior were satisfactory and courteous	1	2	3	4	5	6	7
4	The seller made efforts to identify my needs	1	2	3	4	5	6	7
5	The seller helped me to place the order in an efficient way	1	2	3	4	5	6	7
6	The seller cooperated with me and made an effort to understand my situation in the shopping process	1	2	3	4	5	6	7
7	The seller was never too busy to answer my requests	1	2	3	4	5	6	7
8	The seller informed me ahead of time if my order was going to be delayed.	1	2	3	4	5	6	7
9	The seller was trying to develop long-term relationships	1	2	3	4	5	6	7
10	The seller made recommendations for improvement on a continuous basis	1	2	3	4	5	6	7
11	The seller was trustworthy	1	2	3	4	5	6	7
12	This seller took my best interests into consideration	1	2	3	4	5	6	7
13	The seller fulfilled his/her promises	1	2	3	4	5	6	7
14	I believe in the information provided by the seller	1	2	3	4	5	6	7
15	This seller leaves people with the impression that he/she keeps his/her promises	1	2	3	4	5	6	7
16	The seller accurately fulfilled my order in one and only one delivery attempt	1	2	3	4	5	6	7
17	The seller was timely in delivering all the products I requested	1	2	3	4	5	6	7
18	All the products I requested were in good condition upon delivery after opening	1	2	3	4	5	6	7
19	All of the products I received in the first attempt were the ones I requested	1	2	3	4	5	6	7
20	The seller delivered all the products I requested on time	1	2	3	4	5	6	7
21	All the products I received appeared to be in good condition	1	2	3	4	5	6	7

Q. No	Questions	SD	FD	Disagree	Neutral	Agree	FA	SA
22	All the products I requested were delivered as promised	1	2	3	4	5	6	7
23	The seller delivered all the requested products in a given time	1	2	3	4	5	6	7
24	There was no problem with the condition of all the products that I received	1	2	3	4	5	6	7
25	The seller always delivered all of the products I requested	1	2	3	4	5	6	7
26	All products received were in good condition	1	2	3	4	5	6	7
27	My experience with seller was better than expected during purchase	1	2	3	4	5	6	7
28	The service level provided by the seller was better than expected during purchase	1	2	3	4	5	6	7
29	Overall, most of my expectations of using the seller service were confirmed/ Met	1	2	3	4	5	6	7
30	I think the experience is fun/exciting when I make a purchase with this seller	1	2	3	4	5	6	7
31	The seller's other customers consistently leave me with a good impression of the seller's services/ give good feedback/peer /colleagues	1	2	3	4	5	6	7
32	I am satisfied with the pre-purchase experience with the seller (e.g., consumer education, product search, quality of information about products, product comparison)	1	2	3	4	5	6	7
33	I am satisfied with the during purchase experience with the seller (e.g., ordering, delivery date choice)	1	2	3	4	5	6	7
34	I am satisfied with the post-purchase experience with the seller (e.g., customer support, sales support, handling of returns/refunds, delivery care)	1	2	3	4	5	6	7

Thank you.

End of Questionnaire

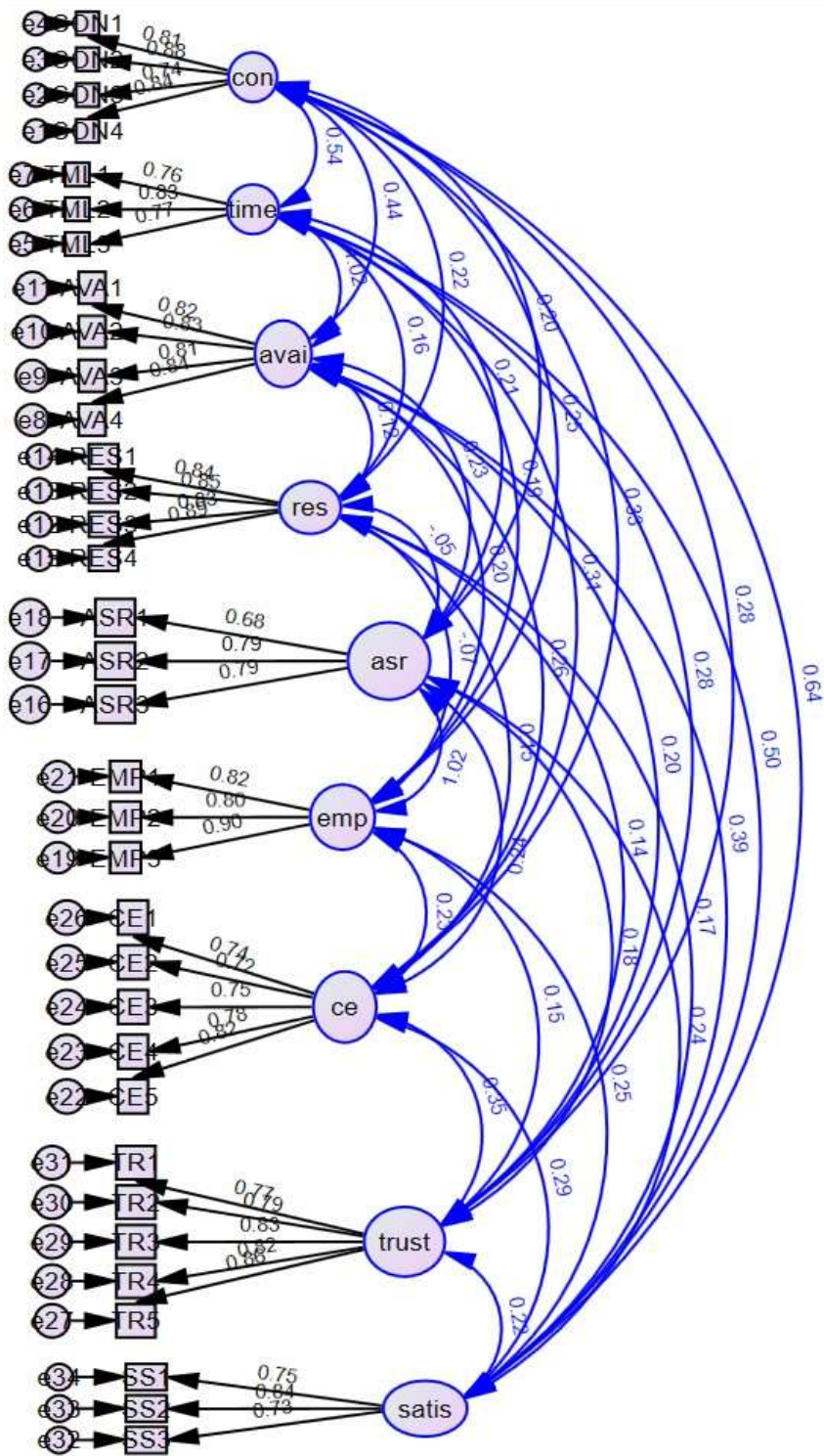
Appendix 2: List of cities

Sr. No.	City Name	State	Region	Tier
1	Guwahati	Assam	East	Tier 2
2	Patna	Bihar	East	Tier 2
3	Chandigarh	Chandigarh	East	Tier 2
4	Durg- Bhilai Nagar	Chhattisgarh	East	Tier 2
5	Raipur	Chhattisgarh	East	Tier 2
6	Bokaro Steel City	Jharkhand	East	Tier 2
7	Dhanbad	Jharkhand	East	Tier 2
8	Jamshedpur	Jharkhand	East	Tier 2
9	Ranchi	Jharkhand	East	Tier 2
10	Bhubaneswar	Odisha	East	Tier 2
11	Cuttack	Odisha	East	Tier 2
12	Rourkela	Odisha	East	Tier 2
13	Asansol	West Bengal	East	Tier 2
14	Durgapur	West Bengal	East	Tier 2
15	Siliguri	West Bengal	East	Tier 2
16	Faridabad	Haryana	North	Tier 2
17	Gurgaon	Haryana	North	Tier 2
18	Jammu	Jammu and Kashmir	North	Tier 2
19	Srinagar	Jammu and Kashmir	North	Tier 2
20	Amritsar	Punjab	North	Tier 2
21	Jalandhar	Punjab	North	Tier 2
22	Ludhiana	Punjab	North	Tier 2
23	Ajmer	Rajasthan	North	Tier 2
24	Bikaner	Rajasthan	North	Tier 2
25	Jaipur	Rajasthan	North	Tier 2
26	Jodhpur	Rajasthan	North	Tier 2
27	Kota	Rajasthan	North	Tier 2
28	Agra	Uttar Pradesh	North	Tier 2
29	Aligarh	Uttar Pradesh	North	Tier 2
30	Allahbad	Uttar Pradesh	North	Tier 2
31	Bareilly	Uttar Pradesh	North	Tier 2
32	Firozabad	Uttar Pradesh	North	Tier 2
33	Ghaziabad	Uttar Pradesh	North	Tier 2
34	Gorakhpur	Uttar Pradesh	North	Tier 2
35	Jhansi	Uttar Pradesh	North	Tier 2
36	Kanpur	Uttar Pradesh	North	Tier 2
37	Lucknow	Uttar Pradesh	North	Tier 2
38	Meerut	Uttar Pradesh	North	Tier 2
39	Moradabad	Uttar Pradesh	North	Tier 2
40	Noida	Uttar Pradesh	North	Tier 2
41	Saharanpur	Uttar Pradesh	North	Tier 2
42	Varanasi	Uttar Pradesh	North	Tier 2
43	Dehradun	Uttarakhand	North	Tier 2
44	Greater Vishakhapatnam	Andhra Pradesh/Telangana	South	Tier 2

Sr. No.	City Name	State	Region	Tier
45	Guntur	Andhra Pradesh/Telangana	South	Tier 2
46	Nellore	Andhra Pradesh/Telangana	South	Tier 2
47	Vijayawada	Andhra Pradesh/Telangana	South	Tier 2
48	Warangal	Andhra Pradesh/Telangana	South	Tier 2
49	Belgaum	Karnataka	South	Tier 2
50	Gulbarga	Karnataka	South	Tier 2
51	Hubli-Dharwad	Karnataka	South	Tier 2
52	Mangaluru	Karnataka	South	Tier 2
53	Mysore	Karnataka	South	Tier 2
54	Kannur	Kerala	South	Tier 2
55	Kochi	Kerala	South	Tier 2
56	Kollam	Kerala	South	Tier 2
57	Kozhikode	Kerala	South	Tier 2
58	Malappuram	Kerala	South	Tier 2
59	Thiruvananthapuram	Kerala	South	Tier 2
60	Thrissur	Kerala	South	Tier 2
61	Coimbatore	Tamil Nadu	South	Tier 2
62	Erode	Tamil Nadu	South	Tier 2
63	Madurai	Tamil Nadu	South	Tier 2
64	Salem	Tamil Nadu	South	Tier 2
65	Tiruchirappalli	Tamil Nadu	South	Tier 2
66	Tiruppur	Tamil Nadu	South	Tier 2
67	Bhavnagar	Gujarat	West	Tier 2
68	Jamnagar	Gujarat	West	Tier 2
69	Rajkot	Gujarat	West	Tier 2
70	Surat	Gujarat	West	Tier 2
71	Vadodara	Gujarat	West	Tier 2
72	Bhopal	Madhya Pradesh	West	Tier 2
73	Gwalior	Madhya Pradesh	West	Tier 2
74	Indore	Madhya Pradesh	West	Tier 2
75	Jabalpur	Madhya Pradesh	West	Tier 2
76	Ujjain	Madhya Pradesh	West	Tier 2
77	Amravati	Maharashtra	West	Tier 2
78	Aurangabad	Maharashtra	West	Tier 2
79	Bhiwandi	Maharashtra	West	Tier 2
80	Kolhapur	Maharashtra	West	Tier 2
81	Malegaon	Maharashtra	West	Tier 2
82	Nagpur	Maharashtra	West	Tier 2
83	Nanded-Waghala	Maharashtra	West	Tier 2
84	Nashik	Maharashtra	West	Tier 2
85	Sangli	Maharashtra	West	Tier 2
86	Solapur	Maharashtra	West	Tier 2
87	Vasai-Virar	Maharashtra	West	Tier 2

Source: Ministry of Finance, Government of India (2017). List of cities for grant of house rent allowance to central government employees

Appendix 3: Measurement model



Source: Data Analysis

Annexure 1: Researcher's Bio Data with List of Publications

CURRICULUM VITAE

Soma Amol Dhaigude

Flat No. 1105, 11th Floor, B Wing,
HDIL Metropolis CHSL
JP Rd, opposite Gurudwara, Sahayog Nagar,
Behind Tirumala shopping centre, Four Bungalows,
Andheri West, Mumbai,
Maharashtra 400053. Email: somalilhare@gmail.com
Mobile: 9522565642 / 9425959230



ACADEMIC QUALIFICATION

- SD Bansal College of Technology, Indore
Master of Business Administration, 2008-11
- Shri Vaishnav Institute of Management, Indore
Bachelor of Science, 2006-2008

WORK EXPERIENCE

Executive
T.A. Pai Management Institute Manipal (TAPMI), India
1 October 2016 to 9 May 2023
6 Year 6 Months

General Duty Assistant
Indian Institute of Management Indore
26 May 2011 to 26 September 2016
4 Year 8 Month

JOURNAL PUBLICATIONS

- Dhaigude, S. A., & Mohan, B. C. (2023b). Customer experience in social commerce: A systematic literature review and research agenda. *International Journal of Consumer Studies*, 47(5), 1629-1668. <https://doi.org/10.1111/ijcs.12954> (ABDC-A and Scopus Q1)
- Dhaigude, S. A., & Mohan, B. C. (2023a). Logistics service quality in online shopping: A bibliometric analysis. *Journal of Internet Commerce*, 22(1), 157-188. <https://doi.org/10.1080/15332861.2021.2011598> (ABDC-B and Scopus Q1)
- Dhaigude, S. A., & Mohan, B. C. (2024). Customer experience in social commerce: Thematic and intellectual structure mapping using bibliometric analysis. *International Journal of Human-Computer Interaction*, 40(5) 1210-1234. <https://doi.org/10.1080/10447318.2022.2134837> (ABDC-B and Scopus Q1)
- Dhaigude, S. A., & Mohan, B. C. Understanding the Role of Logistics Service Quality in Social Media Enabled Online Commerce. *Communications of the Association for Information Systems*. {ABDC-A and Scopus Q1, Under Review}

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- Dhaigude, S. A., & Mohan, B. C (2023). Logistics Service Quality in Social Commerce: Exploring the Mediating Role of Customer Experience. *POMS India International Conference, XLRI Jamshedpur*. December 4-6, 2023.
- Dhaigude, S. A., & Mohan, B. C (2023). Social Commerce and Customer Satisfaction: An Empirical Investigation. *International Conference: Emerging Trends in Operations and Analytics (ICETOA 2023)*. T A Pai Management Institute, Manipal. March 17-19, 2023
- Dhaigude, S. A., & Mohan, B. C (2023). Social Commerce the new avatar of e-commerce: Systematic Literature Review. *The 8th Indian Academy of Management Conference (INDAM)*. NMIMS, Mumbai. January 6-8, 2023
- Dhaigude, S. A., & Mohan, B. C (2021). Social Commerce revolutionizing the women entrepreneurship in India: A case of Meesho.com. *ISDSI Conference, Indian Institute of Management Nagpur*, December 27-30, 2021.
- Dhaigude, S. A., & Mohan, B. C (2021). Delivering Smiles Along with Products: E-fulfilment And Customer Satisfaction in Social Commerce. *POMS India International Conference, S P Jain Institute of Management Research, Mumbai*. December 22-24, 2021.
- Dhaigude, S. A., & Mohan, B. C (2021). Modelling the CSF of Social Commerce adoption in India: ISM and DEMATEL approach. *2nd International Conclave on Globalizing Indian Thoughts 2021 (GIT)*, Indian Institute of Management Kozhikode, Kerala, December 16-18, 2021.