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THE EFFECT OF SOCIAL MEDIA ON SUPPLY CHAIN RESPONSIVENESS: THE CASE OF SAFARICOM TELE COMMUNICATION ETHIOPIA PLC.

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ADDIS ABABA, ETHIOPIA

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THE EFFECT OF SOCIAL MEDIA ON SUPPLY CHAIN RESPONSIVENESS: THE CASE OF SAFARICOM TELECOMMUNICATION ETHIOPIA PLC.

A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF ADDIS ABABA UNIVERSITY IN THE PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTERS IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT

BY

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DECLARATION

I, the under signed, declare that the thesis entitled ‘’the effect of Social Media on Supply Chain Responsiveness: the case of Safaricom Telecommunication Ethiopia Plc is my original work and has not been in presented in Addis Ababa university or any other university ,and that all sources of Material used for the project have been duly acknowledged .

Name: Temesgen Abebe

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Date_____

STATEMENT OF CERTIFICATION

This is to confirm that Temesgen Abebe completed his research on the topic "The Effect of Social Media on Supply Chain Responsiveness: The Case of Safaricom Telecommunication Ethiopia Plc." This thesis is unique in nature and qualifies for submission for the Master's Degree in Logistics and Supply Chain Management.

Dr. Zellalem Tadesse	——————-———	——————-———
(The research advisor)	**Signature**	**Date**

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This is to certify that thesis prepared by Temesgen Abebe G/wold, entitled: ‘’the effect of Social Media on Supply Chain Responsiveness: the case of Safaricom Telecommunication Ethiopia Plc. In partial fulfillment of the requirements for the Degree of Masters of Arts in logistics and Supply chain Management complies with the regulations of the university and meets the accepted standard with respect to originality and quality.

APPROVED BY THE EXAMINING BOARD

Advisor	**signature**	**Date**
Internal examiner s	**signature**	**Date**
External Examiner	**Signature**	**Date**
Department Chair people name	**Signature**	**Date**

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LISTS OF ABBREVEATIONS

AI:	Artificial Intelligence
DF:	Distribution flexibility
ICT:	information and communication technology
IoT:	Internet of Things
OSCM:	O perations and Supply Chain Management
RFID:	Radio Frequency Identification:
SCF:	Supply chain flexibility
SCM:	supply chain management
SCR:	Supply Chain Responsiveness
SCRM:	Supply Chain Risk Management
SPSS:	Statistical Package for Social science

ABSTRACT

This study was aimed to investigate the effect of Social Media on Supply chain Responsiveness in the case of Safari com. In this study explanatory research design was employed to investigate the effect of social media on supply chain responsiveness. To arrange the data required for the study, a combination of research methodologies was also employed. Questionnaires and interviews were used to gather data. The data was gathered using both primary and secondary approaches, with the questioner serving as a source of data collection instrument. 246 employees of the company were selected, and 277 respondents included in the sample size. The descriptive results indicate substantial support for the use of social media to improve transparency, real-time communication, and decision-making. Correlation study reveals substantial positive connections between all independent variables and supply chain responsiveness, with information sharing having the largest correlation ($r = 0.601$). Regression results show that knowledge sharing is the most important predictor ($\beta = 0.576$, $p < 0.01$), followed by partner collaboration and communication ($\beta = 0.160$, $p = 0.015$). Customer involvement is marginally significant ($\beta = 0.120$, $p = 0.058$), whereas market intelligence collecting is not significant ($p = 0.773$). Technology adoption had a substantial negative effect ($\beta = -0.133$, $p = 0.026$), indicating integration issues. The model explains 40.2% of the variance in supply chain responsiveness ($R^2 = 0.402$), demonstrating the importance of social media. To improve supply chain responsiveness, Safaricom Ethiopia should invest in robust information-sharing platforms, powerful customer feedback analytics, and collaborative technologies with partners, as well as ensure judicious technology adoption accompanied by extensive training. Future study should look into the long-term effects of technology deployment, optimize social media-driven client engagement, and increase market intelligence data quality to aid decision-making in emerging areas.

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Keywords: **Technology**, **Supply chain, Supply chain responsiveness, Social media**

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

According to Kaplan and Haenlein (2010) social media refers to "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and allow the creation and exchange of user generated content" (61). It has significantly altered the way people create, interact, and collaborate (Aral et al. 2013), with channels emerging to allow people to connect and share information via social applications (Ahmed et al. 2019). Organizations benefit greatly from social media. Internally, social media facilitates communication among employees, promoting speed, visibility, and traceability within organizations (Leonardi et al. 2013). Externally, social media enables businesses to engage with customers or the general public (Gu and Ye 2014), allowing them to develop positive customer relationships (Chae 2015).

The value of social media in business management has been studied from several disciplinary viewpoints. For example, in information management, Ngai et al. (2015) and Alavi and Denford (2011) found that social media can improve the efficiency of information exchange and knowledge management. In human resource management, PobaNzaou et al. (2016) identified the limitations of using social media into firms' HR management activities. To consolidate and expand on prior research, this work investigates the relevance of social media for Operations and Supply Chain Management (OSCM), an area that appears to be poorly understood despite calls for research from numerous experts (Lam et al. 2016; Chae 2015).

Although the research reveals some evidence of social media use in OSCM, such as vehicle routing (Albuquerque et al. 2016) and supplier selection (e.g. Lin et al. 2018), few managers understand how to use social media for supply chain planning (Natoli 2013). This research topic is distinguished by a lack of consolidation through extensive literature reviews, which serves as reason for the current study's systematic review. The aim of this study was to examine the existing environment of social media research for OSCM, from which plausible research directions will be developed.

Recently, the problem of sustainability has emerged as a critical concern in the manufacturing industries throughout the world. For this reason, industrial organizations that formerly focused solely on financial advantages are increasingly recognizing the need to protect and preserve the environment through the adoption of supply chain management (SCM) strategies (Mallak et al.,

2018).According to Asamoah et al. (2021) that the concept of supply chain responsiveness is one of the major and important initiatives that have been on the agenda of ethicists, strategists, researchers, and practitioners. Yu et al. (2019)) referred supply chain responsiveness in the implementation of a manufacturing strategy that has no negative environmental effects. They necessarily involve the conscious integration of environmental management initiatives throughout the life cycle of a product and cover critical manufacturing issues such as the design of green products with reusable and recyclable content, pollution control and environmental protection, environmental regulatory compliance, and waste management. Supply chain responsiveness is based on the assumptions that manufacturing organizations create harmful pollutants in their effort to meet consumer needs.

Organizations now conduct the business in a challenging environment. In this condition, the role of supply chain management in business strategy is evolving. This may be used in the improvement of its Supply Chain Responsiveness (SCR), which is the capacity to respond quickly and the supply chain's ability to handle fluctuations in client demand. Supply chain responsiveness is the coordination of production, inventory, location, and transportation among supply chain actors to achieve the best possible balance of responsiveness and efficiency for the market being served. Supply Chain Responsiveness (SCR) has become increasingly important in creating new competitive opportunities in a rapidly changing and highly competitive market (Kim & Lee, 2010).

What was once a theoretical process now a competitive weapon, and there is a need to construct supply chains for companies that are substantially more flexible and responsive than the present ones (Thatte et al., 2013; Rajagopal et al., 2016). Among the telecom companies that operate in Ethiopia and offer social media and communication services to millions of people is Safaricom Ethiopia. One of Kenya's top telecom providers, After the company won a bid to operate in Ethiopia, which was previously off-limits to foreign investors, Safaricom Ethiopia was founded in 2021. The business is authorized to offer internet and mobile services to the Ethiopian market, and its main office is in Addis Ababa, Ethiopia. With a population of over 110 million, Safaricom Ethiopia seeks to offer the Ethiopian market high-quality and reasonably priced telecommunications services.

The business intends to make significant investments in technology, human capital, and network infrastructure in order to offer its clients dependable and cutting-edge services. By generating employment opportunities, assisting small businesses in the area, and funding social and community development initiatives, Safaricom Ethiopia also hopes to boost the growth of the Ethiopian economy. As a division of Safaricom PLC, which has a track record of offering cutting-edge and client-focused telecommunications services in Kenya, Safaricom Ethiopia gains from the knowledge and experience of its parent business. The financial services sector in Kenya and other African nations has undergone a transformation because to Safaricom PLC's flagship product, M-PESA, mobile money transfers service.

1.2 Statement of the problem

Several empirical studies have examined the impact of social media on supply chain responsiveness, highlighting its revolutionary potential in improving operational agility. According to research, social media platforms allow for real-time communication and information exchange across supply chain players, which is critical for responding to market changes and consumer requests.

For instance, a study highlighted that organizations leveraging social media can quickly gather customer insights, allowing them to adjust their supply chain strategies effectively, thereby improving responsiveness to customer needs. Recent empirical studies have highlighted the significant impact of social media on supply chain responsiveness, demonstrating its role as a transformative tool in supply chain management. Research indicates that social media enhances real-time communication among supply chain stakeholders, which is crucial for responding to market fluctuations and consumer demands. For example, a study by Mangold and Faulds (2009) emphasizes how companies can leverage social media to gather customer insights and feedback, allowing them to adjust their supply chain strategies accordingly.

Furthermore, empirical research reveals that firms that use social media platforms have better communication and coordination with supply chain partners.

A study by Kapuscinski and Weinstein (2015) found that firms that actively engage on social media can share critical information about inventory levels and logistical challenges, facilitating quicker decision- making processes. This enhanced communication not only reduces lead times but also increases overall supply chain efficiency. Another key finding from research is the role

of social media in crisis management. During disruptions, companies that effectively communicate through social media can manage stakeholder expectations and maintain trust. According to a study by Coombs (2015), timely information shared via social media helps mitigate the negative impacts of crises on supply chain performance, highlighting the platform's value in risk management. Finally, the analytical capabilities of social media provide businesses with valuable data for decision-making. Research by Goh et al. (2016) demonstrates that companies can analyze social media interactions to forecast demand trends and optimize inventory management, further enhancing their responsiveness to changing market conditions. This data-driven approach equips organizations with the insights needed to adapt swiftly to consumer preferences and operational challenges.

The growing reliance on social media platforms has altered the landscape of supply chain management, bringing opportunities and problems for companies such as Safari Com. This research aims to investigate the effect of social media on supply chain responsiveness in Safari Com's operations. In today's fast-paced and digitally driven corporate world, supply chain responsiveness has become vital to sustaining competitiveness, especially in rapidly rising and technology-driven industries. Social media, once seen solely as a marketing and communication tool, is now widely acknowledged as a strategic enabler of supply chain operations, providing real-time communication, consumer engagement, and data collection capabilities. However, despite its potential, there is little empirical evidence on how social media affects supply chain responsiveness, especially in emerging markets like Ethiopia.

Safaricom Ethiopia, a relatively new entrant into the Ethiopian telecom industry, operates within a dynamic and competitive environment that demands efficient and responsive supply chain systems. As a digital company, Safaricom has the opportunity to leverage social media platforms not only for customer service and marketing but also to enhance supply chain visibility, demand forecasting, supplier collaboration, and real-time issue resolution. However, the extent to which this potential is being realized remains unclear.

According to Chae (2015), social media can be an effective strategy for boosting supply chain responsiveness by increasing the speed and quality of information sharing between supply chain parties. Similarly, Wamba and Carter (2013) stated that incorporating social media into supply

chain processes can increase demand sensing and alignment with consumer needs. Nevertheless, these researches are primarily focused on industrialized countries and environments with strong digital infrastructure. In contrast, research concentrating on African or emerging market contexts, such as Kabugo et al. (2021), indicate that, while social media adoption is increasing, its strategic use in supply chain management is still underutilized due to infrastructural, organizational, and legislative constraints.

In Ethiopia, these challenges are compounded by factors such as inconsistent internet connectivity, limited digital literacy, and regulatory constraints, which may affect the effective use of social media in supply chain operations. The absence of localized research and context-specific insights into the role of social media in supply chain responsiveness presents a significant gap. Without understanding the actual impact, firms like Safaricom Ethiopia may miss out on opportunities to enhance operational efficiency, customer satisfaction, and agility. This study, therefore, seeks to fill this gap by examining how social media affects supply chain responsiveness in the specific case of Safaricom telecommunication Ethiopia plc.

1.3. Research Objectives

1.3.1 General Objective of the study

The main objective of the study is examining the effect of social media on supply chain responsiveness in the case of Safaricom telecommunication Ethiopia plc.

1.3.2. Specific Objectives

- To look into how supply chain responsiveness is affected by information sharing.
- To assess how supply chain responsiveness is affected by customer engagement in the context of Safaricom Ethiopia.
- To investigate how the supply chain responsiveness of Safaricom is affected by partner collaboration and communication.
- To ascertain the impact of gathering market intelligence on supply chain responsiveness.
- To investigate the relationship between supply chain responsiveness and technology adoption.

1.4. Basic Research Questions

- To what extent information Sharing affects Supply Responsiveness?
- How does customer engagement affect supply chain responsiveness in the context of Safaricom telecommunications Ethiopia plc?
- What is the effect of Partner Collaboration and Communication on Supply Chain Responsiveness within Safaricom supply chain?
- What is the effect of Market Intelligence Gathering on Supply Chain Responsiveness?
- What is the effect of Technology adoption on Supply Chain Responsiveness?

1.5 Significant of the study

Numerous stakeholders, including the researcher, Safaricom Ethiopia, the general public, governmental organizations, policymakers, and upcoming scholars, find this study on the impact of social media on supply chain responsiveness to be significant.

For the researcher, this study offers a valuable opportunity to contribute to the existing body of literature on supply chain management and social media, providing empirical evidence and insights that can enhance theoretical frameworks and inform best practices. For safaricom Ethiopia, the findings will be instrumental in identifying effective social media strategies that can improve operational efficiency, customer satisfaction, and overall supply chain responsiveness, thereby strengthening its competitive advantage in the telecommunications sector. The public, particularly customers and end-users, will benefit from improved service delivery and responsiveness resulting from optimized supply chain practices influenced by social media insights. Additionally, government entities and policymakers can leverage the study's findings to understand the evolving role of digital communication in business operations, potentially informing regulations and support initiatives that promote innovation within the telecommunications industry. For policymakers, the research can highlight the importance of fostering a digital economy that embraces social media as a tool for enhancing business efficiency and responsiveness. Finally, future researchers will find this study significant as it identifies gaps in the literature regarding the intersection of social media and supply chain management, paving the way for further exploration and analysis. By offering a foundation for subsequent studies, this research can stimulate new inquiries into industry-specific applications, long-term impacts, and the challenges associated with integrating social media into supply chain

practices. Overall, the study aims to create a ripple effect that benefits various stakeholders while advancing the discourse on social media's role in modern supply chains.

1.6. The study scope

This study has various dimensions, including geographic, subject, and methodological issues. Geographically, the investigation focused on safaricom in Ethiopia, investigating its operations and supply chain procedures. The study seeks to understand how social media improves supply chain responsiveness in the local and regional marketplaces where Safari Com operates, though the findings may have larger significance for other businesses. In terms of subject matter, the study investigated the relationship between social media and supply chain responsiveness, focusing on key issues such as real-time communication among stakeholders, the impact of social media on collaboration and coordination between suppliers and customers, and the role of social media in crisis management.

Methodologically, the study adopted a mixed-methods approach, combining qualitative and quantitative research methodologies. Qualitative methods involved interviews with key stakeholders at safaricom Ethiopia, including supply chain managers and marketing teams, to gather insights on their experiences with social media. Quantitative methods will include surveys distributed to a broader audience, comprising customers and supply chain partners, to collect measurable data on the effects of social media on lead times, customer satisfaction, and operational efficiency.

1.7 Organization of the study

The research was divided into five chapters. The first chapter discusses the study's overall context, problem description, objectives, research questions, significance, and scope. The second chapter looks at the conceptual and theoretical basis of social media and supply chain responsiveness. The third chapter discusses the study area and research technique. The fourth chapter focuses on analyzing the study's results in light of the research questions and objectives. Finally, the fifth chapter provides a summary of the key findings, conclusions, and suggestions.

1.8. Definitions of Operational Terms

Supply chain responsiveness: refers to the supply chain's capacity to respond rapidly or predictably to market changes, according to et al. (2013).

Social media: Social media is a group of web-based applications that facilitate the creation and dissemination of user-generated content, expanding on the technological foundations of Web 2.0 (Whiting and Williams, 2013).

CHAPTER TWO

REVIEW OF THE RELATED LITREATURE

2.1 Theoretical Reviews

2.1.1. The idea of social media

Social media's broad reach and dynamic capabilities have contributed to its emergence as a catalyst for beneficial advances in organizational behavior and strategic management. Social media platforms are an effective instrument in the field of organizational behavior for encouraging team collaboration and communication (Lim & Rasul, 2022). The rapid and easily accessible nature of these platforms allows for real-time interactions, which contribute to breaking down traditional communication barriers and creating a more connected and engaged workforce (Vandenbosch et al., 2022).

Teams can enhance the organization's overall cohesion by exchanging ideas, giving feedback, and fostering a sense of community (Yu et al., 2022). Social media is important for internal communication, but it also has a big impact on how the public perceives businesses (Orben et al., 2022). A well-managed and strategically planned online presence can have a favorable impact on the company's reputation, stakeholder relationships, and public image. Businesses that actively utilize social media as part of their strategic management approach may build genuine and transparent relationships with their audience. Additionally, this promotes greater congruence between individual and group actions and the company's beliefs and objectives, which helps to foster a positive organizational culture (Ortiz & Roser, 2023).

The impact that social media has on strategic management is evident from its capacity to provide a wide range of real-time data and insights. Organizations could use the vast amounts of data created on these platforms to better inform their strategic decision-making processes (Ali et al., 2023). Businesses can understand consumer preferences, monitor competitor activity, and assess market trends with the aid of social media analytics (Lee et al., 2023).

This data-driven approach enhances strategic management by empowering businesses to swiftly adapt to changing market conditions and make decisions that are supported by reliable information and consistent with their overall goals (Popat & Tarrant, 2023). Furthermore, social media platforms give companies a unique opportunity to show their commitment to sustainability and

corporate social responsibility (CSR) (Saura et al., 2023). By using social media strategically, organizations can effectively promote their community participation initiatives, environmentally friendly practices, and corporate social responsibility (CSR) initiatives (Hammouri et al., 2022a). This enhances the company's reputation and aligns with consumers' increasing need for ethical and socially conscious corporate operations (Lim & Rasul, 2022). However, to successfully incorporate social media through strategic means into organizational behavior and management, a complex approach is required (Popat & Tarrant, 2023). Organizations must carefully navigate a number of potential challenges, such as privacy concerns, the potential for inaccurate information to be received, and the necessity for a consistent and authentic online voice (Lee et al., 2023).

A strong social media strategy should be in line with the organization's overarching goals to guarantee that online activities effectively enhance organizational behavior and strategic management (Ali et al., 2023). It is possible to draw the conclusion that social media has a profound and revolutionary impact on how businesses behave and how strategic projects are managed. Informed decision-making, improved external relationships, improved internal collaboration, and a positive company culture can all arise from the strategic use of these platforms (Ortiz & Roser, 2023). As they continue to traverse the digital landscape, businesses must continue to understand and take advantage of social media's potential in order to achieve long-term success (Hanandeh et al., 2023).

2.1.2 Social media platforms

Whiting and Williams (2013) define social media as a set of web-based apps that allow users to create and share their own content, building on the technological foundations of Web 2.0. According to Whiting, Williams, and Hair (2019), social media encompasses online information sources that are created, disseminated, and utilized by customers to educate one another about goods, services, and brands. Additionally, social media includes online forums, dating sites, video-sharing websites, review websites, social networking sites, and virtual gaming environments (Gussenhoven & Rabinowitz 2014). Over the past ten years, social media has grown rapidly thanks to the Internet, as evidenced by the rise of social networks like Facebook, Instagram, and Twitter (Meixner et al. 2013).

Given the size and constant evolution of social media, a customer's ability to recognize a physical business by its branding must be equivalent to their ability to recognize the company's online presence and access the appropriate accounts when required (Kapoor et al. 2018:532). What gives

FMCG retailers a competitive edge is their capacity to fully and promptly satisfy customers' requests (Vogt, Förster & Kabst 2014:85). Compared to pay marketing and advertising campaigns, social media communication strategies provide FMCG retailers with a low-cost way to increase their agility for customer engagement, smooth demands, and gather data about customer opinions about the goods being provided (Kasemsap 2018).

According to Diffley and McCole (2019:114), businesses that don't use social media at all are falling behind their rivals. In the end, social media use has influenced businesses to alter their perspectives on and management of their interactions with customers, necessitating a shift in conventional methods to satisfy evolving consumer needs (Pearson 2015. Social technologies, in contrast to traditional media, emphasize cooperative relationships with clients as opposed to exposure and impression marketing (Markova & Petkovska-Mircevska 2013. Consumption, curation, production, and collaboration are the four fundamental components of "social engagement" (Evans, McKee, & Bratton 2010:15), upon which social CRM is built.

2.2 Supply chain opportunities from social media

Businesses have a number of chances to improve their social media presence and, consequently, the experiences of their clients (Kietzmann et al. 2011:242). Customers that feel empowered are more likely to report issues online and have a very low threshold for subpar quality and service (Cui et al. 2018:1). In contrast to more conventional means of submitting complaints, such as by phone or email, social media has made it possible for businesses to provide a more individualized touch through extra channels for customer support (Pearson 2015:21).

The appropriate deployment of social media CRM can improve an organization's image and brand loyalty (Ismail 2017:129). Because social media is free or inexpensive, it can be employed in an organization's operations for a low cost. For example, creating a profile on Twitter, Facebook, or WhatsApp is free, and businesses can utilize these platforms to create online communities for their customers and engage in active conversation with them (Meixner et al. 2013:29). Furthermore, integrating social media into the supply chain can provide firms with more consumer data and insights (O'Leary 2011:122). McDonald's is an example of extrapolating data from social media.

McDonald's used social media to see how much its consumers valued its all-day breakfast. When

they combed through Twitter, they found that McDonald's fans have been mentioning all-day breakfasts since 2007. Then, McDonald's informed almost 12,000 fans who were craving McMuffins at midnight about the launch of its all-day breakfast with personalized tweets. All-day breakfast is credited with helping to reverse a 14-quarter downturn for the company and a 10% gain in favorable consumer sentiment, demonstrating how successful the introduction was.

According to a follow-up study by O'Leary (2016:215), Facebook-like features might be developed to support SCM in several ways. Facebook makes it possible to learn about viewpoints and establish and preserve relationships, which eventually helps networks develop trust. Social media platforms enable businesses to establish personal relationships and enterprise trust with their clients, who feel more connected to a business when they can readily contact it (O'Leary 2016:215). Social media offers organizations the chance to develop substantial social capital through interactions on online networks, even though it can be claimed that it is challenging to assign a monetary value to applying social media practices within an organization. Because social capital may also be used as a competitive advantage, it has a lot of potential for providing intelligence to improve supply chain performance (Swain & Cao 2013:4). Simultaneously, it is critical to defend social media investments and assess the platform's potential financial benefit to the business (Deans 2011:188). To establish genuine demand, some organizations have gone so far as to post on social media, create their own branded website, run sponsored commercials, and estimate demand using social media techniques.

2.2.1 Supply chain challenges of social media

Social media has altered how businesses interact with their clientele and do business (Rapp et al. 2013:548). Consumers are now more information-hungry, and what they read about other consumers' experiences on social media sites affects their choices. Customers' decisions regarding their subsequent purchases are influenced by these encounters (Bronner & de Hoog 2014:51). Because social media is always changing, businesses who don't use it risk losing contact with their clientele (Kietzmann et al. 2011:214). Customers now utilize social media extensively when making selections about what to buy, which is altering how they act and view businesses (Gunarathne et al. 2017:315).

Organizations have little to no control over the narrative that is shared on these various sites and

social media platforms (Gunarathne, Rui & Seidmann et al. 2018:491; Kietzmann et al. 2011:242). Selecting the right social media platform to operate on can be difficult for organizations, but it is essential (Campie 2015:51). Everyone on social media platforms is regarded as a publisher (Meixner et al. 2013:28), and studies have demonstrated that information shared on review sites, individual pages, blogs, Facebook, and Twitter influences consumer decisions (Asur & Huberman 2010:2). Instead, the organization's goals and plans should be reflected in the social media strategy (Kaplan & Haenlein 2010:65). Different market sectors are drawn to different social media sites. As a result, an organization may have difficulty managing several social media profiles to serve various market segments (Kaplan & Haenlein 2010).

2.3 Supply Chain Responsiveness

According to Thatte et al. (2013), supply chain responsiveness refers to the supply chain's ability to respond rapidly or predictably to market developments. Qrunfleh and Tarafdar (2013) also emphasized the company's supply chain's capacity to quickly and efficiently respond to changing consumer demands and expectations. To put it another way, Kim and Lee (2010) asserted that an organization's ability for responsiveness is determined by the company itself, its SC relationships, and how its operations are coordinated. As a result, all other participants in the supply chain management system are included in the scope of supply chain responsiveness.

According to Singh (2015), the grade of the supply chain responsiveness system is determined by the speed with which the supply chain system can modify its output within the four categories of external flexibility product, volume, mix, and delivery to respond to external stimuli (Braunscheidel and Suresh, 2009). Therefore, the supply chain needs to be able to adjust to difficulties including cutting production and delivery lead times, shortening the product life cycle, and boosting product diversity in order to stay competitive (Gilal et al., 2017). Additionally, the frequency of product releases and the growing levels of supply chain uncertainty have increased the importance of time-to-market, which helps businesses prevent inventory obsolescence. Therefore, a key issue in assessing business performance is the supply chain (Hum et al., 2018; Youb & Abdallah, 2019). Previous studies (Chan et al., 2018; Jahre and Costes, 2015b; Moyano- Fuentes et al., 2016; Qi et al., 2017) strongly supported this fact. Furthermore, Thatte et al. (2013) contend that as speed and, more specifically, flexibility grow, so does the supply chain's degree of responsiveness. Based on (Sukati, 2011), Thatte et al. (2013),

Qrunfleh and Tarafdar (2013), and Gilal et al. (2017), who identify various supply chain components of flexibility and responsiveness, researchers expand these components to create the responsiveness of our supply chain constructions. This article specifies operations system responsiveness, logistics process responsiveness, and supply chain responsiveness as the three main components.

Thatte et al. (2013) and Sukati (2011) emphasized the necessity of reacting to supplier networks (instead of individual firms). This served as the primary motivation for the supply chain responsiveness study. Additionally, the next paragraph provides an explanation of each dimension. The ability of a business's manufacturing system to adapt to changes in consumer demand is known as operations system responsiveness. Both production and service operations are included in the operating system's responsiveness. Sukati (2011) and Thatte et al. (2013) emphasize in a conceptual survey that responsiveness activities at each chain node are a crucial component of supply chain responsiveness.

The capacity of a business to respond to logistical processes is determined by its capacity to exit its distribution, warehousing, transportation, and consumer demand systems. The effectiveness of a responsive supply chain strategy depends in large part on response in the logistics process (Thatte et al., 2013b).

Transportation of goods from suppliers to distribution centers is part of logistics and distribution management (Sundram et al., 2018). These include inventory management, reverse logistics, order tracking and delivery, warehousing, packing, and transportation, as well as transportation planning and administration. The ability of top suppliers to adapt to shifts in business demand is known as the supplier network's responsiveness. A fundamental component of responsiveness is having adaptable and responsive partners both on and off the focal point (Thatte et al., 2013b). The speed at which suppliers adjust their volume determines how quickly businesses can react to customer demand.

2.3.1 Social media applications in supply chain management

According to Giannakis et al. (2020), social media has become a popular buzzword among consumers and businesses alike, significantly altering the way that people and organizations communicate. Social media has been described in a variety of ways by previous research. Social media, for instance, has been seen as Internet-based apps developed on the Web 2.0 premise, enabling users to create and share their own content (Kaplan and Haenlein, 2010). However, social

media is linked to electrical communication processes, according to Jabeur et al. (2018), where users actively express their ideas and emotions or exchange information and messages in a variety of ways (text, images, videos, etc.).

Even while opinions on social media vary, most people agree that it provides an online platform for networking (like Facebook), media sharing (like YouTube), and collaborative websites (like Wikipedia). The idea of social media has been investigated and used in a number of business management fields. According to Ngai et al. (2015), social media improves the effectiveness of information management and knowledge exchange. Poba-Nzaou et al. (2016) also looked into the potential and difficulties that social media use can present for human resource management. Social media can be used in supply chain management (SCM) to enhance the efficiency of communication, distribution, and the creation of new products (Yan and Pedraza-Martinez 2019). According to recent studies, social media is also used for sales forecasting and service enhancement (Cui et al. 2015). Even though social media has been extensively covered in previous research, its benefits have not been fully examined, particularly when considering SCM. Many academics have argued that using social media for various supply chain management (SCM) tasks, such as sourcing, delivery, reverse logistics, and inventory management, can assist businesses more (Huang et al. 2019). However, when incorporating social media into SCM, some academics and practitioners have expressed worries and difficulties. They specifically contend that excessive information sharing on external social networks has put businesses at a competitive disadvantage and resulted in staff fatigue (Leonardi et al. 2013; Lam et al. 2016).

Even though social media has radically altered how people and companies interact and work together, further research is still required to completely understand the true influence of social media in supply chain management.

2.3.2 Social Media and the Supply Chain

Modern communications tools are being used for other operational tasks, like marketing and human-resources strategies, but their application in supply chains is trailing behind. Businesses-to- consumer (B2C) enterprises have mostly used social media to market their products and promote their brands to consumers (Howells, 2011). Young professionals who already use these platforms (such as Facebook, Twitter, LinkedIn, and blogs) in their personal lives are considered early adopters from a business standpoint. The main emphasis has been on improving external

communication, awareness, and thought leadership.

Social media has had a positive impact on almost every aspect of business, radically altering the way that organizations and their clients communicate. Given this, specialists and industry leaders have put up a number of tactics for how social media could improve the supply chain and encourage the collection and exchange of information (Chae et al. 2020). To create customer-oriented supply chains and give firms a competitive edge, social media has also been considered to be pertinent to knowledge management (Agnihotri et al. 2022; Rezaei et al. 2015). To meet customer demand, the supply chain also aids in the integration of people, companies, resources, carriers, warehouses, and technology utilized in the production and sale of a product (Frazzon et al. 2019; Rosic 2012).

According to Olanrewaju et al. (2020), social media is used by the majority of businesses in almost every aspect of their operations because of the anticipated benefits. As a result, researchers and industry practitioners have carried out many studies to examine the perceived benefits of social media use as well as its expected aftermath or impact (Dwivedi et al. 2021; Nedungadi 2018; Hanafizadeh et al. 2021). Additionally, social media information is crucial in influencing consumer behavior by drawing their attention or signaling the quality of a product to them (Cui et al. 2018; Raman and Menon 2018). Social media is also known to have a significant impact on businesses' operations and success. By offering pertinent knowledge management to create appropriate consumer-driven interactions, social media helps businesses to collaborate, connect with other organizations, and do so in a timely, cost-effective manner. Similar to this, social media may transform gathered data and information into meaningful knowledge, giving businesses a chance to gain a competitive edge (Agnihotri et al. 2022; Lam et al. 2016).

2.4 Concepts of Supply Chain Management

SCM refers to the management and integration of all business activities that generate goods, services, and information for clients (Cooper, Ellram, Gardner, and Hanks, 1997). Oliver and Webber first coined the term "supply chain management" in 1982. In the 1990s, scholars first defined supply chain management (SCM) from a theoretical standpoint in order to distinguish it from more traditional methods and terminologies (such as logistics) and to control the movement of items and information (Cooper et al., 1997).

Academics, consultants, and company managers have been paying more attention to the idea of supply chain management (SCM), as noted by Feldmann & Müller (2003) and K. C. Tan (2002).

Supply chain management (SCM) has been studied from various perspectives in fields such as purchasing and supply management, logistics and transportation, operations management, marketing, organizational theory, and management information systems (Croom, Romano, & Giannakis, 2000). Tan, Kannan, Handfield, and Ghosh (1999) attempted to connect certain supply chain management strategies with corporate performance. They specifically examined financial performance. According to their findings, firm performance is favorably connected with the engagement of the quality department, management's commitment to quality, the use of performance data in quality management, and management's social responsibility (Gillyard 2003).

It was revealed that supply base management has a substantial impact on firm growth but not overall performance. The significance of supply chain management emphasizes how firms must actively manage their supply chains in order to achieve optimal performance. According to Mentzer et al. (2001), a supply chain exists regardless of whether a corporation actively maintains it. Various theories have provided insights into specific features or viewpoints of SCM, such as industrial organization and associated transaction cost analysis (Ellram & Cooper, 1990), resource-based theory and its extension relational view theory (Mohammed, 2014), Despite the fact that several factors lead to variances in SCM concepts, different academics attempted to define them as follows.

Supply chain management (SCM) is an integrative philosophy that oversees the full distribution channel flow from supplier to ultimate customer, according to Ellram & Cooper (1990). Conversely, Belayneh (2018) views the supply chain as a "process umbrella" that governs the creation and distribution of items to customers. The supply chain, they contend, is the intricate web of connections that businesses have with trading partners in order to procure, produce, and distribute goods. According to Li et al. (2006), supply chain management (SCM) is a concept whose objective is to seamlessly integrate material and information movements throughout the supply chain as a powerful tool for competitive advantage. (Li et al., 2006) added that SCM can be used to illustrate the cooperative interactions between individuals from various levels of SCM also entails managing supply and demand, locating components and raw materials, manufacturing

and assembly, storage and inventory tracking, order entry and administration, distribution via all channels, and customer delivery, according to Agus (2011).

Given how frequently the term SCM is used in today's context, it is likely a widely recognized concept with a set of recognized managerial techniques. However, because SCM is inspired by a wide range of disciplines and researchers, definitions and methods of implementation varies significantly from one organization to the next. SCM is defined as the concurrent integration of internal requirements, customer requirements, and upstream supplier performance (K. C. Tan, Lyman, & Wisner, 2002).

The Council of Logistics Management (CLM) defines supply chain management (SCM) as the methodical, strategic coordination of traditional business functions and tactics across businesses within a specific organization and across businesses within the supply chain in order to enhance the long-term performance of individual organizations and the supply chain overall. Li et al. (2006) state that supply chain management (SCM) was created to identify the strategic nature of trade partner coordination and to explain how it serves the dual goals of enhancing the performance of a business and the supply chain. A supply chain, according to Christopher (1999), is a network of many businesses that use upstream and downstream connections to carry out a range of operations and procedures.

According to Adebayo (2012), supply chain management (SCM) is "the task of integrating organizational units along a supply chain and coordinating materials, information, and financial flows in order to fulfill (ultimate) customer demands with the aim of improving competitiveness of the supply chain as a whole." This sums up the many definitions of SCM by different authors and researchers. Consequently, create value for the final consumer in the form of goods or services. According to these definitions, the upstream and downstream parties, as well as the integration of all participating companies and the internal operations of a company itself, are the essential components of the supply chain and its management.

R. B. Handfield and Nichols (2002) define upstream parties as an organization's operations, processes, and supplier network, whereas downstream parties are involved in the distribution channels, procedures, and functions that the product passes through before reaching the final consumer. External downstream and upstream function managers are in charge of ensuring that goods and services reach at their destinations on time.

If delays are unavoidable, managers are responsible for making sure that they have as little of an effect as possible on the supply chain and the value it contains. To improve the short- and long-term performance of individual organizations and the supply chain as a whole, researchers define supply chain management (SCM) as the strategic coordination of traditional business functions (i.e., coordinating the firm/organization with the supplier and customer) and the tactics across these business functions within a particular organization and across businesses within the supply chain. According to Christopher (1998), a supply chain is a network structure made up of producers, distributors, retailers, raw material suppliers, and end users who work together to generate and distribute goods through connections between upstream and downstream members. Additionally, it is a network of businesses and business divisions that work together to acquire, process, and deliver materials to consumers (Kache & Seuring, 2014). The producing firm is the root of a supply chain, the exclusive agent is the main pole, the distributor is the branches and treetops, and the final user is the green leaf safflower.

As a result, a supply chain's relationships between businesses are comparable to a biological food chain. According to González-Loureiro et al. (2015), the supply chain's structural model shows that it is a network chain structure with a demand-supply link between its node firms. The primary attributes of a supply chain are as follows: (I) Intricacy: The supply chain structure model is more complex than the structural model of a single organization since supply chain nodes have varied spans (hierarchies) and are frequently made up of several, multiple, or even multinational enterprises.

(II) Dynamics: Supply chains have clear dynamics since supply chain management must be adjusted on the go in response to shifts in business strategy and market demands. (III) Responsiveness: Specific market demands are the foundation for the creation, maintenance, and reconstruction of a supply chain. The flow of information in a supply chain is driven by user demand. The supply chain's goods and services serve as the main engine for capital flow and flow operations. (IV) Intersection: A node company may be the node company of one supply chain while simultaneously being the node company of another. The cross-structure of many supply chains makes coordination and management more challenging.

Thus, the process and activity of supply chain management can be a supply chain that extends from the supplier side to the customer side (Kembro et al., 2014; Basnet & Seuring, 2016;

Maestrini et al., 2017; Lu et al., 2018). The term "supply chain management" (SCM) describes the efforts of manufacturers, distributors, warehouses, and distribution centers to keep the overall cost of the supply chain system as low as possible while maintaining a particular standard of customer service. Product manufacture, transshipment, distribution, and sales management techniques are all well-coordinated. Planning, acquiring, producing, distributing, and returning are the five fundamental components of supply chain management (Giunipero et al., 2008).

Inventory management techniques, products movement, cost, information flow, risk, planning, and organizational linkages are all areas where supply chain management and traditional logistics management diverge significantly. Supply chain management is superior to traditional logistics management because of these distinctions (Ntabe et al., 2015). According to Wen et al. (2018), supply chain management is used because it is more dynamic than traditional logistics management and can benefit supply chain participants significantly. However, effective supply chain management requires openness, honesty, and good information exchange among all supply chain participants. Sharing information is difficult for businesses with disparate objectives. It is particularly challenging to accomplish information sharing when a business collaborates with its numerous rivals.

Accordingly, first-hand enterprise companies must agree on the following elements for supply chain integration to be successful: jointly identifying the final customer's service level, jointly determining the supply chain's inventory location and inventory level at each inventory point, and jointly promoting policies and procedures that manage the supply chain as a whole (Ding et al., 2018).

The context of economic globalization has broadened the breadth and substance of supply chain management, leading to significant advancements in supply chain collaboration, outsourcing, global logistics, and strategic sourcing (CPFR, S&OP) (Jasti & Kodali, 2015).

In addition to the internal operations of a business, supply chain management now encompasses the operations of the entire industry and value chain in the global market, as well as associated sustainability and risk management (Batista et al., 2018; Mujkic et al., 2018). As a result, supply chain management techniques have been created to offer options and answers for both practical application and scholarly research in order to examine and address particular supply chain issues.

Why did we write this supply chain management review article? This is an extremely significant query. A brief synopsis of the data and article sources may be found in a literature review (Yalcin et al., 2020). A literature review can incorporate fresh information or reinterpret archival data.

Knowing the value of a literature review aids in determining the significance of previous research and the potential contributions of articles to the academic community (Al Humdan et al., 2020). A literature review, on the other hand, offers a plausible justification for previous, ongoing, and upcoming research (Treiblmaier et al., 2020). A contribution to the study of supply chain management could therefore be a compelling explanation and motivation for this article's construction of a historical backdrop and recommendations for further investigation.

2.5 Supply chain responsiveness dimensions

2.5.1 Supply chain flexibility

To become responsive, businesses employ a variety of tactics (Yi, Ngai, and Moon Citation 2011). To get visibility and reduce uncertainty for prompt and well-informed decision-making, some people make significant investments in information and communication technology (ICT) (Wang and Wei Citation 2007; Williams et al. Citation 2013). Others want to increase the flexibility of SC as a whole so they can react to changes more effectively. According to Upton (1994, 73), flexibility is the capacity to adapt or change with minimal sacrifice in performance, cost, time, or effort. In order to address both external and internal uncertainties that can potentially interfere with business operations, it is also a helpful risk management tool (Reichhart and Holweg, 2007a).

According to Delic and Eyers (2020) and Song, Chen, and Lei (2018), the early understanding of flexibility primarily views it as an internal competency that enables businesses to maximize their manufacturing and production capacities in response to client requirements. It appears that in order to meet the swift and significant shifts in consumer expectations, flexibility became a popular manufacturing technique in the 1990s (Beach et al. Citation 2000; De Toni and Tonchia Citation 1998; Olhager Citation 1993). Since then, the implementation of flexibility strategies has shown effective in addressing the difficulties brought on by demand fluctuation (Song, Chen, and Lei, 2018) and product modification (Novais, Maqueira, and Bruque, 2019; Um 2017).

From a product-centric idea (Upton Citation 1994) to a process and system-wide concept (Beach et al. Citation2000; Coronado and Lyons, 2007; More and Babu, 2011), flexibility has developed

into a multifaceted concept (Singh and Sharma Citation2014). Later, it was extended to the SCM domain (Rojo et al. Citation2018; Stevenson and spring, 2007). Although attaining CR requires manufacturing flexibility (Delic and Eyers, 2020; Zhang, Vonderembse, and Lim, 2003), SC activities go beyond organizational borders.

Therefore, flexibility development efforts must also go beyond internal functional areas (Duclos, Vokurka, and Lummus Citation2003; Gosling, Naim, and Towill 2013) in order to develop capabilities that enable firms to respond swiftly and efficiently to both internal and external changes (Vickery, Calantone, and Dröge, 1999; Williams et al. Citation2013). Despite this heightened attention, Manders, Caniëls, and Ghijsen (Citation 2017) assert that there is a lack of agreement among academics over how to conceptualize SCF. Ad hoc adoption of SCF or its dimensions is primarily demonstrated in the literature. Since there aren't many research that theorize SCF as a separate concept, we tend to agree with this observation.

One of the earliest attempts to conceptualize SCF as the combination of flexibility types that impact the firm's customers and are the "shared responsibility" of multiple functional areas along the SC, whether internal or external, was probably the study by Vickery, Calantone, and Dröge (Citation 1999). By defining six dimensions for the construct operations systems, market, logistics, supply, organizational, and information systems flexibilities Duclos, Vokurka, and Lummus (Citation 2003) extended SCF.

After analyzing the connection between SCF's components and firm competitive advantage, Sánchez and Pérez (Citation 2005) came to the conclusion that different forms of flexibility had varying effects on a company's performance. According to the literature, developing flexibility can be expensive, and choosing the right kind of flexibility requires careful consideration of environmental uncertainty (Sreedevi and Saranga Citation 2017; Merschmann and Thonemann, 2011).

Recent research indicates that businesses do not view SCF as an integrated endeavor, despite the recognized implications of SCF for competitive advantage. For example, Manders, Caniëls, and Ghijsen (2016) examine a four-tiered, fast-moving consumer goods (FMGC) SC and conclude that individual firms primarily implement flexibility to meet the direct needs of the next-tier SC member, rather than a collaborative effort to improve flexibility along the extended value chain.

According to Gosling, Naim, and Towill (2013) and Um et al. (2017), they recognize that SCs are made up of both internal and external activities related to channel partner coordination and collaboration.

Businesses need a well-balanced mix of flexibility types to thrive in a dynamic and disruptive environment, claims Volberda (1996). For example, Malhotra and Mackelprang (2012) contend that if internal and supplier-related external flexibilities are complementary, the company and the logistics providers are managed and choreographed well. Therefore, in line with the research of Malhotra and Mackelprang (2012) and Stevenson and spring (2007), we view SCF as a comprehensive notion that includes IF and external flexibilities (both inbound and outward), both of which enhance company responsiveness.

. In order to deal with external dynamism, we describe SCF as a firm's capacity to modify, adapt, and transform its resources and processes in collaboration with its SC partners. This idea leads us to the conclusion that companies can improve their responsiveness by producing flexible products and coordinating their interactions with their SC partners in the supply and demand value chains (Reichhart and Holweg, 2007).

2.5.2 Supply flexibility

Businesses' dependence on outsourcing increases as they continue to centralize and allocate their scarce resources to core capabilities (Davis-Sramek, Omar, and Germain Citation2019; Handfield and Bechtel, 2002). As a result, planning supplier operations has emerged as a crucial strategic business requirement (Choi and Krause Citation 2006). According to Ojha et al. (Citation2021), cultivating flexibility competencies in their upstream value chains is a key component of businesses' efforts to manage SC risk and shifting customer demand. The ability of a company's purchasing department to reduce environmental uncertainty through supplier base management and coordination is known as sourcing flexibility (SF) (Chiang, Kocabasoglu-Hillmer, and Suresh, 2012). (Rogers, Ojha, and White, 2011).

According to Purvis, Gosling, and Naim (2014), SF is a flexible SC's upstream-facing element. According to Khan and Pillania (2008), when companies intend to build system-wide capabilities to adapt to external change, SF is the most important component of strategic sourcing. In the quickly evolving industry, SF has been examined as a proactive approach to boost product

availability and assist the production function (Purvis, Gosling, and Naim, 2014; Li, Kang, and Haney, 2017). Organizations frequently fail to discover a solution within their manufacturing systems when dealing with demand seasonality issues; instead, the suppliers hold the key to the solution (Choi and Krause, 2006; Purvis, Gosling, and Naim, 2014).

To predict market demands, limit stock-outs, shorten lead times, and facilitate product customization, SF helps the company to swiftly and efficiently design new goods (Wagner, Grosse-Ruyken, and Erhun, 2018). According to Liao, Hong, and Rao (2010), SF helps the SC's other processes build flexibility competencies, which boosts the performance of the company. Higher CR may result from a strategic approach to supply management, as highlighted by Bernardes and Zsidisin (2008). Businesses may be able to react to external unpredictability more swiftly and efficiently if they achieve SF, which can be achieved either by diversifying the supply base or by building strong, long-term relationships with a single source of supply (i.e., primarily reflected in supplier responsiveness) (Tachizawa and Gimenez, 2010).

2.5.3 Internal flexibility

Manufacturing companies have been compelled to switch from traditional mass production systems to more flexible models in order to maximize their speed of response to customers' increasing demands for product customizations, newer products, and smaller batch orders (Duclos, Vokurka, and Lummus, 2003). The operationalization of some IF techniques was linked to this shift. Although these flexibilities are intended to promote external or market-oriented initiatives, they are classified as internal since their fundamental characteristics are characterized by the firm's direct impact (Chang et al., 2003).In the literature on manufacturing and operations management, IF is a well-established idea (Day Citation 1994; Gosling, Purvis, and Naim Citation 2010; Oke, 2005). The intrinsic flexibility in manufacturing resources and management is described by IF, according to Pérez Pérez, Serrano Bedia, and López Fernández (2016).

When properly managed, internally focused flexibility gives the company the platforms and procedures it needs to reach the desired degree of adaptability to deal with external dynamism (Zhang, Vonderembse, and Lim 2003).

Manufacturing systems can respond to rapidly changing customer expectations (Delic and Eyers Citation2020; Bhagwat and Sharma Citation2007) and, eventually, increase customer satisfaction (Sáenz, Knoppen, and Tachizawa Citation2018) by using IF to perform various operations

economically and effectively (Kim, Suresh, and Kocabasoglu-Hillmer, 2013). A workforce that can do a variety of activities with no delay or training is a unique characteristic of flexible manufacturing environments (Pérez Pérez, Serrano Bedia, and López Fernández, 2016).

Organizations may swiftly and efficiently implement the required changes in the production system to accommodate shifting production requirements (such as shifting demand patterns) when their workforce is adaptable and multifunctional (Zhang, Vonderembse, and Lim, 2003). A framework for giving various SF aspects priority to achieve greater responsiveness was created by Singh and Sharma (2014).The relative significance of IF concerning the other categories was demonstrated by their case study in Indian enterprises. Furthermore, to reduce production bottlenecks and satisfy strategic customer demands, firms must have the internal capacity to move parts, tools, and materials (such as raw materials and works-in-process) between different production centers along multiple paths, given the increasing complexity of production systems (Chang, 2007).

2.5.4 Distribution flexibility

The significance of DF as a crucial organizational competency to handle heterogeneity and network complexity in the downstream SCs has been further underscored by customer expectations for shorter order cycle times and more alternative delivery options (Yu, Cadeaux, and Song Citation 2013). SCF, or a company's capacity to offer broad and adaptable product distribution and delivery to its clientele, includes DF (Sánchez and Pérez Citation 2005). In response to shifting market conditions, DF is defined by Swafford, Ghosh, and Murthy (2006, 176) as "the availability of a range of options and the ability to effectively exploit them to adapt the process of controlling the flow and storage of materials, finished goods, services, and related information from origin to destination."

Customizing distribution assets to meet quickly evolving channel needs is a major source of distinction, even more so than the primary offering product, according to Duclos, Vokurka, and Lummus (Citation 2003). The ability to offer a variety of delivery alternatives, handle the rising volume of returned goods, and personalize items closer to the customers might be a major source of competitive advantage, especially in the wake of expanding e-business and lenient return policies. Businesses can create a competitive advantage based on delivery performance by using DF to modify their delivery schedule in response to shifting consumer needs (Zhang,

Vonderembse, and Lim Citation 2003).

Redesigning distribution channels and modifying delivery capacity are essential for improving internal new product development and supporting externally oriented performance measures (Malhotra and Mackelprang Citation 2012). Additionally, according to Closs, Swink, and Nair (2005), industrial responsiveness is facilitated by flexible distribution. Despite the literature's strong argument for a connection between DF and overall responsiveness, there isn't much practical data to back this up.

2.6 The Relationship between Social Media and Supply Chain Responsiveness

Research on social media integration in supply chain management has become crucial, especially in light of its effects on supply chain responsiveness. Customers, manufacturers, suppliers, and other stakeholders can communicate and share information in real-time thanks to social media platforms. This overview of the literature examines how social media affects supply chain responsiveness and emphasizes important discoveries from current research.

2.6.1 Communication Information Sharing

In the supply chain, information sharing entails the interchange of data on demand estimates, inventory levels, order status, customer feedback, and production schedules among suppliers, manufacturers, distributors, and retailers. Lee, So, and Tang (2000) argue that effective information sharing reduces uncertainty, minimizes the bullwhip effect, and enhances synchronization across supply chain nodes. The quality, accuracy, and timeliness of shared information are key determinants of its Usefulness. Better communication and information sharing are two of the main ways social media improves supply chain responsiveness. Social media platforms facilitate the rapid and effective dissemination of information by companies, enabling real-time updates on supply chain activity. For example, businesses can utilize social media to educate stakeholders about disruptions, shifts in demand, or inventory levels, enabling them to act quickly and decisively (Nguyen et al., 2020). Rapid information exchange can drastically cut lead times and improve the supply chain's overall agility (Akbari & Hopkins, 2022). Additionally, social media helps supply chain partners collaborate more effectively. Organizations may increase trust and fortify their bonds with suppliers and consumers by cultivating an atmosphere of openness and transparency. Because it enables faster problem-

solving and adaptation to shifting market conditions, this collaborative approach is crucial for improving responsiveness (Huang et al., 2020). According to research, businesses that successfully use social media for communication are better equipped to handle unforeseen circumstances and client requests (Frederico et al., 2021).With the rise of social media platforms such as Whats App, Twitter, and Facebook, firms now have access to a wealth of real-time information that can be leveraged to enhance operational decision-making. Chae (2015) found that social media analytics significantly improve the visibility of demand signals and disruptions, thus enhancing overall responsiveness.

2.6.1.1. The Link between Information Sharing and Supply Chain Responsiveness

A responsive supply chain must be able to anticipate, adapt, and respond to customer demands quickly. Information sharing is critical in facilitating this responsiveness because it provides current data that supply chain partners may utilize to coordinate and act promptly. According to Zhou and Benton (2007), sharing information about production plans, inventory condition, and demand projections allows enterprises to make faster decisions and lower lead times.

Empirical evidence supports the favorable influence of information exchange on SCR. For example, Li et al. (2006) found that organizations with higher degrees of inter-organizational information exchange have more flexibility and faster response times. Similarly, Gunasekaran et al. (2017) discovered that information sharing, particularly via digital platforms, is highly associated with increased responsiveness and agility in supply chains. Social media has introduced a new dimension to this dynamic. Wamba and Carter (2013) highlighted that social media allows real-time dialogue between companies and their supply chain partners, enabling immediate communication of changes in demand, supplier constraints, or logistical delays. This real-time feedback loop improves the overall adaptability and reactivity of the chain.

Despite its advantages, information sharing is not without difficulties. Trust among supply chain partners is a significant hurdle; enterprises may be hesitant to reveal strategic or sensitive data due to fears of opportunism or competitive disadvantage (Cao & Zhang, 2011). Furthermore, technological inequalities and a lack of integration between information systems can impede smooth communication, especially in emerging economies such as Ethiopia. Due to infrastructural restrictions in such circumstances, while social media may be available, its full potential for strategic information sharing remains untapped. Kabugo et al. (2021) argue that in

African markets, although social media adoption is growing, the digital infrastructure and organizational culture needed to turn it into an effective supply chain tool are still evolving.

2.6.2. Market Intelligence and Supply Chain Responsiveness

In today's dynamic and competitive global market, a supply chain's capacity to respond quickly and efficiently to shifts in demand, client preferences, and interruptions has become critical to corporate success. Supply Chain Responsiveness (SCR) is described as a supply chain's capacity to respond quickly to market changes while maintaining high service levels and operational efficiency (Swafford, Ghosh, and Murthy, 2006). Market Intelligence (MI), the process of collecting, analyzing, and applying market data to guide strategic decisions, is a critical facilitator of SCR. Market information enables supply chains to anticipate changes, decrease uncertainty, and match operational activities with market conditions (Chae, 2015; Dubey, Gunasekaran, & Childe, 2019).

In order to improve supply chain decision-making, market intelligence (MI) in supply chain management refers to the methodical collection and analysis of market-related data, such as customer preferences, competitor behavior, and emerging trends (Li et al. 2006). Historically, MI relied on supplier comments, market surveys, and sales figures. However, the digital age has expanded the scope of MI to include real-time data from social media, online platforms, IoT devices, and big data analytics tools (Chae, 2015).

According to Chae (2015), the utilization of platforms such as Twitter and LinkedIn enables businesses to discover early signals of market disruptions or shifts in customer sentiment, allowing them to respond faster.

2.6.2.1. Market Intelligence as a Driver of Supply Chain Responsiveness

The role of Market Intelligence in enabling responsiveness is multifaceted. First, MI supports demand forecasting by incorporating real-time data, customer feedback, and predictive analytics to reduce forecast errors. Improved forecasting allows firms to adjust inventory levels and production schedules promptly (Li et al., 2006). This proactive approach reduces lead times and enhances responsiveness to customer needs. Second, MI enables better risk management. By identifying geopolitical changes, supply disruptions, or emerging market trends early, organizations can make contingency plans and avoid significant losses (Dubey et al., 2019). For instance, during the COVID-19 pandemic, companies that had access to real-time market intelligence platforms were quicker to shift sourcing strategies and reallocate logistics capacity

(Wamba & Carter, 2013). Third, MI enhances supplier and partner coordination. When supply chain partners share market insights through digital dashboards or integrated systems, it leads to synchronized decision-making. This collaboration fosters a more responsive and agile network (Cao & Zhang, 2011). As Yu et al. (2013) note, market-driven supply chain integration leads to higher customer satisfaction and improved financial performance.

2.6.3. Customer Engagement

In today's rapidly evolving and consumer-driven marketplace, customer expectations are higher than ever. Businesses must not only deliver quality products but also respond swiftly to customer needs, preferences, and feedback. This has led to a growing emphasis on customer engagement as a strategic tool, not only in marketing but also in enhancing supply chain performance particularly supply chain responsiveness (SCR). While customer engagement is traditionally studied within the context of customer relationship management, it has now emerged as a vital dimension influencing how agile and adaptive a supply chain can be (Wamba & Carter, 2013; Ngai et al., 2015).

The ability of a supply chain to respond quickly and efficiently to shifts in consumer demand and market conditions is known as supply chain responsiveness (Li et al., 2006). In this regard, customer engagement facilitates better demand sensing, real-time feedback, and greater alignment between Customer engagement encompasses a firm's efforts to build and maintain interactive relationships with its customers across different touch points, including social media, service channels, and digital platforms. According to Brodie et al. (2011), customer engagement is a multi-dimensional concept involving behavioral, emotional, and cognitive participation in brand or business interactions.In the context of supply chains, customer engagement extends beyond marketing. It includes active communication between the company and its customers regarding product needs, service expectations, order tracking, and post-sale experiences. Through platforms such as Twitter, Facebook, and WhatsApp, companies can collect valuable customer input in real time, which can be used to adapt supply chain processes proactively (Chae, 2015).

2.6.3.1. Customer Engagement as a Driver of Supply Chain Responsiveness

Customer engagement contributes to SCR by increasing demand visibility and allowing businesses to respond more promptly to changes in customer preferences. A responsive supply

chain can reduce lead times, stock outs, and better tailor its products. Wamba and Carter (2013) discovered that organizations that communicate with customers through social media were able to detect market trends early and adapt their inventory and logistical decisions accordingly. Furthermore, engaged consumers frequently provide unfiltered and constant feedback, which can be used as an early warning system for quality problems, shifting preferences, or future interruptions. Ngai et al. (2015) observed that the feedback loop generated by digital engagement contributes to continual improvement and adaptive decision-making across supply chain functions.

Social media, particularly in B2C situations, allows a direct channel of communication with customers. For example, when customers express unhappiness with delays or shortages on social media, businesses can utilize this knowledge to adjust operations, prioritize critical orders, or strengthen service-level agreements. As a result, client interaction becomes a real-time driver of operational and strategic supply chain decisions (Yu et al., 2018).

Several empirical research support the favorable effect of customer engagement on SCR. Choudhury and Harrigan (2014) conducted an analysis of e-commerce enterprises and discovered that those with high levels of social media interaction had considerably higher order fulfillment rates and on-time delivery performance. These companies also had more accurate demand estimates because to customer-sourced information. Similarly, Wang and Zhang (2021) did a study on retail organizations and discovered that those who used customer feedback, social listening, and interactive support channels had higher responsiveness scores, particularly during busy seasons or crisis situations (for example, COVID-19). The study found that customer engagement improves not only demand accuracy but also the firm's capacity to resolve supply chain issues more quickly.

In manufacturing supply chains, Bai, Um, and Lee (2024) found that customer participation via social media platforms enabled real-time adjustments in production planning and inventory management, resulting in shorter cycle times and higher customer satisfaction. Their findings back up the notion that customer interaction is more than just a marketing activity, but a strategic facilitator of rapid operations. Customer involvement serves as a real-time communication method, considerably increasing supply chain agility and responsiveness. It allows for direct feedback loops between end customers and supply chain decision-makers, reducing information flow delays and increasing response time (Ngai et al., 2015).

According to Wamba and Carter (2013), social media-based engagement enhances demand sensing, one of the fundamental components of responsiveness, by giving timely and accurate customer data. This enables businesses to adjust inventory levels, reroute shipments, or change production schedules in response to real-time demand. Chae (2015) discovered that organizations that monitor customer feedback on Twitter and other social media platforms were better at anticipating demand surges and interruptions, resulting in speedier fulfillment times. This type of "social listening" is especially effective in volatile markets or during unexpected events such as pandemics or political turmoil, when typical forecasting models may fail.

Furthermore, Aichner and Jacob (2015) believe that interactive consumer interaction improves supply chain coordination. Customers that participate in product design (co-creation) or provide early product feedback, for example, assist enterprises in minimizing defects, reducing returns, and ensuring more accurate deliveries, all of which are indicative of responsive supply chains.

2.6.3.2. Customer Engagement through Social Media and Digital Platforms

The advent of digital technologies has fundamentally altered the nature of client connection. Social media platforms offer two-way, rapid, and interactive contact between businesses and consumers. Chae (2015) underlined that Twitter hashtags, user-generated content, and real-time consumer complaints can be useful data sources for supply chain monitoring. Beyond basic communication, digital platforms enable the incorporation of customer feedback into predictive analytics and demand forecasting software. For example, AI-powered technologies can evaluate customer engagement data to spot shifts in preferences or predict product shortages, allowing for proactive intervention. This approach is consistent with the findings of Tavana et al. (2021), who discovered that organizations employing such tools were better able to change their logistics and procurement strategies during times of high uncertainty.

2.6.4. Collaboration and Stakeholder Engagement

Partner collaboration is the strategic alignment and cooperative decision-making between supply chain partners to increase overall performance and responsiveness. Simatupang and Sridharan (2005) define cooperation as shared planning, issue solving, and resource sharing for mutual gain. Communication, on the other hand, is the process of sharing information, data, and feedback across supply chain actors, and it includes both formal systems (such as business software) and informal channels (such as emails and messaging platforms). These two ideas are

inextricably linked: collaboration cannot survive without effective communication, and communication gains significance when it is part of collaborative interactions.

Morgan and Hunt (1994) contend that trust, commitment, and mutual dependency are necessary conditions for successful partner collaboration, which fosters responsiveness and competitiveness. The link between partner collaboration and SCR is widely documented in the literature. When supply chain partners collaborate, they align their objectives, share forecasts and inventory data, and make decisions together. This decreases bullwhip impacts, shortens lead times, and increases agility (Lee, 2004). Flynn, Huo, and Zhao (2010) discovered that collaborative supply chain practices—such as information sharing, coordinated production and synchronized logistics—improve both operational performance and responsiveness. Their findings suggested that manufacturing firms that practiced partner collaboration could respond more swiftly to changes in customer demand, particularly in unpredictable settings.

Zhao et al. (2011) underline that collaboration improves visibility throughout the supply chain, allowing enterprises to anticipate and respond to disturbances. For example, during the COVID-19 epidemic, organizations having collaborative relationships with suppliers and logistics providers were better equipped to adjust sourcing strategy, swap vendors, and redirect shipments in response to closures and delays. Furthermore, Ou et al. (2010) found that collaborative communication improves supply chain responsiveness by coordinating inventory levels, customer service tactics, and production planning. The presence of trust and cooperative decision-making mechanisms reinforces the link between partner collaboration and SCR.

Improved cooperation among supply chain stakeholders is a critical component of social media's impact on supply chain responsiveness. Direct communication channels enabled by social media platforms allow different parties collaborate more effectively. This collaborative environment is required for problem solving and enhancing supply chain operations (Caniato et al., 2019). For example, teams can collaborate in real time using platforms such as Microsoft Teams or Slack, exchanging critical information that can speed up response times and decision-making (Tse et al., 2020). Furthermore, social media allows stakeholders to feel more linked to one another, which can be critical for innovation and information sharing. Organizations can use collective intelligence and enhance their problem-solving skills by using social media to establish discussion forums or groups (Rogers et al., 2021).

2.6.5. Technology Adoption and Supply Chain Responsiveness

In the dynamic and international marketplace of the twenty-first century, supply chain responsiveness (SCR) has emerged as an important competitive characteristic for firms. Swafford, Ghosh, and Murthy (2006) define supply chain responsiveness as a supply chain's capacity to respond rapidly and effectively to changes in consumer demand, market volatility, and environmental disruptions. Technology adoption is a critical enabler of this responsiveness, which includes the use of information and communication technologies (ICT), enterprise systems, automation tools, and data analytics to improve decision-making, coordination, and agility across the supply chain (Yu et al., 2014; Gunasekaran et al., 2017).

Technology adoption in supply chains is the integration of technological tools and systems to promote visibility, information sharing, process automation, and responsiveness. These technologies include Enterprise Resource Planning (ERP), Supply Chain Management Systems (SCMS), Radio Frequency Identification (RFID), the Internet of Things (IoT), Artificial Intelligence (AI), blockchain, and big data analytics (Dubey, Gunasekaran & Childe, 2019). According to Swafford et al. (2006), technology facilitates supply chain agility and responsiveness by delivering real-time data, improving cross-functional integration, and allowing for faster and more informed decision-making. According to Gunasekaran et al. (2017), modern digital technologies enable businesses to transition from reactive to predictive supply chain models, boosting their ability to foresee and respond to disturbances.

2.6.6. Technology Adoption as a Driver of Supply Chain Responsiveness

One of the key advantages of incorporating technology into supply networks is increased visibility. Real-time tracking solutions, like RFID and IoT, enable businesses to continuously monitor inventories, shipments, and supplier performance (Chong et al., 2017). This visibility enables a more rapid response to demand shifts or disruptions. According to Wamba and Carter (2013), companies that use RFID technologies have claimed shorter lead times and better supply chain responsiveness.

ERP and SCMS are examples of integrated systems that consolidate information and make cooperation across supply chain roles and partners more efficient. When supply chain entities share timely and accurate information, they can better coordinate operations and respond to consumer requests (Yu et al., 2014). Zhou and Benton (2007) argue that IT-enabled information exchange improves supply chain coordination and responsiveness by reducing uncertainty and

increasing planning accuracy. Robotics, automated storage and retrieval systems (AS/RS), and self-driving vehicles are examples of technologies that improve supply chain efficiency and speed. These improvements reduce human error and response time, improving overall responsiveness (Sanders, 2016). Srinivasan and Swink (2018) contend that process automation improves order fulfillment and adaptability in manufacturing and distribution networks.

Advanced analytics and AI provide predictive modeling, allowing firms to foresee demand changes and disruptions before they occur. Firms can use predictive information to proactively change their supply chain strategy, improving responsiveness (Chae, 2015). Dubey et al. (2019) discovered that big data analytics capabilities correlate positively with supply chain agility and responsiveness, particularly in tumultuous settings. The deployment of technology should be consistent with an organization's strategic goals and capabilities. Companies that successfully adopt digital transformation plans frequently integrate technical tools with improvements in organizational culture, processes, and people development (Teece 2007).

According to Kache and Seuring (2017), digital transformation allows for not only responsiveness, but also resilience, creativity, and value co-creation throughout the supply chain. However, achieving SCR through technology adoption demands more than simply investing in tools. Organizations must overcome obstacles such as cost, employee opposition, and a lack of digital skills (Gunasekaran et al., 2017). Furthermore, the benefits of technology are determined by the extent of supply chain integration and the quality of the data used. Several empirical studies support the relationship between technology adoption and supply chain responsiveness. Yu et al. (2014) conducted a study across 200 manufacturing firms and found a significant positive relationship between ICT integration and SCR.

Swafford et al. (2006) examined a model that linked technological enablers to agility and responsiveness and found that technology greatly improves responsiveness through better process integration. In the automotive and retail industries, companies such as Toyota and Walmart have used digital technologies to create flexible and responsive supply chains. Toyota uses real-time production and demand data to alter its Just-in-Time (JIT) manufacturing processes, whereas Walmart uses sophisticated analytics and IoT to optimize inventory and replenishment in near real time (Chong et al., 2017).

2.7. Empirical reviews on the relationship between social media and supply chain responsiveness

Recent empirical research has demonstrated the major impact of social media on improving supply chain responsiveness. For example, Chae (2020) discovered that social media use promotes real-time communication among supply chain stakeholders, which is critical for speedy decision-making and market response. This immediacy enables businesses to better manage interruptions and preserve operational continuity. Furthermore, empirical research indicates that social media facilitates a more customer-centric approach to supply chain management. Companies that use social media to collect customer feedback and insights can modify their services to match changing consumer wants, resulting in higher service levels and customer satisfaction (Kumar et al., 2018).

Furthermore, Hazen et al. (2014) found that social media analytics are effective methods for measuring supply chain performance. Organizations can learn about customer behavior and market trends by studying social media interactions, which can then be used to inform inventory management and demand forecasting techniques. This data-driven approach improves supply chain responsiveness. However, despite these advantages, difficulties persist. Mishra et al. (2019) highlight that the overwhelming volume of data generated on social media can complicate analysis and decision-making processes. Moreover, concerns regarding data privacy and security can limit the extent to which organizations utilize social media for supply chain purposes (Gonzalez et al., 2020).

Thus, while social media presents great opportunity for improving supply chain responsiveness, firms must overcome these difficulties in order to fully realize their potential. Empirical research has looked into the function of social media in developing dynamic capacities in supply chains. Nguyen et al. (2020) found that social media usage improves supply chain sensing capabilities and knowledge-sharing practices. These dynamic characteristics are critical for creating flexible and robust supply chains, especially in fast-changing market conditions. The study showed that firms that effectively use social media can improve their long-term economic performance by enhancing their ability to detect and respond to market signals.

Caniato et al. (2019) found that social media platforms promote collaboration among supply chain partners. The study found that firms that use social media for communication foster transparency and confidence among stakeholders, which is critical for effective collaboration.

This collaborative atmosphere enables faster issue solving and adaption to changes, increasing supply chain responsiveness.

In addition, Kumar et al. (2018) found that social media could have a considerable impact on brand perception and consumer loyalty. The study found that organizations that actively engage with customers on social media platforms had greater levels of customer happiness and loyalty, which contributes to improved supply chain performance.

This customer-centric strategy enables businesses to better match their supply chain plans with consumer preferences, resulting in increased service delivery and responsiveness. However, despite the obvious benefits of social media in supply chain management, empirical research reveals inherent limitations. For example, Kauffmann et al. (2019) stressed the need of corporations developing effective strategies for dealing with negative opinions voiced on social media. Failure to address negative criticism can harm a company's reputation and reduce customer trust. Furthermore, integrating social media into supply chain procedures necessitates large investments in technology and training, which might be difficult for some firms (Huang et al., 2020).

2.8. Conceptual Framework of the study

It is necessary for researchers to create a conceptual framework that is relevant to the topic they are researching. This enables the researcher to conduct the investigation in an efficient manner. The researcher can understand conflicting perspectives on the topic and try to reconcile them in line with the research questions and hypothesis by using a conceptual framework. Friedlein (2007) adds that the framework helps to conceptualize the link between independent and dependent variables. The independent variables include social media usage, consumer input, dynamic capabilities, and cooperation among supply chain partners, whereas the dependent variable is supply chain responsiveness. The following conceptual framework was developed to evaluate the impact of social media on supply chain responsiveness in order to accelerate the research process and provide a clear understanding of the expected relationship between the variables in the study. The conceptual framework is based on previously identified notions and is shown in Fig. 2.1 below. It demonstrates the causal relationship between the independent and dependent variables.

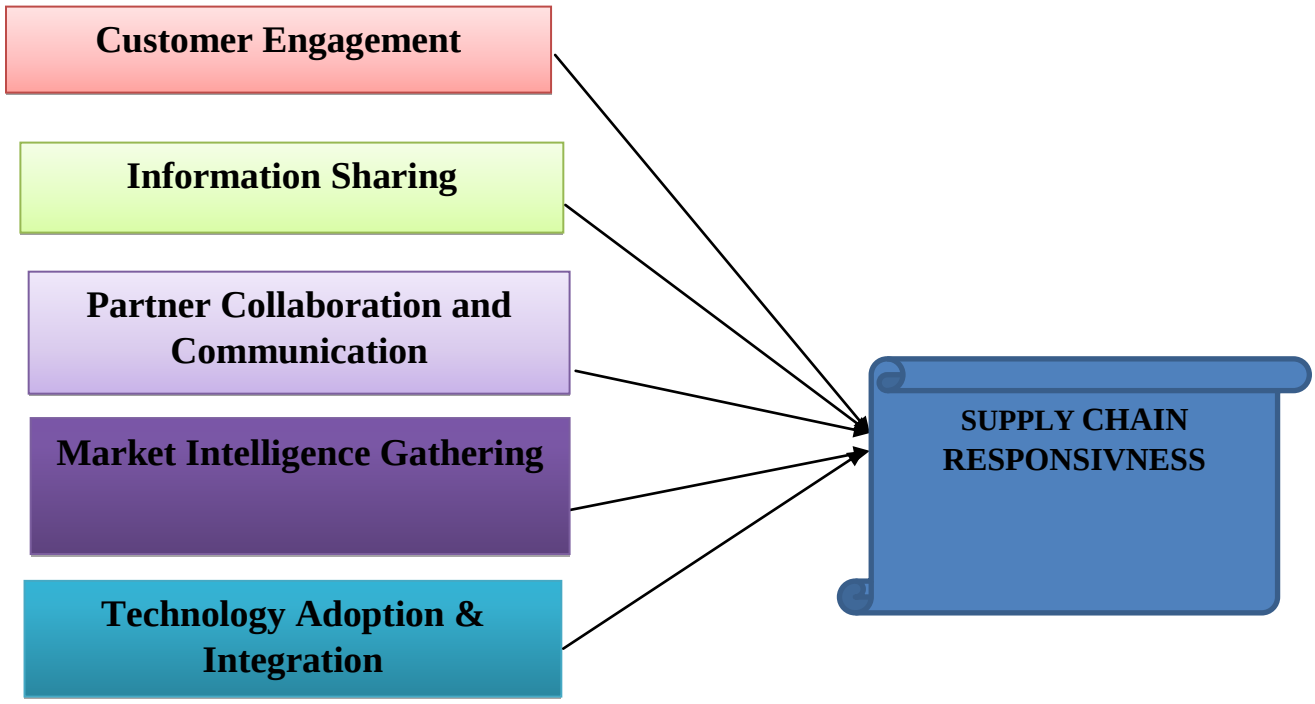

Figure 1 Conceptual framework of the study

Source: Adopted from rodie et al. (2011), Kumar and Pansari (2016), Cao and Zhang (2011), and modified

Based on the conceptual framework presented above, the researcher formulates the following study hypotheses.

Ho1: There is no positive or substantial association between customer engagement and supply chain responsiveness.

Ho2. There is a favorable and strong link between information sharing and supply chain responsiveness.

Ho3. No positive or significant association exists between Partner Collaboration and Communication and Supply Chain Responsiveness.

Ho4: There is no positive and substantial association between market intelligence gathering and supply chain responsiveness.

Ho5: There is no positive or substantial association between technology adoption and integration and supply chain responsiveness.

CHAPTER THREE

RESEARCH METHODOLOGY AND DESIGN

3.1. Research Approach

To achieve the aforementioned goals, the study employs a mixed research approach that includes the use of a questionnaire that primarily collects descriptive and quantitative information. The research method comprises two approaches: quantitative and qualitative, with none being superior to the other depending on the researcher's preferences (Ghauri and Kjell, 2005). A mixed research approach employed in this study since it allows the researcher to understand from both quantitative and qualitative perspectives.

3.2 Research Design

Research design, according to Saunders (2007), is the overall strategy for addressing the research questions. The theoretical framework serves as a guide for research. It serves as a manual for gathering, calculating, and analyzing data. A greater comprehension of the subject under study is made possible by this technique, which blends quantitative and qualitative research methodologies. The explanatory research design is the most suitable for this study since it enables the researcher to investigate the causal links and relationships between the independent and dependent variables.

3.3 Source and Types of Data

The study on the impact of social media on supply chain responsiveness required data from both primary and secondary sources. According to Kothari (2004), primary data is new information that is collected for the first time and thus unique, while Louis et al. (2007) define primary data as those that are specific to the topic being studied. The majority of the data included in the study was obtained.

3.4. Target Population and sample size

3.4.1 Target Population

According to Lavrakas (2008), a population is any finite or infinite collection of distinct elements. Zikmund (2010) and Khotari (2004) define a population as the "universe" or all of the things in any field of study.

This study's target population will be employees from various divisions inside the organization. The number of participants from each department was chosen based on the proportion of employees in those categories among the target populations. The study targeted the firm's permanent employees, with a total population size of 909. .

3.4.2 Sample Size

Since the researcher's conclusions were based on the sample, selecting the sample size is an important, however difficult, component of any research study. Statistical techniques such as significance tests can be used to conduct precise checks to evaluate whether the sample size is adequate for the required study. The researcher used the following simplified sample size calculation formula to determine the study's sample size. According to Yamane (1967), the equation has a 95% confidence level with a sampling error of 0.05.

$$n = \frac{N}{1+N(e)^2}$$

$$n = \frac{909}{1+909(0.05)^2} = 277$$

Samples, where n is the sample size, N is the population size, and e is the percentage of accuracy allowed for sampling mistakes. This study's sample error was assumed to be ±5%.

3.4.3. Sampling Technique

Selecting a subset of the population while maintaining a manageable number of responses is known as a sampling methodology. Sampling techniques can be broadly classified into two categories: probability sampling and non-probability sampling. In order to provide respondents an equal chance of being chosen for the sample, simple random sampling was employed in this investigation. 277 samples were chosen at random. To choose the right samples for the investigation, convenience sampling was used.

3.5. Instruments of Data collections

Survey questionnaires and interviews were the most appropriate data gathering instruments for this investigation. The survey questionnaire and interview were used to obtain quantitative and qualitative data on employees' attitudes, comprehension, and use of social media, as well as how

it influences supply chain responsiveness. The survey questionnaire will be designed in a Likert scale format.

3.5.1 Procedure of Data Collection

The survey questionnaire was created in compliance with the data collection tools and procedures. In addition, interview questions were designed to be open-ended. These enabled respondents to respond without limits. The questions were prepared based on the research questions. Then it gets distributed and collected. The same went for the interview. The researcher conducted it face-to-face.

3.6 Methods of Data Analysis

The researcher used both descriptive and inferential data analysis techniques in this investigation. The researcher will be able to comprehend respondents' opinions regarding digital marketing readiness through the use of descriptive analysis. To give a concise overview of the data, the descriptive results are displayed using tables, frequency distributions, and percentages. In order to do this, statistics were summarized, including the mean and standard deviation values that were calculated for each study variable. The researcher looked at the link between the independent and dependent variables under study using inferential statistics. Regression analysis and Pearson correlation were therefore used to ascertain the relationships between the variables under consideration.

3.7 Reliability and Validity Tests

3.7.1 Validity

The degree to which a given scale or index accurately measures the concept being measured is known as its validity. In order to ensure validity and reliability, a number of measures will be taken in the study on the impact of social media on supply chain responsiveness, as Kothari (2004) states that validity aims to establish results that are relevant to the condition.

Content validity was used to make sure that the data collection instruments accurately represent the constructs being studied, such as digital marketing readiness and the factors that influence it. This can be achieved by consulting with experts in digital marketing and banking to ensure the tools are thorough and relevant. Construct validity was assessed by contrasting the questionnaire responses with qualitative information gleaned from interviews to ensure that the instruments measure what they are intended to.

3.7.2 Reliability

A reliability study is carried out to ascertain the items' internal consistency in capturing the underlying construct when multiple items are utilized to measure the same variable. One of the most often used indicators for this is Cronbach's alpha. According to George and Mallery (2003, cited in Joseph & Rosemary, 2003), Cronbach's alpha is a reliability coefficient that shows how well the items consistently measure the target variable. The coefficient usually varies from 0 to 1, with higher values suggesting greater internal consistency among the components of a scale. The researcher crosschecked the reliability of measurements using reliability test.

Table 3.1 Rule of Thumb of Cronbach's Alpha

No	Cronbach's Alpha	Description
1	≥ to 0.9	Excellent
2	≥ 0.8 but less than0.9	Good
3	≥0.7 but less than 0.8	Acceptable
4	≥ 0.6 but less than 0.7	Questionable
5	≥0.5but less than 0.6	Poor
6	≤ 0.5	Unacceptable

Source: (Zikmund, 2010)

3.8 Ethical Consideration

Many elements are taken into consideration in this study. First and foremost, consent was obtained before study participants were included. Once this is complete, the information they provide via the data collection tools were confidential. Furthermore, their identity were confidential, and only the aggregated results from the information they provide were made public as required. In other words, before the actual data collection for the study began, the customers' right to disclose or withhold the relevant information was explained.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

4.1. Introduction

The data analysis and discussion of the study findings obtained from the survey questionnaire are the main topics of this chapter. Responses are compiled and displayed in tables and charts for ease of comprehension. Descriptive statistics were employed to describe the demographic data, and survey results were examined using a variety of inferential statistics.

4.2. Survey Response Rate

A total of 277 surveys were distributed to particular responders. A total of 246 questionnaires were received, representing an 88.8% response rate for that population. Of the 277 questionnaires gathered, 31 were incomplete. The final acceptable sample included 246 replies from 277 disseminated surveys, with an overall response rate of around 88.8%. The high response rate enhances the trustworthiness and representativeness of the study results. According to Mugenda (2003), a statistically meaningful response rate for analysis is at least 50%.

Table 4.1 Response Rate of Respondents

	Number of questionnaires		Percent
Completed	246		88.8%
Not completed	31		11.2%
Total	277		100%

Source: own survey result (2025)

The first analysis was performed to confirm the validity of the scales used in the data collecting tool after the data had been coded and entered into SPSS version 25. Dependability is the extent to which a measurement yields consistent results when repeated (Malhotra and Birks, 2007). All of the scales employed in this study were found to be trustworthy, with alpha values more than 0.7 and closer to one. Cronbach's alpha, a commonly used measure of internal consistency, was evaluated using SPSS version 25. The table below displays the Cronbach's alpha values for each scale.

Table 4.2 Reliability Statistics Result

Reliability Statistics	
Cronbach's Alpha	**N of Items**
0.787	**6**

Source: own survey result, 2025

4.3. Demographic Profile of Respondents

The demographic details of the sample, such as the respondent's age, gender, degree of education, and work history, are compiled in this section. In order to improve the analysis's usefulness for readers, the demographic analysis in this study attempts to describe the sample's attributes, including the percentage of men and women, age range, and educational attainment.

4.3.1. Gender

Table 4.2 shows the gender breakdown of the study's respondents. Of the 246 participants, 208 were male (84.6%), whereas 38 were female (15.4%). This suggests that male respondents made up a much higher proportion of the study participants than females. The cumulative percentage verifies that 100% of respondents were included in this classification, with all data valid and accounted for. The gender imbalance in the sample shows that the study's conclusions may be more representative of male opinions, which should be taken into account when evaluating the overall results.

Table 4.3 Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	208	84.6	84.6	84.6
	Female	38	15.4	15.4	100.0
	Total	246	100.0	100.0	

Source: Own Survey result, 2025

4.3.2. Age

Table 4.3 shows the age distribution of respondents. The bulk of participants (92, or 37.4%) are between the ages of 20 and 30, with 80 (32.5%) between the ages of 31 and 40. In addition, 54 respondents (22.0%) are between the ages of 41 and 50, with the remaining 20 individuals (8.1%) over the age of 50. The cumulative percentages gradually climb, reaching 100% in the

final category, demonstrating that all age groups were fully represented. This distribution indicates that the study sample is rather youthful, with more than two-thirds (69.9%) of respondents aged 40 or younger.

Table 4.4 **age**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-30years	92	37.4	37.4	37.4
	31-40 years	80	32.5	32.5	69.9
	41-50 years	54	22.0	22.0	91.9
	above 50 years	20	8.1	8.1	100.0
	Total	246	100.0	100.0	

Source: Own Survey Result, 2025

4.3.3. Education level

The educational attainment of the study participants is displayed in Table 4.5. Seventy-two percent of the participants, or 177 out of 246 responders, had a diploma. This suggests that the majority of those surveyed have completed technical or vocational education at the mid-level. 52 respondents (21.1%) have a bachelor's degree (BA/BSc), which is a smaller percentage and indicates that there are comparatively fewer people with higher academic credentials in the sample. Only 17 respondents, or 6.9% of the sample, have completed a certificate program. The cumulative percentages show a progressive distribution, with 78.9% of the respondents having a diploma or less and 100% of the respondents holding a bachelor's degree or more. This distribution demonstrates that while the workforce surveyed has a solid foundation in formal education, most of them have a diploma.

Table 4.5 **education level**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	certificate	17	6.9	6.9	6.9
	diploma	177	72.0	72.0	78.9
	BA/BSC	52	21.1	21.1	100.0
	Total	246	100.0	100.0	

Source: Own survey result, 2025

4.3.4. Work Experience

Table 4.6 shows the distribution of respondents according to their employment experience. According to the data, the vast majority of respondents, 178 (72.4%), had between 3 and 5 years of work experience. In comparison, 68 respondents (27.6%) said they had fewer than two years of job experience. This implies that the sample is primarily made up of people with moderate work experience, implying that most participants have had adequate exposure to their professional tasks and responsibilities. The cumulative proportion confirms that all respondents fit into these two categories, with 100% having up to 5 years of work experience.

Table 4.6**Work experience**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 2 years	68	27.6	27.6	27.6
	3-5 years	178	72.4	72.4	100.0
	Total	246	100.0	100.0	

Source: Own Survey Result, 2025

4.3.5. Work Position

Table 4.7 depicts the distribution of respondents according to their job positions. The majority of responders, 97 out of 246 (39.4%), are from the Customer Service and Marketing Teams, demonstrating that a sizable proportion of study participants work in customer-facing and promotional positions. This is followed by Supply Chain Management Staff (17.5%, 43 respondents) and Procurement and Logistics Staff (17.1%, 42 respondents), both of which are essential supply chain roles. IT or Digital Transformation Officers account for 14.2% (35 respondents), demonstrating the expanding role of technology in modern supply chain

operations. Finally, 11.8% (29 responders) are Warehouse and Inventory Managers, who oversee supply chain operations and storage. The cumulative percentages show that 74.0% of respondents are in roles directly related to customer service, supply chain management, and procurement, emphasizing the broad representation of numerous functional areas within the supply chain and related departments.

Table 4.7 **Work position**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Supply Chain management Staff	43	17.5	17.5	17.5
	Procurement and Logistics Staff	42	17.1	17.1	34.6
	Customer Service and Marketing Teams	97	39.4	39.4	74.0
	IT or Digital Transformation Officers	35	14.2	14.2	88.2
	Warehouse and Inventory Managers	29	11.8	11.8	100.0
	Total	246	100.0	100.0	

Source: own survey result, 2025

4.4. Descriptive Analysis

The descriptive statistics explain data in terms of measures of central tendency. Descriptive statistics are the most efficient means of summarizing the characteristics of large sets of data. In a statically analysis, the analyst calculates one number or a few numbers that reveal something about characteristics of large sets of data Cooper and Emory (1995). The descriptive statics used in this study were frequency, Mean and standard deviations.

According to Aakeret al. (2004), a frequency is a report of the number of responses that a question has received. The arithmetic mean (the mean) is defined as the sum of the values in the data group divided by the number of values. Since the standard deviation is based on the difference between each value in the data set and the group mean, it is comparable to the average deviation (Kaizmier, 1988). The standard deviation is the square root of the variance. The degree of score variation from the mean is documented by the standard deviation.

Table 4.8 Descriptive statistics of Information Sharing

	N Statistic	Mean Statistic	Std. Deviation Statistic
Social media enables real-time sharing of supply chain information.	246	4.55	.507
Safaricom uses social media to communicate stock levels with supply chain partners.	246	4.46	.500
Information shared on social platforms improves supply chain decision-making.	246	4.56	.498
Social media facilitates accurate and timely delivery updates.	246	4.37	.483
Social media enhances visibility across the supply chain.	246	4.47	.500
Valid N (list wise)	246		

Source: Own survey result, 2025

The table presents descriptive statistics that evaluate the effect of information sharing facilitated by social media on supply chain responsiveness at Safaricom Ethiopia. The responses of 246 participants show a consistently high level of agreement across all five measures, implying that social media-driven information sharing has a considerable impact on the responsiveness of the company's supply chain.

The statement "Information shared on social platforms improves supply chain decision-making" received the highest mean score (Mean = 4.56, SD = 0.498), indicating that respondents strongly believe that effective information flow through social media contributes to faster and more accurate decision-making. This is a critical component of supply chain responsiveness because timely decisions allow firms to react swiftly to changes in demand or supply conditions.

The statement "Social media enables real-time sharing of supply chain information" (Mean = 4.55, SD = 0.507) expresses the idea that rapid access to supply chain data through social platforms greatly improves partner agility and coordination. Real-time communication guarantees that all stakeholders are notified at the same time, minimizing the time it takes to respond to interruptions or opportunities.

The use of social media to share stock levels with partners (Mean = 4.46, SD = 0.500) was also well accepted, suggesting that inventory transparency helps to avoid shortages or overstock

situations, both of which influence response. Furthermore, "Social media enhances visibility across the supply chain" (mean = 4.47, SD = 0.500) indicates that information sharing improves situational awareness, allowing for faster responses to market swings and operational adjustments. Finally, the statement "Social media facilitates accurate and timely delivery updates" (Mean = 4.37, SD = 0.483) has a somewhat lower level of agreement than the others but remains strong. This highlights the importance of social media in keeping consumers and partners informed about delivery timetables, allowing them to manage expectations and change plans as needed. Overall, the consistently high mean scores and low standard deviations show that respondents saw social media-enabled information sharing as a critical enabler of supply chain responsiveness. The findings confirm that social platforms promote rapid, transparent, and real-time communication, which increases Safaricom Ethiopia's ability to adapt and respond to supply chain dynamics efficiently.

Table 4.9 **Descriptive Statistics of Customer Engagement**

	N	Mean	Std. Deviation
	Statistic	Statistic	Statistic
Social media improves communication between Safaricom and its customers.	246	4.35	.502
Customer feedback on social platforms is used to enhance supply chain operations.	246	4.46	.531
Social media helps identify customer needs quickly.	246	4.52	.524
Engagement on social media helps forecast demand more accurately	246	4.54	.499
Customer complaints on social media are addressed promptly.	246	4.55	.523
Valid N (list wise)	246		

Source: Own Survey result, 2025

The table shows descriptive statistics on respondents' impressions of how consumer interaction via social media affects supply chain responsiveness at Safaricom Ethiopia. All five answers earned high mean ratings, showing that the 246 respondents agreed that social media plays an important role in boosting responsiveness through increased customer connection.

The statement "Customer complaints on social media are addressed promptly" received the highest mean score (M = 4.55; SD = 0.523). This shows that Safaricom's ability to respond quickly to consumer issues via social media is a recognized strength, directly contributing to the

agility and adaptability of its supply chain processes. Similarly, "Engagement on social media helps forecast demand more accurately" received a high level of agreement (M = 4.54, SD = 0.499), indicating that interactions with customers on digital platforms provide valuable insights into consumer behavior and market trends, improving the company's ability to anticipate demand and plan accordingly.

The statement "Social media helps identify customer needs quickly" also received a high score (M = 4.52, SD = 0.524), indicating the perceived relevance of social platforms in receiving real-time customer feedback, allowing the supply chain to respond more quickly to shifting preferences and requirements. Furthermore, the utilization of consumer feedback from social media platforms to improve supply chain operations was acknowledged (M = 4.46, SD = 0.531), indicating that Safaricom effectively uses user feedback to make operational improvements. Finally, "Social media improves communication between Safaricom and its customers" (M = 4.35, SD = 0.502) received favorable feedback, underlining the importance of digital platforms in building communication channels that enable faster and more effective customer service. In summary, the findings show that consumer participation via social media dramatically improves supply chain responsiveness by improving communication, shortening feedback loops, boosting demand forecasting, and allowing for faster resolution of customer complaints. The low standard deviations across all items indicate the stability of respondents' perceptions.

Table 4.10 **Descriptive Statistics of Partner Collaboration and communication**

	N	**Mean**	**Std. Deviation**
Safaricom uses social media tools to collaborate with suppliers and partners.	246	4.54	.507
Communication with supply chain partners is more efficient through social media.	246	4.41	.509
Social media helps resolve supply chain disputes quickly.	246	4.39	.521
Supply chain partners share updates via social platforms.	246	4.48	.509
Social media promotes transparency among supply chain partners.	246	4.61	.489
Valid N (list wise)	246		

Source: own survey result, 2025

The descriptive study lends empirical support to the notion that social media improves collaboration and communication among supply chain partners, leading to increased supply

chain responsiveness. The data, gathered from 246 respondents, show uniformly high mean scores across all five parameters, implying a significant consensus on the functional importance of social media platforms in supporting efficient inter-organizational relations. The top-rated answer, "Social media promotes transparency among supply chain partners" (mean = 4.61, SD = 0.489), emphasizes the importance of transparency in responsive supply networks. Transparency offered by social media ensures that relevant, timely, and accurate information is easily accessible across the network, allowing for faster decision-making and reducing the bullwhip effect. This outcome is consistent with prior literature emphasizing the importance of digital visibility in reducing supply chain uncertainty and improving coordination.

Furthermore, the substantial agreement with the statement "Safaricom uses social media tools to collaborate with suppliers and partners" (Mean = 4.54, SD = 0.507) backs up the claim that digital platforms are actively used to develop collaborative partnerships. Such collaboration is essential for responsive supply chains because it promotes shared problem solving, real-time information exchange, and integrated planning all of which are necessary for agility and adaptation under dynamic market conditions. The response to "Supply chain partners share updates via social platforms" (mean = 4.48, SD = 0.509) underscores the idea that social media serves as a channel for real-time communication. This is critical for synchronized operations throughout the supply chain and reduces latency in responding to changes in demand or disruption.

Furthermore, the mean score for "Communication with supply chain partners is more efficient through social media" (Mean = 4.41, SD = 0.509) indicates that social platforms reduce transactional friction while increasing the speed and clarity of inter-partner exchanges. Finally, the item "Social media helps resolve supply chain disputes quickly" (Mean = 4.39, SD = 0.521) illustrates that social media may also be used for conflict resolution, allowing stakeholders to address concerns that would otherwise hamper supply chain flows. This responsiveness to dispute resolution highlights the broader significance of social media in improving operational resilience and continuity. Overall, the low standard deviations imply consistency in respondents' perceptions, which increases the dependability of the findings. These findings imply that social media-based partner collaboration and communication considerably improve supply chain responsiveness by increasing transparency, speeding up information flow, and facilitating agile

decision-making processes. These findings provide strong factual support for incorporating social media into strategic supply chain communication frameworks.

Table 4.11 **Descriptive Statistics of Market Intelligence Gathering**

	N	Mean	Std. Deviation
Safaricom uses social media tools to collaborate with suppliers and partners.	246	4.54	.507
Communication with supply chain partners is more efficient through social media.	246	4.41	.509
Social media helps resolve supply chain disputes quickly.	246	4.39	.521
Supply chain partners share updates via social platforms.	246	4.48	.509
Social media promotes transparency among supply chain partners.	246	4.61	.489
Valid N (list wise)	246		

Source: Own Survey result, 2025

Table 4.11 presents descriptive statistics on respondents' perceptions of the use of social media for market intelligence gathering inside Safaricom's supply chain activities. The sample has 246 responders, and the mean scores for all assessed variables show a consistently high level of agreement, with values ranging from 4.39 to 4.61 on a five-point Likert scale. Notably, the item assessing the extent to which social media fosters transparency among supply chain partners had the highest mean value of 4.61 (SD = 0.489), indicating a Furthermore, the usage of social media tools to enhance collaboration with suppliers and partners received excellent ratings (M = 4.54, SD = 0.507), showing a strong support of social media as an essential platform for cooperative interaction. The frequency of updates shared by supply chain partners via social media platforms obtained a similar high mean score (M = 4.48, SD = 0.509), highlighting the tools' perceived usefulness in enabling continuous information exchange. Communication efficiency amongst supply chain partners, as enabled by social media, was also scored positively (M = 4.41, SD = 0.509), showing recognition of better interaction dynamics. Furthermore, respondents agreed that social media helps to quickly resolve supply chain problems, as demonstrated by a mean score of

4.39 (SD = 0.521). Collectively, these findings provide compelling evidence that social media plays an important role in market information collecting, improving transparency, communication, collaboration, and conflict resolution inside Safaricom's supply chain architecture.

Table 4.12 **Descriptive Statistics of Technology Adoption**

	N	Mean	Std. Deviation
Safaricom has adopted social media platforms as part of its supply chain strategy.	246	4.41	.525
Social media tools are integrated with supply chain management systems.	246	4.47	.532
The use of social media has increased operational efficiency.	246	4.37	.501
Social media adoption has improved communication speed in the supply chain.	246	4.42	.494
Safaricom's supply chain responds quickly to changes in customer demand.	246	4.45	.499
Employees are trained to use social media for supply chain functions.	246	4.53	.516
Valid N (listwise)	246		

Source: Own Survey result, 2025

The responses of the total 246 respondents in the table above shows that the descriptive statistics for technology adoption in Safaricom's supply chain demonstrate a high positive consensus on the integration and impact of social media platforms in supply chain operations. The mean scores for all evaluated items range from 4.37 to 4.53 on a five-point Likert scale, indicating a high level of agreement. The highest mean score of 4.53 (SD = 0.516) corresponds to employee training in the use of social media for supply chain operations, demonstrating the organization's commitment to developing appropriate competencies. Furthermore, respondents agreed that social media tools are integrated with supply chain management systems (M = 4.47, SD = 0.532), and that Safaricom's supply chain responds quickly to changes in customer demand (M = 4.45, SD = 0.499).Furthermore, social media use has been identified as a driver of faster

communication (M = 4.42, SD = 0.494) and higher operational efficiency (M = 4.37, SD = 0.501). These findings collectively indicate that technology adoption, particularly via social media platforms, is crucial to improving the agility, efficiency, and overall efficacy of Safaricom's supply chain strategy.

Table 4.13 **Descriptive Statistics of Supply Chain Responsiveness**

	N	Mean	Std. Deviation
Safaricom's supply chain responds quickly to changes in customer demand.	246	4.45	.499
The supply chain can adapt effectively to supply disruptions.	246	4.51	.501
There is minimal delay in product delivery due to fast decision-making in the supply chain.	246	4.56	.497
The company's supply chain can handle urgent customer orders efficiently.	246	4.41	.493
Safaricom's supply chain can rapidly adjust inventory levels based on real-time information.	246	4.52	.501
Valid N (list wise)	246		

Source: own survey result, 2025

Table 4.13 shows descriptive information on respondents' perceptions of Safaricom's supply chain responsiveness and adaptability. The data, gathered from 246 individuals, show consistently high mean scores across all items, ranging from 4.41 to 4.56 on a five-point Likert scale, showing substantial agreement with the presented assertions. Notably, the statement about low delays in product delivery due to swift decision-making in the supply chain obtained the highest mean score of 4.56 (SD = 0.497), indicating that respondents believe Safaricom's supply chain is extremely efficient in speeding delivery processes. Furthermore, the supply chain's ability to respond efficiently to supply shocks was assessed highly (M = 4.51, SD = 0.501), demonstrating its resilience.

The supply chain's ability to quickly modify inventory levels based on real-time data received a high mean score of 4.52 (SD = 0.501), indicating operational agility. Furthermore, respondents felt that Safaricom's supply chain is responsive to changes in consumer demand (M = 4.45, SD = 0.499) and efficiently handles urgent customer requests (M = 4.41, SD = 0.493). Collectively,

these findings give solid evidence that Safaricom's supply chain is highly responsive, with quick decision-making, flexibility, and excellent handling of customer requirements and supply disruptions.

4.5. Inferential Analysis

4.5.1 Correlation Analysis

The linear relationship between variables is shown by correlations. The value of a correlation coefficient can range from -1 to 1. A significant correlation between the correlated variables is shown by values around the absolute value of 1, whereas a minimal or nonexistent linear relationship is indicated by values near 0. According to Andy (2006), correlation is a measure of effect magnitude, with a small effect being ± 0.1, a medium effect being ± 0.3, and a large effect being ± 0.5. The researcher performs the following correlation analysis in order to address the given research questions because correlation analysis shows the relationship between the variables of interest.

Table 4.13 **Correlations Table**

		IST	CET	PCCT	MIGT	TAT	SCRT
IST	Pearson Correlation	1	.278**	.248**	.265**	.403**	.601**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	N	246	246	246	246	246	246
CET	Pearson Correlation	.278**	1	.468**	.561**	.433**	.309**
	Sig. (2-tailed)	.000		.000	.000	.000	.000
	N	246	246	246	246	246	246
PCCT	Pearson Correlation	.248**	.468**	1	.637**	.303**	.332**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
	N	246	246	246	246	246	246
MIGT	Pearson Correlation	.265**	.561**	.637**	1	.405**	.288**
	Sig. (2-tailed)	.000	.000	.000		.000	.000
	N	246	246	246	246	246	246
TAT	Pearson Correlation	.403**	.433**	.303**	.405**	1	.208**
	Sig. (2-tailed)	.000	.000	.000	.000		.001
	N	246	246	246	246	246	246
SCRT	Pearson Correlation	.601**	.309**	.332**	.288**	.208**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.001	
	N	246	246	246	246	246	246

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Own Survey result, 2025

4.6. The Relationship between the studying variables

The Pearson correlation coefficients presented in Table 4.14 reveal the nature and strength of the relationships between the independent variables Information Sharing (IST), Customer Engagement , Partner Collaboration and Communication , Market Intelligence Gathering, Technology Adoption and the dependent variable, Supply Chain Responsiveness (SCRT), within Safaricom's supply chain context. All correlations are statistically significant at the 0.01 level (2-tailed), indicating robust associations between these variables.

Supply Chain Responsiveness (SCRT) exhibits the strongest positive correlation with Information Sharing (IST), with a coefficient of r = 0.601, suggesting that enhanced information sharing significantly relates to improved responsiveness in the supply chain. This relationship implies that effective dissemination and exchange of information within the supply chain network are critical for agile and responsive operations. The largest correlation was established between Information Sharing (IST) and Supply Chain Responsiveness (SCRT) (r = 0.601), indicating that timely and effective information flow is critical for agile supply chain performance. Chae (2020) supports this finding, stating that social media-driven real-time communication promotes decision-making and operational continuity throughout supply chain networks. Nguyen et al. (2020) also underlined that social media usage promotes sensing capabilities and knowledge exchange, which are dynamic capabilities vital to responsiveness.

SCRT also has moderate positive connections with customer engagement (r = 0.309), partner collaboration and communication (r = 0.332), market intelligence gathering (r = 0.288), and technology adoption (r = 0.208). These findings show that each of these independent variables adds favorably to the supply chain's ability to respond quickly and efficiently to changes in demand and operating conditions, albeit to various degrees.

Several significant correlations were found between the independent variables. For example, Customer Engagement has a strong correlation with Partner Collaboration and Communication (r = 0.468) and Market Intelligence Gathering (r = 0.561), highlighting the importance of collaborative activities and market intelligence in supporting customer-oriented supply chain functions. The moderate correlations of Partner Collaboration and Communication (r = 0.332) and Customer Engagement (r = 0.309) with SCRT support the findings of Caniato et al. (2019), who discovered that social media platforms increase transparency and trust among stakeholders,

promoting effective collaboration. Similarly, Kumar et al. (2018) demonstrated that consumer interaction through social media not only improves loyalty but also aligns supply chain strategy with customer expectations, resulting in increased service levels and responsiveness.

Similarly, Market Intelligence Gathering and Partner Collaboration have a strong association (r = 0.637), demonstrating that effective collaboration improves the quality and use of market intelligence. Technology adoption has the strongest link with information sharing (r = 0.403), meaning that the use of technical instruments allows more efficient information sharing throughout the supply chain. Market Intelligence Gathering (MIG) also has a moderate association (r = 0.288) with SCRT, supporting the notion that monitoring market trends and customer behavior through digital interactions is critical to making educated decisions. This finding is consistent with Hazen et al. (2014), who established the utility of social media analytics in driving inventory management and forecasting accuracy, both of which contribute to supply chain responsiveness.

Overall, the correlation study demonstrates that information sharing is critical to improving supply chain responsiveness, with additional influences from customer involvement, partner collaboration, market knowledge, and technology adoption. These interrelationships highlight the multiple nature of supply chain responsiveness and the significance of integrated solutions that include communication, collaboration, information flow, and technological innovation.

4.7. Regression Analysis Assumptions Tests

Field (2009) asserts that employing a linear regression is helpful for making inferences about the population being studied, but it also necessitates verifying important assumptions. The findings of an analysis of the residual variables' normality, homoscedasticity, and inter-variable multi-colinearity are displayed below.

4.7.1. Test of Multicollinearity

The variance inflation factor (VIF), which measures the degree of multicollinearity in regression analysis, is used in this work to test for multicollinearity. The VIF factor should preferably be near one and not more than ten. To examine the possible correlation between the independent variables in the model that predicted the dependent variable (SCRT), a multicollinearity test was conducted using the regression output.

The tolerance values for all predictors ranged from 0.490 to 0.815, all of which are more than the generally used cutoff of 0.1 or 0.2, indicating that there is no substantial concern about multicollinearity. Similarly, the Variance Inflation Factor (VIF) values ranged from 1.227 to 2.042, all considerably below the threshold value of 10, indicating that multicollinearity is not a major issue in this model. As a result, the independent variables can be deemed sufficiently independent of one another, allowing for accurate interpretation of their respective regression coefficients.

Table 4.15 **Coefficients**[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.497	1.599		2.187	.030		
	IST	.677	.064	.576	10.521	.000	.815	1.227
	CET	.103	.054	.120	1.903	.058	.615	1.626
	PCCT	.164	.067	.160	2.452	.015	.573	1.746
	MIGT	.019	.067	.020	.289	.773	.490	2.042
	TAT	-.119	.053	-.133	-2.247	.026	.701	1.426

a. Dependent Variable: SCRT

Source: own survey result, 2025

4.7.2. Test of Autocorrelation

The degree of autocorrelation between observations was assessed using the Durbin-Watson test. The value of the Durbin-Watson statistic is between 0 and 4. There is no autocorrelation if the score is close to 2, positive autocorrelation if it is close to 0, and negative autocorrelation if it is close to 4. The premise of independent error was almost probably satisfied, as indicated by the Durbin Watson value of 1.708, which is near to two.

Table 4.16 **Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.644[a]	.414	.402	.880	.414	33.956	5	240	.000	2.589

a. Predictors: (Constant), TAT, PCCT, IST, CET, MIGT

b. Dependent Variable: SCRT

Source: Own Survey Result, 2025

The Durbin-Watson (DW) statistic was used to determine the presence of autocorrelation in the residuals of the regression model that predicted SCRT. Autocorrelation arises when the residuals of one observation are correlated with those of another, which can violate the independence principle and impair the reliability of regression results. The DW value varies from 0 to 4, with values near 2 indicating no autocorrelation, values near 0 implying positive autocorrelation, and values near 4 indicating negative autocorrelation. In this analysis, the Durbin-Watson statistic is 2.589, which is somewhat higher than 2. This implies that there is no indication of positive autocorrelation in the residuals; rather, it could indicate a minor negative autocorrelation, which is normally less problematic. This contributes to the dependability of the model's estimations and inferences, such as hypothesis testing and confidence intervals. To summarize, the regression model is free of autocorrelation concerns, which would otherwise distort or undermine the data' statistical significance.

4.7.3. Test of Normality

Field (2009) asserts that the assumption of normalcy is important in regression research because it makes it possible to extrapolate study findings outside of the sample size. Thus, using a P-P plot to ascertain whether a distribution is normal is one of the different methods for verifying normality assumptions in linear regression analysis. The researcher uses the P-P plot, as seen below, to test the residuals with bivariate for normality in order to verify the validity of these assumptions. A normal distribution is shown in the figure, with residuals denoted by points. All points would be on the line in a data collection that is completely regularly distributed (Field, 2009). We may therefore fairly assume that the model is accurate and generalizable to the

population since the presumptions of simple linear regression have been satisfied. Both approaches were used in the study to gauge normalcy.

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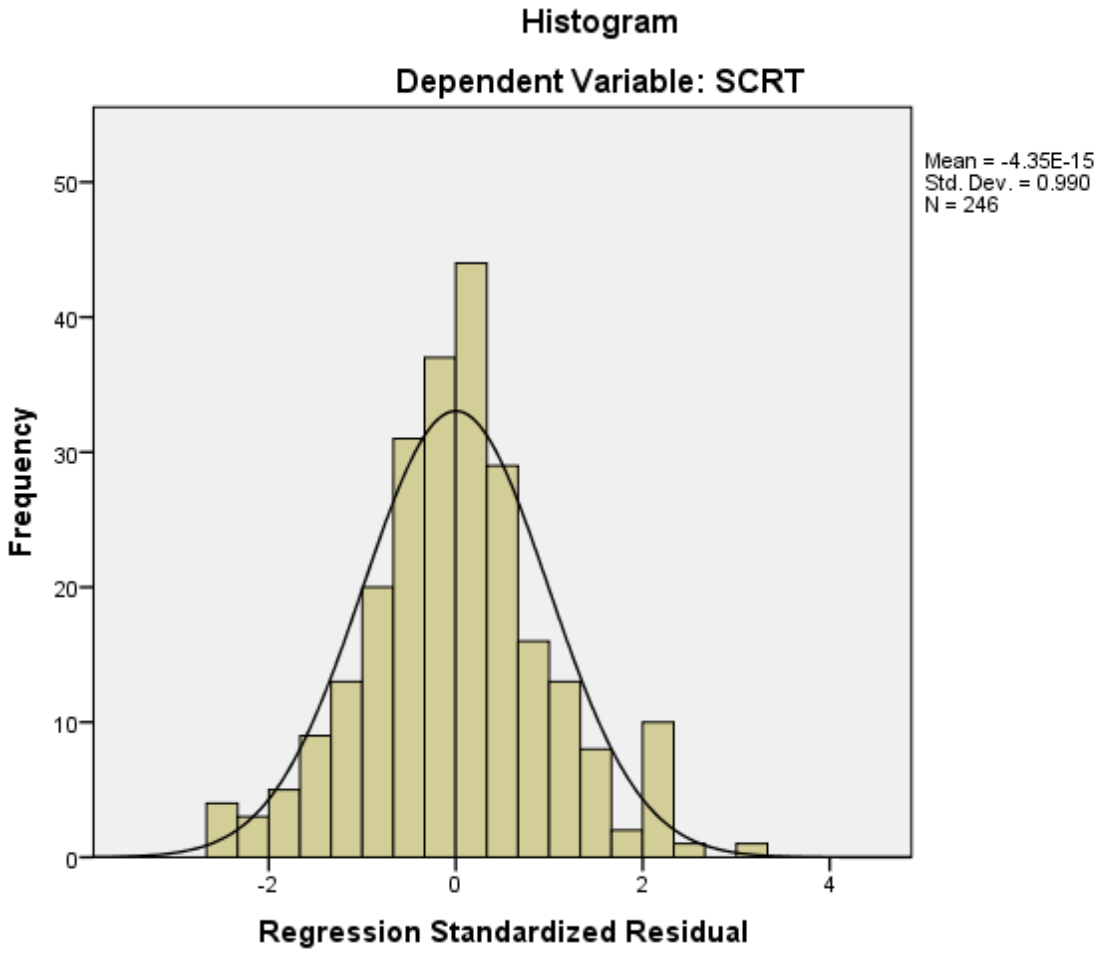

Figure 2. Histogram, Normality test

Source: own Survey result, 2025

The normal probability plots were also employed to test the normality assumption, as illustrated by the normal p-plot picture. The histogram is bell-shaped, showing that the residuals (disturbances or errors) follow a normal distribution.

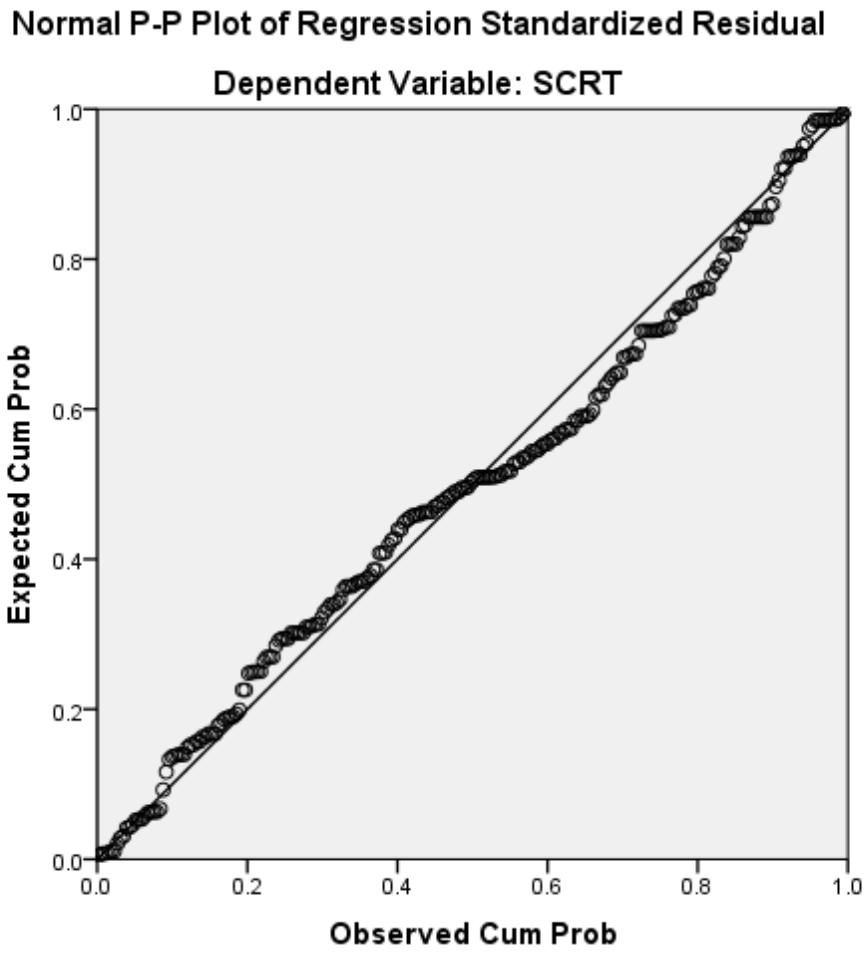

Figure 3 Normality P-P plot

Source: own survey result, 2025

4.7.4. Homoscedasticity

The degree to which the variance of the data values for the independent and dependent variables is the same is known as homoscedasticity (Field 2009). The variance of the residual term should be constant for every value of the predictor variable. In essence, this means that the residuals at every predictor level should have the same variance; therefore, checking for this condition improves the fitness of the regression model. Plotting the standardized residuals or errors (ZRESID) on the Y axis and the standardized predicted values of the dependent variable based on the model (ZPRED) on the X axis, as seen below, allows the researcher to do the homoscedasticity analysis as recommended by Field (2009).

According to Field (2009), if the homoscedasticity requirement is met, the graphs of *ZRESID and *ZPRED should resemble a random array of dots uniformly distributed about zero.

Likewise, as seen in the picture below, there are no obvious outliers in this cloud of dots centered on zero; instead, the points are dispersed equally and at random throughout the plot. The scatter plot should have a fairly equal rectangular shape throughout; scores below and above zero points, indicating both positive and negative values; and the variability in scores for independent variables should be constant for all values of the dependent variable.

According to Garson (2012), homoscedasticity helps to guarantee that the relationship under examination is consistent throughout the dependent variable's range, and a lack of homoscedasticity is shown by increased errors (residuals) for specific areas of the range, as shown on the scatter plot. Before doing a multiple regression analysis, ensure that the residuals have constant variance and the difference between the observed and projected dependent variables is normally distributed (Burns & Burns, 2008). If there is heteroscedasticity, it contradicts the homoscedasticity postulate. The graph shows the study's homoscedasticity because the errors (dots) are near to the line.

4.8. Multiple Regressions

A multiple linear regression analysis was used to look into the impact of five independent variables on the dependent variable, Supply Chain Responsiveness (SCRT): information sharing, customer engagement, Partner Collaboration and Communication Technology (PCCT), market intelligence gathering, and technology adoption. The correlation value (R) is 0.644, implying a moderate to strong positive association between the combined independent variables and supply chain responsiveness. This suggests that the predictors together have a considerable association with how responsive the supply chain is.

The R Square (R^2) value is 0.414, meaning that approximately 41.4% of the variation in supply chain responsiveness is explained by the five predictor variables in the model. The Adjusted R Square is 0.402, accounting for the number of predictors and sample size. This score indicates that, after correcting for model complexity, 40.2% of the variance in the dependent variable is explained. The tiny difference between R^2 and Adjusted R^2 indicates that the model is not over fitted and is still a good fit for the data.

The standard error of the estimate is 0.880, which is the average distance between the actual data points and the regression model's projected values. A lower standard error suggests that the data points are more closely aligned with the model's anticipated values, resulting in a better fit. The

F-statistic is 33.956, and the significance level (Sig. F Change) is.000, indicating that the total regression model is statistically significant. This suggests that the five variables, when taken together, make a considerable contribution to explaining variations in supply chain responsiveness, and that the model's results are unlikely to be random.

Table 4.17 **Model Summary[b]**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.644[a]	.414	.402	.880	.414	33.956	5	240	.000	2.589

a. Predictors: (Constant), TAT, PCCT, IST, CET, MIGT

b. Dependent Variable: SCRT

Source: own survey result, 2025

Table 4.18 **ANOVA[a]**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	131.342	5	26.268	33.956	.000[b]
	Residual	185.666	240	.774		
	Total	317.008	245			

a. Dependent Variable: SCRT

b. Predictors: (Constant), TAT, PCCT, IST, CET, MIGT

Source: own survey result, 2025

Table 4.19. **Coefficients**[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.497	1.599		2.187	.030		
	IST	.677	.064	.576	10.521	.000	.815	1.227
	CET	.103	.054	.120	1.903	.058	.615	1.626
	PCCT	.164	.067	.160	2.452	.015	.573	1.746
	MIGT	.019	.067	.020	.289	.773	.490	2.042
	TAT	-.119	.053	-.133	-2.247	.026	.701	1.426

a. Dependent Variable: SCRT

Source: own survey result, 2025

The majority of the predictors show a positive and statistically significant relationship with the dependent variable, supply chain responsiveness (SCRT), according to the regression analysis looking at the impact of the independent variables information sharing, customer engagement, partner collaboration and communication, market intelligence gathering through, and technology adoption.

The model summary shows that the five independent variables account for approximately 40.2% of the variation in supply chain responsiveness, with an Adjusted R-Square value of 0.402. Although the model is relatively robust, there are other variables outside the purview of this study that also affect supply chain responsiveness, as evidenced by the remaining 59.8%, which is ascribed to random error and other factors not included in the model.

From this the regression equation is derived as:

$$\mathbf{Y=\alpha+\beta1(IST) +\beta2(CET) +\beta3(PCCT) +\beta4(MIGT) +\beta5(TAT) +\varepsilon}$$

Substituting the values from the coefficients table:

$$\mathbf{Y=3.497+0.677(IST) +0.103(CET) +0.164(PCCT) +0.019(MIGT) -0.119\ (TAT) +\varepsilon}$$

4.9. Regression Results and Interpretations

Information sharing had the highest unstandardized coefficient (B = 0.677) and standardized coefficient (β = 0.576), making it the strongest predictor of supply chain responsiveness in the model. The finding is statistically significant ($p < 0.01$). This indicates that, assuming all other factors stay the same, a one-unit increase in employee information sharing results in a 0.677-unit increase in supply chain responsiveness. Agile and responsive supply chains are more likely to be developed by businesses that place a high priority on staff training in digital tools and platforms. With B = 0.164 and β = 0.160, Partner Collaboration and Communication Technology (PCCT) is the second most influential component and is statistically significant ($p = 0.015$). This implies that responsiveness can be significantly increased through better collaboration and communication tools with supply chain partners (such as shared dashboards and real-time communication platforms).

Customer Engagement exhibits a positive coefficient (B = 0.103, β = 0.120), but is only marginally significant ($p = 0.058$), somewhat above the customary 0.05 threshold. This suggests a possible positive effect, implying that digital connection with clients can increase responsiveness, however the evidence is limited.

Market intelligence collection is not statistically significant ($p = 0.773$) and has a tiny coefficient (B = 0.019, β = 0.020). This indicates that the supply chain's responsiveness is not significantly impacted by the use of technology to obtain market knowledge in this scenario.

The coefficient for Technology Adoption is negative (B = -0.119, β = -0.133) and statistically significant ($p = 0.026$). This suggests that higher levels of technology use, as measured in the study, are associated with reduced supply chain responsiveness. This surprising finding could signal that, while technology is being embraced, it is not being used efficiently, or that it is producing complexity, delays, or integration challenges. It could also indicate implementation issues, opposition to change, or a mismatch between adopted technologies and operational requirements. This study calls for more investigation into how technology is adopted and used inside supply chains.

Results for interview questions

How do you perceive the impact of social media trends on customer demand for Safaricom Ethiopia's products and services?

Social media trends have an instantaneous and significant impact on client demand for Safaricom Ethiopia's products and services. Platforms like Facebook, Telegram, and TikTok are popular among Ethiopian youth and urban customers, making them useful platforms for marketing and promotion. When Safaricom introduces new data bundles, airtime promotions, or mobile money services such as M-PESA, word spreads quickly via these channels. As a result, the company frequently sees abrupt increases in demand. For example, a viral post or influencer endorsement can swiftly result in a spike in consumer visits to retail locations, online queries, and increased demand on customer service personnel. This dynamic indicates that social media is more than simply a tool for communication; it is also a major driver of consumer behavior in Ethiopia.

In what ways does Safaricom utilize social media to enhance its supply chain responsiveness?

Safaricom Ethiopia uses social media as a crucial tool to improve supply chain responsiveness through real-time consumer involvement and feedback collection. Customers use social platforms to express their experiences, grievances, and expectations for services such as SIM card availability, airtime top-ups, and M-PESA functionality. Safaricom's digital teams monitor user feedback, which is then shared with the logistics, operations, and customer support divisions. For example, if numerous customers notice service delays or stock shortages in the same area, the supply chain team is notified to investigate and respond appropriately. This real-time flow of information enables the organization to make faster and more informed decisions, boosting its capacity to meet consumer requests and maintain service continuity.

How does the integration of social media feedback affect decision-making in Safaricom's supply chain operations?

Safaricom has integrated social media feedback into their supply chain decision-making. Ethiopia enables a more agile and customer-focused approach. Online comments, messages, and trending topics provide valuable insights that assist the organization in identifying operational shortcomings, assessing customer happiness, and prioritizing resource allocation. This feedback frequently influences decisions about inventory redistribution, service rollout, and network expansion. For example, repeated complaints about bad network coverage in a certain region may cause the provider to accelerate infrastructure improvements in that area. Similarly, if

customers report a lack of SIM cards or M-PESA agents, the supply chain team can reroute supplies to resolve the issue. By embedding social media insights into its operational strategy, Safaricom ensures that supply chain decisions reflect real-time customer needs and expectations.

Do you believe that social media trends have improved overall supply chain efficiency at Safaricom? Why or why not?

Despite the advantages of employing social media insights, Safaricom Ethiopia has many problems in aligning its supply chain processes with the rapidly changing nature of social media trends. One of the most pressing challenges in Ethiopia is the country's infrastructure and logistics. The country's transportation networks, legal climate, and occasionally poor technology capability can all cause delays in implementing social media feedback-driven decisions. Furthermore, the rapidity with which trends arise and evolve on social platforms makes it challenging for supply chain processes which frequently involve planning and coordination to adapt in real time. Another problem is filtering and evaluating social media data to ensure that it appropriately reflects overall customer demands, rather than isolated occurrences or misinformation.

What challenges does Safaricom face in aligning its supply chain operations with rapidly changing social media trends?

Social media trends have contributed positively to Safaricom Ethiopia's supply chain efficiency, though the influence is still evolving. These tools have helped the organization listen to customers, spot problems quickly, and respond more effectively. For example, increased visibility through social media has enabled the company to address supply imbalances, expand service coverage, and better understand regional demand variances. While social media has enhanced response and communication, it has not yet resulted in full supply chain efficiency due to infrastructural, staffing, and logistical constraints. The efficiency of social media is dependent on the company's internal ability to act on feedback quickly, and given Ethiopia's evolving market context, this process encounters some barriers.

4.10. Hypothesis Testing

A statistical hypothesis is a proposed statement about a population parameter that is tested using sample data. Due to time, expense, and accessibility constraints, assessing a complete population is rarely possible in practical research. As a result, researchers rely on a representative sample to draw conclusions about the population using hypothesis tests. The method comprises creating a

null hypothesis (H_0) assuming no effect or relationship between variables, and an alternative hypothesis (H_1) indicating the presence of an effect or association.

Hypotheses were constructed for this study to determine whether several elements of social media, including as information sharing, customer involvement, partner communication, market intelligence, and technology adoption, have a substantial impact on supply chain responsiveness. The study was carried out using regression findings from a sample of respondents, and each hypothesis was checked by calculating the significance of the relevant regression coefficient (p-value) at a standard alpha level of 0.05. This p-value was used to determine whether to accept or reject each hypothesis: if it was less than 0.05, the null hypothesis was rejected, suggesting that the sample provided enough evidence to support the alternative claim. If the p-value surpassed 0.05, there was insufficient evidence to reject the null hypothesis, therefore the effect was considered statistically insignificant.

Table 4.20 Hypothesis Testing Results for the Effect of Social Media on Supply Chain Responsiveness

Independent Variable (IV)	**Hypothesis Statement**	**Sig. (p-value)**	**Decision (at α = 0.05)**	**Hypothesis Result**	**Effect Direction**
Information Sharing Technology	IST has a significant effect on S	0.000	Reject Null Hypothesis (H_o)	Accepted	Significant Positive
Customer Engagement Technology	H_2: CET has a significant effect on SCRT	0.058	Fail to Reject Null Hypothesis	Rejected	Not Significant
Partner Collaboration & Communication Tech)	H_3: PCCT has a significant effect on SCRT	0.015	Reject Null Hypothesis (H_o)	Accepted	Significant Positive
Market Intelligence	H_4: MIGT has a significant effect on SCRT	0.773	Fail to Reject Null Hypothesis	Rejected	Not Significant
Technology Adoption & Training	H_5: TAT has a significant effect on SCRT	0.026	Reject Null Hypothesis (H_o)	Accepted	Significant Negative

Source: Own Survey Result, 2025

The hypothesis testing results provide a nuanced knowledge of the effect of social media on supply chain responsiveness, validating some conclusions from earlier empirical research but also highlighting some areas of disagreement. The first hypothesis (H_1), which claimed a

significant association between Information Sharing Technology (IST) and supply chain responsiveness, was accepted, with a strong positive effect ($\beta = 0.67$, $p = 0.000$). This conclusion backs up Chae's (2020) assertion that real-time communication enabled by social media is critical for speedy decision-making and responsiveness across the supply chain. The findings are also consistent with Nguyen et al. (2020), who discovered that information sharing through social media improves sensing capacity and dynamic responsiveness in supply chains.

The second hypothesis (H_2) on the impact of Customer Engagement Technology (CET) on responsiveness was rejected ($p = 0.058$), showing no statistically significant association. This somewhat contradicts Kumar et al. (2018), who claimed that engaging with clients on social media helps enterprises align their supply chain strategy with consumer preferences, resulting in increased responsiveness. The current finding implies that, while customer engagement might improve brand impression and loyalty, its direct impact on operational responsiveness may be limited or indirect.

The third hypothesis (H_3) on Partner Collaboration and Communication Technology (PCCT) was accepted ($\beta = 0.164$, $p = 0.015$), showing a positive and statistically significant impact on supply chain responsiveness. Caniato et al. (2019) strongly endorse this, stating that social media improves transparency and trust among supply chain partners, hence increasing collaboration and agility. Such collaborative workspaces are vital for promptly resolving difficulties and reacting to changes, thereby improving overall responsiveness.

The fourth hypothesis (H_4) on Market Intelligence Gathering Technology (MIGT) was rejected ($p = 0.773$), indicating no meaningful link with supply chain responsiveness. This results contrasts with that of Hazen et al. (2014), who emphasized the importance of social media analytics in identifying market trends and informing demand predictions. According to Mishra et al. (2019), one possible explanation for the unimpressive outcome is the overwhelming number and complexity of data, which might impede effective analysis and timely decision-making if not well managed.

The fifth hypothesis (H_5), which proposed a link between TAT and responsiveness, was accepted but had a negative effect ($\beta = -0.119$, $p = 0.026$). This surprising trend may reflect the challenges described by Huang et al. (2020), who noted that incorporating social media into supply chain systems necessitates significant investment in technology and training. These initial

hurdles and inefficiencies during the adoption period may momentarily impede responsiveness, even if the long-term advantages are excellent.

CHAPTER FIVE

SUMMARY OF FINDINGS CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

An overview of significant discoveries, conclusions, and recommendations is given in this chapter. The study's main objective was to evaluate how social media affects supply chain responsiveness. The goal of the study was achieved by evaluating pertinent literature and gathering quantitative and qualitative data through respondent interviews and questionnaires. The statistical program for social science (SPSS) version 25 was used to display, analyze, evaluate, and discuss the data collected through questionnaires. The inquiry produced the following findings, conclusions, and suggestions for the practitioners of Safaricom Telecommunication Ethiopia Plc.

5.2. Key Findings and their summary

- The results bring to the fore important findings on the effect of Social Media on Supply Chain Responsiveness. The findings are likely to have great implications for Safaricom Ethiopia and for future researchers.
- A total of 246 respondents from staffs provided usable data for analysis. Descriptive statistics, Pearson correlation analysis and regression analysis was considered to be reliable and valid measure of the study.
- The descriptive statistics collected from 246 respondents show a consistently high level of agreement across all categories, emphasizing the importance of social media in improving supply chain responsiveness at Safaricom Ethiopia. Respondents overwhelmingly agreed that social media enables real-time information sharing, increases customer interaction, improves partner collaboration, aids market intelligence collecting, and encourages effective technology implementation. Specifically, high mean scores across dimensions such as information sharing (M = 4.56), customer involvement (M = 4.55), and partner cooperation (M = 4.61) demonstrate that social media promotes better transparency, timely communication, and speedier decision making.
- The correlation analysis shows that all independent variables information sharing, customer engagement, partner collaboration and communication, market intelligence

gathering, and technology adoption have statistically significant positive relationships with supply chain responsiveness (SCRT) at the 0.01 level. Information sharing has the highest association with SCRT ($r = 0.601$), suggesting its importance in facilitating responsive and agile supply chain operations. Moderate positive relationships were also found with Customer Engagement ($r = 0.309$), Partner Collaboration ($r = 0.332$), Market Intelligence Gathering ($r = 0.288$), and Technology Adoption ($r = 0.208$), indicating that these characteristics contribute to responsiveness, albeit to a lesser level. Strong interrelationships between the independent variables, such as Market Intelligence and Partner Collaboration ($r = 0.637$) and Customer Engagement and Market Intelligence ($r = 0.561$), highlight the importance of integrated communication, collaboration, and technological strategies. Overall, the analysis reveals that information flow, aided by digital tools and stakeholder involvement, is critical to improving supply chain responsiveness at Safaricom Ethiopia.

- The regression study shows that Information Sharing is the most important predictor of Supply Chain Responsiveness ($B = 0.677$, $\beta = 0.576$, $p < 0.01$), showing that improving information sharing considerably enhances supply chain agility. Partner collaboration and communication technology improves responsiveness ($B = 0.164$, $\beta = 0.160$, $p = 0.015$), highlighting the importance of collaborative tools and platforms. Customer engagement has a slight beneficial effect ($B = 0.103$, $\beta = 0.120$), but is only marginally significant ($p = 0.058$), indicating minimal evidence for its role. Market Intelligence Gathering had no significant influence ($B = 0.019$, $\beta = 0.020$, $p = 0.773$), suggesting it may not directly improve responsiveness in this situation. Surprisingly, Technology Adoption has a negative and statistically significant link with responsiveness ($B = -0.119$, $\beta = -0.133$, $p = 0.026$), indicating that higher usage of technology may introduce inefficiencies or integration concerns. These findings underscore the need of using digital technologies strategically and effectively, as well as the need for more research into how technology is used in supply chains.

- Overall, the model summary showed that all independent variables explained 40.2% of the variance in supply chain responsiveness ($R2 = 0.402$). Thus, the five factors explain

40.2% of the diversity in supply chain responsiveness, whereas other undiscovered factors may limit supply chain responsiveness, accounting for approximately 59.8%.

5.3. Conclusion

The results of this study give persuasive evidence that social media plays an important role in improving supply chain responsiveness at Safaricom Ethiopia. The analysis of data from 246 respondents revealed a strong consensus on social media's positive contributions to facilitating real-time information sharing, increasing customer interaction, promoting partner collaboration, supporting market intelligence gathering, and encouraging the adoption of digital technologies.

Among the variables examined, information sharing emerged as the most important predictor of supply chain responsiveness, highlighting its importance in enabling agility, transparency, and prompt decision-making. Partner Collaboration and Communication also had a meaningful and statistically significant contribution, highlighting the value of collaborative platforms in maintaining effective supply chain coordination. While Customer Engagement had a minor positive effect, its low statistical significance shows that its influence in improving responsiveness is conditional or indirect. Interestingly, Market Intelligence Gathering had no meaningful impact, showing that while helpful, it may not directly influence response in Safaricom Ethiopia's current operational setting.

A particularly interesting finding is the negative and significant association between technology adoption and supply chain responsiveness, implying that just using technology without sufficient integration or strategy alignment can result in inefficiencies. This emphasizes the significance of a deliberate, systematic, and context-sensitive approach to digital transformation in supply chain management. Overall, the study indicates that efficient use of social media, particularly in terms of communication and collaboration, is critical for enhancing supply chain responsiveness. The findings also highlight the importance for firms like Safaricom Ethiopia to carefully manage technology installation and invest in integrated systems that support their operational objectives. These findings have practical consequences for supply chain managers and provide useful insights for future research in the rapidly developing subject of digital supply chain management.

5.4. Recommendation

Numerous important suggestions are provided to enhance supply chain responsiveness at Safaricom Telecommunication Ethiopia plc in light of the study's findings.

- Safaricom should prioritize developing and formalizing information-sharing platforms throughout its supply chain. This includes investing in training programs to improve employees' digital communication skills, as well as developing real-time data-sharing channels to ensure that information flows on time and accurately. Improving information exchange will boost decision-making and overall supply chain responsiveness.
- While consumer interaction had a good but minor impact, Safaricom could more consistently incorporate customer feedback into operational planning. This could include creating analytics tools to efficiently filter and evaluate social media feedback, transforming involvement into actionable insights that aid in demand forecasts and supply chain modifications.
- Safaricom can improve its collaboration with supply chain partners by introducing sophisticated communication technology including shared dashboards and real-time collaboration platforms. Regular joint planning and review sessions with partners can boost transparency, trust, and agility in responding to interruptions or demand changes.
- Given the negligible influence shown, Safaricom should reconsider how market intelligence data is gathered and used. Investments in data management systems and competent analysts are required to convert raw market data into timely, relevant insight capable of effectively guiding supply chain choices. Future research should focus on removing noise from data in order to improve decision quality.
- The negative impact of technology adoption emphasizes the importance of careful implementation tactics. Safaricom should prioritize change management, including sufficient training, support, and the progressive incorporation of new technology. Furthermore, examining the alignment between adopted technology and operational demands prior to large-scale rollout would help to reduce interruptions and increase responsiveness.

5.4.1. Recommendations for future researchers

- Assess the long-term impact of technology deployment on supply chain performance, including learning curves and system optimization.
- Analyze client engagement using social media to optimize operations.
- Investigate the impact of data quality and processing approaches on the effectiveness of market intelligence for supply chain choices in emerging markets.

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Appendix I

Questionnaires

Dear respondents

I am kindly request you to participate on this survey questionnaire **the effect of social media trends on supply chain responsiveness in the case of safaricom telecommunication Ethiopia plc.**The information you will provide will be used as primary data for partial fulfilment of the requirements for the MA degree in Logistics **and Supply Chain Management**Your participation in this study is completely voluntary. Your genuine response and cooperation is vital for this study and will take approximately 10 minutes. All your responses are strictly confidential and data from this research will be reported only in the aggregate. Please don't write your name anywhere on this questionnaire .Please Tick (√) where appropriate in the box. I would like to express my heartfelt gratitude in advance for your kind participation.

PART ONE: DEMOGRAPHIC INFORMATION

Instructions:

- **Please carefully ☑tick in the given box.**
- **No need of writing your name.**
- **There is no right or wrong answers; it's just get your honest opinion and perception**

1. Gender

Male ☐ Female ☐

2. Age

20-30 ☐ 31-40 ☐ 41-50 ☐ Above 50 ☐

3. Educational level

Certificate ☐ Diploma ☐ BA/BSC ☐ MA/MSC PhD ☐

4. Work Experience in the Safaricom

Less than 2years ☐ **3-5years** ☐

5. What is your position in the Safaricom?

Supply Chain management Staff ☐

Procurement and Logistics Staff ☐

Customer Service and Marketing Teams ☐

IT or Digital Transformation Officers ☐

Warehouse and Inventory Managers ☐

Others (please specify)_____

Part Two: Questionnaires on the studying variables

The following sets of statements aimed at helping to understand your feelings or perceptions of the Influence of Social Media on Supply Chain Responsiveness in the case of Safaricom telecommunication Ethiopia plc. Please place a tick (√) or a mark (**X**) in the box (cell) only one choice that represents your appropriate level of agreement. Please choose only one scale

Key for scales- 1= strongly Disagree, 2=Disagree, 3= Neutral, 4= Agree, 5= strongly Agree

No	**Information Sharing**	1	2	3	4	5
1	Social media enables real-time sharing of supply chain information.					
2	Safaricom uses social media to communicate stock levels with supply chain partners.					
3	Information shared on social platforms improves supply chain decision-making.					
4	Social media facilitates accurate and timely delivery updates.					
5	Social media enhances visibility across the supply chain.					
	Customer Engagement	**1**	**2**	**3**	**4**	**5**
1	Social media improves communication between Safaricom and its customers.					
2	Customer feedback on social platforms is used to enhance supply chain operations.					
3	Social media helps identify customer needs quickly.					
4	Engagement on social media helps forecast demand more accurately					
5	Customer complaints on social media are addressed promptly.					
	Partner Collaboration and Communication	**1**	**2**	**3**	**4**	**5**
1	Safaricom uses social media tools to collaborate with suppliers and partners.					
2	Communication with supply chain partners is more efficient through social media.					
3	Social media helps resolve supply chain disputes quickly.					
4	Supply chain partners share updates via social platforms.					
5	Social media promotes transparency among supply chain partners.					
	Market Intelligence Gathering	**1**	**2**	**3**	**4**	**5**
1	Safaricom uses social media to gather competitor insights.					
2	Social media helps in identifying market trends relevant to the supply chain.					

3	Social platforms are a valuable source of customer behavior data.					
4	Social media helps predict supply and demand fluctuations.					
5	Market information from social media enhances responsiveness to changes.					
	Technology Adoption (Social Media Tools)	**1**	**2**	**3**	**4**	**5**
1	Safaricom has adopted social media platforms as part of its supply chain strategy.					
2	Employees are trained to use social media for supply chain functions.					
3	Social media tools are integrated with supply chain management systems.					
4	The use of social media has increased operational efficiency.					
5	Social media adoption has improved communication speed in the supply chain.					
	Supply Chain Responsiveness					
1	Safaricom's supply chain responds quickly to changes in customer demand.					
2	The supply chain can adapt effectively to supply disruptions.					
3	There is minimal delay in product delivery due to fast decision-making in the supply chain.					
4	The company's supply chain can handle urgent customer orders efficiently.					
5	Safaricom's supply chain can rapidly adjust inventory levels based on real-time information.					
6	Overall, Safaricom's supply chain demonstrates agility in responding to internal and external changes					

Part Three Interview guide Questionnaires

1. How do you perceive the impact of social media on customer demand for Safaricom's products and services?

_____

_____

_____

_____

_____

2. In what ways does Safaricom utilize social media to enhance its supply chain responsiveness?

_____

_____

3. How does the integration of social media feedback affect decision-making in Safaricom's supply chain operations?

_____

_____

_____

4. What challenges does Safaricom face in aligning its supply chain operations with rapidly changing social media trends?

_____

_____

_____

5. Do you believe that social media trends have improved overall supply chain efficiency at Safaricom? Why or why not?