

Supply Chain Transparency, Reputational Risk, and Costs: A Focus on Customers in Saudi Arabia

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ABSTRACT

This study investigated how supply chain transparency affects company reputation and operational costs. The study assumed that stakeholders favour companies that disclose information about their supply chain operations, given the growing interest in supply chain transparency. Companies that practice such transparency build stakeholder trust and loyalty, thereby reducing business risks while benefiting from sustained customer relationships. However, transparency also carries risks, including potential patent and copyright infringement. Using a qualitative approach, the study conducted in-depth interviews with eighteen supply chain professionals across logistics, planning, customer service, technology management, inventory, and warehouse operations. Data analysis revealed that supply chain transparency is crucial for mitigating reputational risks and reducing operational costs, as stakeholders preferentially collaborate with trustworthy, reliable, and efficient companies. These findings have practical implications for organizations seeking to enhance collaboration, build stakeholder loyalty, and reduce costs associated with poor market perception.

Introduction

Supply chain transparency has become commonplace due to a fast-changing business world that progressively demands accountability and sustainable practices. Moreover, technologies such as the internet and social media have made some of today's stakeholders such as consumers well-informed and aware of the need for ethical business practices. As such, consumers value companies that willingly engage in supply chain transparency and are willing to pay premium prices for products and services that attain it. Such companies minimize reputation risks that could harm their brand names and revenues. Supply chain transparency relies on transparent communication that was traditionally lacking within the supply chain sector or was non-existent. Moreover, communication needs to occur both internally and externally since it bears benefits in terms of streamlining operations and obtaining valuable feedback from suppliers and customers that can be used to improve the business. This study hypothesizes that supply chain transparency minimizes reputation risks and business costs.

In reality, some companies understand the need to disclose their information to demanding stakeholders, particularly the consumers who is currently well-informed, and this has yielded better results in terms of reducing operational and reputational costs (Egels-Zandén et al., 2015). Today's consumer increasingly cares about where the products they consume come from, how the raw materials and ingredients are sourced, the conditions in which they were produced, the labour used, carbon footprint, and ethical practices. Some companies willingly disclose this information and this could lead to increased sales and brand recognition. Moreover, a lack of transparency in supply chains can make the process difficult, costly, and time-consuming within the international and national supply chains. (Schäfer, 2022).

Aim and Objectives

This research aims to determine whether supply chain transparency influences reputational risks and business costs and how this happens – considering sustainability issues. This will be achieved through the following objectives.

- 1) A literature review of prior studies on the topic to determine other research findings.
- 2) A qualitative study where first-hand information is collected through a questionnaire and analysis is done thereafter.
- 3) Report the findings of the results.

Research Questions

The research was guided by the following questions:

- 1) Is supply chain transparency crucial in today's business world?
- 2) Does transparency improve trust among stakeholders and in turn reputation?
- 3) Does the organization experience a decrease in costs for being transparent?
- 4) How does technology enable transparency?

Significance

This study is important because of the changing times where information has become key in purchasing matters. Moreover, there is an increasing need globally to ensure sustainable practices that conserve the environment and eliminate wastage. Businesses and their stakeholders stand to gain, particularly the consumer who is assured of the best supply chain practices. Businesses also stand to gain reputation-wise. Since supply chain management transparency is a key issue, management information and communication technologies have become part of sustainable supply chain management (Schäfer, 2022).

Literature Review

Supply Chain Transparency

Conceptualizing supply chain transparency provides a better understanding of its role in reputation risk and business costs. The first definition is by Budler et al. (2023) who state that supply chain transparency is the degree of information voluntarily made available within and beyond a supply chain in areas such as operations, raw-material sourcing, and cost analysis to stakeholders. The stakeholders include suppliers, end-consumers, manufacturers, distributors, and the government. The authors note that stakeholders seek transparency to make informed decisions

and follow up with contemporary issues such as ethical sourcing (Budler et al., 2023). Moreover, the significance of data sharing, an aspect of transparency, is claimed to improve collaboration, compliance with sector regulations, and ethical practices by suppliers (Budler et al., 2023). Montecchi et al. (2021) define supply chain transparency as the practice of disclosing detailed and accurate information about operations such as sourcing, manufacturing processes, logistics, and business costs. Bateman & Bonanni (2019) define supply chain transparency as the disclosure of events happening upstream in the supply chain both internally and externally. The need for such disclosure is because stakeholders are increasingly demanding such information (Bateman & Bonanni, 2019). MIT Sloan School of Management found that consumers are willing to pay 2% to 10% more for products from firms that provide greater supply chain transparency (Bateman & Bonanni, 2019). The information sought includes how workers are treated and how manufacturers enhance working conditions (Bateman & Bonanni, 2019). All three definitions emphasize disclosing or voluntarily sharing information about the events of a supply chain. While this may be the case, there is also the risk of businesses disclosing wrongful or inaccurate information as they try to fulfill transparency obligations. Buck (2022) argues that a company should have both visibility and traceability before it can achieve transparency in the supply chain. Visibility concerns witnessing all that is occurring in the supply chain, traceability means tracking a product's journey across the supply chain, and transparency is about communicating the information to those outside the company so that they are aware of what is happening in the supply chain (Buck, 2022).

Achieving supply chain transparency can be challenging and it seems easier in theory than practice. Some companies experience challenges with costs involved such as purchasing technologies that help to monitor the supply chain and implement changes (Fraser & Van der Ven, 2022). Profitable firms have been known to be more transparent because they budget for mechanisms for reporting and monitoring and they also require the legitimacy that comes with transparency to increase their social acceptance (Ebinger & Omondi, 2020). Other challenges experienced when enforcing transparency in the supply chain include organizational and structural complications (the risks and problems are hidden in-depth in the value chain), cultural differences among players that make it difficult to comprehend the requirements for attaining transparency, risk of disclosing business secrets that can expose patents and copyrights and confidentiality issues, and organizing high-volume data in a useful manner and deciding which data should be shared on a shared platform (Ebinger & Omondi, 2020).

Factors that Support Supply Chain Transparency

As mentioned earlier, visibility and traceability enable transparency, however, these are not the only factors that support transparency. Montecchi et al. (2021) note that openness is a requirement for transparency as it reflects a need for the organization to promote a culture of proactive disclosure. But as was mentioned in the previous subsection, companies do experience the challenge of disclosing business secrets that could lead to negative consequences such as the theft of patents. Thus, there is a need for companies to balance out the type of information they are willing to share without experiencing loss. The benefit of disclosure, however, is enhanced openness perception among stakeholders (Montecchi et al., 2021).

Budler et al. (2023) argue that there are different types of transparencies within a supply chain that affect operations and performance. These transparencies need to be communicated within the organization and outside the organization for enhanced transparency. The goal should be to increase visibility among stakeholders within and outside the organization.

Table 1

Different Types of Transparencies of the Supply Chain [Budler et al. 2023].

Type of transparency	Meaning
Process transparency	This is a systematic provision of product and processing information under formal and informal agreements. This information should also be communicated within the organization with the intent to make internal information visible to members of the organization.
Relational transparency	This type aims to assist the focal firm in developing and integrating its supply chain through better self-assessment and improved relationships with suppliers. However, there is a need to develop the relationship through better contracts to avoid taking advantage of other's information.
Operational transparency	This refers to the sharing of procedures governing buyer-supplier transactions to ensure that the procedures are administered consistently. This type of transparency influences the procurement function in the supply chain sometimes through the selection criteria for suppliers in a governmental purchase context.
Channel Transparency	This can refer to inventory visibility across the channels or to the capacity to track orders throughout the process from the purchase to delivery points.
Environmental transparency	This relates to the extent which information about environmentally-friendly supply chain operations is made publicly available and accessible to stakeholders, including investors, regardless of whether the information is positive or negative.

The transparencies described in Table 1 can be supported by technologies. According to He et al. (2024), cutting-edge technologies such as artificial intelligence (AI), blockchain, big data, and cloud computing enable transparency and deal with some of the challenges mentioned in the previous subsection such as organizing and reporting of high-volume information. For instance, AI is being used for optimizing supply chains and adjusting parameters in real time during the production process (He et al., 2024). Blockchain technology plays a significant role in improving the transparency and security of transactions and in tracking the complete journey of products from beginning to end (He et al., 2024). Assessment tools for use across the supply chain such as mobile technology can be used to track compliance and employment data instead of conducting on-site or third-party audits (Linich, 2014). The benefits of mobile-based data are they provide real-time data, confidentiality, and reduced cost (Linich, 2014).

Company activities and culture can support transparency. Transparency is built through the identification and prioritization of risks, visualization of risks, and use of transparency levers to close information gaps, managing and monitoring any risk using risk management tools (Mollenkopf et al., 2022). According to Gardner et al. (2019), there exist dimensions of information that enable sharing that leads to transparency. A huge aspect of transparency is information sharing of pertinent matters with stakeholders.

Table 2

Types of information to be shared by Stakeholders [Source: Gardner et al., 2019].

Type of information	Description
Traceability information	This refers to different players involved in the supply chain including in production, transport, and processing systems, their functions, the relationship between the players (basically transparency around relationships).
Transaction information	This information reports on the purchasing practices and investment decisions of different supply chain players. This can include product purchases, sales of input of the manufacturing process, ownership, and investments – including players outside of the principal supply chain.
Impact information	This information reports on social and environmental impacts including as well as risks linked with specific stages in the supply chain such as manufacturing, transport, processing, and consumption (transparency information about the sustainability of supply chain stages setting a baseline for reviewing the performance of all players).
Policy and commitment information	This refers to the sharing of information regarding existing policies and any changes made including the company's commitment. This provides transparency on any differences in the degrees and strengths of policies accepted by different players.
Activity information	This reports on activities undertaken by supply chain players in regard to production, sales, purchasing, and investment decisions, to deliver the goals set out in their policies and commitments. Here, transparency is shown in the type and extent of new activities that players are taking to improve their behavior.
Effectiveness information	This reports on the effectiveness of a given intervention to decrease negative social and environmental impacts to improve the performance of the supply chain players or their operations. Here, transparency is around how much or minimal progress is being made by a given player.

Supply Chain Transparency Effect on Improved Reputation and Reduced Costs

This study hypothesizes that transparent supply chains lead to improved reputation of organizations. As mentioned earlier, openness causes improved perception among stakeholders. An improved reputation has the benefit of several indirect benefits the foremost being reduced business costs (Budler et al., 2023). For instance, transparency reduces the costs that come with litigations due to violations of contracts and lack of adherence to regulations (Linich, 2014). The authors also add how customers perceive the efforts taken by organizations to ensure transparency has been shown to influence their trust and attitudes regarding the organization (Budler et al., 2023). Moreover, as businesses streamline their activities to meet transparency by adopting best practices such as lean and agile processes as well as resilience, they reduce their costs. Linich (2014) argues that transparency is a capability for organizations because as they attempt to build supply chain resilience, and the ability to recover from and decrease the impact of key risks, transparency's role is crucial. Operational costs are also reduced as organizations manage risks by accessing, learning from, and acting on supply chain information (Linich, 2014). Mollenkopf et al. (2022) note that organizations that divulge information about their supply chains tend to do so to establish trust with consumers, and to further improve their brand and reputation.

However, there has been a notion that cost transparency may decrease profit margins (Budler et al., 2023). Also, it has been argued that information required to predict future supply

chain events should be disclosed through formal agreements (Budler et al., 2023). This suggests that what should be made transparent in the supply chain is only the information that permits inferences to be made about past activities and engagements. There is also the challenge of predicting how the costs and benefits of supply chain transparency will be distributed to the stakeholders in the chain (Budler et al., 2023). It has been argued that there are instances where divulging more information about the organization causes its interest to be less aligned with the supply chain interests (Buck, 2022). For example, when an organization makes its operations transparent, it not only does so to stakeholders like consumers but also competitors, making it easier for competitors to copy their processes. Budler et al. (2023) state that from the beginning, supply chain transparency should be planned and designed to consider challenges such as risks of exposure by considering the importance and relevance of the information to stakeholders.

Supply Chain Transparency Trends Globally and in Saudi Arabia

Currently, rapid advancements in technologies are shaping how organizations disclose, collect, and share information. The mode of communication has expanded to allow the sharing of high-volume information to a wider audience in real-time in a qualitative manner (He et al., 2024). The benefits of this are the reduced cost and timely way of sharing information. Technologies such as blockchain, AI, cloud computing, social media, and big data facilitate disclosure in one way or another (He et al., 2024). Similarly, Garner et al. (2019) note how the onset of the information age, driven by technologies in the collection, storage, dissemination, and interpretation of data has increased the potential for information exchange. The authors further assert that the improvement in open data portals has stimulated and supported new procedures of governance intervention. So, technology is not only supporting transparency but good governance (Gardner et al., 2019). Ebinger and Omondi (2020) state that technologies such as blockchain and big data are used for monitoring and assessing supply chain activities. However, they add there is a need for more research on how transparency connects with digital technologies (Ebinger & Omondi, 2020). Jia et al. (2024) also note the role of digital technologies notably the Internet of Things (IoT), digital twins (cloud computing and big data analytics), radio frequency identification (RFID), and 5G wireless in capturing, representing and analyzing intricate supply chain operations and sharing the information. Figures have shown a major trend toward the adoption of blockchain in supply chains across different regions something that is driven by the need for transparency and security in supply chain operations, regulatory processes, and the need for optimal supply chain processes (Weller, 2024). Moreover, the adoption of blockchain is deemed to have the potential to simplify cross-border trade, reduce customs clearance time and transaction costs promoting efficient international trade (Weller, 2024). Ultimately, supply chain transparency can improve competitiveness among countries in the global market and attract foreign investments (Weller, 2024).

As the Saudi Arabian processing sector navigates a vibrant global marketplace, supply chain transparency adoption has been crucial in sustaining lasting competitiveness (Hejazi & Habani, 2024). Saudi Arabia has been able to apply technologies within different sectors to ensure transparency, but this is limited to company policies and willingness to do so (Hejazi & Habani, 2024). A good example where transparency is applied in the supply chain is Saudi Arabia's construction sector that has developed smarter and more sustainable processes (Azmi et al., 2022). Moreover, the introduction of blockchain technology in the Saudi Arabian construction sector has offered many solutions to transparency such as enhanced tracking with real-time planning, less administrative work, efficiency throughout the supply chain, and enhanced financial flows (Azmi et al., 2022).

Methodology

Research Design

The study employed a qualitative design focusing on participants' knowledge and work experience. This approach was chosen for two main reasons: to identify similarities with the literature review discussion and to evaluate the hypothesis that supply chain transparency improves reputation and reduces costs. Additionally, the research was designed to capture participants'

demographic and professional information, including age, gender, education level, years of work experience, company and position, and region, to assess whether these variables influence the findings. A survey form was used for data collection, allowing participants to provide detailed responses to open-ended questions—a level of depth that would not have been possible with a fully structured questionnaire (Gupta et al., 2019). Participants were contacted in advance to invite them to complete the online survey, which was distributed through third-party sources. The survey was conducted online to reduce costs, as participants were from various regions of Saudi Arabia. Data collection occurred between December 15th and 21st, 2024, with participants completing the survey at their convenience.

Participants and Sampling

The study initially targeted twelve participants but exceeded this goal, with eighteen participants completing the survey. The participants are of diverse backgrounds in terms of gender, age, education background, regions, fields, and years of work experience as shown in the figures and charts below.

Table 1

Detailed Summary of Participants' Variables

Variable	Attribute	Total
Gender	Male	12
	Female	6
	N	18
Age Group	21 – 30 years	4
	31 – 40 years	7
	41 – 50 years	4
	51 – 60 years	3
	N	18
Education Level	Bachelor's Degree	14
	Master's Degree	4
	N	18
Field	Logistics Management	1
	Transportation & Distribution Management	2
	Technology Management	1
	Customer Service Management	5
	Planning & Development	1
	Planning & Forecasting	1
	Production & Operations Management	1
	Inventory & Warehouse Management	6
	N	18
Years of Work Experience	One	3
	Two	2
	Three	1
	Four	1
	Five	3
	Six	1
	Seven	1
	Eight	2
	Nine	1
	Ten	1
	Eleven	1

Twelve	1
N	18

The sampling technique used was purposive because we had a pre-determined target group in mind that would fulfil the study's goal of securing the information on supply chain transparency (Gupta et al., 2019). As mentioned earlier, the study relied on participants' knowledge and work experience, so we targeted individuals who work in the supply chain sector or perform functions related to it such as logistics, inventory and warehouse, customer care, planning, forecasting, and development fields.

Survey instrument and protocol

An online survey was used to collect the information from participants (see Appendix). The online survey contained questions under four different headings, namely customer education, data sharing and collaboration, stakeholder assessment, and cost-benefit assessment. These areas were chosen as they had been reviewed in the literature review and were suitable for determining if the proposed premise is true. The questions under each theme reflected issues of transparency such as "Does your company publish reports that detail your supply chain practices and sustainability efforts? If not, please explain why." or "Do you implement data-sharing platforms that enable secure and efficient data sharing among supply chain partners? If so, what are the benefits?" These questions were open-ended allowing for probing so that more information is given for better analysis.

Participants accessed the study via an online survey link. At the start, they were reminded of confidentiality and required to consent by selecting a participation agreement. The survey included open-ended questions, and pseudonyms were assigned to maintain privacy. The data was later analyzed, and coded for recurring themes.

Data analysis and strategy

The goal of the data analysis strategy was to describe the relationship between statements and forthcoming themes present in the data. This process would embrace three basic categories of data analysis, namely description, analysis, and interpretation (Gupta et al., 2019). These categories are not exclusive but they need to be identified and distinguished so that each is useful in organizing and presenting data (Gupta et al., 2019). While analyzing the data, we linked the themes to the demographic variables of the participants to determine any correlations to determine whether they could explain certain phenomena or findings inferred. We focused on emerging words and phrases for each question and analyzed participants' responses regarding the phenomenon. For instance, question two had common responses from different participants. When asked about how their companies communicate with customers to address issues and build trust, most stated this happens through "phones", "emails", "Twitter", "social media" and "live chat" among others. Even though the word differed, the conclusion for most of the responses is the use of digital media.

Ethical considerations

The ethical considerations in this study entailed the privacy of participants' identities. Participants needed to trust us with personal information that included age, educational background, years of work experience, and field of work. The use of such information is meaningful to the study but in some cases, it is difficult for some participants to share.

Findings

In this section, we describe and define (analyse) the data collected. We begin by describing the demographic variables and then the findings of the data. Foremost, the demographic data shows that there are more males than females with all age groups having an almost equal number of participants. However, most participants have a bachelor's degree and it is interesting to see how it influences the findings. Moreover, those with five years and below of work experience are ten while those with more than five years of work experience are eight. Most of the participants work in the fields of inventory and warehouse management and customer service management. The field of customer service management is pivotal for understanding what customers require as well as their

perceptions. Unfortunately, the field of technology had only one participant and the study could have obtained valuable information concerning the correlation between technology and transparency, which is mentioned amply in the literature review.

This section highlights the findings of the questions asked under different headings. Various responses are compared to determine emerging themes and how they compare and differ.

A. Consumer Education

Two questions were asked under this heading. The first concerns whether the participants' organizations publish reports detailing supply chain practices and sustainability efforts. Except for one participant who answered "No", all the other seventeen participants answered "Yes". One of the seventeen participants stated *"Our Company publishes annual reports about supply chain practices and sustainability."* The participant who responded with a "No" had the highest working experience of twelve years. However, she did not provide a reason for the probing question, "If not, why not?" An answer to the probing question would have let us know of any limiting factors to disclosure.

The next question under this heading was how the company communicates with customers to address their concerns and build trust. These questions yielded different answers except for Participant One who did not respond. The other seventeen responded that they communicate with their customers using different channels. Participants Three and Four noted that they use *"Phone and email"* and *"Phone and Twitter"* respectively. Participants Six and Seven mentioned they use *"Social media platforms and email"* and *"All social media platforms and email"* respectively. An analysis of the responses shows that the words *"phone"*, *social media*" and *"email"* appeared more than four times for different participants. However, in these responses, there were variations, for instance, some appeared as *"direct phone calls to communicate personally with customers to solve problems"* as in the case of Participant Nine. In the case of social media, Participants Four, Eight, and Twelve mentioned different social media platforms without mentioning the phrase *"social media"*. For instance, they mentioned *"Twitter"*, *"applications like WhatsApp and Messenger"*, and *"we interact with customers through platforms like Facebook, Instagram, Twitter, and LinkedIn."* Two of the participants worked in the fields of customer service management and the other one was in warehouse and inventory management.

Other responses include *"direct meeting with customers"* and *"personal visits"* in the case of Participants Ten and Eleven. Participant Sixteen notes, *"We offer live chat on our website to immediately answer customer questions and help them make purchase decisions."* Participant Seventeen states, *"We send surveys to customers to get their opinions and evaluate their experiences with our services, which helps us keep improving."* Based on the responses, some participants provided short direct responses while others elaborated on why they use their channels.

B. Data Sharing and Collaboration

One questions were asked under this heading and it pertained to whether the participants' companies use information-sharing platforms with supply chain partners to which all the eighteen participants responded with a "Yes". For further probing, the participants were asked what the benefits of information sharing were.

Participant One noted, *"Yes, we have a supplier platform that ensures security by providing each supplier with their password to access the data they need."* Similarly, Participant Two stated, *"We use the SAP platform to communicate and share information with our supply chain partners. The system is highly secure and requires specific login credentials for each user."* In both cases, the benefit was mutual security since the issue of passwords and specific login credentials was paramount.

In answering these questions, most of the participants specified the information-sharing platform used, for instance, Participants Two and Nine noted they used a platform called SAP. Participant Eight mentioned the SCM system which *"provides end-to-end operation tracking from suppliers to customers."* In the case of Participant Nine, the SAP system was supplemented by the Oracle system *"to link inventory, orders, and delivery data with partners."* Below is a summary of

the platforms used by companies of different participants.

Table 2

A summary of some of the participants' information-sharing platforms.

Participant	Field of Work	Information-sharing platform
Two	Transportation and Distribution Management	SAP
Eight	Customer Service Management	SCM system
Nine	Production and Operations Management	SAP and Oracle
Ten	Inventory and Warehouse Management	AWS
Eleven	Inventory and Warehouse Management	Slack and Microsoft
Twelve	Inventory and Warehouse Management	Microsoft Azure

Some participants did not indicate the information-sharing platforms they use but mentioned the benefits of using them. Participant Three notes that such platforms “*achieve customer satisfaction*”, Participant Four notes that the platforms “*reduce costs and improve efficiency*”, and Participant Five states that “*it improves planning and decision making.*” These were generic statements of the benefits. Below are more specific statements of benefits linked to the field of work.

Participant Fourteen argues that data sharing “*Facilitates faster and more accurate decisions about inventory, production, and distribution*”. This supports decision-making.

Participant Seventeen states, “*Better inventory and shipping management reduces waste and costs of storage and emergency shipping.*”

Participant Eighteen notes, “*It reduces time spent on manual information processing.*”

It is worth noting that based on the responses, many alluded to the benefits of operations in terms of cost reduction and waste elimination. None specifically mentioned that it helps improve the reputation of a company or shareholder, however, this can be deduced from some responses. For instance, Participant Twelve notes that real-time data “*helps all parties track operations accurately, reducing ambiguity or misunderstandings.*” This helps create transparency and build a good reputation. Also, Participant Fifteen states that data-sharing platforms “*help identify potential supply chain risks like delays or material shortages and address them early.*” This helps build a good reputation in terms of reliability and trustworthiness.

C. Technology Adoption

One question was asked under this heading and it relates to whether the participants found that technologies such as the Internet of Things (IoT) and Artificial Intelligence (AI) help their companies achieve supply chain transparency. The matter of technology was mentioned severally in the literature review as a tool that can be used efficiently for transparency through data-sharing and convenience (ease of transmitting information). The previous section has also shown examples of technology used by some of the participants’ companies for activities like data-sharing. Therefore, technology is crucial for facilitating transparency in many aspects of operations through communication.

For this question, all participants responded with a “Yes” even though few provided an explanation of how IoT and AI assist. One drawback concerning this question is that participants were not asked whether they apply AI or IoT in their companies therefore, it is not possible to know whether the participants were responding generally or about something that has been tested, but some seemed to allude to the use of IoT. This study, however, assumes that technology helps achieve transparency based on the positive response.

For those who explained, it seemed as if they used at least one of the technologies mentioned. For instance, Participant Eight states that “*Yes, IoT plays a role in enhancing transparency and achieving efficiency*” however, this was not elaborated further.

Participant Nine notes the significance of technology in connecting devices and sharing accurate data. She states, “*Connected devices provide accurate data about equipment performance in supply*

chains, which helps reduce breakdowns and improve preventive maintenance.”

Participant Eleven who works in the field of inventory and warehouse management noted that they use technology to *“track goods movement and monitor storage conditions (like temperature and humidity) directly in real-time, and this helps reduce losses, especially for sensitive products like food or medical items.”*

D. Stakeholder Assessment

There was one question under this heading and it revolved around stakeholder activities. The question asked whether participants’ partners and customers were interested in their supply chain transparency and if this was the case, how transparency helped improve their relationship. All the participants noted that their partners and customers were interested. The participants provided varying responses and how their relationships have improved.

Participant One notes that customers are more aware and interested in matters of transparency. She states, *“Yes, customers have become more aware and ask questions about things like how certain food items are sourced and stored.”* Some customers are interested in delivery times and may seek transparent information on this.

Participant Two states *“In my daily work I receive constant inquiries from customers about their shipment status and delivery times.”*

When responding to the probing question "How has transparency helped improve your relationship?" there were varying responses but all had a resounding theme that it has helped with continuity, problem-solving, and better decision-making.

Participant Six states that transparency has *“strengthened connections and grown collaboration.”*

Participant Seven mentions that *“transparency helps with continuity.”*

Participant Eight explained more by stating *“Our partners care about supply chain transparency as it's essential for building trust and enhancing cooperation - partners look for clear visibility and accurate data to help them make better decisions and improve performance.”*

Participant Sixteen notes that it has helped with *“Yes, this has led to reducing errors and avoiding conflicts in schedules or required quantities.”*

Participant Ten mentions that transparency is *“fundamental for building trust and strengthening cooperation. Partners seek clear visibility and accurate information to make more effective decisions and improve their performance.”*

In this topic, phrases such as *“strengthens trust between us”, “helped solve problems faster”, “partners feel more confident in dealing with us”, and “reduces doubt and anxiety, especially during crises or delays”* emerged. Thus, supply partners and stakeholders are interested in transparency and this has some benefits for the organizations.

E. Cost-Benefit Assessment

Two questions were asked under this heading. The first entailed how transparency had helped reduce operational costs and how this has happened. To this question, all the participants answered “Yes”. Participant Four notes how this has happened through the identification of waste. He notes that transparency helps in *“identifying waste points in resources like time, energy, or materials has helped improve operational efficiency.”* Similarly, Participant Five noted that *“errors were identified early before they turned into bigger problems requiring costly fixes.”*

Another aspect noted for cost reduction is monitoring and over-ordering. Participant Eight says, *“Through accurate data sharing with partners, we’ve become better able to monitor inventory and avoid over-ordering or material shortages.”* Something that reduces wastage and ensures efficiency. Similarly, Participant Nine notes that transparency has helped reduce operational costs *“by reducing excess product storage costs.”*

Participant Ten mentions how collecting accurate data reduces operation costs. He notes *“transparency allowed us to collect accurate data about market needs and forecast future demand using advanced analytics, leading to better planning and reduced operational costs.”*

Participant Twelve states, *“Transparency also reduced supply chain disruption risks, resulting in significant savings on sudden reduction.”*

Participant Seventeen notes *“improving coordination between suppliers and manufacturers helped increase production efficiency, which reduced operational costs.”*

Participant Eighteen states, *“Thanks to transparency, it became possible to integrate digital tools that reduce dependence on manual operations.”*

Other phrases related to a reduction in operation costs include *“it worked to reduce delays and emergency costs”* and *“it helped in avoiding emergency costs like express shipping or late delivery penalties”*.

Question two relates to whether transparency might expose the company's weaknesses and if this is the case, what are the weaknesses, and if this bears benefits or risks. Out of the eighteen participants, only one noted that transparency did not expose the company's weaknesses, however, that participant did not provide an explanation. Most participants, however, provided reasons for their responses.

Participant Two notes, *“Actually, like any company, being transparent can reveal some weaknesses, but from my experience, I've found that being frank with customers is much better. When we inform them in advance about potential challenges and explain our plans to handle them, they appreciate this transparency and understand the situation.”*

Participant Three notes how competitors can exploit transparency, she states, *“Exposing weaknesses allows us to address them, though competitors might try to exploit them.”*

Participant Five mentions that any risks associated with transparency in terms of exposure are outweighed by the benefits. He states, *“Benefits outweigh the drawbacks, like faster adaptation to unexpected changes in supply and demand thanks to real-time, updated information.”*

There is also the opportunity to fix errors and avoid mistakes. Participant Six states, *“It reveals human errors and sometimes poor planning - no, of course, it brings benefits as we avoid and fix mistakes”*.

Participant Eight notes, *“Transparency might reveal some weaknesses in our company, which is natural because transparency means highlighting all work stages, including aspects that need improvement. Although this might seem risky at first, identifying these points brings benefits that outweigh the challenges, as it helps improve performance and build trust.”*

Participant Ten notes, *“Transparency reveals repeated delays from suppliers or problems in shipping and distribution operations, which draws attention to flaws in time management or partner cooperation.”*

The responses show that transparency does expose the company's weaknesses but this is for the benefit of the company in terms of solving or fixing the issues. Phrases such as *“exposing weaknesses allows us to address them”*, *“but once weaknesses are identified, we can work on improving them through well-studied decisions and implementing proper solutions”*, *“through transparency we improve performance and build trust”*, and *“revealing weaknesses is a golden opportunity to address problems and improve performance.”* These phrases suggest companies can improve weaknesses once identified.

Discussion

The study sought to determine whether supply chain transparency influences reputation risks and costs. Research questions provided a guidance to researching the topic. The first question sought to know whether supply chain transparency is crucial in today's business world. We assumed that supply chain transparency minimizes reputation risks and costs. The findings of the study support this notion. In one of the findings, the participant revealed that customers were interested in how raw materials are sourced and the occurrences of the supply chain. However, all this has been made possible not just through supply chain technologies, but also technology in the form of social media. Gupta and Chopra (2020) note that social media has impacted consumer behavior in terms of engaged purchasers and advertisers have no control over the substance, timing, or recurrence of online discussion among consumers. Moreover, social media usage influences consumer satisfaction in the stages of information search and alternative evaluation (Chopra & Gupta, 2020). This shows that today's consumer are aware of information that affects their potential

products. The notion that advertisers have no control over what happens online highlights an empowered consumer who seeks information and is likely to be influenced by positive or negative perceptions of a product even within the supply chain. Also, social media impacts environmental awareness, sustainability, and business ethics (Xie et al., 2024). For instance, individuals post reviews about the products and services rendered by companies that can affect their reputation. While there will be negative and positive reviews, they can be a reliable way of gauging a company based on whether the negative and positive reviews are many. Yet, we assume that the interest of individual consumers on factors that affect the supply chain of the products they consume is not high compared to those of companies engaged in business-to-business scenarios. Most companies will want to know how reliable, transparent, and trustworthy a company is because it will affect their businesses.

The findings of this study have shown that most people are concerned with trust, reliability, efficiency, and timeliness. One drawback we note in collecting data is that we did not ask the participants to specify whether they were dealing with individual consumers or companies/businesses while providing their responses. Businesses in this case represent stakeholders such as suppliers, distributors, manufacturers, or administrators. This would have enabled us to know what factors of the supply chain process matter to end consumers and businesses as we assume they care about different things. Despite competing interests by individual consumers and businesses, the supply chain process affects the end products and other factors such as reliability and ethics. A streamlined supply chain that eliminates waste and is efficient is likely to meet the standards of individual consumers and businesses especially since they rely on that supply chain for their operations. This can improve the reputation of the companies in the supply chain and reduce costs associated with delays and unreliability. The findings have shown that companies rely on communication with stakeholders to understand their weaknesses and fix problems whether through technology or simple acts such as surveys. Moreover, transparency is beneficial to companies when it comes to problem-solving and decision-making, factors that were highlighted in the literature review section (Montecchi et al., 2021; Azmi et al., 2022).

One of the research questions sought to know how transparency improves trust among stakeholders and in turn their reputation. The literature review mentioned the importance of communication in realizing this, and the findings have shown that this can be achieved through social media and technology. Most themes regarding this aspect had to do with consumer education, sharing and collaboration, stakeholder assessment, and technology adoption discussed in the findings section. Examples include social media usage, real-time/live chat, direct visitation or contacting, use of data-sharing platforms such as SAP and SCM, continuity, and collaboration among others. There was also the question of whether technology enables supply chain transparency. The findings show that this is the case since most of the participants use technology to contact/communicate with their stakeholders or disclose company information. Zeltst et al. (2019) note that digital technology can enhance supply chain transparency through relationship-building and monitoring, which this study has found. The study also found that through social media, AI, IoT, and other technologies, it is possible to achieve certain transparencies such as truth-telling, documentation of accountability, tracking, logistical status, forum engagement with users, documentation of organizational developments, and provision of emerging news concerning companies. Therefore, technology is crucial to achieving transparency.

Another question sought to determine whether companies experience a decrease in costs for being transparent. The study found this to be the case as one of the participants indicated that being transparent enabled them to identify waste points in resources like time, energy, or materials, which helped improve operational efficiency. The issue of cost in this case should not be deemed as material/financial only but also time and resources as they are interlinked. Another finding shows that transparency helps to determine errors early before they turn into larger problems that would require costly fixes. This can happen in a company internally or externally through transparent information-sharing. Also, the need to be transparent may require the use of technology or

automation that reduces manual errors that tend to occur (Andiyappillai, 2021). This can be cost-efficient in terms of time and quality provision.

Conclusion

In summary, supply chain transparency is essential for mitigating reputational risks and reducing costs. This is because stakeholders prefer to collaborate with individuals and companies that are trustworthy, reliable, and efficient at the same time. One way that stakeholders can be transparent is by sharing information about their operations and finances. This is crucial because it enables other stakeholders to make decisions such as if they want to partner or stop partnering with a company. This helps disclose the company because it avoids misunderstanding or misleading information from outside parties that could jeopardize the company's reputation. Companies should also provide truthful or factual information with the products and services they provide because this is also a way of being transparent. For instance, when discussing with users or sharing information on social media, companies should provide factual information because doing the contrary can create a reputation risk for the company.

This study has found that disclosing company information can be highly beneficial for the company in terms of increasing collaboration, identifying and solving problems, eliminating anxiety, building confidence, and reducing costs. One of the findings showed that the setback of disclosing information such as highlighting company weaknesses does not outweigh the benefits. In reality, such companies can make amends and improve on the areas of weaknesses. However, the risk of theft for information that makes a company thrive is high but this can be managed if the company can balance the type of information they disclose. Therefore, companies should plan on the type of information they want to share without risking confidential information related to their operations.

The study had limitations like any other study the first being that one cannot verify the result of a qualitative study due to the open-ended nature of the questions. This is because participants have more control over the content of the data collected. Thus, the research is subjective more than objective on the side of the participants. However the relatively high number of participants (for a qualitative study) who participated and their almost similar responses for each question makes the study reliable. Due to this limitation, interpretation is limited and this is because personal experience and knowledge influence observations and understanding. Second, the research process was labor-intensive, particularly during the data collection and analysis phases. Participants completed the survey independently at their convenience, with data collection occurring over several days. The use of open-ended questions in the survey required careful review and coding of responses. Additionally, significant effort was invested in analyzing the data to identify recurring themes and patterns.

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Appendix

Survey Questions

Participant Information

1. What is your age group?
2. What is your gender?
3. Company/Organization
4. Years of work experience
5. Job title/position

Consumer education

- 1) Do you publish reports detailing your supply chain practices and sustainability efforts? If not, why not?
- 2) Does your company publish reports that detail your supply chain practices and sustainability efforts? If not, please explain why.

Data sharing and collaboration

- 1) Does your company use information-sharing platforms with supply chain partners?
If yes, what are the benefits?

Technology adoption

- 1) Do you find that technologies like IoT and AI help your company achieve supply chain transparency?

Stakeholder assessment

- 1) Are your partners or customers interested in your supply chain transparency? If yes, how has transparency helped improve your relationships?

Cost-benefit assessment

- 1) Has transparency helped reduce your company's operational costs? Please explain.
- 2) Do you think transparency might expose your company's weaknesses? If yes, what are these weaknesses? And do you believe exposing them brings benefits or risks?