

Explaining the Impact of Supply Chain Transparency on Sustainable Consumption

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1.1. Background

Over the past two decades, sustainable consumption has garnered widespread attention from various stakeholders around the world such as the government, the general public, international organizations, researchers, and academia. Due to the effects of climate change, usage of scarce resources, global warming, and waste production, there's an urgent need to adopt sustainable practices for the well-being of the next generation (Ottman, 2011; Wei et al., 2017). Thus, nations across the world have started taking initiatives to lessen the harmful environmental practices associated with economic activities. This acknowledgment and awareness about the environment have led to the establishment of sustainable consumption which emphasizes sustainable practices that result in a lesser negative impact on the environment (Joshi et al., 2019).

The term sustainable consumption refers to "the use of goods and services that respond to basic needs and bring a better quality of life while minimizing the use of natural resources, toxic materials, and emissions of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generations" (Kongress Oslo, 1994). Notably, the essence of sustainable consumption alludes that whatever we purchase, consume, and dispose of, should not impact our environment in a way that the earth becomes uninhabitable for the generation to come because consumer choices not only have an impact on the current generation's but also on how well the future generation can meet its requirements (Lee, 2014). Since there has been a growing demand for sustainable products in the market, companies need to disclose information about the products as modern-day consumers are not only interested in the end product, but also in the sourcing, production, and distribution processes that bring it to market (Kirchoff et al., 2017). From different

empirical studies, it has been found that a staggering 87% of consumers have become increasingly conscious of the social and environmental implications associated with a product (Bonini & Oppenheim, 2008). Besides, consumers make purchasing decisions based on the sustainability information of the product (Grunert et al., 2014; Marucheck et al., 2011). As a result, consumers' need for comprehensive product information related to production and the intricacies of the supply chain system has increased (Marucheck et al., 2011). Thus, it has become imperative for companies to maintain transparency across all stages of the supply chain.

Supply chain transparency (SCT) implies the practice of disclosing detailed and accurate information about operations and products, such as their origin and sourcing, manufacturing processes, costs, and logistics (Bai & Sarkis, 2020). One of the benefits of maintaining transparency between organizations is how the impact of the bullwhip effect is reduced (Fisher et al., 1997; Dejonckheere et al., 2004). Thus, accurate demand forecasting is done as a result of the supply chain network's various stages being informed on demand changes through information sharing (Lamming et al., 2001). On the contrary, many renowned companies are making information accessible to consumers as they are playing a significant role in supply chain operations as important stakeholders (Ta et al., 2015). Besides, there is an increase in demand on supply chains to be transparent about the products from various stakeholders (New, 2010). As the demand of consumers is increasing with regard to embedding transparency and accountability into the supply chain process, new opportunities along with reputational risk have heightened compared to before (CDP, 2017). Realizing the significance of social conscience in sourcing, apparel companies have started to develop a transparent supply chain matrix (Andersen & Skjoett-Larsen, 2009; Perry & Towers, 2009). Norton, Ryan, and Wang (2015) proposed three ways for building strong transparent supply chains in a company (i) Prioritizing the supply chain process (ii) Taking initiative and creating goals along with suppliers (iii) Assessing continuous results for achieving the planned goals.

In addition, researchers have found that the information provided on social sustainability activities performed by companies has a positive impact on customer purchasing behavior (Buell & Kalkanci, 2021; Buell et al., 2017). In fact, several companies include supply chain information in their product pages to let customers know how their product is sourced and manufactured (Awaysheh & Klassen, 2010; Carter & Easton, 2011). For instance, fashion brand H&M took an initiative known as the "transparency layer" where they provide information related to raw materials sourcing, manufacturing, and sustainability of each product through their social media pages (Paton & Maheshwari, 2019). Similarly, the key components of Unilever's sustainable sourcing initiatives are high standards for the network of suppliers it works with, continuous improvement policies that drive change throughout the supply chain, the advancement of regenerative farming methods, and consumer disclosure of these practices (Unilever, 2021). To foster consumer trust and enhance brand intention, firms make their information on environmental and social policies accessible to consumers (Mollenkopf et al., 2022). However, a firm may not be able to fully comprehend its risks or develop its sustainability initiatives if there is a lack of transparency in its supply chain (Sustainability Consortium, 2016). In order for a firm to better understand its increasingly complicated supply chain and lessen its exposure to business risks, it also becomes crucial to create a more transparent supply chain (Laurell, 2014). Thus, it has become crucial for consumers to embrace a sustainable lifestyle to offset severe environmental changes and unethical practices, and in order to accomplish this, companies must maintain supply chain

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transparency because people will be more interested in sustainable consumption if firms make the supply chain process visible. If consumers observe that each stage of the supply chain is taking place in a way that is not harming the environment, then people will be more likely to shift towards sustainable consumption.

1.2. Problem Statement

It is substantiated by research that consumers have become very concerned about sustainability issues and are demanding product information that details its sustainability features. However, very few studies have investigated the relationship between supply chain transparency and sustainable consumption. Although prior research has explored supply chain transparency and sustainability with regard to apparel, agri-food, automobile, transportation, and global commodity, there have been few studies on how specific dimensions of consumer perception explains the relationship between supply chain transparency and sustainable consumption in the context of Bangladesh. On this ground, this paper aims to explain the impact of supply chain transparency on sustainable consumption and determine the factors that best explain this relationship.

Furthermore, consumption patterns have mostly been the focus of empirical researchers in the USA and Europe, who were often conceptually motivated by the models that emerged from research on consumption behaviors (Spaargaren, 2003). On the contrary, very few studies in Bangladesh have explored the driving factors of sustainable consumption, especially with regard to supply chain transparency. Indeed, owing to the urgency of adopting sustainable practices, it has become imperative to make people lean towards sustainable consumption. In fact, empowering consumers with the necessary information will have a profound impact as they are more likely to incline toward sustainable consumption (Ehrich & Irwin, 2005b). This empowerment can only be achieved when consumers have access to information regarding the social, environmental, and economic impact of their consumption choice.

1.3. Research Questions

This research revolves around a set of questions that seek to explain the relationship between supply chain transparency and sustainable consumption in more detail. The research questions are: RQ1: What role does supply chain transparency play in building sustainable consumption?

RQ2: Do trustworthiness and perceived product quality play any mediating role in explaining the impact of supply chain transparency on sustainable consumption?

1.4. Research Objective:

The objectives of this research are:

- i) To evaluate the impact of supply chain transparency on sustainable consumption

ii) To investigate the mediating role of trustworthiness and perceived product quality in explaining the impact of supply chain transparency on sustainable consumption.

1.5. Significance of the study

The study of the effect of supply chain transparency on sustainable consumption acquires critical relevance in an era characterised by increased consumer demand for ethically produced goods and increased consumer knowledge of environmental concerns. At current times, the concept of supply chain transparency is spreading around the world as customers become more aware of the ethical and environmental repercussions of their purchase choices. The study might illuminate how transparent supply chains can support sustainable consumption habits in Bangladesh, where sectors like textile and apparel play a significant role in the economy. Transparency in the supply chain has become essential in influencing consumer perceptions and purchasing decisions. The study's commitment to analysing the relationship between transparency and sustainable consumption in an era where customers are more aware of the sources of their purchases bears significant importance and provides insightful information. The lack of empirical data addressing the relationship between supply chain transparency and sustainable consumption is the research gap in the context of Bangladesh. By offering context-specific insights, this study attempts to reduce the research gap and lay the groundwork for further investigation and useful interventions. This research advances sustainable practises in the business sector by illuminating how supply chain transparency affects customer behaviour. The study's emphasis on trustworthiness and perceived product quality as mediating factors also contributes to its increased importance. As the cornerstone of enduring business-consumer interactions, trust is especially important in the context of supply chain transparency. This study explores how customer views of a brand's ethics and integrity may be influenced by transparent supply chains, which can help build consumer trust. The results of this study have ramifications for Bangladeshi firms looking to match their operations with moral and environmental standards in a larger context. The study advances practical knowledge of how companies in Bangladesh may apply efficient supply chain transparency tactics to promote sustainable consumption by rooting the research in empirical data. The research not only advances scholarly discussion but also provides useful advice for companies moving towards sustainability and ethical consumerism by illuminating the complex interaction of various factors. This research illuminates the way to a more ethical and sustainable future in a world where ethical issues are shaping society more and more.

Chapter 2: Literature Review

2.1. Supply Chain Transparency (SCT)

Even though it was not intended for supply chains to be transparent (Bateman & Bonanni, 2019; Parmigiani et al., 2011), transparency is now being recognized as a crucial component of

sustainable supply chain management (Sodhi & Tang, 2019; Carter & Rogers, 2008). According to Mol (2015), there are four different types of supply chain transparency (i) Public transparency - which provides direct information on the ecological impact of production (ii) Management transparency - which indicates information exchange between or within firms (iii) Regulatory transparency specifies information disclosure to the concerned public (iv) Consumer transparency alludes to product information with regard to sustainable practices. The ability of a company to convey to stakeholders how its supply chain actions align with stated sustainability objectives is significantly aided by transparency (Castillo et al., 2018). Some studies referred to transparency as the key characteristic of an organization by emphasizing that the interactions between organizations are transparent. People generally view transparency as a positive initiative and praise the companies that openly provide information on the social and environmental impact of their actions (Gardner et al., 2019). To cite an instance, a Swedish company named Nudie Jeans Co. has established a goal to become the most transparent company in the world (Egels-Zandén et al., 2015). *Supply chain transparency* refers to the practice of providing comprehensive accurate information about production and operations including sourcing of raw materials, manufacturing process, supply chain costs, and logistics (Bai and Sarkis, 2020). However, there are terminologies that are closely associated with SCT such as visibility, traceability, and disclosure. Here *supply chain visibility* is an organization's ability to compile and organize data regarding supply activities, particularly for internal stakeholders (Bartlett et al., 2007; Somapa et al., 2018, Sodhi and Tang, 2019) and *traceability* refers to a wide variety of organizational practices and technology frameworks required to improve efficient information integration (Ringsberg, 2014). On the contrary, disclosure refers to providing organizational information to both internal and external stakeholders (Schnackenberg et al., 2020). In response to the demand of consumers, numerous companies disclose their sustainable practices with external stakeholders (consumers) in an effort to establish supply chain transparency for building a sustainable supply chain (Christmann, 2004; Carter & Easton, 2011b; Busse, 2015). In order to demonstrate a company's commitment to ethical practices, many companies have joined organizations like the Fair Labor Association where its principal goal is transparency (Fair Labor Association, 2010). In fact, since 2012, The California Transparency in Supply Chains Act was enacted to eliminate any dangers associated with human trafficking in the international supply chains of US-based firms (Hunter & Kepes, 2012). This act has made it easier for consumers to know which companies are socially responsible and can manage their supply chain sustainably allowing consumers to make better consumption choices (Corporate Law Report, 2011; CLI, 2012).

There are many instances where companies started maintaining supply chain transparency in order to show their commitment towards sustainability. In the food sector, a multinational manufacturer of food products Nestlé publicly states that the company is aiming to achieve a resilient and sustainable food supply chain (Nestlé, 2021). Also, a Swiss company named Heidi.com SA set itself apart from other apparel companies by incorporating openness where both male and female gets to see the entire supply chain process through an attached tag to the clothing item (Sodhi and Tang, 2019). According to research, consumers are more satisfied and perceive a supplier as having more value when companies maintain supplier transparency (Eggert and Helm, 2003). Even some companies took the initiative to share their supplier details with their stakeholders for instance Nike began revealing its contract suppliers in 2005 which included the name, location, and function of each supplier, and made information readily available on their website (Doorey, 2011).

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Similarly, Apple began to disclose the details of its top 200 Tier 1 suppliers in 2017 in order to demonstrate its commitment to sustainable supply chain practices. In order to ensure workplace safety, after the Rana Plaza incident in Bangladesh, over 166 companies from 20 countries including worker unions of Bangladesh formed Accord by signing a 5-year pact in 2013. In fact, these organizations carefully examine the suppliers' compliance with workplace safety regulations and then publish the audit report online. (Caro et al. 2018). As far as supplier transparency is concerned, Gold et al. (2010) state that companies having transparent supply chain partners boost their supply chain transparency and make profits by highlighting social, environmental, and other value-added features on their products. Gold et al. (2010) further assert that the firms on which supply chain transparency was imposed by legislation, can view it as a competitive advantage as stakeholders go from assessing merely the final product to assessing the entire supply chain process. In order to win over customers' trust and boost sales, companies also employ supply chain transparency as a marketing tool (Werbach, 2009). According to Kline (2017), 73% of those who participated in the 2016 Label Insight Transparency Study stated that consumers are willing to pay extra for a product that is equipped with supply chain transparency. In addition, prior studies also reveal that customers are willing to spend more for a product when there's transparency in the product information (Owusu and Anifori, 2013; Xu et al., 2012). Traditionally, both public and private sectors have been using several disclosure tools such as certification schemes and sustainability reports (Egels-Zandén et al., 2015). But now various forms of transparency instruments have been developed such as different footprint calculators, unbiased local monitoring projects, scorecards, traceability platforms, eco-labels, and many more (Grimard et al., 2017). According to some studies, customers are willing to pay for specific social attributes such as non-animal testing or non-child labor (Auger et al., 2008). Even though consumers' awareness of sustainability has influenced them to pay a premium price in order to change their consumption habits, still they are deprived of transparent information through which they get to choose which product is suitable for them (Jacobsen & Dulsrud, 2007). Thus it is clear that consumers will be able to compare goods more easily and pick those with more transparent information with the help of ecologically and socially conscious information, which will ultimately boost the firm's market share and profits (Ganesan et al., 2009; Meise et al., 2014).

2.2. Sustainable Consumption (SC)

The term 'Sustainable Consumption' was first explicitly established in 1994 at the Oslo Symposium and now, it is one of the 17 sustainable development goals proposed by the United Nations in 2015. Modern consumption habits and manufacturing systems that rely on conventional techniques and industrial technology are typically unsustainable. Due to its active role in society, the industrial sector has played a major role in environmental exploitation and pollution. Owing to rapid industrialization and the subsequent rise of water levels, air, and land pollution, questions are being raised about the unsustainable nature of the current growth trends (Tseng & Hung, 2013) The paradox that humans and natural environmental systems are inextricably linked is becoming more and more urgent. Human activity is potentially eroding or destroying the planetary boundaries that are necessary for human survival (Steffen et al., 2015). Now, humans are at crossroads and must develop solutions to lessen the harm that is impacting the world's natural systems. The key to this

is changing our consumption habits. Many of the environmental concerns are rooted in the way humans use resources like food, energy, water, and other natural resources (Ruby et al., 2020). Given that many of the population's fundamental requirements are unfulfilled, it is significant that both overconsumption and underconsumption put a strain on the environment, compromising the preservation of renewable resources and escalating social disparities (Clark, 2007). During the 1990s, household energy efficiency was the main topic of study for sustainable consumption and during the late 1990s, the shifting perception of consumption and the development of new consumption patterns became major issues. After that period, the Oslo Symposium formally established the idea of sustainable consumption, with pertinent research concentrating on the environmental effects of various consumption behaviors (Liu et al, 2016). From past studies, it has been affirmed that private consumption is increasingly held responsible for resource depletion and environmental damage (Gardner et al. 2014). According to Micheletti and Follesdal (2007), the fundamental cause of unfair conditions in developing countries with regard to child labor, poor working conditions, and unfair trade terms, boils down to the choice of affluent consumers. According to a study conducted by BCG-MIT, around 4000 managers from 113 countries advocated that sustainability is positively advancing within the worldwide business community (Haanaes, 2012). In the context of sustainable consumption behavior, researchers have employed the theory of consumption values to explore the influencing elements for consumer purchasing behavior across various customer segments (Lin & Huang, 2012; Biswas and Roy, 2015a, 2015b). Several models have been created and used in the past to explore various concepts of sustainable consumption, including pro-environmental behavior (Dietz et al., 1998) and green choice behavioral patterns (Young et al., 2010). A number of academics proposed fundamental theories for comprehending how customers' attitudes toward adopting green items and behavior emerge for instance theory of planned behavior (Ajzen, 1991), perceived behavior control and norm activation theory (Schwartz, 1977), theory of reasoned action (Ajzen and Fishbein, 1980). Conversely, the models that have been used in relation to pro-environmental behavior are the Attitude-Behavior-Context model (Stren, 2000) and the Value-BeliefNorm model (Stern et al., 1999).

At present, it has become necessary to understand the importance of sustainable consumption as most people don't realize how their consumption habits contribute to the deterioration of the ecosystem, society, and economy (Lee, 2014; Yadav & Pathak, 2017). Governments as well as companies from around the world are making an effort to inform people about leading sustainable ways of life while encouraging sustainable consumption habits (Joshi & Rahman, 2017). Reduced consumption, increased consumption of sustainable goods and services, energy conservation, and a shift towards purchasing from environmentally friendly companies are all necessary for sustainable consumption (Peattie, 2010). In order to prevent harmful environmental consequences, sustainable consumption aims to increase the purchase of green goods (Liobikiene & Bernatoniene, 2017). Previously most research was focused on key drivers of sustainable consumption, particularly in relation to how consumer choice and behavior affect environmental quality (Wang et al., 2014). According to Reheul et al. (2001), roughly 30% of customers generally have a favorable attitude toward sustainable consumption. These consumers assert that they pay close attention to the sourcing of the product and ecological packaging, and furthermore, they associate sustainable products with better quality, taste, and safety and are good for the environment and economy (Vermier, 2005). However, numerous research has discovered a weak

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correlation between consumers' attitudes toward sustainable consumption and their actual consumption behaviors, known as the attitude-behavior gap (Tanner & Wölfling Kast, 2003; Tseng & Hung, 2013). Besides, most of the research was focused on studying the key determinants of sustainable consumption with regard to how individual choices impact the quality of the environment (Liu et al., 2012; Wang et al., 2014; Young et al., 2010). In fact, researchers also studied how to reduce the attitude-behavioral intention gap so that consumers can translate their values and beliefs into sustainable purchases (Vermeir & Verbeke, 2006). Apart from that, with the use of the social practice model, many studies emphasized reducing the environmental impact by balancing daily consumption including clothing, food, energy usage, and accommodation (Spaargaren, 2003). There is a large corpus of empirical research on sustainable consumption that focuses on single behaviors (such as buying fair-trade coffee or recycling paper) and it provides valuable insights by addressing specific issues. On the other hand, regarding the overall area of sustainable consumption research, they offer a fairly fragmented picture of evidence that is difficult to compare to other researchers' findings and remains unresolved for policy-makers trying to encourage behavioral change (Heiskanen et al. 2014).

2.3. Supply Chain Transparency and Sustainable Consumption

Transparency is a crucial component of sustainable supply chain management through which companies proactively disclose information about the processing of products to their stakeholders (Carter et al., 2019). Transparency is often understood to comprise a set of practical requirements required to raise sustainability standards and practices (T, A Gardner 2018). In addition, transparency can simplify complicated supply chains, assist different players in identifying and reducing risks, and determine where progress is being achieved. Besides, the sustainability of commodity production can change with improved supply chain transparency (T, A Gardner 2018). Three characteristics of corporate disclosure are distinguished by an initial framework for supply chain transparency: (i) Suppliers who are involved in the production (ii) information on the sustainability circumstances affecting these suppliers and (iii) the sourcing and procurement procedures of buying firms (Egels-Zandén et al., 2015). Two of the most crucial applications of supply chain transparency are understanding the impact of various initiatives to enhance sustainability outcomes and evaluating the contribution that various interventions have made in bringing about the necessary improvements (Lambin et al., 2014). Diving deeper into SCT, there have been studies on how the nature of the information provided by companies determines the type of reaction and behavior exhibited by consumers (Muthulingam et al. 2013, Roels and Su 2013, Hainmueller et al. 2015, Kraft et al. 2018). Because of technological advancements, consumers now have easier access to information and can make better decisions about a product. These developments have allowed customers to learn more origins and manufacturing processes of a product (Coff 2010). Thus, this improved informational accessibility is leading to promoting sustainable consumption habits (Y-N. Cho 2019). Previous studies have demonstrated that greater consumer trust in a company's communications can result from the disclosure of information (Kang and Hustvedt 2014, Kalkanci et al. 2016, Pigors and Rockenbach 2016a). Regarding supply chain transparency, several studies have focused on how SCT helps build sustainable supply chain management practices. Numerous studies have revealed that communication of sustainable supply

chain practices positively influences consumer purchasing decisions (Buell and Kalkanci 2021). Besides, due to the growing inclination towards sustainable consumption, consumers are willing to pay more for sustainable products (Nielsen 2015). Although customers are ready to pay a premium for sustainability or change their consumption patterns, they are however still in need of reliable information to make wise decisions (Jacobsen and Dulsrud, 2007). One of the main factors is the lack of readily available information on the transition from sustainable production to sustainable consumption (Meise et al., 2014). More pertinent information is needed as a result of customers' growing awareness of the social impact a product has during the production process (shao 2016). On the contrary, with the help of social media, smartphone applications, and online communities, customers are better equipped to overcome information gaps and get greater insight into the features of products (Watts 2011). However, research indicates that customers who buy online are more likely to do so than those who do so in person because they have more time to carefully consider all available information and make sustainably minded decisions in the comfort of their homes (Carrington 2014). Supply chain information disclosure strengthens decision-making and accountability such as by calling out unsustainable practices, and by assisting those involved in the supply chain to make more responsible choices sustainably (T, A Gardner 2018). With regard to sustainable consumption, most people agree that the setting of sustainable consumption represents a social dilemma since those who practice sustainable consumption are ready to give up some immediate personal gains in exchange for a future community benefit (Dawes 2000). Sustainable consumption deals with securing future needs by enhancing the quality of life while preventing ourselves to degrade our environment (Ahamad 2018). A key strategy for conserving natural resources and attaining sustainable development for the country is the accumulation of consumer behavior with regard to sustainable consumption (Nguyen et al., 2017; Quoquab and Mohammad, 2016). Having access to information on sustainable consumption encourages customers to change their behavior and become sustainable consumers by reducing their environmental impact (Ahamad 2018). Thus, it is understood that consumption patterns can be changed for the better if consumers have access to transparent information about how products are being processed.

2.4. Trustworthiness

One's belief in another person's ability to act honestly, in good faith, and without abusing their position even when that opportunity arises is known as trust (Cummings & Bromiley, 1996). According to Erdem & Swait (2004), trustworthiness is the degree to which a person believes a company will uphold its promises. According to Morgan and Hunt (1994), trust is present when there is assurance in the reliability and honesty of the opposite partner. Besides commitment or loyalty, trust has long been recognized as a mediator between consumers and brands (Fournier, 1998; Morgan & Hunt, 1994). According to Delgado-Ballester et al.'s (2003) theory, brand trust is made up of brand reliability and brand intentions where brand reliability is the consumer's belief that the brand will meet their expectations and brand intention is the consumer's belief that a brand has their best intentions towards consumers. Willmott (2003) proposed a concept of the citizen brand in which transparency is one of the key components of the relationship formed through brand trust. Besides, transparency is expected to be connected with trustworthiness as the notion of transparency reflects the relationship of trust and belief between a consumer and a brand (Hustvedt

2013). Moreover, Kitchin (2003) asserted that trust is not only built through a brand's transparent activities but also from customers' perceptions of the brand's objectives in each circumstance whether the activities are transparent or not. Consumers' loyalty to a brand, purchase intent, and product preferences are all positively impacted by the trust built between consumers and companies (Matzler et al. 2008). Many renowned companies such as Microsoft, Nike, Gap Inc have taken initiatives by being transparent about their supply chain, labor issues and planning community outreach programs in order to build consumer trust (Steigrad 2010; Tu 2012). Compared to other benefits such as brand commitment and stakeholder engagement, building trust is the top benefit of transparency for companies (Marks & Spencer and Globescan 2015). According to 75% of respondents in a poll, being transparent helps build trustworthiness between consumers and companies (KPMG and Global Reporting Initiative 2014). In fact, supply chain transparency has been acknowledged as a powerful strategy for companies to increase customer trust. It has been found that supply chain visibility enhances consumer trust in the socially responsible practices of a company. Furthermore, prosocial customers may be persuaded to purchase a product if they trust a company's claims of good SR practices (Kraft et al. 2022). Additionally, trustworthiness is probably to have a beneficial impact on how customers perceive that company. It has been demonstrated that increasing trustworthiness has a favorable impact on perceptions in both interpersonal and corporate interactions (Belogolovsky and Bamberger 2014; John, Barasz, and Norton 2016). In addition, according to Mohan et al. (2020), providing pricing information boosts customer trust and purchase intention in a brand. According to past studies, when a company discloses information in its communication, it increases consumer trust in that company (Kang and Hustvedt 2014, Kalkanci et al. 2016). Apart from information disclosure, greater visibility in the supply chain increases consumer trust which reduces any uncertainty that consumers might have towards the operations of the company (Kraft et al. 2022). On the contrary, consumers expect verifiable information that goes beyond a simple emblem or mark to learn more about the process-oriented qualities. When consumers gain access to information across the supply chain related to standards as well as processes associated with certifications, it has a favorable impact on consumers' development of trusting beliefs. Moreover, information about brands and certifications' reputation has a significant influence on the growth of trust (Zhang 2016).

2.5. Perceived Product Quality

The subjective and individual assessment of product standards is product quality (Falk 2010). According to Zeithaml (1988), perceived quality is a consumer's assessment of a product's overall excellence and an assumption of the functional features of the product whereas quality is the perfection of a good or service, and it can be analyzed in terms of either objective quality or perceived quality. Since a person must judge quality, objective quality may not even exist (Zeithaml, 1988). Because physical dimensions can be measured and changed through quality management systems, companies usually concentrate on the objective quality of their goods and services (Zhang, Linderman, & Schroeder, 2012). Perceived quality, on the other hand, is intangible, subjective, and frequently variable, and it is more challenging for companies to control and measure than objective quality thus, instead of using objective measurement, customers frequently base their perception on comparison (Beneke, Brito, & Garvey, 2015). The manner in

which we analyze and interpret the stimulus or information entering our senses determines the quality of our perception (Agyekum 2015). The process of perception is how a person chooses, arranges, and interprets information inputs to generate a meaningful image of the outside world and our ability to react depends on how we understand a situation or a series of circumstances (Kotler, 1997). Besides technical product features such as safety, price, or social conditions under which products are produced and raw materials are delivered, the environmental effect is seen as a product quality dimension. However, not all quality dimensions are readily apparent to supply chain actors. This is especially true for the environmental aspect, as sustainable manufacturing conditions cannot be reflected in the finished product without the inclusion of extra information (Wognum 2010). According to the directory of certifications maintained by the Ecolabel Index, there are currently over 435 environmental labeling programs in 197 countries and 25 industries. These initiatives create voluntary standards, offer verification services, and accredit businesses and supply chains (Castka and Corbett, 2015; Delmas et al., 2013). According to Grunert et al. (2013), environmental labels are in competition with product features including brand, nutritional information, quantity, and price when it comes to influencing consumer decision behavior. In addition to providing assurance of intra-chain quality in transactions between supply chain participants, labels are employed to facilitate product origin tracking. Labeling is a classic illustration of how companies support consumer policy objectives by providing offers to customers who are environmentally and/or socially conscious (Ulf Schrader 2011). The labels increase consumers' willingness to pay and perceptions of product quality when sustainability-related information is disclosed (Yoon-Na Cho 2019). In the food service sector, there is evidence that customers have a positive perception of quality from the information offered by eco-labels (Loureiro and McCluskey, 2000; Loureiro et al., 2001; Grankvist and Biel, 2007). Besides, consumers get more concerned about the quality of the product and thus they require information about its materials and processing methods. In a study, it has been found that when consumers perceive supply chain transparency as a positive signal, they have a higher perception of quality which indicates high SCT leads to high perceived quality where high SCT represents plenty of information regarding sustainable sourcing practices. Moreover, SCT not only helps protect businesses from consumers' negative quality perception after a product recall but even low levels of SCT were found to aid in the recovery from negative perceptions (Mollenkopf 2022). Furthermore, another study suggests that despite the fact that supply chain news has nothing to do with quality control procedures, it can still undermine consumer trust in product quality (Nichols 2019).

2.6. Research Framework and Hypothesis

The purpose of this study is to explain the impact of supply chain transparency on sustainable consumption where sustainable consumption is the dependent variable. In Figure 1, it is clearly illustrated the conceptual model depicting the relationship between the variables. It is specified that supply chain transparency is the independent variable that impacts sustainable consumption. In tandem with the analysis, when it comes to determining the nature and scope of the impact that supply chain transparency has on sustainable consumption, both trustworthiness and perceived product quality operate as mediating variables.

2.6.1. Supply Chain Transparency and Sustainable Consumption Hypothesis

According to Harbert (2020), supply chain transparency is made up of two essential components: The first step is visibility, which entails identifying and collecting information from all supply chain actors. This stage makes sure that every part of the business is rigorously scrutinized and that no aspect of it is obscure. The second component, disclosure, emphasizes the crucial function of communication. In order to give all supply chain stakeholders a thorough awareness of all the processes involved, this part entails sharing the data and information gathered. Kassoy (2010) asserts that transparency is essential for an organization to achieve sustainability. There is a greater need for transparency in product information due to the growing concern among consumers about product safety and sustainability (Dimara 2005). Consumers are increasingly eager to learn more about the place of origin, the manufacturing process, and the social and environmental effects of the products they purchase. In order to satisfy the consumer's desire for product qualities, a smart disclosure of information derived by exchanging information along the supply chain is necessary (Jarman et al 2016; Luna-Reyes et al 2014). The underlying principle is based on the notion that customers who are better informed would choose sustainable products in accordance with their beliefs in terms of their environmental and social values. Before making a purchase, consumers research products in-depth and assess their utility and feasibility. However, due to the high costs associated with obtaining this information, supply chain transparency remained largely detached from customers. Since information technology has advanced, customers may now easily acquire supply chain information due to a decrease in the cost of their search. As a result, this improved informational accessibility has created an environment conducive to promoting sustainable consumption habits (Taehyun Ko 2022). Thus, based on the above discussion, the following hypothesis is suggested:

Hypothesis 1 (H1). *Supply Chain Transparency positively affects sustainable consumption*

2.6.2. Mediating Role of Trustworthiness Hypothesis

There are two sources of trust production such as cognitive trust and institution-based trust. Cognitive trust is founded on information and logical decision-making; trust only develops when the purpose and competence of another are demonstrated by accurate information whereas institutional-based trust is created beyond a single transaction and one particular relationship and is based on a range of institutional variables including the legal system and structural assurance Gefen, Karahanna, and Straub (2003). The existing literature on organizational trustworthiness asserts that stakeholder views of ability, benevolence, and integrity shape the impression of an organization's trustworthiness. The term "ability" refers to the knowledge, aptitude, and qualities that enable a business to not only function but also to shape its interactions with its stakeholders and customers. A company's benevolence is measured by how much compassion it is seen in addition to an egotistical economic motivation. Integrity is the stakeholder's belief that a company upholds a set of ethical standards that they deem acceptable. Transparency is an essential

component of this equation as people build opinions of traits based on their visible manifestations, or signals (Bruner and Tagiuri 1954; Estes 1937). Supply chain transparency serves as an integrity signal that influences how consumers perceive a company's skill, generosity, and integrity. Since this is required for the disclosure itself, the company's disclosure of supply chain information communicates to stakeholders that the firm has access to its supply networks. By making the effort to obtain and disseminate the information, an organization is also demonstrating an innately altruistic concern for individuals who are impacted by its supply chain practices. With regard to sustainability, the availability and reliability of product information that can be tracked across the whole supply chain is what allows consumers to trust sustainable claims (Zhang 2016). According to Kalkanci et al. (2016), voluntary disclosure of a company's social and environmental externalities outperforms obligatory disclosure which ultimately increases consumer trust and purchase intentions. Thus, through a transparent supply chain, firms will be able to build consumer trust which will ultimately be influencing them to propel toward sustainable consumption. Therefore, trustworthiness mediates the relationship between supply chain transparency and sustainable consumption.

Hypothesis 2 (H2). *The relationship between supply chain transparency and sustainable consumption is mediated by trustworthiness.*

2.6.3. Mediating Role of Perceived Product Quality Hypothesis

Manufacturers and marketers place a high value on perceived product quality as it serves as a means of differentiating their products from their rivals (Konuk 2018). Cue utilization theory emphasized that customers may perceive product quality from both external and internal cues (Collins-Dodd and Lindley, 2003). Price, brand name, and packaging are examples of extrinsic signals in the context of products. In contrast, intrinsic cues cover product attributes like ingredients that directly affect the physical properties of the product (Richardson et al., 1994, p.29). Supply chains that aim to differentiate themselves from rival supply chains, usually utilize the labels they provide as a tool for information (Wognum 2010). In this case, eco-labeling serves as an extrinsic cue for product quality perception. Thus, one of the means of achieving supply chain transparency is to provide sustainable information through eco-labels. Along with evaluating the suppliers, one of the objectives of the environmental label is to give customers understandable information that will raise demand for goods that are seen as being ecologically friendly (Castka and Corbett, 2015). Eco- and social labeling are common consumer information tools to encourage and facilitate sustainable consumption, particularly with reference to food choices (Ulf Schrader 2011). Thus, it can be derived from the above discussion that perceived product quality mediates the relationship between supply chain transparency and sustainable consumption.

Hypothesis 3 (H3). *The relationship between supply chain transparency and sustainable consumption is mediated by perceived product quality.*

Figure 1: Conceptual Framework

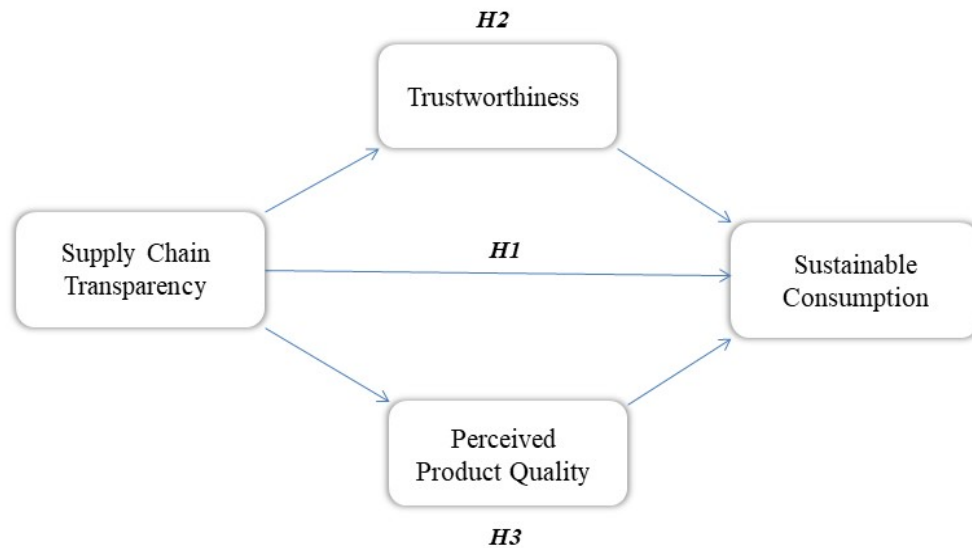


Fig 1: A conceptual framework illustrating the impact of supply chain transparency on sustainable consumption mediated by trustworthiness and perceived product quality.

Chapter 3: Methodology

3.1. Sample

In order to evaluate the hypothesis depicted in Figure 1, a structured questionnaire was used to gather information which has been divided into two sections. To create the respondents' profiles, the components that listed the demographic factors include gender, age, and occupation. The second section of the questionnaire comprised 14 questions pertinent to evaluate the four constructs such as supply chain transparency, trustworthiness, perceived product quality, and sustainable consumption. This questionnaire was filled up by 182 respondents. Among 182 respondents, about 59.3% were male with 108 respondents whereas 40.7% were female with 74 respondents. Majority of the the respondents belonged to the age group of 18-30 which makes up

90.7% with 165 respondents. In the case of occupation, most of the respondents were students making up 79.1% with 144 respondents, followed by Private Job (11.5%), Entrepreneur (4.4%), Public Job (1.1%), and others (3.8%).

Demographic	Categories	Frequency	Percent
Gender	Male	108	59.3
	Female	74	40.7
Age	18-30	165	90.7
	31-40	13	7.1
	41-50	2	1.1
	>=50	2	1.1
Occupation	Public Job	2	1.1
	Private Job	21	11.5
	Entrepreneur	8	4.4
	Student	144	79.1
	Others	7	3.8

3.2.Measurement of Constructs

The conceptual framework for this study includes one dependent variable, one independent variable, and two mediating variables. After meticulously studying the literature, each item used to measure the study variables was carefully selected. A five-point Likert scale ranging from strongly disagree to strongly agree was used to evaluate the measurements. Supply chain transparency (SCT) is the independent variable that was assessed using 4 items adopted from Hustvedt (2013) and Castillo et al (2018). On the contrary, the dependent variable, sustainable consumption was measured using four items adopted from H. Imkamp (2000), Quoquab (2018), and Augur (2003). In addition, the mediating variable trustworthiness (TW) was assessed using three items taken from Zhang (2016) whereas perceived product quality was measured using three items adapted from Mollenkopf (2022). The items of each construct are described in Table 1.

Table1: Measurement Items

Construct	Measurement Items	Source
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Supply Chain Transparency (SCT)	I have a positive perception of a company that is transparent about its supply chain activities.	(Hustvedt 2013)
	Supply chain transparency helps me to make purchasing decisions.	
	I am more likely to share positive news about a company that maintains supply chain transparency.	
	I believe transparency is important in order to explain how supply chain operations align with a firm's sustainability objectives.	(Castillo et al., 2018)
Trustworthiness	I trust the sustainability claims of a product if detail information is provided on the label and packaging.	(Zhang 2016)
	I trust the information available on product packaging regarding sustainable practices when the product is certified.	
	I trust in sustainable products of a company when information about the company's supply chain information is disclosed.	
Perceived Product Quality	I have a positive perception of a product's quality when the company discloses supply chain information related to its sustainability.	(A. Mollenkopf, 2022)
	I have a higher perception of product quality when the company discloses the time, money, and resources invested in order to achieve certified sustainable supply chain practices.	
	I am more likely to purchase a product from a company that maintains high transparency in the supply chain owing to higher product quality perception.	
	Access to supply chain information on a product's ethical attributes influences my purchase intention.	Augur 2003

Sustainable Consumption	I believe increased access to supply chain information regarding product attributes is important to foster sustainable consumption.	H. Imkamp 2000
	I check the supply chain transparency information to find environment-friendly products before I decide to buy.	(Quoquab 2018)
	I will be more inclined towards sustainable consumption if I have access to supply chain information.	Augur 2003

3.3. Data Collection Procedure

Exploring the impact of supply chain transparency on sustainable consumption is a novel concept in Bangladesh, making the evaluation of the factors an interesting subject to investigate using primary data. The data has been collected through the use of convenience sampling and a self-administered survey questionnaire. Informed permission and the respondents' right to confidentiality were upheld during the survey. Partial Least Squares Structural Equation Modeling (PLS-SEM) version 4 has been used to test the conceptual model. This technique has been used to study the factors that will explain the impact of supply chain transparency on sustainable consumption. Compared to alternative methods, such as a structural equation model based on covariance, this strategy provides a number of advantages. The benefits include the capacity to handle complicated interactions between the constructs, effectiveness in predicting the primary driving constructs, and advanced analysis (Hair et al., 2011, 2012). According to Ringle et al (2015) in contrast to covariance-based analysis, PLS-SEM exhibits superior credibility, reliability, and validity.

Chapter 4: Analysis and Findings

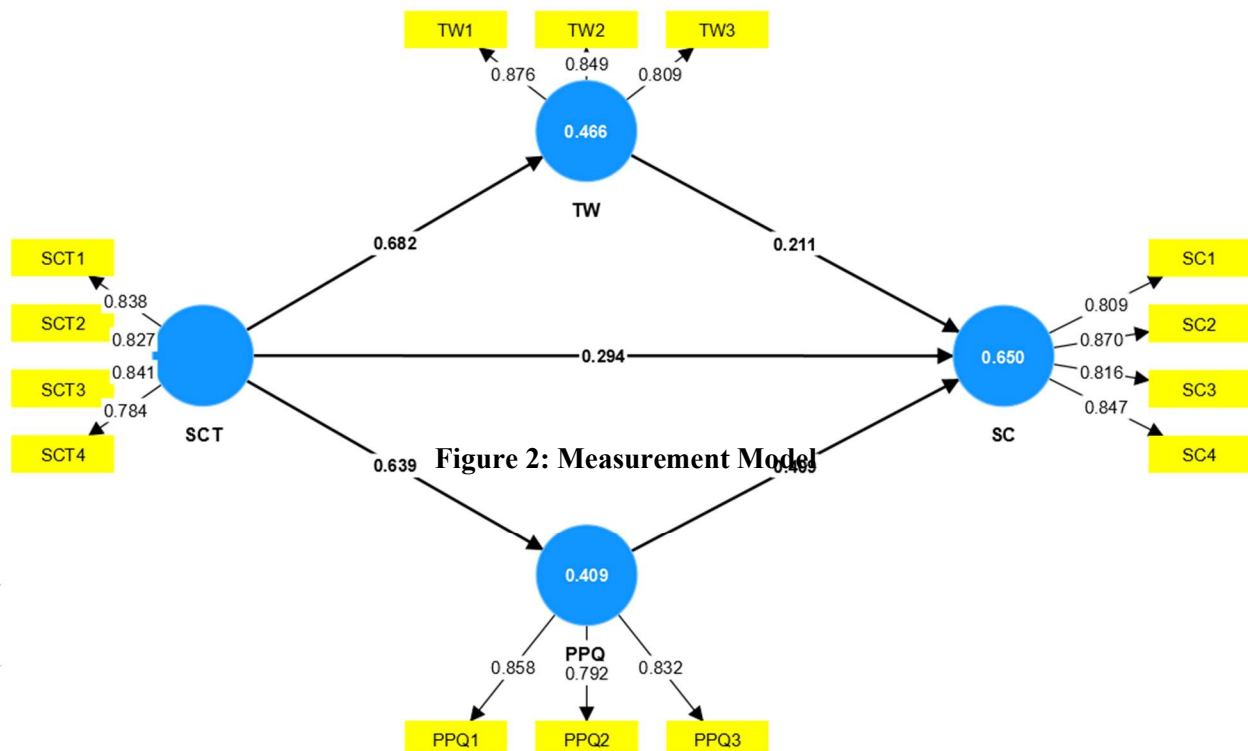
To assess the relationship between supply chain transparency and sustainable consumption, quantitative analysis has been conducted. This research employed empirical deductive reasoning which involves formulating a hypothesis while taking into account the relevant literature and then using a test procedure to determine whether the desired hypothesis is reliable (Wilson, 2014). The analytical aspect of this work is divided into two parts. At first, the measurement model is evaluated and then the structural model is assessed. The measurement model (MM) section ensures the research's consistency, relevance, and credibility whereas structural equation model (SEM) is used to explain the impact of supply chain transparency on sustainable consumption and its

practical applicability. Using partial least square SEM (PLS-SEM), a model is verified in this study with reference to the supporting literature.

A coherent structure has been followed in this research. Model fit requirements are initially used to make sure the framework is strong. First, factor loadings, composite reliability (CRI), and average variance extracted (AVE) are used to analyse the reliability and convergent validity. Second, the heterotrait-monotrait (HTMT) ratio, cross-loadings, and Fornell-Larcker criterion are employed to evaluate the discriminant validity (BOLLEN, 198; Henseler et al., 2015; Schreiber et al., 2006). The variance inflation factor (VIF) indicator is also used to assess for the absence of multicollinearity. The SEM is ultimately verified using the coefficient of determination (R^2), effect size (f^2), standardised root mean square residual (SRMR), and predictive relevance (Q^2) (Chin et al., 2003).

4.1. Measurement Model

The indicators and the connections between them and the latent variables are carried by the PLS-SEM outer model, which is a part of the path model. Internal accuracy, convergent validity, and discriminant validity assessments of the suggested model are required. The outer model must (i) show internal consistency reliability for each item, (ii) meet convergent validity for reflective constructs, and (iii) meet discriminant validity for reflective constructs in order to be considered valid within the PLS-SEM framework (Hair et al., 2014; Henseler et al., 2009).



4.1.1. Internal Consistency Reliability and Convergent Validity

The term "reliability of internal accuracy" refers to a reliability estimate approach used to ascertain whether the rating criteria used to evaluate a construct are similar. It is indicated that the value of composite reliability (CRI) is more than 0.70 with a slack of 0.60-0.70 as the ideal range of exploratory testing based on the reliability recommendations of Nunnally and Bernstein (1995). The CRI was found to be larger than 0.7 for all of the latent variables examined in this study, matching and exceeding the minimal cut-off value recommended by previous works of literature. An effective metric of internal accuracy stability is the alpha of Cronbach, which offers a dependability signal based on how measurements of the observable component interact with one another. The optimal value of Cronbach's alpha is 0.7, according to Hair et al. (2014), Liouville and Bayad (1998), and Sureshchandar et al. (2002). Similar to this, Nunnally and Bernstein (1978) proposed that good dependability is indicated by an alpha value of 0.7 or above. Every alpha value employed in this analysis is larger than 0.7, keeping the internal accuracy criteria for this study, as shown by the reliability and validity data table.

Convergence validity refers to how well the elements agree with one another. Researchers frequently presumptively take into account the outer loadings of the markers and the AVE in order to establish convergent validity based on the criteria of Hair et al. (2016) and Fornell and Larcker (1981). Hair et al. (2016) claim that convergent validity is achieved when no item from any of the other latent variables has a loading that is higher than the one being tested and the factor loading of all the products is more than 0.5. The findings of Table 3's reliability and validity tests (Hair et al., 2016) show that the conditions for convergent validity have been satisfied.

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
PPQ	0.771	0.780	0.867	0.685
SC	0.856	0.858	0.902	0.698
SCT	0.841	0.843	0.893	0.677
TW	0.801	0.811	0.882	0.715

Table 3: Construct Reliability and Validity

4.1.2. Discriminant Validity

Reliable measurement models depend on the confirmation of discriminant validity (DV). According to scientific criteria, it describes how dramatically one build varies from other constructs. In this connection, consideration is typically given to two popular DV tests. The first approach is cross-loading assessment. According to Hair et al. (2016), all cross-loads on other constructs should perform worse than external loadings of a variable on the associated construct. Compliance with the cross-loading standards is ensured by Table 4.

	PPQ	SC	SCT	TW
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PPQ1	0.858	0.628	0.499	0.620
PPQ2	0.792	0.550	0.441	0.502
PPQ3	0.832	0.641	0.627	0.516
SC1	0.635	0.809	0.595	0.595
SC2	0.633	0.870	0.623	0.613
SC3	0.554	0.816	0.518	0.545
SC4	0.631	0.847	0.593	0.518
SCT1	0.604	0.587	0.838	0.581
SCT2	0.508	0.585	0.827	0.518
SCT3	0.532	0.557	0.841	0.608
SCT4	0.452	0.572	0.784	0.536
TW1	0.581	0.624	0.658	0.876
TW2	0.561	0.580	0.531	0.849
TW3	0.527	0.516	0.530	0.809

Table 4: Cross Loadings

Although the Fornell-Larcker criteria lack an additional theoretical justification, it is a good test of discriminant validity. Researchers have also recommended the Heterotrait-Monotrait (HTMT) ratio strategy to assess the discriminant validity (Henseler et al., 2015). With this method, the relationships between the structures are measured against a predetermined threshold value. According to Thompson et al. (2008), a 0.90 threshold value should be maintained to keep the HTMT ratio adequate for discriminant validity. All of the HTMT ratios in Table 6 are under 0.90. According to Hair et al. (2016), the fundamental premise of each research construct is that it is distinct and has built-up discriminant validity amongst the variables.

	PPQ	SC	SCT	TW
PPQ	0.828			
SC	0.736	0.836		
SCT	0.639	0.699	0.823	
TW	0.659	0.681	0.682	0.845

Table 5: Fornell-Larcker Criterion

	PPQ	SC	SCT	TW
PPQ				
SC	0.899			
SCT	0.780	0.822		
TW	0.838	0.817	0.825	

Table 6: Heterotrait-Monotrait Ratio

4.1.3. Multi - Collinearity Statistics (VIF)

After assessing the weights and multicollinearity, the validity and reliability are assessed (Hair et al., 2016). To find any gaps in the interactions between the elements, the multicollinearity is explored. The weights' significance level and the variance inflation factors (VIF) were utilized to determine the amount of collinearity. The weights and their importance were then examined using bootstrapping. Henseler et al. (2015) assert that the VIF must be less than 3.3 in order to conclude that there is no collinearity problem. The lack of multi-collinearity in this investigation is satisfied by the VIF values in Table 7. The weights' significance was also assessed, and it was determined that all of them were significant ($p < 0.05$). The p values of no weights show insignificance (see Table 7). Because there is no collinearity and the weights are substantial, the non-collinearity is guaranteed (Hair et al., 2016).

	VIF
PPQ1	1.807
PPQ2	1.572
PPQ3	1.496
SC1	1.788
SC2	2.298
SC3	1.952
SC4	2.197
SCT1	1.950
SCT2	1.915
SCT3	2.023
SCT4	1.680
TW1	1.832
TW2	1.789
TW3	1.588

Table 7: VIF values

4.2 Structural Model

Using the latent variables and their path interactions, the inner model in PLS-SEM illustrates the theoretical elements of the route model (Hair et al., 2016). The degree of the R^2 values, the f^2 effect scale, and the applicability of the direction coefficients are the essential considerations for evaluating the structural model or internal model in PLS-SEM (Hair et al., 2016). A measure of the variance in the outcome variable brought on by the predictors is the coefficient of determination (R^2). The inner model in PLS-SEM displays the theoretical components of the route model using the latent variables and their path interactions (Hair et al., 2016). The key factors to take into account while assessing the structural model or internal model in PLS-SEM are the degree of the R^2 values, the f^2 effect scale, and the applicability of the direction coefficients (Hair et al., 2016).

The coefficient of determination (R^2) is a gauge of the variation in the outcome variable brought on by the predictors.

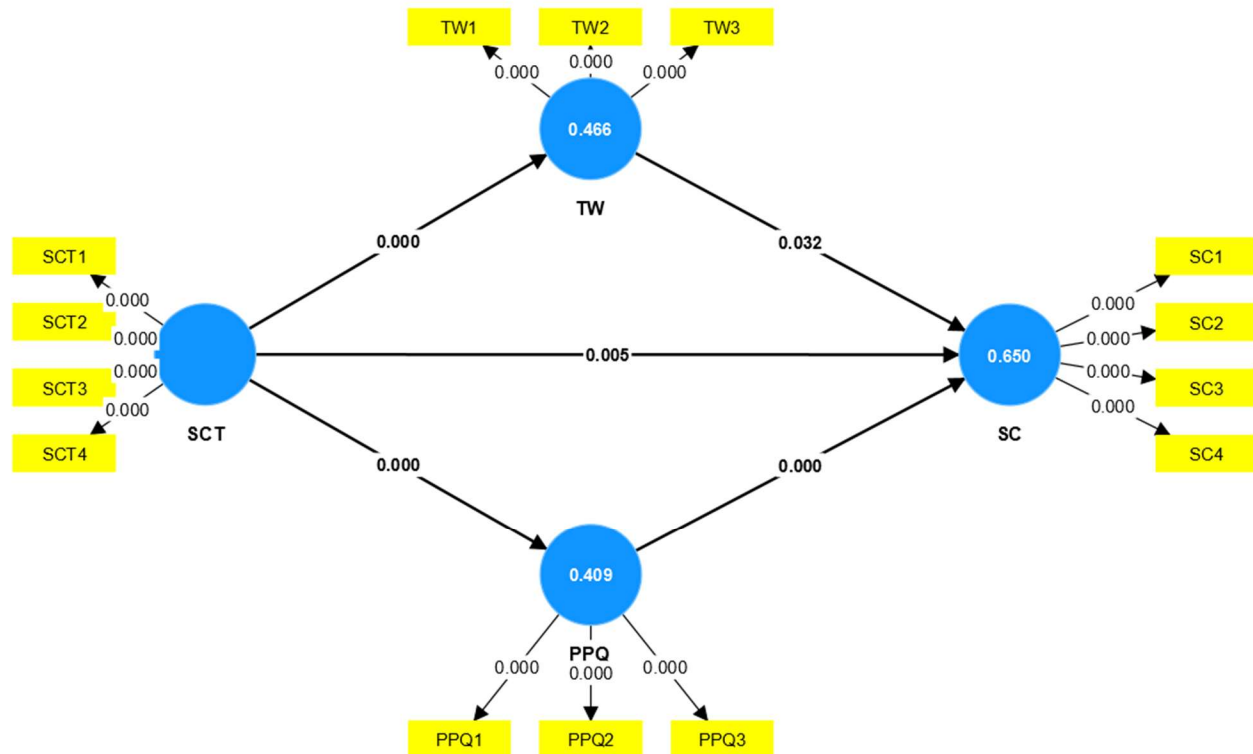


Figure 3: Structural Mode

4.2.1. Coefficient of Determination (R^2)

The statistical accuracy of a model's predictions is gauged by the coefficient of determination. R^2 represents the total impact of independent factors on a dependent variable. If the value of R^2 exceeds 15%, it is regarded as satisfactory (Falk and Miller, 1992). Cohen (1998) also proposed three levels of structural model quality, referred to as poor (between 0.02 and 0.12), moderate (0.13 and 0.26) and considerable (0.26 and above). Table 8 shows that this analysis's R^2 and modified R^2 scores for the act and sense are poor, those for relate and think are moderate, and those for feel and experiential marketing success are significant.

	R Square	R Square Adjusted
PPQ	0.409	0.408
SC	0.650	0.648
TW	0.466	0.465

Table 8: R square

4.2.2. Results of Hypothesis

Table 9 shows that all three hypotheses were accepted at a 5% level of significance. The p-values were computed using the PLS bootstrapping method and 5,000 bootstrapping samples. P-values were obtained directly from SmartPLS 4 based on the 5% significant threshold, which is the appropriate level for social science research (Bickel, 2012; Cox & Hinkley, 1994; Tacq, 2007).

Relationships	β	STDEV	T - value	P - value	Findings
PPQ -> SC	0.409	0.069	5.935	0.000	Supported
SCT -> PPQ	0.639	0.061	10.563	0.000	Supported
SCT -> SC	0.293	0.104	2.828	0.005	Supported
SCT -> TW	0.682	0.067	10.201	0.000	Supported
TW -> SC	0.211	0.098	2.151	0.032	Supported

Table 9: Structural Path Model (direct)

Relationships	β	(STDEV)	T - value	P - value	Findings
SCT -> PPQ -> SC	0.261	0.049	5.318	0.000	Supported
SCT -> TW -> SC	0.144	0.065	2.222	0.026	Supported

Table 10: Structural Path Model (indirect)

4.2.3. Effect Size (f^2)

The effect size, or f^2 , measures the change in R^2 caused by eliminating a particular explanatory component from the model. This score reflects if the concept eliminated has a substantial effect on the outcome variable, according to Callaghan et al. (2007) and Hair et al. (2016).

According to estimations of the exogenous latent constructs of 0.350, 0.150, and 0.020, respectively, effect sizes are big, medium, and minor (Cohen, 1998). When the other elements are generally understood, it is possible to accept even a tiny impact scale, claim Chin et al. (2003).

	PPQ	SC	SCT	TW
PPQ		0.238		
SC				
SCT	0.691	0.116		0.871
TW		0.057		

Table 10: f square

4.2.4 Predictive Relevance (Q²)

Together with the R² intensity, the Stone-Geisser Q² scores should be assessed as a metric of prediction accuracy (STONE, 1974; GEISSER, 1974). The cross-validated communality Q² has been measured using the blindfolding approach. For a particular construct, a Q² score in SEM larger than zero denotes the explanatory power of the variable (Hair et al., 2016). Osborne et al. (2008) claim that communality of larger than 0.4 is adequate. Child (2006) contends that communality values below 0.2 should be disregarded, nevertheless.

Child (2006) and Hair et al. (2016) state that each and every Q² value in Tables 13 and 14 satisfies the necessary requirements. A method involving blindfolding was used to determine this.

	Q ² predict
PPQ	0.394
SC	0.475
TW	0.452

Table 10: Q square

Chapter 5: Conclusion and Research Limitations

5.1. Discussion

Humans, like all other living things, rely on the natural environment for survival and success. Besides that, humans also severely harm and ruin the habitats that support us. We are currently

experiencing a number of interrelated global environmental crises as a result of human activity assaults and challenges to natural systems (IPCC, 2019). The most notable of these crises, which we have produced, is probably climate change besides the depletion of natural resources, the collapse of ecosystems. Indeed, according to some studies, we are on the verge of crossing crucial planetary boundaries (Steffen et al., 2015). The difficulty facing humanity is figuring out how to lessen the harm we cause to the world's natural systems. The key to this is altering our consumption habits. Consumption-related issues go much beyond the simple resources and commodities we use up directly. It's crucial to also take into account the complex supply chain that supports the production and distribution of these consumables, the complex processes that go into those networks, and the indisputable environmental effects associated with those operations (Reisch & Thorgersen, 2015; Schandl & Walker, 2017). To mitigate these issues, humans need to take many initiatives and one of the initiatives should be changing consumption habits so that it doesn't have a harmful impact on the environment. This study addresses how supply chain transparency propels people toward sustainable consumption and how trustworthiness and perceived product quality play a role in forming sustainable habits through supply chain transparency.

A conceptual framework has been developed to analyze the impact of supply chain transparency on sustainable consumption. We examined the literature in line with the conceptual framework that this study has suggested in order to understand and recognize the relevance of the findings. To make sure the framework takes into account real-life scenarios, we performed a questionnaire survey. In consideration of their experiences and insights, we respectfully asked them for their opinions through this questionnaire research.

Based on our findings, we assert that supply chain transparency has a positive effect on sustainable consumption. Supply chain transparency deals with making various stages of the supply chain visible to the people such as raw materials sourcing, production, and distribution etc. After having access to detailed information about the supply chain of a product, consumers are able to make better consumption decisions. A transparent supply chain provides information about ethical sourcing, eco-friendly production techniques, ethical labor standards, and overall sustainability performance. With this information at hand, customers may decide more wisely in light of their beliefs, interests, and sustainability objectives. They may make product selections that are in line with their moral, environmental, and social values. Consumers are able to get better traceability of products through a transparent supply chain which makes it easier for them to locate the origin of the product along with identifying any environmental issues. In fact, a transparent supply chain helps consumers to identify companies that follow ethical business practices. Transparency allows consumers to distinguish between goods that are actually sustainable and those that only make the claim. Moreover, transparency allows buyers to distinguish between goods that are actually sustainable and those that only make the claim. They can assess a product's environmental impact by looking at factors like greenhouse gases, water consumption, and declining resources, and choose solutions that are less harmful to the environment. According to Polonsky et al. (2012), consumers tend to modify their attitudes and subsequent behavior in response to their newly acquired knowledge as they learn more about environmental issues. Furthermore, the abundant information that consumers will be receiving through supply chain transparency, will encourage consumers to change their behavior in order to have less of an impact on the environment and become sustainable consumers.

Previous studies have focused on supply chain transparency from different dimensions such as SCT conveys information on the firm's two most important relationships which are trustworthiness and interpersonal justice (Dickey 2022). There were studies regarding how supply chain transparency signals ethical production to consumers (Taehyun Ko 2022), and how negative and positive supply chain news impacts consumer perception of product quality (Nichols 2019). However, prior studies did not make an attempt to look into how supply chain transparency influences consumers toward sustainable consumption.

With regards to trustworthiness as a mediating variable, our findings suggest that trustworthiness plays a vital mediating role between supply chain transparency and sustainable consumption by affecting how customers view and react to accessible supply chain information, eventually shaping consumption habits. Sharing specific information about a product's route from raw ingredients to end customers is a key component of supply chain transparency. From the perspective of consumers, companies develop trust and authenticity when they deliver accurate, thorough, and verified information that is transparent. Customers are more inclined to believe a company's claims about sustainability and ethical behavior if they believe the company is transparent about its supply chain operations. Transparency in the supply chain frequently includes information on fair labor practices, ethical sourcing, and other moral factors. The dedication of a company to openly disclose this information strengthens the legitimacy of its ethical claims. Consumers are more inclined to support a firm's ethical business practices through their purchasing decisions when they believe that the company is truly abiding by them. When customers believe that the information about the supply chain is reliable and consistent with the company's actions, they are more inclined to take action and make sustainable decisions. Besides, consumers are more likely to support sustainable goods and contribute to beneficial environmental and social results when a firm is dedicated to transparent and reliable supply chain practices.

Our results indicate that perceived product quality has a crucial mediating effect between supply chain transparency and sustainable consumption. A product may differentiate itself from rivals on the market by having transparent supply networks. Consumers are more likely to consider a product as distinctive and set it apart from competing goods when they believe the product's supply chain to be open and ethical. As customers equate transparency and sustainability with greater qualities, this distinction helps to raise the perceived quality of the product. Transparency in the supply chain frequently draws attention to moral issues, such as just labor laws and sustainable production techniques. Consumers who are aware of these ethical considerations believe that the product adheres to ethical and sustainable standards. As a result of this favorable relationship, customers are more likely to perceive products as having greater quality since they value them more. Reductions in perceived risks are frequently associated with perceptions of product quality. Consumers can more accurately assess possible hazards connected with a product, such as environmental impact or unethical practices when they have access to accessible supply chain information. Because of supply chain transparency, these perceived risks are reduced, which raises consumer expectations for the quality of the product. Consumers acquire a deeper sense of brand loyalty as they get more involved with and informed about a product's history and moral

implications. A greater perceived product quality results from this loyalty because of the emotional bond and trust created.

5.2. Implications

SCT appears to have the potential for improved customer reactions and purchasing patterns both in academia and industry (Buell and Kalkanci 2021). Transparency in the supply chain is a key factor in influencing customers' predisposition for sustainable purchases. Consumers' understanding of environmental and ethical issues is influenced by how much accessible, thorough information is offered about a product's path, from raw material sourcing through production techniques. As a result, consumers develop more ethical awareness and a sense of responsibility, which promotes the adoption of sustainable purchasing habits. In this connection, trustworthiness turns out to be a crucial mediator. The credibility of sustainable promises is increased when consumers have faith in the veracity and accuracy of the information companies disclose about their supply chains. Consumers are more likely to internalize and embrace the sustainable qualities of items when they have faith in the transparency efforts of companies.. Because trustworthiness acts as a link between transparent disclosure and the impression of credible sustainability pledges, consumers are more likely to embrace sustainable consumption habits. In order to translate supply chain transparency into perceived sustainability commitments, trustworthiness serves as a key enabler, encouraging a positive mentality and behaviors. Customers' trusting views of information are strongly influenced by valuable government support in the shape of legal tools to protect customers from the fabrication and forgery of claims. According to prior research, reliable certification based on NGOs is essential to creating and upholding the validity of certification programs, which in turn might foster trust (Raynolds, Murray, & Heller, 2007). The connection between supply chain transparency and sustainable consumption is more deeply entwined by perceived product quality. Transparent supply chains demonstrate how companies are generally committed to excellence and honesty, as well as ethical and environmental concerns. Customers are more likely to rate a product's intrinsic quality and worth higher when they believe its supply chain is open and consistent with sustainable practices. In addition, consumers are more likely to perceive a product as being of higher overall quality because of the ethical and responsible image associated with supply chain transparency.

Managers should take SCT into account as a strategic effort for developing and managing customer connections with the company in order to increase trustworthiness (Mollenkopf 2022). The study's results on the relationship between supply chain transparency and sustainable consumption have important management ramifications for companies looking to increase customer involvement and their commitment to sustainability. Transparent communication across the supply chain should be prioritized by managers, who should also emphasize ethical sourcing, environmentally friendly production, and sustainable practices. Consumer trust and confidence in the brand's dedication to sustainability may be increased by expressing these actions in a clear and concise manner in marketing, labeling, and product descriptions. The foundational goal of every organization should be to establish and sustain credibility. Companies may improve their image and customer connections by regularly matching actions with clear supply chain claims. In order to resolve such

issues, managers should make investments in systems that check and verify supply chain information. Managers that are aware of the connection between supply chain transparency and perceived product quality may influence consumer views by highlighting the moral and environmentally friendly features of their products. The perceived worth and attractiveness of products may be increased by incorporating supply chain information into branding and marketing narratives, which promotes sustainable consumption. According to Duan et al., (2021), supply chain managers are crucial to a company's capacity to correctly provide pertinent information.

5.3. Research Limitations and Future Scope

This study doesn't fall short of limitations and has the potential to further this research. One of the limitations of this study is the sample size and the composition of the survey impact the generalizability of the findings. The results may not fully reflect the opinions of the whole population as the sample size is neither varied or representative of the larger community. The link between supply chain transparency and sustainable consumption could not be entirely captured by the research because of certain contextual factors, such as cultural or economic variations. Due to distinct product qualities, supply chain complexity, and customer preferences, several industry sectors may have drastically different consumer perceptions, behaviours, and connections between the variables. Thus, the focus of this study on the relationship between supply chain transparency and sustainable consumption may not adequately reflect the subtleties and variances that could occur across different industries in Bangladesh. Moreover, there is room for further research with regards to exploring other factors that could encourage consumers towards sustainable consumption through supply chain transparency. To determine whether the effect of supply chain transparency on sustainable consumption and its mediators changes across various types of products, this research can be explored across different product categories.

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