Hungarian University of Agriculture and Life Sciences
(MATE)
Ph.D. in Economic and Regional Sciences

VALUE OF TRUST AND E-COMMERCE TRANSACTIONAL FRAUDS IN BANGLADESH

Submitted by: Md Billal Hossain

Supervisor's Name:

Prof. Dr. Csaba Bálint Illés

Gödöllő, Hungary

2023

Hungarian University of Agriculture and Life Sciences

Name of Doctoral School: Doctoral School of Economic and Regional Sciences

Discipline: Management and Business Administration

Head of Doctoral School: Prof. Dr. Zoltan LAKNER, DSc
MATE, Institute of Agricultural and Food Economics

Supervisor: Prof. Dr. Csaba Bálint ILLÉS, CSc
John von Neumann University

---------- ----------

Approval of Head of Doctoral School **Approval of Supervisor**

Contents

1. INTRODUCTION

Online shopping is considered a frequent word in the business environment. The developing countries are not unknown of ‘online shopping’, neither developed countries were. Online stores and online shopping stores have similar patterns and are used for the same purpose. There are different terms, but these terms denote one pattern, ‘Go online to sell or buy anything’. The existence of the virtual world on the internet has made things easier for consumers. Bangladesh has seen rapid growth in online shopping. The prominent websites in Bangladesh were Cell Bazaar, and Bikroy.com etc. These websites fulfilled the basic needs of the consumers from household, stationary to automotive vehicles. However, with the advancement of online shopping, consumer shopping behavior has been rapidly changed. Personally, visiting the store and buying a thing is an activity, but people trapped in time can shop online and wait for the product to deliver in three to ten days of time (Obeidat, Alshurideh, Al Dweeri, & Masa'deh, 2019). Online shopping has made it easier to choose between the thoughts. Selection of the products has become easy, and a family decision to buy a product with comparison is possible. Online shopping is a market of competition, where a variety of products are available.

There is a huge difference between the online shopping market and traditional shopping market. It is easier for a person to go online, sitting at home, comparing products, and making a family decision to buy a particular item. In the traditional market, it wasn’t possible for a family to choose a product. The online market is open all the time, while the traditional market observes timing and holidays (Georgiadou et al., 2021). In the traditional market, transaction needs cash in hand, while in online shopping cash on delivery and credit card payment facility is available. Also, the online market offers discounts on specific bank credit cards. It's a hassle-free shopping world. In the traditional market, one has to travel for hours to purchase a product. It costs travel charges, delivery charges and other expenses. Online shopping, delivery and other services have minimal charges.

However, all these benefits of online shopping have some vulnerabilities and threats. There are plenty of benefits of online shopping. These benefits are subjective and objective at the same time. But there are some back draws of online shopping. The fraudulent activities are common in online shopping. There is no certification for the online store, proving its genuinely and discipline. The product may be fake, reviews on the products can be fake and the delivery of the product may be delayed. In all these scenarios, the product in the online shopping store may not be the same delivered to the consumer.

Online transaction frauds are common. It includes the credit card information disclosure fraud, card not present fraud, stealing of sensitive information. The e-commerce technology in every sense has two faces, to benefit the consumer by resolving a conflict or problem, and to create a problem. The creation of problem works like a double-edged sword. Internet itself isn't secure, which is the fundamental component of e-commerce. This dilemma has generated a war between resolving a conflict and creating it. The problem solving isn't better than problem creating in the internet world (Chowdhury et al., 2022). These two goes side by side. On one side, ethical hacking is improving and testing the security of the website, applications and internet related e-commerce. On the other hand, unethical hacking is generating problems, exposing secret information of the consumers. Internet shopping works with one-click purchasing intentions. Amazon introduced a one-click method of purchasing a product. According to Pai and Chary (2016), one clicks option has ample meanings. In one click, a consumer can buy a product, with one click he can endorse a product, like or dislike, send to cart, order and buy. All these options are available all over the internet shopping websites. Each online shopping platform works in the same way, use same third-party security. The attack on the internet is not on a product or service, rather on the main domain of the internet provider. Once, third-party security is vulnerable, it makes a way to all over the internet, hence every website becomes vulnerable to attack.

1.1. Problem Statement

Majority of applications, and software are working to inspect fraudulent activity in online transaction systems. Their mechanism is based on the location of smartphone or computer usage, IP address and specific pattern. Change in the behavior of a consumer, or change in the place where a consumer has been using the platform before, or trying different types of passwords exposes the consumer to theft or fraud activity. In this research, the process to devise a mechanism to stop the fraud is twofold; (1) from companies' perspective to the consumer, (2) from consumer's perspective to the company. There is no coping mechanism available on the consumer side to detect the fraud in the E-commerce system. However, ample studies have shown the perspective of companies dealing with consumer trust issues, stealing the sensitive data. In this regard, it is necessary for the consumer to fully understand the online transaction system, so that the company can't cheat him. From consumer perspective to the company; the fraud activity was noticed in eValy and Aleshmart, Bangladeshi E-commerce organizations selling products and services online. In that case; there are several platforms to discuss or encourage the organization to satisfy the consumer by assuring maximum security to the sensitive data. On the other hand, there is less research on the topic; if an e-commerce company is playing a fraud game, then how consumers can detect and save their money.

The transfer of traditional retail systems to online systems needs adaptability. It needs IBAN, an internet-based identity number, but the majority of the business owners feel uninterested in obtaining the IBAN. They also seem less interested in renewing their license, which is the reason keeping them away from online business (Sultana & Akter, 2021). The non-presence of IBAN leads to ambiguity in the identification which further leads to fraud and depiction, also to consumer rights violations. To borrow money from a bank requires a trade license, which every seller wants to get in Bangladesh. Sellers engaged in online business face fake orders, fraudulent activity on a daily basis from the consumer's side. The cash on delivery

mechanism has limited reach in the cities. If the order is placed from a village far from the city, the consumer has to pick up the order. In that case, if the consumer delays to pick the order, the courier services return the order to the company. Once the order is returned, the company marks the consumer as fraudulent and blocks his access for further shopping. Identification of the customers for the delivery men is another obstacle for E-commerce services. In some cases, the fraudulent orders have fake phone numbers, when deliverymen call the number, it gets no response, or the service is out of reach (Hossain, 2021; Hossin, Sarker, Xiaohua, & Frimpong, 2018). In the whole process, additional delivery fees are incurred by the sellers with unsuccessful delivery. The seller has to pay the delivery charges, which is a loss for the business.

To bring a positive change in the legal framework of online buying and selling of the products, also to implement and initiate a process of laws to protect the rights of both buyer and seller is the need of the time. In the above context, this research explores the E-commerce fraudulent activities both from consumers and sellers' point of view, also to devise a framework to stop the monopoly of online markets, establishing a pure mechanism of 'true reviews', with 'accurate product details', and clean process of 'transaction' and delivery of the products.

1.2. Main Objective

This research aims to understand and prevent a merchant's fraud in e-commerce platforms, especially the online web stores in Bangladesh. The research framework highlights key judgments to ensure the consumer's satisfaction regarding the merchant's benevolence, trust, reliability and risk.

1.2.1. Research Objective

This research focused on the following specific objectives:

It has been assumed that in the future, trust of the consumer on e-commerce platforms relating to online shopping will increase in future due to;

(1) the system will improve and be equipped with better technology and changes in industry will increase the trust. The younger generation, who depends on the technology to buy a product online will grow more. The use of smartphones is increasing and it will maximize the potential customers.

(2) The embedment of technology into humans will fluid the nature of trust. Although trust is not binary or distributed.

(3) Trust will never grow in e-commerce platforms, rather the technology will keep on growing. Consumers will attach themselves to the online purchase risk and it will become a 'new normal' in the future. There will be no choice left for the consumer but to trust the online shopping platform.

(4) Blockchain may help in the future, enabling the merchant to gain the consumer's trust.

(5) The Internet is insecure, so there will be no trust in the future. Dictatorship may rule over the internet by threatening the individual's rights.

1.2.2. Research Hypotheses

The hypothesis of the study are:

The perceived benevolence is the trust of the consumer on the knowledge source, with good will and good intention towards the source. In this research, the benevolence of the merchant is discussed. The merchant must be more careful in his relationship with the consumer and client. He must be helpful for the client and provide what is demanded (D. Peterson, 2004). Perceived benevolence in electronic commerce refers to the extent to which consumers believe that online retailers have their best interests at heart and are motivated to act in their favor. In other words, it reflects the degree to which consumers trust that online retailers are honest and have their well-being in mind. Perceived benevolence can be influenced by a variety of factors in electronic commerce, including website design, customer service, online

reviews and ratings, brand reputation, and transparency of pricing and policies. For example, an online retailer that offers a clear return policy, provides responsive customer service, and has a strong reputation for delivering high-quality products is likely to be perceived as more benevolent by consumers. Perceived benevolence is an important factor in building trust and loyalty in electronic commerce (Guo et al., 2021). Consumers are more likely to make purchases from online retailers they perceive as benevolent, and they are more likely to recommend these retailers to others. As such, online retailers should make efforts to build and maintain trust with their customers by providing transparent and ethical business practices that prioritize consumer well-being (Degli Esposti et al., 2021). Perceived benevolence can have a positive impact on consumer trust in online shopping. Perceived benevolence refers to the perception that an online seller has the customer's best interests at heart, and is genuinely concerned with providing quality products or services and satisfying the customer's needs. When consumers perceive an online seller as benevolent, they are more likely to trust the seller and feel more comfortable engaging in transactions with them. This is because they believe that the seller is trustworthy and reliable, and that they are more likely to provide high-quality products or services. Moreover, studies have shown that perceived benevolence can also increase customer satisfaction and loyalty, which can ultimately lead to increased sales and revenue for online sellers (Degli Esposti et al., 2021). In summary, perceived benevolence is an important factor in building consumer trust in online shopping, and online sellers who are perceived as benevolent are more likely to attract and retain loyal customers.

H1 Perceived benevolence has positive impact on Consumer trust in online shopping.

Risk is a word, which is used at different places with different meanings. Perceived risk refers to the degree of uncertainty or potential negative consequences associated with a purchase decision. It reflects the level of concern a consumer has about the potential outcomes of a purchase, including financial, functional, physical, social, and psychological risks. In electronic commerce, perceived risk can be influenced

by a variety of factors, including the nature of the product, the reputation of the seller, the security of the payment process, and the quality of the website. For example, consumers may perceive higher risk when buying expensive products, products with unknown or unproven brands, or products that require a significant investment of time or effort to use. Perceived risk can have a significant impact on consumer behavior, leading consumers to delay or avoid purchase decisions, switch to a different retailer or product, or seek more information before making a purchase (Ahmed et al., 2021). As such, online retailers should make efforts to reduce perceived risk by providing detailed information about their products, offering secure payment methods, providing clear and transparent policies, and building trust with their customers through positive reviews and ratings. According to XU and CHENG (2021) economic times the risk is the uncertain result of future outcome, or the expectation with fear in future. In economics, every investment has a risk of its own type, which is related to its uncertain realization (Lăzăroiu, Neguriţă, Grecu, Grecu, & Mitran, 2020). Risk is the uncertainty of a certain mind, of thinking human being, having desire to achieve a goal or attain a motto. perceived risk can have a negative impact on consumer trust in online shopping. Perceived risk refers to the perception that an online purchase carries a certain level of uncertainty or potential negative consequences, such as receiving a faulty product or having personal information stolen. When consumers perceive a high level of risk associated with online shopping, they are less likely to trust online sellers and may be hesitant to engage in transactions with them. This is because they believe that the risk of a negative outcome outweighs the potential benefits of the transaction. Moreover, studies have shown that perceived risk can also decrease customer satisfaction and loyalty, which can ultimately lead to decreased sales and revenue for online sellers (Ahmed et al., 2021; Drew & Farrell, 2018; Lăzăroiu et al., 2020). In summary, perceived risk is an important factor in undermining consumer trust in online shopping, and online sellers who are able to mitigate perceived risk and provide a sense of security and safety to their customers are more likely to attract and retain loyal customers.

H2 Perceived Risk has negative impact on Consumer trust in online shopping

Perceived ability in electronic commerce refers to the extent to which consumers believe they have the knowledge and skills necessary to successfully navigate and complete a transaction on an online platform. It reflects the level of confidence a consumer has in their ability to use the technology and tools required to make a purchase or engage in other online activities. In electronic commerce, perceived ability can be influenced by a variety of factors, including the design and usability of the website, the availability of customer support, and the consumer's prior experience with online shopping (Yuniarto et al., 2018). A website that is easy to navigate and provides clear instructions on how to complete a purchase can increase consumers' perceived ability. Perceived ability is an important factor in driving consumer engagement and loyalty in electronic commerce. Consumers who perceive themselves as competent and confident in their online shopping skills are more likely to engage in a wider range of online activities, make more frequent purchases, and provide positive feedback and reviews. As such, online retailers should strive to create user-friendly and accessible websites and provide support and guidance to consumers as needed to increase their perceived ability and overall satisfaction (Raykov & Grayson, 2003). Trust beliefs are positively attached to the internet merchant with trust intentions to focus when purchasing online or offline. In traditional shopping style, trust on the merchant is the first approach of the consumer, and when the consumer feels satisfied with the merchant, then a relationship is built between consumer and the merchant, which is based on the level of trust. This level of trust has ability standards of the merchant (M. K. Lee & Turban, 2001). Perceived ability can have a positive impact on consumer trust in online shopping. Perceived ability refers to the perception that an online seller has the ability to deliver on their promises, and is competent in providing quality products or services. When consumers perceive an online seller as having the ability to deliver on their promises, they are more likely to trust the seller and feel more confident in engaging in transactions with them. This is because they believe that

the seller is reliable and competent, and that they are more likely to provide high-quality products or services. Moreover, studies have shown that perceived ability can also increase customer satisfaction and loyalty, which can ultimately lead to increased sales and revenue for online sellers (Guo et al., 2021; Jung & Kang, 2021; R. A. Peterson & Kim, 2013; Yuniarto et al., 2018). In summary, perceived ability is an important factor in building consumer trust in online shopping, and online sellers who are perceived as competent and reliable are more likely to attract and retain loyal customers.

H3 Perceived ability has positive impact on Consumer trust in online shopping

Perceived integrity in electronic commerce refers to the extent to which consumers believe that online retailers are honest, ethical, and trustworthy in their business practices. It reflects the level of confidence a consumer has in the reliability and fairness of the online platform and the retailers that operate on it. In electronic commerce, perceived integrity can be influenced by a variety of factors, including the accuracy and transparency of product information, the security and privacy of customer data, the fairness and consistency of pricing and promotions, and the responsiveness and accountability of customer service (X. Li et al., 2009). A retailer that provides detailed and accurate product descriptions, has a clear and consistent pricing policy, and responds promptly and effectively to customer inquiries and complaints is likely to be perceived as more trustworthy. Perceived integrity is an important factor in building and maintaining trust and loyalty in electronic commerce. Consumers who perceive online retailers as honest and ethical are more likely to make purchases, recommend the platform to others, and provide positive feedback and reviews. As such, online retailers should prioritize transparency and honesty in their business practices, ensure the security and privacy of customer data, and provide responsive and effective customer service to enhance their perceived integrity and overall reputation. Integrity is attached to the moral obligation of a person to fulfill a duty, but the perception of integrity changes with cultures and traditions. Also, the institute differentiate the word 'integrity' according to its nature.

In practical terms, the process of differentiation isn't considered valuable, but philosophically each term has its limit and scope (Guo et al., 2021; Jung & Kang, 2021). Perceived integrity refers to the perception that an online seller is honest and transparent in their business practices, and that they are committed to ethical and moral principles. When consumers perceive an online seller as having integrity, they are more likely to trust the seller and feel more comfortable engaging in transactions with them. This is because they believe that the seller is honest and transparent, and that they are more likely to provide accurate information about their products or services. Moreover, studies have shown that perceived integrity can also increase customer satisfaction and loyalty, which can ultimately lead to increased sales and revenue for online sellers (X. Li et al., 2009; Parry & Proctor-Thomson, 2002; D. Peterson, 2004). In summary, perceived integrity is an important factor in building consumer trust in online shopping, and online sellers who are perceived as honest and transparent are more likely to attract and retain loyal customers.

H4 Perceived integrity has negative impact on Consumer trust in online shopping

Perceived service reliability in e-commerce refers to the extent to which consumers believe that online retailers are dependable and consistent in providing high-quality products and services. It reflects the level of confidence a consumer has in the reliability and consistency of the online platform and the retailers that operate on it. Perceived service reliability is one amongst important elements of trust in online shopping. According to Obeidat et al. (2019) perceived quality is the assumption and expectation of the consumer about the service's, assurance of product's quality, on time responsiveness and empathy of the merchant. If the quality of a product on the online store is not up to the mark, there is a section of review from the consumer behind the product description on every online platform. The buyer can review the product, and rate the product quality (X. Li et al., 2009). Perceived reliability can have a positive impact on consumer trust in online shopping. Perceived reliability refers to the perception that an online seller is dependable and trustworthy, and is

able to deliver products or services as promised. When consumers perceive an online seller as reliable, they are more likely to trust the seller and feel more comfortable engaging in transactions with them. This is because they believe that the seller is dependable and trustworthy, and that they are more likely to provide high-quality products or services. Moreover, studies have shown that perceived reliability can also increase customer satisfaction and loyalty, which can ultimately lead to increased sales and revenue for online sellers (R. A. Peterson & Kim, 2013; Raykov & Grayson, 2003). In summary, perceived reliability is an important factor in building consumer trust in online shopping, and online sellers who are perceived as dependable and trustworthy are more likely to attract and retain loyal customers.

H5 Perceived reliability has positive impact on Consumer trust in online shopping

Three main components of online platforms are the marketplace, virtual wallet and the registration portal to log in or log up the services. The registration portal is a place to store data relating to the basic information demanded from the consumer (Raykov & Grayson, 2003). Perceived technical competence in e-commerce refers to the perception that an online seller has the technical knowledge and expertise to provide high-quality products or services in the online environment. This includes aspects such as website functionality, security, user interface design, and online payment systems. When consumers perceive an online seller as technically competent in e-commerce, they are more likely to trust the seller and feel more confident in engaging in transactions with them. This is because they believe that the seller has the necessary technical knowledge and expertise to provide a seamless and secure online shopping experience. Perceived technical competence can have a positive impact on consumer trust in online shopping. Perceived technical competence refers to the perception that an online seller has the technical knowledge and expertise to provide high-quality products or services. When consumers perceive an online seller as technically competent, they are more likely to trust the seller and feel more confident in engaging in transactions with them. This is because

they believe that the seller has the necessary technical knowledge and expertise to provide high-quality products or services. Moreover, studies have shown that perceived technical competence in e-commerce can also increase customer satisfaction and loyalty, which can ultimately lead to increased sales and revenue for online sellers (Axman & Kročová, 2019; Tallman, 2021). In summary, perceived technical competence is an important factor in building consumer trust in e-commerce, and online sellers who are perceived as technically competent in the online environment are more likely to attract and retain loyal customers.

H6 Perceived technical competence has positive impact on Consumer trust in online shopping

A challenge each E-commerce industry is facing; the increasing development in the fake products. Production of fake products has dramatically reduced the trust of E-commerce consumers. Consumers are suffering more from fake products, but traders also face severe consequences. The innovation of a product, when faked with a little change, not only ruins the worth of the patent company, but also it makes the product worthless (Dong et al., 2009). Internet capability or internet literacy can have a positive impact on consumer trust in online shopping. When consumers have a high level of internet capability, they are more likely to feel comfortable and confident navigating online shopping platforms and making purchases online. This includes having the ability to find the products they are looking for, compare prices, and complete the purchase process without any difficulties. Moreover, studies have shown that internet capability can also increase consumer satisfaction and loyalty, as it can lead to a more positive online shopping experience (Buxton & Walton, 2014; Han, 2021; Junior & Kamienski, 2021; M. K. Lee & Turban, 2001). In summary, internet capability is an important factor in building consumer trust in online shopping, and consumers who are perceived as having a high level of internet literacy are more likely to feel confident and comfortable engaging in transactions online.

H7 Internet Capability has positive impact on Consumer trust in online shopping.

Perceived certification is also known as 'authentication' which links the internet merchant with the third-party, that guarantee the genuine form of the e-commerce business, also it assures that internet merchant isn't fake (Han, 2021). In some cases, the third-parties are the reliable source to assure that internet merchant is, what he claims. Third party certification is the independent organization in every sector to assure that the company or organization is properly functional and the product of the company is up to the quality standards regarding performance, safety and quality (Buxton & Walton, 2014). Perceived certification can have a positive impact on consumer trust in online shopping. Perceived certification refers to the perception that an online seller has received some form of certification or accreditation that verifies their quality, safety, or reliability. When consumers perceive an online seller as being certified, they are more likely to trust the seller and feel more comfortable engaging in transactions with them. This is because they believe that the seller has been verified by a third-party authority, which can increase their confidence in the quality, safety, and reliability of the seller's products or services. Moreover, studies have shown that perceived certification can also increase customer satisfaction and loyalty, which can ultimately lead to increased sales and revenue for online sellers (Hatanaka et al., 2005; Jiang et al., 2008; Stafford & Wallnau, 2001). In summary, perceived certification is an important factor in building consumer trust in online shopping, and online sellers who are perceived as being certified are more likely to attract and retain loyal customers. However, it is important to note that not all certifications are created equal, and consumers may have different perceptions and attitudes towards different types of certifications.

H8 Perceived Certification has positive impact on Consumer trust in online shopping

Trust is a value shared by two parties to build a relationship, which is based on some beliefs that E-commerce is a system of integrity and ability (McKnight & Chervany,

2001). Trust is defined in negative. In positive terms, trust cannot be understood. When there is a trust deficit, or trust is broken, then it comes to the mind that trust is something which binds the relationship between consumer and the producer. In that case, the buying and selling of products and services is based on trust. Trust propensity has a significant positive impact on consumer trust in online shopping. Trust propensity refers to a consumer's general willingness to trust others, including online sellers. When consumers have a high level of trust propensity, they are more likely to trust online sellers and feel more comfortable engaging in transactions with them. This is because they are generally more willing to trust others and assume that the seller is acting in their best interest. Moreover, studies have shown that trust propensity can also increase customer satisfaction and loyalty, as it can lead to a more positive online shopping experience and increased willingness to return to the same seller in the future (Ahmed et al., 2021; Diputra & Yasa, 2021; Hammouri et al., 2021; Junior & Kamienski, 2021). In summary, trust propensity is an important factor in building consumer trust in online shopping, and online sellers who are able to build trust with consumers who have a high level of trust propensity are more likely to attract and retain loyal customers. However, it is important to note that trust propensity is not the only factor that influences consumer trust in online shopping, and other factors such as perceived risk and perceived benefit also play important roles.

H9 Trust propensity has significant positive impact on Consumer's Trust in Online shopping.

Figure 7 summarizes the dissertation’s research hypotheses.

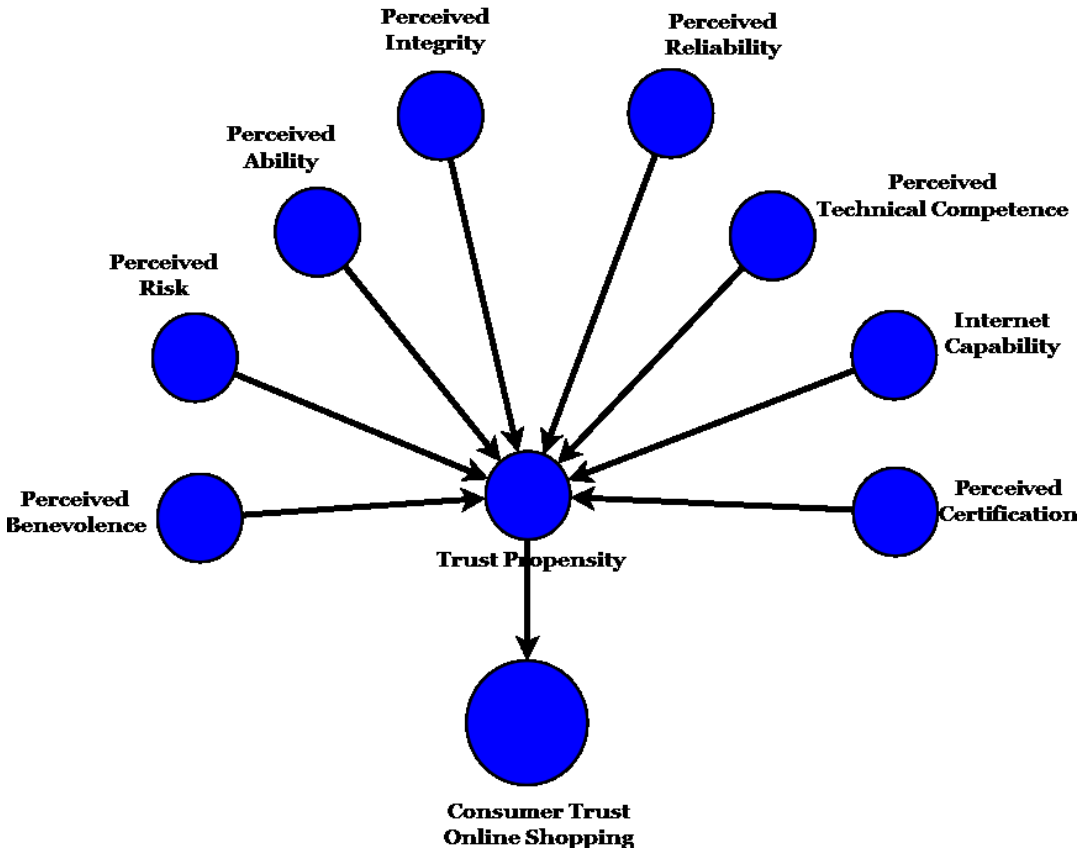

Figure 1. Research Hypotheses (Source: Own compilation)

2.MATERIALS AND METHODS

2.1. Study Area

In Bangladesh, the rapid change is observed in small and medium sized businesses during the pandemic. SMEs established their trading through online platforms to save money. The findings show that;

- In Bangladesh, more than 2,500 websites and 150,000 social media pages are operating under E-commerce. It shows the 80% sale in Dhaka, Gazipur and Chattogram is online. The record sale is observed in 2019 with $1,684 million, which further increased in 2020 to $2,177 million (Banna et al., 2022).
- As per the statement of the President of E-commerce association in Bangladesh, the marketing size is above $1 billion with more than 50,000 orders per day. The annual growth rate is 75%.
- The small and medium sized enterprises in Bangladesh have grown to 25,000 and individual markets have reached 35,000. It has been predicted that in 2023, the business market will grow to $3 billion.

E-commerce has become popular as a growing economy nowadays. The concept of E-commerce isn't very old, as it started in 1995 with requirements of digital goods and dealing with their transactions. The term 'Digital Goods' deals with something that can be transferred or delivered over a digital network (Laudon & Traver, 2013). E-Commerce has transformed itself in a way to communicate among the consumers and enterprises, also among the rapidly growing digital world. E-Commerce now deals with information and communication technology as a means of communication among the rapidly growing economic markets. However, the process of transaction has become easy with the time, but it hasn't become painless and secure. Even the secure way of transaction over the internet is not secure enough to save on self from fraud.

The e-commerce adoption provides advantages to the companies both short-term and long-term. The short-term advantages are quick order taking, quick delivery options, resolving of conflict with one-click and making a decision. E-commerce adoption in companies improves the level of efficiency (Sobihah, Mohamad, Ali, & Ismail, 2015). Also, it helps the company to rebrand the image from a trend setter, and to compete with other companies. The competition has become easier among companies. Similar products on online shopping stores with discounted rates provide edge to the company. In addition, new customers are the biggest asset of the companies. In traditional marketing, customers were fixed to one shop or another. In online shopping, customers find a discount and where the rates of the product are less. These benefits are for the companies. Online companies working in China can sell their products in Pakistan, India, and Bangladesh. There are no barriers for any online shopping company to dispatch a product to anywhere. These benefits not only for the new customers but also for the existing clients. Existing client reviews improve the services. Also, the main benefit for online shopping websites is third-party security and conflict resolution. In addition, technological advancement has provided the company with a variety of experiences. These experiences not only enrich the company but also enable the company to track consumer satisfaction. In case of unsatisfied consumers, the company can change its policies, reduce the price, offer discounts, etc. (Cho & Shim, 2013).

2.2. Research Design

Technology Acceptance Model was introduced by Davis in 1986, which is based on the theory of reasoned action (TRA) (Lee, Kozar, & Larsen, 2003). In previous studies, TRA has been applied successfully in several studies relating to consumer behavior. The technology acceptance model has changed the direction of TRA through PU (perceived usefulness) and PEOU (perceived ease of use), because both have connections with computer related technology acceptance behavior (Amin, Rezaei, & Abolghasemi, 2014). Perceived usefulness (PU) is defined by Davis as; It enables a system or technology to be perceived by a user as useful or beneficial for

the job or activity. Perceived ease of use (PEOU) refers to the degree to which a consumer believes that the use of a particular technology will be easy to use and user-friendly. In the Technology Acceptance Model, Perceived ease of use has a positive effect on Perceived usefulness (Jahangir & Begum, 2008). It creates the attitude either positive or negative. According to Davis, PU and PEOU have a strong positive effect on the attitude of the user. It further leads to accepting the process as beneficial for actual usage. The technology acceptance model proposed by Davis is based on the external variable, which leads towards (1) Perceived usefulness, and (2) Perceived ease of use. Perceived usefulness and perceived ease of use directly affects the attitude of the consumer, which further builds the intention of the consumer and it leads to the actual usage of the product or service.

2.3. Theoretical Framework

Trust is the basic value in every human, which can't be neglected in any case. Trust has been defined as the rational decision to attach oneself to another party. Trust in E-Commerce has been defined by Pavlou (2003) as; a system of belief to show acceptance to the internet for vulnerability purposes on ethical grounds.

The theoretical model of the research is developed based on the literature review to examine the trust in e-commerce shopping. The inspection of fraudulent merchant is an example of a latent variable which is hard to observe directly. Measuring a variable, if not possible to observe directly, can be in-directed to satisfy the task. In that case, the other variables are necessary to attach with the latent variable. Latent is an unobserved variable which cannot be observed directly. For example, health is a latent variable and it cannot be observed independently. To observe health, other related factors are necessary to measure. In case of 'consumer trust on online shopping', variables related to trust and shopping are related to measure. There are two type of variables, Independent and Dependent. Independent variable and dependent variable are cause and effect in the research process. Independent variable

is the cause, dependent variable is the effect. Independent variable in not dependent on other variables.

Independent variables of the study are divided into these categories;

(1) Internet Merchant's Trustworthiness, which includes the Perceived ability, Perceived integrity, Perceived Benevolence and Perceived Risk. (2) Shopping medium trustworthiness includes Perceived technical competence, Perceived Reliability and Internet Capability. (3) External environment includes the Perceived certification (Third Party).

The dependent variable of the research is Consumer's trust on Internet Shopping (CTIS).

The independent variables of the study are moderated by Propensity of Trust (POT) of the consumer. Trust propensity is the value to trust something, or willing decision to trust others. It involving willingness to rely on others. The trust of the consumer varies with age and experience. In our case, the level of trust of the consumer is considered stable, which is further measured in the results. The Propensity of Trust (POT) is the mediator variable between independent and dependent variables of the research. There is a difference between mediator and moderating variables. The researcher used mediating variable as POT, which explains the process through which independent and dependent variables are attached.

A consumer is willingly participating in the internet shopping, considering it reliable and worthwhile for shopping transactions. This intention of the consumer is based on the previous experience, or based on the expectation that an online shopping merchant is worth trusting and follows the rules and regulations presented by the Government of Bangladesh for e-commerce.

This model enables the consumer to inspect the online shopping merchant, as well as the internet linking to the online shopping store, which in most cases is the third

party. The third party provides security protocols to ensure the safe transaction, also the third party ensures the data privacy of the consumer.

2.4. Data Types and Sources

This research study was obtained from one type of data sources, primary data. Primary data was collected by the use of questionnaires.

2.4.1. Questionnaires

Table 1 Survey Scale development

	Data Source	References
INTERNET MERCHANT'S TRUSTWORTHINESS		
1. Perceived Benevolence	Literature Review	(Degli Esposti, Ball, & Dibb, 2021; Guo, Wang, & Wang, 2021; Khan, 2016)
I believer, internet merchants will do their best for me.		
If I need help regarding a product, an internet merchant will find it for me.		
If I return a product, the internet merchant will not hesitate to take it back.		
Internet Merchants take care not only of themselves, but also of my kindness.		
2. Perceived Risk	Literature Review	(Ahmed, Ali, & Top, 2021; Drew & Farrell, 2018; Kim, Ferrin, & Rao, 2008; Lăzăroiu, Neguriţă, Grecu, Grecu, & Mitran, 2020; Qalati et al., 2021)
I was afraid that online shopping websites might steal my personal information.		
I was afraid that an online shopping website might steal my credit card number.		
I was afraid that online shopping websites might misuse my private information and data.		
I suddenly got suspicious from an online shopping website.		
The online shopping website didn't promise secure transactions.		
The online shopping website didn't provide a Cashback guarantee.		

Table 1.a

3. Perceived Ability	Literature Review	(Peterson & Kim, 2013; Raykov & Grayson, 2003; Yuniarto, Suryadi, Firmansyah, Herdiana, & Rahman, 2018)
Internet merchants will not charge more for internet shopping.		
Internet merchants are honest to their customers.		
Internet merchant's act justly when dealing with customers.		
Internet merchants provide sales every six month on reasonable prices.		
Internet merchants update product catalogs routinely.		
Internet merchants provided product descriptions based on truth.		
Reviews on the products are real and valuable on shopping websites.		
4. Perceived Integrity	Literature Review	(Fatima, Humayun, Iqbal, & Shafiq, 2019; Hasan & Islam, 2013; Pai & Chary, 2016)
Internet merchants always keep their promises by delivering products on time.		
Internet merchants provide quality products in their stores.		
Internet merchants preserve my security and privacy.		
I feel satisfied sharing credit card details with internet merchants.		
I feel satisfied sharing personal information (phone, home address) with internet merchants.		
SHOPPING MEDIUM TRUSTWORTHINESS		
1. Perceived Reliability	Literature Review	(Chen & Dhillon, 2003; Diputra & Yasa, 2021; Hammouri, Al-Gasawneh, Nusairat, Hanandeh, & Barakat, 2021; Junior & Kamienski, 2021)
Internet shopping is not reliable anymore.		
I cannot trust internet shopping because it has many uncertainties.		
I can't trust the promises internet shopping vendors make.		
Internet shopping fails to deliver my requested product on time.		
Internet shopping sometimes fails to provide the product I requested, instead I receive a different product.		

Table 1.b

2. Perceived technical competence	Literature Review	(Ahmed et al., 2021; Amin et al., 2014; Bojang, Medvedev, Spasov, & Matvevnina, 2017)
Online shopping stores have a proper understanding of technical processes.		
Online shopping stores are good at building and fixing things.		
Online shopping stores manage website security routinely.		
Online shopping stores resolve my conflict whenever I report.		
Online shopping stores cannot compromise my information.		
Online shopping stores have a shared privacy policy on their website.		
3. Internet Capability	Literature Review	(Ahmed et al., 2021; Georgiadou et al., 2021; Qalati et al., 2021; Tendai & Crispen, 2009)
Online shopping websites are easy to understand.		
Online shopping websites are not complicated to place orders.		
I can easily find the desired product on Internet shopping websites		
I understand how to use shopping websites and smartphone applications.		
I understand how to search for products on internet stores.		
I can easily pay for a product of my choice in online shopping.		
EXTERNAL ENVIRONMENT		
1. Perceived Certification (Third-party)	Literature Review	(Hatanaka, Bain, & Busch, 2005; Jiang, Jones, & Javie, 2008; Stafford & Wallnau, 2001; XU & CHENG, 2021)
To assure the trustworthiness of internet merchants, there are many third-party certification companies in Bangladesh.		
I think I feel safe over shopping applications due to third-party certification.		
Third-party certification is helpful to maintain healthy relationship shopping interest.		

Table 1.c

Consumer Trust on Internet Shopping (CTIS)	Literature Review	(Ahmed et al., 2021; Liu & Ding, 2007; Suki, 2011; Wang, Chen, & Jiang, 2009)
Internet Shopping in Bangladesh is not reliable.		
Internet shopping can't be trusted anymore in Bangladesh.		
Anyone interested in Internet shopping is in trouble.		
Trust Propensity	Literature Review	(Quoquab, Sadom, & Mohammad, 2019; Suki, 2011; Willis, Jai, & Lauderdale, 2021; Xia, Xiao, Zhang, Hu, & Cheng, 2019)
Trusting a person or a thing is easy for me.		
I have a high tendency to trust a person or a thing		
With a little knowledge, I can trust a person or a thing.		
Trusting someone is not difficult.		

Source: own compilation

2.4.2. Sample and Data Collection

The sample of this research is seven hundred respondents (*n=700*) from the universities of Bangladesh, online questionnaire and personal sources. These universities are located in different cities of Bangladesh. The universities consulted for data collection are; Bangladesh Open University, National University Bangladesh located in Gazipur, University of Dhaka, and Bangladesh university of Engineering and technology in Dhaka, BRAC university, North South University, Rajshahi University, American international university Bangladesh, Ranada Prasad Shaha university, East west university and Asian university of Women, Comilia university, University of Barisal, Leading University, Asian university of Bangladesh, Eastern university of Bangladesh and Sonargaon University. The online questionnaire is prepared on Google Forms, where it was circulated through a link, email and social media platform. The respondents have age above eighteen years

(18) and below sixty (60) years. The limit is applied on the age because the aged respondents have limited knowledge of online shopping. The questionnaire of the study consists of two sections. Section 1 is the Demographic profile of the respondents, and section 2 is the questionnaire of the study. This is quantitative research. The research analysis is carried out in a statistical software SmartPLS.

2.5. Convergent Validity and Reliability

Convergent validity of a construct is established through two patterns of analysis, (1) Indicator's outer loading, and (2) average variance explained (AVE).

2.5.1. Outer loading

The basic criteria for outer loading are, each construct should explain at least 50% of the indicator's variance. To examine the variance explained by the construct, the square of each construct shows the standardized outer loading which should be greater than 0.70. The outer loading table of construct shows the values of all the constructs explaining 50% of the indicator's variance. The consumer trust in online shopping (CTI) has average of 0.674 which explains 67% of the indicator, Perceived Ability (PA) has an average of 0.673 which explains 67% of the indicator variance, Perceived benevolence (PB) has average outer loading of 0.801 which explains 80% of the indicator variance, Perceived integrity (PI) has an average outer loading of 0.745 which explains 74% of the indicator's variance, Perceived risk (PR) has an average outer loading of 0.702 which explains 70% of the indicator's variance, Perceived reliability (PRE) has an average of 0.732 which explains 73% of the indicator's variance, Perceived technical competence (PTC) has an average of 0.700 which explains 70% of the indicator variance, Internet Capability (IC) has an average of 0.740 which explain 74% of the indicator's variance, and Trust Propensity (TPR) has an average of 0.788 which explain 78% of the indicator's variance.

2.5.2. Validity

To observe either the construct is different from the other construct is examined through the discriminant validity technique. To examine the discriminant validity of

a construct, three prominent methods are used in PLS-SEM. The first method is; Cross loading criterion, second is; Fornell-Larcker criterion, and third method is; HTMT. In this research the researcher will use all three methods to examine the discriminant validity of all the indicators.

2.6. Data Analysis and Presentation

The data collected was analyzed using analysis on PLS-SEM. PLS analysis is widely accepted and the previous researches as approved it as compulsory standard for data analysis (Zeng, Liu, Gong, Hertogh, & König, 2021). In the first phase reliability and consistency of the data has been observed by the researcher. To fulfill the task, Composite reliability measures were selected as appropriate for analysis. The convergent validity is observed through (1) Cross loading, (2) Average variance Extracted. Discriminant validity of the construct is observed with (1) Cross loading criterion, (2) Fornell Larcker Criterion, (3) The Heterotrait-monotrait ratio (HTMT). Since, this research has a mediating role of 'Trust Propensity', which further observed through post-hoc analysis.

3. RESULTS

3.1. Measurement Model Assessment

The second generation of multivariate data analysis is the partial least square equation modeling, known as PLS-SEM. This method is useful in the research relating to marketing, business and other approaches to examine the theoretically supported linear models (StatSoft, 2013). PLS-SEM is useful in visualizing the relationship between the variables of interest to examine the consumer's satisfaction level. In this research the PLS-SEM is used to examine the role of consumer's trust in online shopping and their concerns regarding the merchant e-commerce fraudulent policies in Bangladesh. This method is adopted by the researcher because directly examining the dependent variable seems impossible. PLS has helped in measuring the sub-domains of data with latent variables.

To find the latent variable direction, Confirmatory Tetrad Analysis technique (CTA-PLS) is used (Gudergan, Ringle, Wende, & Will, 2008). In this research, the latent variables have at least four indicators, which fulfills the requirement to check the latent variable direction. In the reflective measurement model each tetrad is expected to be zero.

$$H_a: \pi \neq 0$$

$$H_0: \pi = 0$$

The above hypothesis is tested in CTA-PLS. Through the PLS-Algorithm technique, base data correlation indictors were observed. Indicators showed difference values in comparison to zero.

In the CTA results each variables' CL low adj and Cl up adj has been comparatively check to find either of them have zero. The results showed that, zero falls between two variables, which further leads to the conclusion that latent variables direction is reflective. Through this technique other variables were also check, which shows that

measurement model in Smart-PLS is reflective, and there is no need to change the direction of arrow in our model, because smart-PLS by default set to reflective measurement model.

3.1.1. Average Variance Extracted

The average variance extracted AVE is the grand mean of the indicator's squared loading, which is associated with the constructs. An established rule is, if the AVE value is above 0.5, it indicates the 50% of the variance is explained which is considered reliable among the indicators. It has been observed that each indicator has AVE value above 0.5, which shows that 50% of the variance is explained by the indicators, which proves the convergent validity of the construct for further analysis.

3.1.2. Fornell Larcker Criterion

The criterion of Fornell Larcker was established by Fornell and Larcker (1981) to access the 'shared variance degree between the latent variables' of the observed model. According to FL criterion, the observed convergent validity of any construct or measure is assessed though AVE and Composite reliability (CR), in which the composite reliability has been observed by the research in the table given above. The selection of composite reliability is adopted as a choice, because it is considered less biased than any other reliability checking technique. The Cronbach's alpha is considered biased in PLS-SEM.

3.1.3. The Heterotrait monotrait ratio HTMT

The Heterotrait-monotrait ratio commonly known as HTMT is considered more reliable in predicting the discriminant validity of the indicator's relationship between constructs. HTMT is defined as; Indicator correlation's mean value among constructs, which is relative to the mean of the average correlation of the same construct. If the value of HTMT is high, it shows the discriminant validity problem persists. According to Henseler et al., (2015) the threshold value is 0.90. If the value of the construct is greater than 0.9, it shows the discriminant validity is not present.

3.1.4. HTMT Bootstrapping

In the bootstrapping technique, it is observed that upper bound 95% confidence interval is lower in value to the threshold which is considered 0.90. The researcher has selected 0.90 as threshold value, which maybe different in other cases, as some researches uses 0.85 as recommended threshold value. The researcher has conducted one-sided bootstrapping. As can be observed in the table, there is no value of 1 in the intervals, which shows there is no discriminant validity issue. If there were any issues relating to HTMT values, then it can be eliminated by eliminating items to lower the value of correlation. The discriminant validity has been proved in HTMT bootstrapping technique. The researcher has fulfilled all three criteria to observe the discriminant validity. Although, it was not necessary to examine all three techniques to reach the conclusion, but it was considered appropriate that future researchers may benefit from the results.

3.2. Structural Model Assessment

The assessment of the structural model comes after the assessment of the measurement model. In this case, the measurement model assessment remained successful and satisfactory. The next step in PLS-SEM is to access the Structural model. The criteria used to assess the structural model are;

- Coefficient of determination assessment (R2)
- Blindfold-based cross-validated redundancy measure (Q2)
- Statistical significance
- Relevance of Path Coefficients

3.2.1. Model Estimation

The model estimation is carried out with PLS-SEM algorithm technique observed by (Li & Bar-Shalom, 1996). In this technique the maximum iterations selected are 300, the stopping criteria of iteration is 0.00000001. It has been observed that after running the algorithm, it converged to the less than expected iterations.

The results of the algorithm are given in the figure which shows the path relationships as regression coefficients. The number in the circles are the value of R2. In the initial assessment, it has been observed that Trust propensity has strongest impact on Consumer trust in online shopping (0.646) which explains 64% of the total variance, followed by Perceived certification has strong impact on Trust propensity (0.289) which explains 28% of the total variance, Perceived Reliability (0.175) which explains 17% of the total variance, and Perceived technical competence (0.112) which explains 11% of the total variance.

In the similar case we can observed the relationship of independent variables relationship with dependent variable, which shows the weak impact of Perceived Risk on Trust propensity (0.089) which explains 08% of the total variance, Perceived benevolence (0.107) which explains 10% of the total variance, Perceived ability (0.069) which explains 06% of the total variance and Internet Capability (-0.012) which explains 01% of the total variance, and perceived integrity (0.050) which explains 05% of the total variance.

3.2.2. Coefficient of Determination

To determine the coefficient of determination (R^2) to represent the amount of variance in the endogenous construct, which is explained by exogenous constructs (independent) in the model. The value of R^2 ranges from 0 to 1. This is the technique of 'prediction', if the value of R^2 is higher, it shows high level of predictability, if the value of R^2 is low, it shows lower level of predictability. We have examined the direct and indirect effect of the mediating variable TP on CTI. If the value of R2 is 0.75, it indicates the substantial, if 0.50 indicates moderate, and if 0.25 indicates the weak (Hair Jr et al., 2021). The results show, the Consumer trust online shopping (CTI) is explained by the mediating variable 'Trust propensity' to 59%, and the mediating variable is explained by the exogenous variables to 60%.

3.2.3. Q2 Predictive relevance

Q square is the predictive relevance, which predicts either the model has relevance or not. In case of good relevance, Q square should be greater than zero. If the model has greater value than zero, it shows greater predictive relevance. Q square establishes the predictive relevance of the endogenous constructs not the exogenous construct. If the value of Q Square is 0.02, it shows weak predictive relevance, if 0.15 shows moderate predictive relevance, if it is 0.35 shows strong degree of predictive relevance (Hair Jr et al., 2021). In the older version 3 of Smart-PLS blindfolding procedure can determine the Q square results, but in the Smart-PLS version 4, the change is observed as there is none blindfolding procedure. It has been changed with PLS-Predict. In the PLS-predict, the Latent variable predictive summary shows the Q square predict. As observed in the table, the Q2 predictive values are above zero, hence predictive relevance is established. The Q2 relevance of Consumer trust online shopping (CTI) is Q^2=0.26, and Trust Propensity (TP) is Q^2=0.39.

3.3. Hypothesis Testing

The hypothesis results of the research are given below, showing the statement of the hypothesis, direction of variable, and VF value which is the resulting value to examine the hypothesis.

3.3.1. Indirect effect

The indirect effect is observed through PLS-SEM bootstrapping procedure. The indirect effect is the product of path coefficient of PA, PB, PR, PTC, PC, PRE, IC to CTI. Where CTI is the consumer trust on online shopping, which is the dependent variable, and others are independent variables. The results of the table to find the indirect effect shows Perceived Benevolence (PB) has significant effect on Consumer Trust in Online shopping (CTI) path coefficient (0.045), t value (1.54), p value (0.052), follows by Perceived Risk (PR) path coefficient (0.057), t value

(2.30), p value (0.021), Perceived technical competence (PTC) path coefficient (0.072), t value (2.251), p value (0.024), Perceived Compatibility (PC) path coefficient (0.187), t value (6.94), p value (0.000), and Perceived reliability (PRE) path coefficient (0.113), t value (4.92), p value (0.000).

3.3.2. Direct effect

The above table of direct effect shows insignificant weak relationship of Perceived ability (PA) with Consumer trust online shopping (CTI) path coefficient 0.045, t value (1.54), p value (0.112), follows by Perceived benevolence (PB) path coefficient (0.069), t value (1.94), p value (0.052), Perceived Integrity (PI) path coefficient (0.033), t value (0.95), p value (0.339) and Internet Capability (IC) path coefficient (-0.008), t value (0.321), p value (0.748). The significant relationship of Perceived Benevolence (PB) with Trust Propensity (TP), path coefficient (0.107), t value (1.96), p value (0.50) follows by Perceived risk (PR) path coefficient (0.089), t value (2.33), p value (0.020), Perceived technical competence (PTC) path coefficient (0.112), t value (2.238), p value (0.025), Perceived certification (PC) path coefficient (0.289), t value (7.13) and p value (0.000), Perceived reliability (PRE) path coefficient (0.175), t value (4.98), p value (0.000). There is a significant strong relationship between Trust Propensity (TP) which is mediating variable, with Consumer trust in online shopping (CTI) which is dependent variable path coefficient (0.646), t value (45.6), p value (0.000).

3.3.3. Total effect

VAF is the moderating effect which is divided with indirect and total effect. The total effect is the sum of direct and indirect effect. We observed that Trust Propensity (TP) as mediating variable has strong direct effect on consumer trust in online shopping (CTI), VAF value 12.5. Hence, the results shows that TP →CTI explains the 12% of the effect on the dependent variable.

4. NEW AND NOVEL SCIENTIFIC RESULTS

Human being creates and generates liabilities and assets. The liabilities are the need of people to survive in the world, and assets provide a backbone of survival for the communities. To buy a liability, consumer has to go for shopping. In modern world, the shopping mechanism has been transformed from classic pattern of shopping to online shopping. In classic shopping, consumer relies on the merchant, and in the online shopping, consumer trust in online shopping has several dimensions. This study explored these dimensions to examine, which factor is prominent in maintaining the consumer trust in online shopping environment. This study has focused the Bangladeshi online markets. The prominent platforms in the country serve to deliver products to the consumers. However, there has been an ongoing fraud in the online shopping world, which make it harder for the consumer to shift their standards of 'trust in online shopping'. This study explored, which new factors are being trusted by the consumers, and which factors are not necessary to make a consumer's trust in online shopping.

1. This study has unique perspective to play in the exploration of 'trust' in online shopping in Bangladesh, because few studies have been published and no prominent study has explored the key factors to deal with trust mechanism in the online shopping world of Bangladesh. Based on the several factors this study has explored the merchant's benevolence factor, which is hidden in the online shopping as the consumer has no direct relationship with the merchant, but the factors that motivate a consumer to stay in the online market to buy from a particular merchant has some unique perspectives. In the first place, the consumer trusts a merchant who offers less price than others. Although, this trust factor has no moral ground, but greed which is the neglected factor in the study of 'trust'. Consumer's need leads to buy a product and consumer's greed helps to build a trust in the online merchant. Although there is a risk in buying a product online. This risk factor has several dimensions and these dimensions have been studied earlier in the studies.

2. It has been observed that technical competence is the backbone to a business. In Bangladesh, the industrial hub of the region, technical competence level is high. But, in case of technical competence dealing with online fraudulent activities over the websites, social media and online shopping platforms needs the involvement of Government sector's technical staff at one side, and shopping platform's technical competence at another level. This study is unique in exploring the technical competence of the online shopping platforms. In Bangladesh, there is no certification required to join the shopping platform as a technical staff member. It has been harder for the people to trust the online shopping platforms because of their shared accounts over the websites with incompetent staff dealing with consumer online data. In that data, the credit card information has been a gigantic hit in the last decade. However, the results shows that third party certification standards as promoted the 'technical competence' to a next level with updated certification standards to follow for the security protocols.
3. This study contributed empirical knowledge relating to the trust propensity. The propensity to trust in the online shopping medium is affected not by the availability of the internet, which is unique factor. Although the world of online business stood on the availability of the internet, but the consumer has availability of the internet, which is not a problem to go for online shopping. However, the perceived ability of the shopping medium, which is the internet, the shopping website and shopping application on smartphone, either Android application or iPhone store application has equal importance for the consumers. It has been observed in the study that consumers have grave concern when using an online tool (smartphone application) to buy a product, because of their shared accounts with the online platforms.

5. CONCLUSIONS

5.1. Conclusion

To examine the construct's reliability and consistency, it is important to examine the construct's Cronbach's alpha value. But it has been learned by the researcher that Cronbach's alpha value has little importance in PLS-SEM. Cronbach's measurement isn't a good fit to observe the reliability of the construct. In constrict, the researcher has used 'composite reliability' in replacement of Cronbach's reliability to ensure that scale has reliability. The internal consistency of the construct is observed through the same measure. To observe the convergent validity of the construct, the researcher has used two measures of indicator's outer loading and average variance examined, which proves the convergent validity of the construct. In the similar fashion, the discriminant validity of the construct is established through cross loading criterion which proves that construct has valid discriminant validity, also the researcher ensures to examine the discriminant validity of the construct through Fornell Larcker criterion, which proves that construct has discriminant validity. It has been learned by the researcher that Fornell Larcker criterion failed to observe the discriminant validity in previous studies. To remove the gap and to assure the discriminant validity, the researcher has established a third measure of Heterotrait-monotrait ratio (HTMT), which is acceptable as per modern standards. It has been observed that through bootstrapping technique, the HTMT criterion has established the discriminant validity of the construct.

According to hypothesis results, (Hypothesis H1) perceived benevolence of the online merchant has positive impact in shaping a consumer's trust in online shopping. However, the similar results have been drawn in the (hypothesis H2), where the perceived risk has strong positive impact in building a consumer's trust in online shopping. The effect of perceived risk is negative to the consumer trust, which shows in case of risk there won't be any trust with the online merchant and shopping platform. Online shopping medium involves the perceived ability (Hypothesis H3) which shows the positive impact with consumer's trust in online shopping ***therefore***

H3 is accepted. However, the (hypothesis H4) perceived integrity has negative impact on consumer' trust. Integrity plays an important role, and in case of non-availability of integrity, there is lesser chances of trust ***therefore H4 is accepted***. If there is no internet (hypothesis H7), there is no connection between consumer and merchant. The result shows that internet capability, which motivates the consumer's intention to buy a product has negative effect in building a consumer' trust in online shopping, therefore ***H7 is rejected***. This study established a case (Hypothesis H9), that trust propensity factors have strong impact to the consumer's trust in online shopping, ***therefore H9 is accepted***.

In the recent years the e-commerce industry has remained a leader in electronic business, especially after the covid-19 pandemic, the role of e-commerce emerged as an 'everlasting business', which facilitated the consumers in hard times. The e-commerce industry has introduced new modes of transaction, changing the old mode of 'currency payment' and making a way to the ground breaking transactional setup. Also, the e-commerce shopping industry has introduced a mechanism of brand introduction through different techniques. In the upcoming years, the meta universe of internet will be exposed to artificial intelligence, though which a consumer can interact with a thing available on the store. This technique will revolutionize the electronic commerce. In Bangladesh, the e-commerce industry has been flourishing since past few years, and its impact on the traditional business has been observed deeply. It has introduced a strong setup of change in the lives of common consumers. This change has facilitated the consumers with bunch of facilities, by sitting at location and placing an order of a product. No, physical visit to the shopping store and no extra cost on travel, or shipment charges. All these facilities have made the consumer happy and satisfied.

On one side, e-commerce has given benefits to the consumer and on the other side e-commerce is exposed to a greater risk. The mode of payment on online shopping platform is not safe for the consumers. Transactional details shared by the consumer

on the website or smartphone application record private information of the client. In that case, the merchant fraud has prevailed in the Bangladesh. Perceived ability of the internet merchant has insignificant impact on the 'consumer's trust in online shopping'. Yuniarto et al. (2018) has observed the same case of perceived ability, which has a place in other factors but not in building a relationship between consumer and internet merchant. In the similar fashion, perceived benevolence of the internet merchant has insignificant impact on the consumer's trust in online shopping. It has been observed that perceived ability and perceived benevolence of the internet merchant has small impact on the trust of the consumers. According to Degli Esposti et al. (2021) perceived benevolence has little impact on trust building between internet merchant and consumer. Hence, these variables have less propensity level in determining the trust. Consumer has no intention to examine the benevolence of the merchant, or to inspect the ability of the merchant. Internet merchant either charge more for the internet shopping, but it has no impact on the consumer's trust. If internet merchant is honest or not has nothing to do with the consumer, or the just act of the merchant has no impact on the consumer's trust level. If internet merchant provides sales in every six months, it has strong impact on the consumer's trust in online shopping. As, the belief in the internet merchant regarding the 'he will do his best for the client', has no impact to shape a consumer's trust. Similar is the case with internet merchant's ability to find a right product for the consumer. These qualities have no place to shape and build a strong positive trust on the client.

Perceived risk has strong significant impact on consumer's trust in online shopping. Consumer is afraid of sharing personal detail on their shopping website. Consumer is afraid that his credit card details may be stolen by the internet merchant, or the sopping website or smartphone application might misuse the private information of the client. Consumer feels unsatisfied and got suspicion from online shopping websites. Consumer in Bangladesh believes that shopping websites did not promise secure transaction, and there is no cashback guaranteed to the consumer in case of

risk. Ahmed et al. (2021); Lăzăroiu et al. (2020) has observed the impact of perceived risk on trust of the consumer on online shopping platforms. Similar case has been observed by (Drew & Farrell, 2018; Pavlou, 2003; Qalati et al., 2021) in their studies.

However, Internet Capability trustworthiness has strong impact in building a strong trust of consumer with online shopping. It has been believed by the consumer that shopping websites have proper understanding of the technology in use. Shopping websites are good at fixing problems with the online store. In case of any technical issue, consumer feels satisfied with the staff. Consumer got quick resolve of the conflict and believes that online shopping stores with great understanding of the technical processes cannot compromise with their credit card information, because they don't have lop holes in their system to steal the private information of the client.

5.2. Recommendations

Support from Government sector

There is a dire need to develop the e-commerce industry in Bangladesh on modern standards. As the e-commerce industry relies on the usage of internet and linked with technological infrastructure, it is necessary for the government to facilitate e-commerce related businesses with better rules and regulations.

- Tax duty on e-commerce related technologies, computers must be lifted to empower the businesses.
- Delivery of product to abroad needs updated rules with ease and comfort for the vendor.
- Availability of the uninterrupted internet on e-commerce locations.
- Availability of the internet for consumers.
- Reducing prices on product delivery.

For internet merchant and online shopping platforms

- It is necessary to follow the rules and regulations of the government relating to e-commerce businesses. In case, where the product delivery charges are concerned, the internet merchant can;
- Localize a business to cities to reduce delivery costs.
- Outlets can be introduced to several cities.
- Product return facility on local cities with international standards machines.
- Investigation and elimination of fake reviews on online shopping websites.

For researchers and companies

It is necessary for the future research to observe the warehouses of online shopping platforms to get insight about the mechanism. It is also necessary for the researcher to; devise a consumer-based satisfaction scale for online shopping.

This chapter presents the discussion and conclusion of the research. the e-commerce frauds in online shopping have remained common in Bangladesh. The involvement of 'internet merchant' in online shopping fraud is reviewed in previous studies but no particular study is being found by the research relating to 'e-commerce internet merchant's fraud of online shopping'.

5. REFERENCES

1. Ahmed, S. Y., Ali, B. J., & Top, C. (2021). Understanding the impact of trust, perceived risk, and perceived technology on the online shopping intentions: case study in Kurdistan Region of Iraq. *Ahmed, SY, Ali, BJ, Top, C.(2021). Understanding the Impact of Trust, Perceived Risk, and Perceived Technology on the Online Shopping Intentions: Case Study in Kurdistan Region of Iraq. Journal of Contemporary Issues in Business and Government, 27*(3), 2136-2153.
2. Amin, M., Rezaei, S., & Abolghasemi, M. (2014). User satisfaction with mobile websites: the impact of perceived usefulness (PU), perceived ease of use (PEOU) and trust. *Nankai Business Review International*.
3. Banna, M. H. A., Sayeed, A., Kundu, S., Christopher, E., Hasan, M. T., Begum, M. R., . . . Chowdhury, S. (2022). The impact of the COVID-19 pandemic on the mental health of the adult population in Bangladesh: a nationwide cross-sectional study. *International Journal of Environmental Health Research, 32*(4), 850-861.
4. Bojang, I., Medvedev, M. A., Spasov, K. B., & Matvevnina, A. I. (2017). *Determinants of trust in B2C e-commerce and their relationship with consumer online trust.* Paper presented at the AIP Conference Proceedings.
5. Chen, S. C., & Dhillon, G. S. (2003). Interpreting dimensions of consumer trust in e-commerce. *Information technology and management, 4*(2), 303-318.
6. Cho, Y., & Shim, S. S. (2013). Predicting teachers' achievement goals for teaching: The role of perceived school goal structure and teachers' sense of efficacy. *Teaching and teacher education, 32*, 12-21.
7. Chowdhury, M. S. A., Bappi, M. A. U., Imtiaz, M. N., Hoque, S., Islam, S., & Haque, M. S. (2022). The Transition of E-Commerce Industry in Bangladesh: Added Concerns & Ways of Recovery. *International Journal of Economics and Finance, 14*(7), 1-18.
8. Degli Esposti, S., Ball, K., & Dibb, S. (2021). What's In It For Us? Benevolence, National Security, and Digital Surveillance. *Public Administration Review, 81*(5), 862-873.
9. Diputra, I., & Yasa, N. (2021). The influence of product quality, brand image, brand trust on customer satisfaction and loyalty. *American International Journal of Business Management (AIJBM), 4*(1), 25-34.
10. Drew, J. M., & Farrell, L. (2018). Online victimization risk and self-protective strategies: Developing police-led cyber fraud prevention programs. *Police Practice and Research, 19*(6), 537-549.
11. Fatima, I., Humayun, A., Iqbal, U., & Shafiq, M. (2019). Dimensions of service quality in healthcare: a systematic review of literature. *International Journal for Quality in Health Care, 31*(1), 11-29.
12. Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. In: Sage Publications Sage CA: Los Angeles, CA.
13. Georgiadou, E., Koopmann, A., Müller, A., Leménager, T., Hillemacher, T., & Kiefer, F. (2021). Who Was Shopping More During the Spring Lockdown 2020 in Germany? *Frontiers in Psychiatry, 12*, 215.
14. Gudergan, S. P., Ringle, C. M., Wende, S., & Will, A. (2008). Confirmatory tetrad analysis in PLS path modeling. *Journal of business research, 61*(12), 1238-1249.

15. Guo, Y., Wang, X., & Wang, C. (2021). Impact of privacy policy content on perceived effectiveness of privacy policy: the role of vulnerability, benevolence and privacy concern. *Journal of Enterprise Information Management*.
16. Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). Partial least squares structural equation modeling (PLS-SEM) using R: A workbook. In: Springer Nature.
17. Hammouri, Q., Al-Gasawneh, J. A., Nusairat, N. M., Hanandeh, A., & Barakat, S. (2021). The Determinants of Trust and its Influence on Online Buying Intention: An Empirical Study on Social Commerce in Jordan. *Annals of the Romanian Society for Cell Biology*, 4522-4539.
18. Hasan, M. M., & Islam, M. R. (2013). Assessing service quality of mobile money transfer in bangladesh: A case study on bkash. *International Journal of Innovative Research and Development (ISSN 2278–0211), 2*(7).
19. Hatanaka, M., Bain, C., & Busch, L. (2005). Third-party certification in the global agrifood system. *Food policy, 30*(3), 354-369.
20. Hossain, S. (2021). E-commerce Business Opportunities, Challenges and Future in Bangladesh.
21. Hossin, M. A., Sarker, M. N. I., Xiaohua, Y., & Frimpong, A. N. K. (2018). *Development dimensions of e-commerce in Bangladesh: scope, challenges and threats.* Paper presented at the Proceedings of the 2018 International Conference on Information Management & Management Science.
22. Jahangir, N., & Begum, N. (2008). The role of perceived usefulness, perceived ease of use, security and privacy, and customer attitude to engender customer adaptation in the context of electronic banking. *African journal of business management, 2*(2), 032-040.
23. Jiang, P., Jones, D. B., & Javie, S. (2008). How third- party certification programs relate to consumer trust in online transactions: An exploratory study. *Psychology & Marketing, 25*(9), 839-858.
24. Junior, F. M. R., & Kamienski, C. A. (2021). A Survey on Trustworthiness for the Internet of Things. *IEEE Access, 9*, 42493-42514.
25. Khan, A. G. (2016). Electronic commerce: A study on benefits and challenges in an emerging economy. *Global Journal of Management and Business Research*.
26. Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision support systems, 44*(2), 544-564.
27. Laudon, K. C., & Traver, C. G. (2013). *E-commerce*: Pearson Boston, MA.
28. Lăzăroiu, G., Neguriţă, O., Grecu, I., Grecu, G., & Mitran, P. C. (2020). Consumers' decision-making process on social commerce platforms: online trust, perceived risk, and purchase intentions. *Frontiers in Psychology, 11*, 890.
29. Lee, Y., Kozar, K. A., & Larsen, K. R. (2003). The technology acceptance model: Past, present, and future. *Communications of the Association for information systems, 12*(1), 50.
30. Li, X.-R., & Bar-Shalom, Y. (1996). Multiple-model estimation with variable structure. *IEEE Transactions on Automatic control, 41*(4), 478-493.
31. Liu, F.-M., & Ding, Y.-S. (2007). Evolutionary model of trust game based on ecological network in P 2 P networks. *Jisuanji Gongcheng yu Yingyong(Computer Engineering and Applications), 42*(23), 24-27.

32. Obeidat, Z., Alshurideh, M., Al Dweeri, R., & Masa'deh, R. (2019). *The influence of online revenge acts on consumers psychological and emotional states: Does revenge taste sweet.* Paper presented at the Proceedings of the 33rd International Business Information Management Association Conference, IBIMA.
33. Pai, Y. P., & Chary, S. T. (2016). Measuring patient-perceived hospital service quality: a conceptual framework. *International journal of health care quality assurance*.
34. Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of electronic commerce, 7*(3), 101-134.
35. Peterson, R. A., & Kim, Y. (2013). On the relationship between coefficient alpha and composite reliability. *Journal of applied psychology, 98*(1), 194.
36. Qalati, S. A., Vela, E. G., Li, W., Dakhan, S. A., Hong Thuy, T. T., & Merani, S. H. (2021). Effects of perceived service quality, website quality, and reputation on purchase intention: The mediating and moderating roles of trust and perceived risk in online shopping. *Cogent Business & Management, 8*(1), 1869363.
37. Quoquab, F., Sadom, N. Z. M., & Mohammad, J. (2019). Driving customer loyalty in the Malaysian fast food industry: The role of halal logo, trust and perceived reputation. *Journal of Islamic Marketing*.
38. Raykov, T., & Grayson, D. (2003). A test for change of composite reliability in scale development. *Multivariate behavioral research, 38*(2), 143-159.
39. Sobihah, M., Mohamad, M., Ali, N. A. M., & Ismail, W. Z. W. (2015). E-commerce service quality on customer satisfaction, belief and loyalty: a proposal. *Mediterranean Journal of Social Sciences, 6*(2), 260-260.
40. Stafford, J., & Wallnau, K. (2001). *Is third party certification necessary?* Paper presented at the Proceedings of the 4th ICSE Workshop on Component-based Software Engineering: Component Certification and System Prediction.
41. StatSoft, I. (2013). Electronic statistics textbook. *Tulsa, OK: StatSoft, 34*.
42. Suki, N. M. (2011). A structural model of customer satisfaction and trust in vendors involved in mobile commerce. *International Journal of Business Science & Applied Management (IJBSAM), 6*(2), 18-30.
43. Sultana, F., & Akter, A. (2021). Women E-Commerce: Perspective in Bangladesh. *Journal of Management, Economics, and Industrial Organization, 5*(3), 1-13.
44. Tendai, M., & Crispen, C. (2009). In-store shopping environment and impulsive buying. *African journal of marketing management, 1*(4), 102-108.
45. Wang, C.-C., Chen, C.-A., & Jiang, J.-C. (2009). The Impact of Knowledge and Trust on E-Consumers' Online Shopping Activities: An Empirical Study. *J. Comput., 4*(1), 11-18.
46. Willis, B., Jai, T., & Lauderdale, M. (2021). Trust and commitment: Effect of applying consumer data rights on US Consumers' attitudes toward online retailers in big data era. *Journal of Consumer Behaviour, 20*(6), 1575-1590.
47. Xia, H., Xiao, F., Zhang, S.-s., Hu, C.-q., & Cheng, X.-z. (2019). *Trustworthiness inference framework in the social Internet of Things: A context-aware approach.* Paper presented at the IEEE INFOCOM 2019-IEEE Conference on Computer Communications.
48. XU, J., & CHENG, C. (2021). Uncertainty avoidance, individualism and the readiness of Business-to-Consumer E-commerce. *The Journal of Asian Finance, Economics, and Business, 8*(1), 791-801.

49. Yuniarto, D., Suryadi, M., Firmansyah, E., Herdiana, D., & Rahman, A. B. A. (2018). *Integrating the readiness and usability models for assessing the information system use.* Paper presented at the 2018 6th International Conference on Cyber and IT Service Management (CITSM).
50. Zeng, N., Liu, Y., Gong, P., Hertogh, M., & König, M. (2021). Do right PLS and do PLS right: A critical review of the application of PLS-SEM in construction management research. *Frontiers of Engineering Management, 8*(3), 356-369.

PUBLICATION LISTS

1. **Billal, H. M.**, Shin, H. K., & Sim, W. J. (2019). Critical success factors (CSF) on e-commerce adoption in Bangladesh SMEs. *MANAGEMENT REVIEW: AN INTERNATIONAL JOURNAL*, 14:(1), 51-81.

2. Wicaksono, T., **Hossain, M. B.**, & Illés, C. B. (2021). Prioritizing business quality improvement of fresh agri-food SMEs through open innovation to survive the pandemic: A QFD-based model. *JOURNAL OF OPEN INNOVATION: TECHNOLOGY, MARKET, AND COMPLEXITY*, 7:(2), 156. (Scopus: Q1)

3. **Hossain, M. B.**, Wicaksono, T., Nor, K. M., Dunay, A., & Illes, C. B. (2022). E-commerce adoption of small and medium-sized enterprises during COVID-19 pandemic: Evidence from South Asian Countries. *THE JOURNAL OF ASIAN FINANCE, ECONOMICS AND BUSINESS*, 9:(1), 291-298. (WoS)

4. Hervie, D. M., Amoako-Atta, E., **Hossain, M. B.**, Illés, C. B., & Dunay, A. (2022). Impact of COVID-19 Pandemic on Hotel Employees in the Greater Accra Region of Ghana. *SUSTAINABILITY*, 14:(5), 2509 (Scopus: Q1; WoS IF: 3.889; MTA IV. osztály: A)

5. Priatmoko S, **Hossain MB,** Rahmawati W, Winarno SB, Dávid LD (2022). Webinar among Indonesian academics during Covid-19, embracing the audiences. *PLOS ONE*, 17:(3), e0265257 (Scopus: Q1; WoS IF: 3.752; MTA IX. osztály SzTB: A nemzetközi)

6. Dewan, N., **Hossain, M. B.**, Kim, G. G., Dunay, A., & Illés, C. B. (2022). Transportation Mobile Applications Adoption Behavior Does Affect Overseas Residents' Life Satisfaction: Involvement as A Moderator. *COGENT BUSINESS & MANAGEMENT*, 9:(1), 2096998. (Scopus: Q2; WoS)

7. Dewan, N., **Hossain, M. B.**, Kim, G. G., Dunay, A., & Bálint Illés, C. (2022). How Does AR Technology Adoption and Involvement Behavior Affect Overseas Residents' Life Satisfaction? *BIG DATA AND COGNITIVE COMPUTING*, 6:(3), 80. (Scopus: Q1; WoS)

8. **Hossain Md.B**., Al-Hanakta R.Y., Hervie D.M., Nor Md.K., Illes C.B. (2022). Exploring the key success factors for sustainable e-commerce adoption in SMEs. *POLISH JOURNAL OF MANAGEMENT STUDIES*, 2022; 25:(1), 162-178. (Scopus: Q3; WoS; MTA IV. osztály: A)

9. **Hossain, M. B.**, Nassar, S., Rahman, M. U., Dunay, A., & Illés, C. B. (2022). Exploring the mediating role of knowledge management practices to corporate sustainability. *JOURNAL OF CLEANER PRODUCTION*, 374, Paper: 133869 (Scopus: D1; WoS IF: 11.072; MTA IX. osztály GMB: A nemzetközi)

10. Nassar, S., **Hossain, M. B.**, Naárné, É. Z. T., & Vasa, L. (2022). The mediating effect of organizational and co-workers support on employee retention in international non-governmental organizations in Gaza Strip. *DECISION MAKING: APPLICATIONS IN MANAGEMENT AND ENGINEERING*, 5(2), 396-412. (Scopus, Q1)

11. Al-Hanakta, R., **Hossain, M. B**., Pataki, L., & Dunay, A. (2023). Eco-innovation influence on business performance in Jordanian micro, small and medium enterprises operating in the food processing sector. Plos one, 18(2), e0281664. (Scopus: Q1; WoS IF: 3.752; MTA IX. osztály SzTB: A nemzetközi)