

RESEARCH ARTICLE

E-shopping decisions during the COVID-19 pandemic in Bangladesh: The mediating role of consumers' psychology

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ABSTRACT

The COVID-19 pandemic has fundamentally transformed consumer behavior on a global scale, and Bangladesh is no exception. The pandemic caused extraordinary disruptions in daily life, forcing consumers to rapidly adjust to a new normal characterized by lockdowns, social isolation, and limitations on physical mobility. Coronavirus disease 2019 (COVID-19) brings greater changes in the consumer decision-making process across the globe. Factors affecting consumers' electronic shopping (e-shopping) decisions may vary between pre and during the COVID-19 situation. Therefore, the purpose of this research was to investigate the determinants of electronic shopping decisions during the COVID-19 pandemic in the context of Bangladesh, along with the role of consumers' psychology as a mediator. Quantitative type research was applied, and the study used a descriptive research design. A standardized questionnaire was used to collect 543 data points from Bangladeshi consumers using an online purposive sampling method. A partial least squares structural equation modeling (PLS-SEM) approach was used to evaluate the data and test the hypotheses. The results of the PLS-SEM method showed that electronic shopping decisions were significantly associated with consumers' psychology, governmental, health, product, and payment factors. The results also revealed that consumers' psychology significantly and positively mediates the relationship between three determinants (e.g., governmental, social, and product aspects) and electronic shopping decisions. The research recommends that managers, policymakers, and practitioners should provide special attention to the significant determinants of electronic shopping decisions and formulate relevant strategies to address the changes in consumer behavior brought by coronavirus disease.

Keywords: E-shopping; consumers' psychology; COVID-19 pandemic; PLS-SEM; Bangladesh

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1. Introduction

The global COVID-19 issue is still wreaking havoc on society and economies all over the world, affecting all sectors of the economy in different ways. The second wave of the pandemic is a once-in a-lifetime occurrence that is having a substantial impact on economic recovery. Furthermore, the nationwide lockdowns have various ramifications for consumers' daily lives and have radically impacted how businesses and consumers behave. The market witnessed spectacular shifts in consumer behavior during the first wave of the COVID-19 pandemic, owing primarily to government limitations. COVID-19 has brought about a major shift in urban mobility. As a consequence of pandemic precautions and other government actions, there is an unprecedented surge in e-commerce around the world. Consumers of all ages are increasingly making digital purchases of critical goods and services. Consumer opinion is splitting as a result of government constraints, and tracking this deviation will help us strategize and adapt our marketing aims ^[1].

Bangladesh is currently in the grip of the second wave of the COVID-19 pandemic. The second wave peaked in the first week of April, but the situation should improve by mid-May if the severe lockdown is well executed ^[2]. Due to the coronavirus outbreak, practically every country in the world has been placed under lockdown. The economy is stagnant, people are losing jobs, and a significant number of low-income people are falling into extreme poverty. E-commerce businesses are also facing challenges due to mobility restrictions and consumers' fears of being infected by delivery men. Consumers are deeply concerned about COVID-19's effects, both in terms of health and economics. People are reacting in a variety of ways, with differing attitudes, behaviors, and purchasing habits. The COVID-19 outbreak has slowed and altered many consumers' daily lives, having a significant impact on how we perceive personal cleanliness, health, and how we interact with our communities, friends, and families. People are adopting technology in greater numbers than ever before to assist with all aspects and ramifications of isolation. There is also evidence that this crisis will aid in the development of communities rather than tearing them apart. COVID-19 is a health and economic disaster that will have long-term effects on consumer attitudes, behaviors, and purchasing habits. Firms in the consumer packaged goods industry can respond to these changes by implementing activities to adjust, reset, and reinvent themselves in order to be more competitive in the future ^[3]. The information and communication technology revolution has played a critical role in transforming the global economy into a digital economy. It is viewed as the engine of a modern economy, with the goal of accelerating the country's economic growth. Nowadays, the old market has given way to a digital or online market with a wider reach and greater consumer trust. In the case of the COVID-19 pandemic in Bangladesh, it has already been demonstrated that there is no other marketplace other than online, and the entire world is completely reliant on online economic transactions ^[4]. The pandemic of COVID-19 has increased online purchasing among Bangladeshi consumers. Previously, it took a lot of effort to get consumers used to purchasing online, but the results were not as effective as the current COVID-19 phenomenon.

After reviewing most related literature of factors that influence on consumers' electronic shopping decisions, it is clear that maximum scholars tried to measure the influence of several factors (governmental, health, social, payment, and product factors) on purchase intention, online purchase intention, online hotel booking, online shopping intention, buying behavior, purchasing behavior, online buying behavior, online shopping behavior, electronic shopping decisions, purchase decisions, satisfaction and loyalty from the perspectives of all over the world, but this research has been tried to focus on examined the factors affecting electronic shopping decisions during the COVID-19 pandemic, adding the Fear-Avoidance Model FAM, by examining the mediating role of consumers' psychology in the perspective of Bangladesh which remained as an unexplored field. Therefore, this research provides an insight on the influence of governmental, health, social, payment, and product factors on electronic shopping decisions during the COVID-19 pandemic in the

mediating role of consumers' psychology. Understanding Bangladeshi consumers' purchasing experiences on this platform will help policymakers and stakeholders develop enhanced digital marketing strategies in Bangladesh, and provide useful data for research during the COVID-19 pandemic.

This research article is allocated into several sections. Firstly, objectives of the research. Secondly, the literature review is provided based on a past study. Thirdly, the theoretical background and hypotheses development have been demonstrated. Fourthly, research methods that are applied to the current research are described. Fifthly, the paper is demonstrated with the results and analysis. Sixthly, the conclusions and implications section incorporate the consequences of present research and its linkups with the previous studies. At the end of the segment, the shortcomings and potential directions of the research are stated.

1.1 Objectives of the research

The general objective of this study was to investigate the factors affecting electronic shopping decisions while using consumers' psychology as a mediator during the COVID-19 pandemic from the perspective of Bangladesh. Specific objectives are: to identify the influence of governmental, health, social, payment, and product aspects on psychology and e-shopping decisions; to examine the effects of consumers' psychology on e-shopping decisions; and to examine how psychology mediates the relationship between several aspects and e-shopping decisions.

2. Review of literature

Bangladeshi consumers' electronic shopping habits were significantly impacted by the COVID-19 pandemic, which upset their usual routines and caused them to switch to internet retailers. Bangladesh's online purchasing habits have been rapidly expanding in recent years as a result of rising internet usage, better digital infrastructure, and the availability of sensibly priced smartphones. Online shopping is becoming more and more popular among Bangladeshi consumers as a practical and effective way to purchase a variety of goods and services. It is important to note that depending on variables like location, socioeconomic position, and access to technology, the precise impact of the COVID-19 pandemic on electronic shopping behavior in Bangladesh may differ.

2.1 Governmental factor

Government policy is assessed in the form of rules, treaties, and bilateral agreements that limit organizations' choices of who to buy from, what to buy, and how to buy ^[5]. The government has a huge impact on the expansion of a specific enterprise ^[6]. In a growing economy, the influence of government standards and personal consideration factors on organizational purchase decisions is obvious. Although government policy requirements and personal interest variables have a direct impact on organizational purchasing decisions, they were subsequently identified as having a more substantial impact ^[7]. E-commerce advancements necessitate on going government support initiatives as well as the implementation of critical government legislation and regulations. Hai LC, Alam Kazmi SH ^[8] propose merging governmental factors with other antecedents of consumer purchasing intention in the technology adoption model to build an inventive, quicker, and stable e-commerce market environment (TAM). Government assistance influences perceived ease of e-shopping and, consequently, consumer e-shopping intentions. Consumers are shifting to online and mobile shopping to purchase groceries, daily essentials, and other products as a result of government lockdowns and business closings. According to current research included in the paper, a double-digit share of online buyers are purchasing more digitally as a result of COVID-19, with some adopting the habit for the first time during the outbreak. As a result, the portion of global retail sales generated by e-commerce is expanding and is expected to reach one-third by 2024 ^[9].

2.2 Health factor

Health awareness is a measure of one's eagerness to engage in health-related activities ^[10]. Numerous studies on health consciousness have been conducted; however, the functioning and theoretical elucidation of health perception is not consistently adequate ^[11]. Health consciousness is the process of paying attention, concentrating, and caring for one's own health ^[12]. Individuals who are health-conscious are concerned about their health and make efforts to maintain a healthy balance and development of their health ^[13]. Consumers keep their health in check by engaging in daily health activities, eating fresh and organic foods, and keeping their physical and psychological health in check ^[14]. According to investigations, consumers' opinions are considerably and positively influenced by their health consciousness, particularly when it comes to dietary supplement goods ^[15]. Millions of online consumers change their behavior at the same time in order to save time and be more suitable, putting a tremendous strain on e-commerce and online businesses today. Once state-by-state stay-at-home (health) orders are raised, e-commerce sales may begin to fall at a slower rate than they are now. However, behavioral changes are already in action that will drastically alter the retailing scene and businesses in general for years to come ^[16]. COVID-19 is a highly contagious respiratory disease caused by a recently identified coronavirus. Because of the city's lockdown and closure of retail malls and business centres during the coronavirus pandemic, human daily life, transportation, and business have been disrupted. Currently, e-commerce is a powerful instrument for assisting consumers in remaining at home, keeping social distance, safeguarding against viruses, and enriching relationships with both consumers and business partners. Previous research shown that in a coronavirus (COVID-19) pandemic situation, the health element has a favorable and significant effect on e-commerce decisions ^[17].

2.3 Social factor

Family, reference, social value and status are examples of social factors that impact consumer decisions. Consumers' purchasing decisions are positively influenced by the virtual group and word of mouth in the context of e-marketing. Friendship groups, colleague groups, workgroups, virtual groups or communities, shopping groups, and consumer-action groups are examples of consumer reference groups ^[18]. Social factors such as family, reference groups, roles, and status all have a substantial impact on purchasing behavior. These factors play a significant influence in consumer purchasing decisions ^[19]. Reference groups consider consumer reference groups such as family members, friends, social institutions, professional organizations, and trade, which influence brand choices. Others' values and behaviors are influenced by reference groups in some way. The bulk of purchasers are influenced by the reference group's opinions and feelings. Previous research found that the influence of the reference group, social circumstances, and extraversion were three major elements influencing consumer purchase behavior ^[20]. Family members have a strong influence on consumer behavior. Sellers are concerned about the wives, husbands, and children's roles and influences. Consumer behavior is influenced by age and life cycle stage since people's purchasing habits change over time ^[21]. Dignity refers to society's regard for such job. People frequently choose things that serve as messengers of their social role and position in the community ^[22]. Social variables such as groups, family, roles and status also influence a consumer's behavior ^[23].

2.4 Payment factor

The payment mechanism is one of the most important factors of every transaction ^[24]. Payment collected and processed electronically is frequently referred to as e-payment ^[25]. It is a worldwide phenomenon that enables people to conduct online transactions from any location and at any time ^[26]. As a result, both national and international trade are boosted ^[27]. Its popularity is often attributed to its adaptability and applicability, as well as a respect for rapid technological advancement ^[28]. M-payment, a type of e-payment, makes use of

communication technology by enabling users to make payments using internet-connected mobile devices ^[29]. M-payment systems take advantage of wireless and communication technology by allowing payments to be made using mobile phones via SMS message, PIN transmission, WAP electronic billing, Mobile Web, direct to credit card transaction, and direct to subscriber bill ^[30]. Because of their utility, product users have been shown to be increasingly supportive of M-payment solutions ^[31]. Electronic point of sale (E-POS) and electronic payment methods are user-friendly, multi-functional accessories that provide a variety of consumption options. It allows staffs to manage consumer payments in a minimal manner before recording the payments for strong accounting drives. The E-POS is similar to an electronic cash register in that it allows sales points to be linked to both merchant and buyer banking accounts in order to transfer money automatically ^[32]. Consumers' perceived security and trust in mobile and other payment systems impede e-commerce transactions ^[33]. The method of money is changing from day to day. As money formats changed, the globe displayed a variety of transaction formats such as electronic fund transfer (EFT), electronic transactions at point-of-sale (POS), store value cards, prepaid devices, digital wallets, and network money, among others ^[34]. According to studies, spending and payment by credit card are more conditional than cash and credit card, resulting in a more relaxed and acceptable lifestyle ^[35]. Mobile payments make life easier for consumers by allowing them to conduct international transactions, have access to the global financial market, and make additional cash payments. Except for going to an ATM, consumers can pay for transportation tickets, items, or service fees ^[36]. Consumers can transact with mobile banking authorities regardless of their location ^[37]. According to studies, electronic payment reduces total purchase costs when compared to cash payment, and consumers intend to acquire at reduced transaction prices ^[38].

2.5 Product factor

A Product is anything on the market, including physical goods, services, people, organizations and necessities to be considered, acquired or consumed. Goods or services that can be presented on the market, both online and offline, to attract attention, achievement, use, or consumption to meet consumers' demands or needs. Because the product is sold to consumers for profit, it is the dynamic of commercial activity ^[22]. Product attributes were identified as the most vigorous variable, as well as a motivating dynamic that influences consumers to make a product purchasing decision ^[39]. Individuals and households who buy the goods for personal use are referred to as consumers ^[40]. It is regularly used to differentiate between two types of consuming entities, such as personal consumers and organizational consumers. While usability is one of the most important aspects of product selection, other factors such as features, aesthetics, and price all have an impact on product brand selection ^[41]. Similarly, previous studies identified four critical aspects such as price, size or shape, new technology aspects, and brand name that may impact consumers' purchasing decisions. According to the results of the study, the most important characteristic that determines consumers' decision to purchase a new product is new technology ^[42]. Furthermore, there is a positive relationship between product and purchase decision in Bangladesh ^[43].

2.6 Consumers' psychology

Psychological variables are major elements in an individual's life. Motivation, perception, learning, and attitudes and beliefs are the four major psychological components. Consumers' online purchasing decisions are influenced by factors such as perception, attitudes, motivation, personality, and emotion ^[44]. Perception is a way of exposure, attention, and interpretation, as well as a reality theory. When the impetus is at a modest distance from the sensory receptors of the consumers, exposure happens. Attention is the perceptual selection of a small portion of total exposure, and interpretation is an illustration of a meaningful image of the stimuli received by consumers ^[45]. Consumer motivation can be defined as their needs, wants, and demands. It occurs when consumers feel the need to satisfy their needs, wants, and demands. It serves as a powerful force

to fulfil the wishes and demands of the consumers ^[46]. Belief is an individual's point of view on any item, whereas attitude refers to judgments such as good or negative, sentiments, emotions, and actions toward an object. Consumers have different opinions and attitudes toward specific items or services ^[47]. Consumers will only make a purchase if their views and attitudes toward a product, service, or brand are favorable; otherwise, they will not make a buy ^[48].

2.7 E-Shopping decisions

E-shopping decisions refer to the process by which consumers make choices regarding the purchase of goods or services through online platforms. These decisions encompass the entire consumer journey, from the initial recognition of a need or desire to the final purchase and post-purchase behavior. E-shopping can be defined as actions involving the purchase of products and services via electronic media or the internet using information and communication technologies. According to studies, the majority of e-shoppers are from the higher economic classes, whereas persons from the middle or lower economic classes have less intention to purchase through electronic media or the internet ^[49]. An e-shop, as opposed to a traditional store, is an online-based store that tracks and functions using electronic or internet-based information and communication technologies ^[50]. E-commerce simplified business and created a superb platform that can support all types of businesses, including small, medium, and large commercial organizations ^[51]. Traditional businesses can now enter the electronic media market by utilizing free electronic or internet platforms such as WooCommerce, which can be integrated into content management systems ^[51]. According to the research, e-shopping is a type of e-commerce that involves the transaction of products and services from business to business (B2B) or business to consumer (B2C) using the World Wide Web (WWW) and the business's web address. The website assists consumers in obtaining critical information about the company's products and services ^[52]. E-shopping necessitates the consumer exploring the information required to acquire the product, issuing a purchase appeal through the e-shopping platform, and completing shopping activities in the form of an e-payment or cash on delivery. For many young consumers, e-commerce has become a modern way to shop, and the archaic purchasing forms that are limited by geographical location, time, style, types, and other factors can be abolished through online shopping ^[50].

3. Theoretical background and hypotheses development

3.1 The Fear-Avoidance Model (FAM)

The Fear-Avoidance Model (FAM) postulates that people are driven to engage in online purchasing during the coronavirus pandemic in order to avoid potential health risks and lessen fear related to in-person buying. The model suggests that the main influences on decision-making when it comes to online buying at this time are fear and avoidance behavior. Consumers' health worries have escalated as a result of the epidemic, raising their risk of contracting the virus. Fear can greatly affect consumer behavior, leading people to adopt risk-avoidance techniques, according to research ^[53]. Due to the lower danger of contracting the virus when purchasing online, people believe it to be a safer option than shopping in-person ^[54]. E-commerce has become the only practical choice for many consumers due to government-imposed lockdowns and restrictions that have restricted physical access to brick-and-mortar stores. People have changed their buying habits to be more online-focused due to the ease of using online platforms and the availability of a large variety of goods. By removing the necessity for physical touch, social interaction, and the possibility of virus transmission, online shopping is more convenient and lessens anxiety. In order to avoid congested areas and possible virus exposure, consumers can purchase from the comfort of their homes ^[48]. Due to the pandemic, the practice of digital technology has quickened, increasing consumer digital literacy. A wider

acceptance and adoption of e-shopping practices have resulted from those who were previously reluctant to engage in it becoming more at ease with online platforms ^[54].

3.2 Consumer Behavior Theory (CBT)

To comprehend how people make decisions and engage with goods and services in the marketplace, consumer behavior theory is an essential foundation. We now have a better knowledge of consumer behavior thanks to a number of important theories. The theory of planned conduct is an example of one of these theories ^[55]. The three components of attitudes, subjective standards, and perceived behavioral control are what the theory of planned behavior claims determine consumer behavior. Subjective norms show the social pressure or impact on the consumer's decision-making, while attitudes are the consumer's overall assessment of a good or service, and perceived behavioral control is the consumer's opinion of their capacity to engage in the desired activity. The social identity theory ^[56] is a significant hypothesis that explains consumer behavior. According to this theory, group affiliations have an impact on how people perceive themselves, and consumers frequently choose products in order to strengthen their social identities. The brands or items that consumers select may represent their membership in particular social groups or their intended social image. Additionally, the cognitive dissonance theory ^[57] proposes that people aim for coherence between their ideas and actions. Cognitive dissonance is caused when someone's beliefs and actions conflict, and it makes them want to find a solution. This idea contends that when it comes to buying habits, people may experience post-purchase dissonance and act in ways to ease the pain, such as asking for assurance or returning an item.

3.3 Technology Acceptance Model (TAM)

A popular theoretical framework in the study of information systems and technology management is the Technology Acceptance Model (TAM). It was initially put up by Fred Davis in 1989, and several researchers have since expanded and improved it. TAM examines people's attitudes and perceptions of new technologies in an effort to explain how people embrace and adopt them. The following are the main elements of the technology acceptance model: PU and PEOU stand for perceived usefulness and perceived ease of use. According to TAM, a person's attitude toward adopting a technology is directly influenced by both perceived usefulness and perceived ease of use. Their behavioral intent to embrace and use the technology is therefore influenced by these sentiments. According to the model, a variety of external circumstances may affect how beneficial and simple something is considered to be, which may have an effect on people's attitudes and intentions. Social impact, enabling circumstances, and system characteristics are a few examples of these extraneous variables ^[58]. To comprehend technology adoption and user behavior in a variety of areas, including e-commerce, online banking, social networking, and mobile applications, the Technology Acceptance Model has been widely used in research and practical situations. It offers a practical framework for identifying and addressing the variables that affect the acceptance of new technologies ^[59].

3.4 Diffusion of Innovation Theory (DIT)

Everett Rogers created the Diffusion of Innovation Theory in 1962 to describe how new concepts, items, or technology spread and are embraced by individuals or groups within a social system. The theory offers understanding into the variables affecting the adoption and spread of technologies, particularly online commerce platforms. The Diffusion of Innovation Theory's main tenets are as follows: innovation, adoption, diffusion, and adopter categories. These adopter types include laggards, early majority, late majority, innovators, and early adopters.

3.5 Hypotheses development

Governmental factors significantly impact the growth and development of e-shopping. These elements encompass legislation, policies, infrastructure, and government backing that can either facilitate or impede the growth of online retail markets. Government regulations, such as laws that protect consumers, regulations that safeguard data privacy, and policies regarding taxation, have a substantial influence on electronic commerce. An explicit legal framework can increase consumer confidence in online transactions, therefore promoting e-commerce activity. Strict data privacy rules can incentivize consumers to participate more in e-commerce by instilling a greater sense of security over their personal information ^[60]. The success of e-shopping heavily relies on the presence and excellence of digital infrastructure, encompassing high-speed internet, mobile networks, and digital payment systems. Government funding in digital infrastructure can enhance accessibility to online shopping platforms, particularly in rural and underserved regions, hence extending the scope of e-commerce ^[61]. Taxation rules directly influence the pricing of products in the e-commerce industry. Reducing taxes on e-commerce transactions might enhance the appeal of online buying for consumers. In contrast, elevated tax rates can dissuade consumers from engaging in online shopping due to the higher expenses involved. The e-commerce business is greatly concerned about cyber security. By enacting rigorous cyber security measures and allocating resources to combat cybercrime, governments may establish a more secure online shopping environment. Consequently, this leads to a rise in consumer trust and promotes the utilization of electronic commerce platforms ^[62]. Trade rules have a significant impact on e-shopping, particularly when it comes to cross-border e-commerce. Governments that streamline import and export procedures can bolster the global e-commerce business, enabling consumers to easily purchase a diverse range of products from other countries ^[60]. Governments may bolster the e-commerce industry by providing a range of incentives, including financial aid in the form of subsidies for small and medium-sized firms (SMEs), grants to facilitate technology adoption, and tax exemptions for online businesses. Providing such assistance can reduce the obstacles for new participants and promote the expansion of online purchasing ^[63]. Therefore, it is hypothesized from the above discussion:

Hypothesis (H₁): Governmental factor positively influences consumers' psychology.

Hypothesis (H₆): Governmental factor positively influences e-shopping decisions.

Hypothesis (H_{12a}): Consumers' psychology positively mediates the relationship between governmental factor and e-shopping decisions.

Health variables have a significant impact on consumer behavior in online buying, especially when it comes to public health concerns and individual health awareness. During public health crises, such as pandemics, there is sometimes a significant increase in online purchasing as consumers try to avoid going to physical businesses due to the associated health hazards. The COVID-19 pandemic expedited the widespread acceptance of internet shopping, as individuals prioritized the safety of purchasing items from the comfort of their homes ^[64]. The increasing demand for health-related products, such as organic foods, vitamins, and fitness equipment, is driven by consumers' growing awareness and concern for their health. This has led to a rise in online purchases of these products. Online shopping platforms that specifically target health-conscious consumers by providing comprehensive product information and highlighting health benefits have a greater tendency to attract a larger client base ^[13]. Online purchasing offers convenient access to health supplies, particularly for persons with limited mobility or residing in isolated regions. Online platforms provide a greater assortment of health-related products compared to physical stores, enhancing convenience for consumers in finding and buying these items ^[65]. The presence of health information on the internet has an impact on online shopping habits, particularly when it comes to purchasing things connected to health.

Consumers frequently depend on internet product evaluations, health blogs, and expert viewpoints to make well-informed purchasing decisions ^[66]. Psychological well-being can also impact online shopping habits. For instance, persons experiencing stress and worry may resort to increased internet purchasing as a means of coping. However, engaging in excessive online shopping might result in addictive behaviors that have a detrimental effect on mental well-being ^[67]. Therefore, it is hypothesized from the above discussion:

Hypothesis (H₂): Health factor positively influences consumers' psychology.

Hypothesis (H₇): Health factor positively influences e-shopping decisions.

Hypothesis (H_{12b}): Consumers' psychology positively mediates the relationship between health factor and e-shopping decisions.

Consumer behavior in electronic shopping is heavily influenced by social aspects. These elements encompass social influence, online communities, cultural norms, and demographic features, all of which exert a substantial influence on consumers' decisions and motivations to engage in online shopping. Social influence, encompassing endorsements from acquaintances, relatives, and digital opinion leaders, exerts a significant influence on electronic commerce. Favorable reviews, endorsements on social media, and recommendations from others can have a substantial influence on consumers' choices to buy. Consumers are more inclined to acquire things that receive recommendations from those they trust or admire ^[68]. Online communities and social networks provide as stages for consumers to exchange their experiences, viewpoints, and endorsements. Communities have the ability to impact consumer behavior by fostering a feeling of belonging and trust among its members, resulting in a rise in online shopping activity ^[69]. Cultural norms and values have a substantial influence on online shopping behavior. Consumers with diverse cultural origins may exhibit distinct preferences, attitudes, and behaviors when it comes to online shopping. Collectivist cultures prioritize communal acceptance and recommendations, whereas individualistic cultures prioritize personal preferences ^[70]. Demographic variables, including age, gender, income, and education level, have an impact on online shopping behavior. Typically, younger consumers have a greater level of technological proficiency and are more inclined to engage in online shopping. Likewise, individuals who have attained greater levels of education and possess higher incomes are more inclined to participate in online purchasing because they have improved access to technology and resources ^[71]. Online platforms' credibility and apprehensions over security and privacy are prominent societal influences impacting electronic commerce. Consumers are inclined to engage in online shopping if they have confidence in the platform and perceive that their personal and financial information is protected. Establishing social trust is essential for e-commerce podiums to effectively recruit and maintain a consumer base ^[72]. Social networking networks have become essential for online shopping, providing a platform where consumers can explore new products, access reviews, and make direct purchases. Social media's interactive aspect facilitates immediate connection between consumers and brands, applying a greater impact on purchasing choices ^[73]. Word-of-Mouth [WOM], whether it occurs online or offline, is a potent social influence that affects the way people shop online. Positive word-of-mouth (WOM) can improve brand reputation and increase the number of online shoppers, whilst bad WOM can discourage potential buyers ^[74]. Therefore, it is hypothesized from the above discussion:

Hypothesis (H₃): Social factor positively influences consumers' psychology.

Hypothesis (H₈): Social factor positively influences e-shopping decisions.

Hypothesis (H_{12c}): Consumers' psychology positively mediates the relationship between social factor and e-shopping decisions.

Payment variables play a crucial role in shaping e-shopping behavior, since they have a direct impact on the simplicity, safety, and convenience of online transactions. The presence of a wide range of payment options, including credit/debit cards, digital wallets, bank transfers, and cash on delivery, is essential in facilitating online buying. Consumers are more inclined to finalize online transactions if they have the option to utilize their preferred payment method. Providing a variety of payment choices appeals to a wider range of consumers and increases the chances of completing successful transactions ^[75]. Security issues pose a substantial obstacle to engaging in online commerce. Consumers frequently exhibit reluctance to engage in online transactions if they believe the payment procedure to be lacking in security. Implementing robust security measures, such as encryption, secure socket layer (SSL) certificates, and two-factor authentication, can address these issues and foster consumer confidence, ultimately boosting e-commerce activity ^[76]. The user-friendliness of payment systems is another crucial aspect impacting online buying. Payment gateways that are intuitive and streamlined, with a minimal number of steps, contribute to higher conversion rates by providing a seamless transaction experience. Elaborate or time-consuming payment procedures can result in consumers abandoning their shopping carts ^[77]. Transaction costs, such as fees for processing and charges for currency translation, might impact decisions made when shopping online. Consumers may be deterred from making purchases, particularly in international e-commerce, due to the presence of significant transaction costs. On the other hand, providing little or zero transaction costs can entice a larger client base and promote recurring transactions ^[78]. The emergence of digital wallets and mobile payment options, such as PayPal, Apple Pay, and Google Wallet, has revolutionized the online buying environment. These payment options provide convenience, rapidity, and security, rendering them progressively favored by consumers. The prevalence of mobile payments is especially notable in markets with a high rate of smartphone usage ^[79]. In the context of international online trade, it is essential to have payment solutions that can handle many currencies and facilitate smooth cross-border transactions. Consumers are more inclined to participate in cross-border purchasing if they have the convenience of paying in their own currency and if the payment procedure is uncomplicated ^[80]. Transparent and user-friendly refund and chargeback procedures have a significant impact on consumer confidence and their desire to engage in online transactions. E-commerce platforms that provide seamless refund processes and efficient chargeback systems are more inclined to retain consumers and motivate them to engage in repeat transactions ^[81]. Emerging technologies like blockchain, cryptocurrencies, and biometric payments are starting to impact e-shopping by providing novel methods to ensure transaction security and minimize fraudulent activities. The advancements in technology are altering consumers' perception of the safety and ease of online payments ^[61]. Therefore, it is hypothesized from the above discussion:

Hypothesis (H₄): Payment factor positively influences consumers' psychology.

Hypothesis (H₉): Payment factor positively influences e-shopping decisions.

Hypothesis (H_{12d}): Consumers' psychology positively mediates the relationship between payment factor and e-shopping decisions.

Product-related characteristics have a substantial impact on both e-shopping behavior and consumer psychology. The aspects that influence consumers' perception and interaction with online shopping platforms include product quality, variety, cost, brand reputation, and product display. The quality of a product is a key factor that influences consumer happiness and loyalty while shopping online. Superior products result in favorable post-purchase experiences, which strengthen confidence and promote repeat buying. In contrast, substandard product quality might result in discontentment, adverse evaluations, and hesitancy to engage in online shopping again ^[82]. The presence of a diverse assortment of products is a crucial element in enticing

and maintaining online consumers. E-commerce platforms that provide a wide range of products cater to the diverse preferences of consumers, hence improving the purchasing experience and boosting consumer satisfaction^[83]. The pricing of products plays a crucial role in online shopping since it immediately impacts the purchasing choices made by consumers. Price-sensitive consumers can be attracted by employing competitive pricing methods, offering discounts, and providing special offers. In addition, a pricing strategy that is clear and free from undisclosed fees fosters trust and motivates consumers to finalize their purchases^[84]. The reputation of a brand has a substantial impact on how consumers perceive and behave when purchasing online. Established and reputable brands have a higher likelihood of attracting online consumers, as buyers frequently link brand reputation with product quality and dependability. Having a positive brand reputation helps reduce the perceived dangers associated with online purchase^[85]. The online presentation of products, which includes photographs, descriptions, and specifications, has a huge impact on consumer psychology. Providing high-resolution photographs, comprehensive descriptions, and precise product information minimizes ambiguity and enables buyers to make well-informed choices. Consequently, this enhances the probability of making a purchase and decreases the occurrence of returns^[86]. Consumer evaluations and ratings play a key role in shaping e-commerce purchasing choices. Favorable reviews can greatly enhance the attractiveness of a product, but unfavorable ones can discourage prospective purchasers. Consumers frequently depend on peer ratings as a replacement for physical examination, which is lacking in online shopping^[87]. Customizing and personalizing products can improve consumer engagement and happiness in online buying. Providing tailored suggestions and adaptable merchandise accommodates specific tastes, enhancing the purchasing process by making it more pertinent and pleasurable^[88]. The availability of a product is a significant determinant of online purchase behavior. Consumers anticipate that things will be readily available and in stock for instant purchase. Regular occurrences of stock shortages can result in dissatisfaction and potentially cause consumers to go to rival companies, whereas effective stock management guarantees consumer contentment and loyalty^[89]. Product attributes influence multiple psychological aspects of consumer behavior, such as trust, perceived value, and contentment. Consumers are more inclined to trust the online retailer and experience satisfaction with their purchase when they perceive the goods as being of excellent quality, reasonably priced, and truthfully shown. The favorable psychological effect of this nurtures consumer loyalty and promotes repeat purchases^[90]. Therefore, it is hypothesized from the above discussion:

Hypothesis (H₅): Product factor positively influences consumers' psychology.

Hypothesis (H₁₀): Product factor positively influences e-shopping decisions.

Hypothesis (H_{12e}): Consumers' psychology positively mediates the relationship between product factor and e-shopping decisions.

Consumer psychology is a crucial factor in shaping online purchase behavior. Gaining insight into the psychological determinants that influence online consumer behavior is crucial for e-commerce enterprises to optimize their tactics, improve user satisfaction, and boost revenues. Perceived risk plays a crucial role in influencing the behavior of individuals when it comes to online shopping. Consumers frequently link online purchasing with potential hazards concerning the quality of products, the security of payments, and concerns about privacy. Consumers may be discouraged from completing online purchases due to a strong perception of risk. However, the implementation of appropriate risk reduction tactics, such as secure payment systems and clear return policies, can help alleviate these worries^[91]. Trust plays a vital role in consumer psychology and has a significant impact on e-shopping behavior. Consumers are inclined to engage in online shopping if they have confidence in the e-commerce platform. Trust can be established by fostering pleasant previous

encounters, implementing safe payment methods, maintaining transparent policies, and providing social proof in the form of consumer evaluations and ratings^[92]. The convenience provided by online buying is a substantial incentive for consumers. Consumers are attracted to the convenience and time-saving benefits of being able to buy from any location at any time, easily compare prices, and have things delivered directly to their homes. Convenience has significant importance for individuals who lead busy lives and have restricted access to brick-and-mortar retail establishments.^[93] Hedonic motivation pertains to the gratification and delight obtained from the act of buying itself. For several consumers, online shopping serves not just as a means to meet their needs but also as a source of enjoyment, discovery, and a break from their daily routines. According to Arnold MJ, Reynolds KE^[94], e-commerce systems that offer an attractive and immersive buying experience might boost the desire for pleasure and involvement among consumers. Consumer participation refers to the degree of interest and personal significance that a consumer attributes to a product or shopping experience. Increased engagement frequently results in greater levels of information analysis, evaluation, and intentional decision-making in online buying. According to Zaichkowsky JL^[95], products that are perceived as vital or personally meaningful to consumers generally elicit greater engagement. Impulse buying is a prevalent occurrence in online shopping, motivated by emotional reactions rather than deliberate choices. The convenience of e-commerce, along with the use of targeted marketing and tailored suggestions, might elicit impulsive buying behavior. E-commerce platforms frequently exploit this phenomenon by generating a feeling of urgency through time-limited deals and flash discounts^[96]. Social influence, encompassing peer recommendations, social media endorsements, and online reviews, exerts a substantial impact on the formation of e-shopping habit. Consumers frequently succumb to the influence of others' beliefs and habits, particularly within their social circles or through trusted influencers. According to Smith AD, Rupp WT^[44] social evidence has the ability to decrease uncertainty and enhance the probability of making a purchase. Cognitive dissonance arises when consumers feel discomfort due to the presence of competing beliefs, often following a purchase. In the realm of online purchasing, such a situation might arise when a purchased item fails to match the anticipated standards, resulting in feelings of remorse or discontentment. E-commerce platforms can mitigate cognitive dissonance by offering precise product information, user-friendly return ways, and comprehensive post-purchase assistance^[57]. Personalization in e-commerce involves tailoring the purchasing experience to align with the unique preferences and habits of individual consumers. Customized suggestions, promotions, and material can improve the significance of the purchasing process, creating a sense of worth and comprehension among buyers. According to Pappas IO, Kourouthanassis PE, Giannakos MN, Chrissikopoulos V^[88], this can enhance satisfaction, loyalty, and the intention to make a purchase. Perceived value refers to the consumer's comprehensive evaluation of the advantages obtained in relation to the costs involved. Perceived value in online buying is determined by aspects such as the quality of the goods, its pricing, the convenience of the shopping process, and the overall shopping experience. Consumers are more inclined to engage in a purchase if they have the perception that they are getting a favorable exchange of value for their monetary investment^[97]. Therefore, it is hypothesized from the above discussion:

Hypothesis (H₁₁): Consumers' psychology positively influences e-shopping decisions.

In this research, there are five independent variables (governmental factor, health factor, social factor, payment factor, and product factor), one mediating variable (consumers' psychology) and one dependent variable (e-shopping decisions) have recognized. Based on the previous literatures and discussions, the research model (**Figure 1**) and research hypotheses (from H₁ to H_{12e}) have been developed.

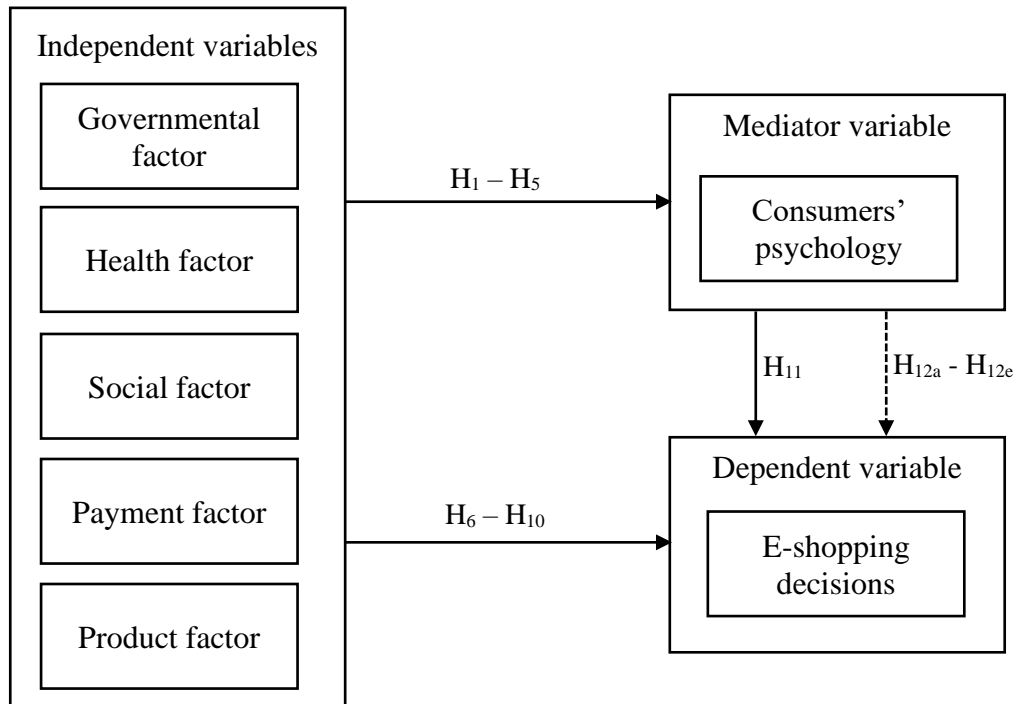


Figure 1. Research model (note: direct paths →; indirect paths ---->)

4. Research methods

4.1 Sampling design and data collection

The participants of the research consisted of 560 consumers who did electronic shopping two or more times during the COVID-19 pandemic in different e-shop platforms in the perspectives of Bangladesh. Individual respondent was the unit of analysis in the research. The research was carried out using a quantitative survey technique, with data collected using a structured questionnaire. For data collection, an electronic purpose sampling method was performed. This electronic survey was also used in other research projects and collected data from consumers of different electronic sites [98-100]. The respondents were asked to agree or disagree with each statement based on their respective e-shopping experience. From December 2020 to April 2021, a total of 551 respondents completed the questionnaire online. Eight questionnaires have been rejected because of incomplete information and 543 replies have been considered for statistical analysis after careful review of replies.

4.2 Measurement instrument

The scale items for evaluating e-shopping decision during the coronavirus pandemic were adopted from [8, 19, 23, 44, 101-110] where the items were found reliable and valid. Table 1 shows the latent constructs and their observed variables. The first section of the questionnaire contains general consumer information such as gender, age, occupation, education, and income. The second section includes questions about e-commerce during the coronavirus pandemic. On a 5-point Likert scale ranging from strongly disagree to strongly agree, consumers were asked to rate their level of agreement or disagreement. A pre-testing period of 45 consumers was conducted prior to the finalization of the questionnaire.

Table 1. Constructs and measured variables

Constructs	Measured variables	Sources
Governmental factor	Government support Shut down offline shops Lockdown	[8, 101]
Health factor	Maintain social distancing Protect from virus Stay at home	[17]
Payment factor	Financial transaction Cash on delivery Safe & secure web transaction	[102-105]
Social factor	Reference groups Family members Group opinión Roles and status	[19, 23]
Product factor	Many types of products Good quality of products After sales service	[104, 106, 107, 111]
Consumers psychology	Perceived risk is a Significant Trust is a crucial element Hedonic motivation Positive perception and attitude	[22, 44, 47]
E-shopping decisions	Shopping decisions Satisfaction with e-shopping Recommendation to others	[105, 108-110]

4.3 Data analysis

The SmartPLS software version 3 was used to analyze the data collected via questionnaire. The study's conceptual model was tested using structural equation modeling (SEM). For sample distribution, frequency distribution and percentile measures were primarily used. The descriptive statistics included measures such as mean, standard deviation, skewness, and kurtosis. Collinearity statistics (tolerance and VIF) had been used to check multicollinearity among the independent variables. Moreover, unidimensionality and convergent validity measures had been conducted using factor loading, and average variance extracted (AVE). The reliability of the scale items was established through the score of Cronbach's alpha coefficients and composite reliability (CR). Likewise, discriminant validity had been checked using the Fornell-Larcker criterion among the independent variables and dependent variable.

5. Results and analysis

5.1 Descriptive statistics

All the seven constructs were initially analysed with mean, standard deviation, skewness and kurtosis. The mean or central tendency of a distribution indicates its centre ^[112]. Furthermore, the standard deviation is used to determine how far the data deviated from the mean ^[112]. The shape of the distribution is generally determined by Kurtosis and Skewness ^[113]. As demonstrated in Table 2, the results showed that the governmental factor had the highest mean score (M = 4.0247) and the product factor had the lowest mean score (M = 3.3182).

Table 2. A summary of the descriptive statistics

Latent variables	N	Mean	Std. Deviation	Skewness	Kurtosis		
	Statistic	Statistic	Statistic	Statistic	Std. Error	Std. Error	
Governmental	543	4.0247	.78164	-.927	.156	1.805	.311
Health	543	3.9684	.85087	-.968	.156	1.219	.311
Social	543	3.7901	.82271	-.523	.156	.072	.311
Payment	543	3.6132	1.04507	-.977	.156	.637	.311
Product	543	3.3182	.89599	-.074	.156	-.485	.311
Consumers' psychology	543	3.6975	.86488	-.373	.156	.005	.311
E-shopping decisions	543	3.8066	.86700	-.643	.156	.368	.311

5.2 Multicollinearity test

A multicollinearity test is used to see whether the independent variables are highly correlated among themselves. The collinearity among the predictor constructs affects the estimated path coefficients ^[113]. Variance inflation factor (VIF) above 5 and tolerance below 0.10 indicates a presence of inter predictors collinearity ^[113]. As illustrated in Table 3, in this study, the results of collinearity statistics showed that all VIF and tolerance values are within the acceptable range. It indicated that multicollinearity would not interfere with independent variables' ability to interpret the outcome variable.

Table 3. Multicollinearity test

Latent variables	Consumers' psychology		E-shopping decisions	
	Tolerance	VIF	Tolerance	VIF
Governmental	.416	2.406	.416	2.406
Health	.393	2.543	.393	2.543
Social	.520	1.922	.520	1.922
Payment	.778	1.286	.778	1.286
Product	.671	1.490	.671	1.490

5.3 Assessment of measurements model (outer model)

According to Hair JF, Risher JJ, Sarstedt M, Ringle CM ^[113], “measurement model is a component of a theoretical path model that contains the indicators and their relationships with the constructs; also called the outer model in PLS-SEM.” Measurement model assessment is done with four aspects of each latent construct, e.g., factor loading, construct reliability, convergent validity and discriminant validity. For estimating both measurement and structural model, SmartPLS software version 3 has been used and the results are demonstrated ^[114].

5.3.1 Unidimensionality

The aspect of construct unidimensionality indicates that each measurement item has an acceptable level of factor loading with the respective latent construct. According to Hair JF, Risher JJ, Sarstedt M, Ringle CM ^[113], each construct should have measurement items with a factor loading of at least 0.70. As seen Table 4, all of the factor loadings in this research were greater than 0.70. As a result, the measurement model's unidimensionality has been established.

5.3.2 Construct reliability

Construct reliability denotes the consistency of each latent construct's internal consistency ^[113]. Cronbach's alpha is widely used to assess construct reliability, as is composite reliability (CR). Cronbach's alpha and composite reliability values between 0.70 and 0.95 are considered satisfactory by [113]. Table 4 shows that all of the Cronbach's alpha and composite reliability values are within the acceptable range, indicating that the constructs are suitable for further analysis.

5.3.3 Convergent validity

An AVE of 0.50 or greater indicates that the latent construct, on average, accounts for 50% or more of the variance in the observed variables. Table 4 shows that all of the AVE values are within the acceptable range, indicating that the constructs are suitable for further investigation.

Table 4. A Summary of measurement model assessment

Latent variables	Items	Factor Loading	Cronbach's Alpha	CR	AVE
Governmental factor	governmental1	0.834	0.757	0.860	0.672
	governmental2	0.819			
	governmental3	0.805			
Health factor	health1	0.846	0.759	0.861	0.674
	health2	0.812			
	health3	0.804			
Social factor	social1	0.775	0.831	0.888	0.666
	social2	0.875			
	social3	0.863			
	social4	0.744			
Payment factor	payment1	0.888	0.822	0.891	0.732
	payment2	0.808			
	payment3	0.869			
Product factor	product1	0.739	0.754	0.858	0.670
	product2	0.860			
	product3	0.851			
Consumers' psychology	psychological1	0.798	0.814	0.878	0.642
	psychological2	0.780			
	psychological3	0.785			
	psychological4	0.841			
E-shopping decisions	eshopping1	0.863	0.818	0.892	0.734
	eshopping2	0.866			
	eshopping3	0.841			

5.4 Discriminant validity

Discriminant validity ensures that no large inter construct correlation and cross-loading exist among the latent constructs. The square root of AVE and correlation coefficients among the constructs are compared to create discriminant validity ^[113]. The square roots of AVE shown diagonally are greater than the inter-

construct similarities shown off-diagonally, as seen in Table 5. Thus, the discriminant validity is obtained for the research constructs.

Table 5. Results of discriminant validity: Fornell-Larcker Criterion

Latent variables	1	2	3	4	5	6	7
1. Consumers' psychology	0.801						
2. E-shopping decisions	0.660	0.857					
3. Governmental factor	0.545	0.674	0.819				
4. Health factor	0.513	0.670	0.745	0.821			
5. Payment factor	0.355	0.440	0.451	0.406	0.856		
6. Product factor	0.595	0.559	0.374	0.422	0.247	0.818	
7. Social factor	0.746	0.613	0.522	0.585	0.369	0.563	0.816

Note: Diagonal elements are the square root of AVE and off-diagonal elements are correlations among constructs.

5.5 Assessment of Structural Model (Inner Model)

Bootstrapping is the process of taking a large number of subsamples (e.g., 1000) from the original sample with replacement to generate bootstrap standard errors, which provide approximate t-values for structural path significance testing. A bootstrapping procedure with 5000 subsamples was used to estimate the structural model [114].

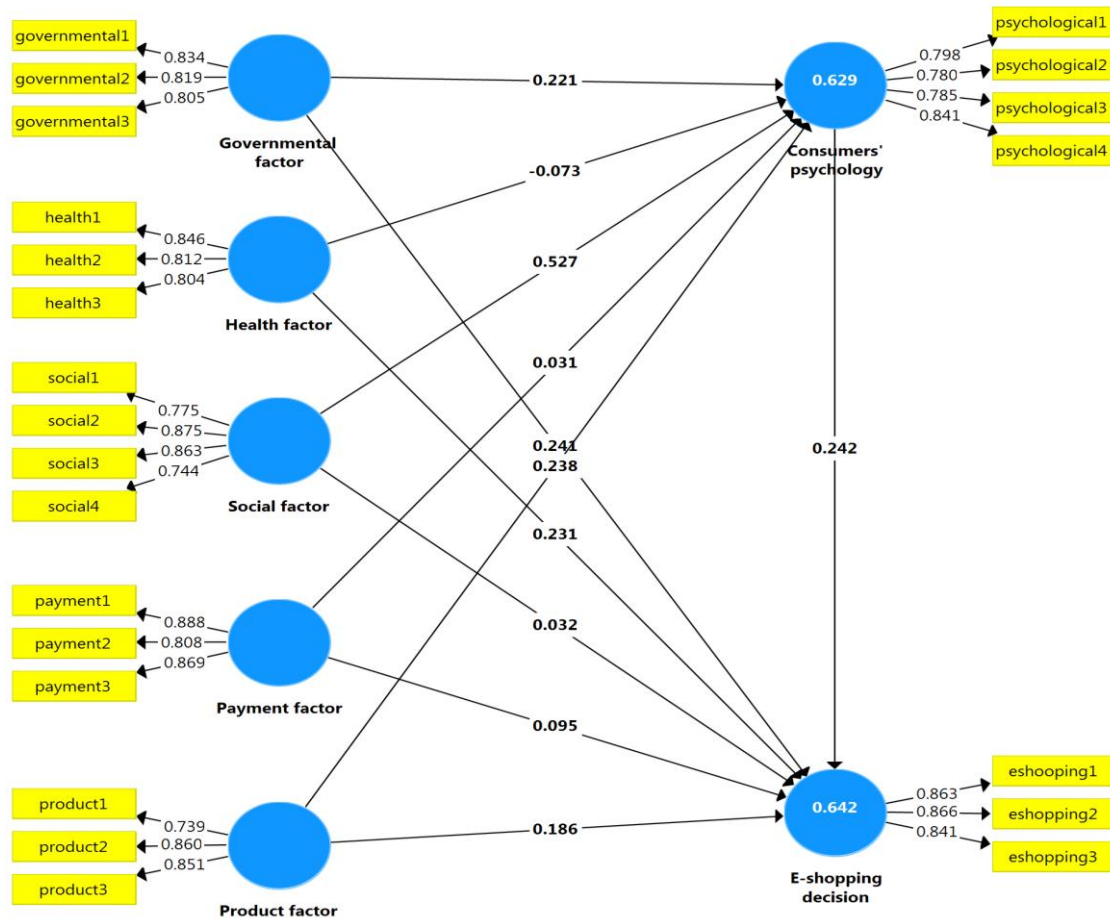


Figure 2. Structural Model

5.5.1 Assessment of direct effects

As seen in Table 6 and Figure 2, the paths, path coefficients (β), t value, p values and results of the path coefficients. The results indicated that 8 out of 11 direct effects were statistically significant at $p < 0.05$. Thus, hypothesis H₁, H₃, H₅, H₆, H₇, H₉, H₁₀, and H₁₁ were supported. The path from social factor to consumers' psychology was the largest ($\beta = 0.527$) which means that if social factor scores are increased by one standard deviation unit, the consumers' psychology would be likely to increase by 0.527 standard deviation units, assuming all other independent constructs remain constant. Besides, the value of r square suggests that all the independent variables explain 62.9% and 64.2% variation in consumers' psychology and electronic shopping decisions respectively.

Table 6. A summary of structural model analysis (direct effects)

Direct effects	Path coefficients (β)	T Statistics	P Values	Results
Governmental factor -> Consumers' psychology	0.221	3.110	0.002*	Significant
Health factor -> Consumers' psychology	-0.073	0.972	0.331	Insignificant
Social factor -> Consumers' psychology	0.527	9.915	0.000*	Significant
Payment factor -> Consumers' psychology	0.031	0.855	0.393	Insignificant
Product factor -> Consumers' psychology	0.238	4.843	0.000*	Significant
Governmental factor -> E-shopping decisions	0.241	2.991	0.003*	Significant
Health factor -> E-shopping decisions	0.231	3.097	0.002*	Significant
Social factor -> E-shopping decisions	0.032	0.405	0.686	Insignificant
Payment factor -> E-shopping decisions	0.095	2.496	0.013*	Significant
Product factor -> E-shopping decisions	0.186	3.276	0.001*	Significant
Consumers' psychology -> E-shopping decisions	0.242	3.198	0.001*	Significant

Note: $p^* < 0.05$, based on the two-tailed test; $t = 1.96$.

5.5.2 Assessment of indirect effects (mediation)

The indirect effects show the mediating role of consumers' psychology. As illustrated in Table 7 and Figure 2, consumers' psychology significantly and positively mediated the relationship between three factors and e-shopping decisions. These factors were the governmental factor, social factor and product factor and thus, hypotheses H_{12a}, H_{12c}, and H_{12e} were supported. As the direct effect of governmental and product factors on e-shopping decisions was also significant, consumers' psychology plays a partial mediation. In contrast, as the direct effect of a social factor on e-shopping decisions was also not significant, consumers' psychology plays a full mediation.

Table 7. A summary of structural model analysis (indirect effects)

Indirect effects	Path coefficients (β)	T Statistics	P Values	Results
Governmental factor -> Consumers' psychology -> E-shopping decisions	0.054	2.023	0.044*	Significant
Health factor -> Consumers' psychology -> E-shopping decisions	-0.018	0.848	0.397	Insignificant
Social factor -> Consumers' psychology -> E-shopping decisions	0.128	3.113	0.002*	Significant
Payment factor -> Consumers' psychology -> E-shopping decisions	0.008	0.745	0.457	Insignificant
Product factor -> Consumers' psychology -> E-shopping decisions	0.058	2.866	0.004*	Significant

Note: $p^* < 0.05$, based on the two-tailed test; $t = 1.96$.

6. Discussions and conclusion

This research has emphasized the important role that consumers' psychology played in shaping e-shopping decisions during the COVID-19 pandemic in Bangladesh. The pandemic-induced fears, particularly related to health and safety, led to a marked shift in consumer behavior, with many opting for the convenience and perceived safety of online shopping. Key psychological factors, such as risk perception, motivation for safety, and changes in social norms, emerged as crucial mediators in this shift. The research has examined is to apply partial least squares structural equation modeling (PLS-SEM) to examine the influence of governmental, health, social, payment, and product factors on e-shopping decisions during the COVID-19 pandemic from the perspective of Bangladesh. The study enables the digital marketing practicing companies to understand the vital factors that influence e-shopping decisions during the COVID-19 pandemic in Bangladesh. The most recent and relevant studies regarding the determinants of consumers' e-shopping decisions during the COVID-19 pandemic are reviewed. The majority of the studies investigated the factors that affect consumers' intention, online intention, purchasing decision, online buying behavior, online reactions, satisfaction, online satisfaction, satisfaction, trust, and loyalty [102-105, 108-110, 115-123]. Since e-shopping decisions during the COVID-19 pandemic are found to be less attended and under-researched, this research attempts to examine the relationships between factors (governmental, health, social, payment, and product) and e-shopping decisions and how the associations are mediated by consumers' psychology.

The results of the current study are comparable with related previous studies. The findings reveal that all the factors, except the social factor, are significantly related to e-shopping during the COVID-19 pandemic. The results also show that all the factors, except health and payment factor, are significantly related to consumers' psychology. Moreover, consumers' psychology positively and significantly influences e-shopping decisions. The findings are consistent with Alam J [17], who investigated the significant influence of health aspects, price aspects, product aspects, and place aspects on consumers' online buying behavior during COVID-19 situations in Bangladesh. Neger M, Uddin B [124] also found that consumers' internet shopping behavior was significantly influenced by several factors, such as product factor, time-saving factor, payment factor, administrative factor, and psychological factor. These results suggest that product factor, payment factor, and consumer psychology are the most prominent determinants of consumers' online buying intention. Hossain A, Al Jamil MA, Rahman MM [125] examined the influence of security, delivery, psychological, payment approach, sacrifice, secrecy, product availability, product variety, and promotional factors on fashion apparel buying decisions online. However, the results did not find the significance of psychological and payment factors on buying behavior, which is not consistent with the present study. The

discrepancy may be due to the influence of the COVID-19 situation, which is the study context of the present study. The current study found that factors related to government, health, payment, product, and consumers' psychology were the most significant during the COVID-19 situation. Hasan S, Islam MA, Bodrud-Doza M^[126] investigated how the COVID-19 pandemic alters people's consumption and spending habits. Their research found that COVID-19 caused a higher level of crisis perception and greater changes in consumption patterns among Indian consumers, who were more concerned and affected than Pakistani and Bangladeshi consumers. Furthermore, consumers who had a higher crisis perception reported more behavioral changes as a result of COVID-19. Finally, the current study's findings suggest that consumer psychology significantly and positively mediates the relationship between three factors (e.g., governmental, social, and product factors) and e-shopping decisions during a coronavirus pandemic. Beliefs and attitudes are important components of consumer psychology that influence purchasing decisions. According to the findings of Hamouda M, Tabbane RS^[127], attitude toward the product plays a significant mediating role between electronic word-of-mouth evaluation and consumer purchase intention. According to Kaushal SK, Kumar R^[128], brand attitude significantly and completely mediated the relationship between attitude toward advertisement and purchase intention. Previous research has also shown that shopping intention mediated the relationship between attitude and behavior^[129].

Consumer behavior is a complex concept that can be influenced by numerous internal and external factors. This research outlines the internal factors (e.g., psychology) and external factors (e.g., governmental, health, product, and payment factors) that significantly and positively influence Bangladeshi consumers' online shopping behavior during the COVID-19. This study has implications for both practitioners and academicians in the fields of consumer behavior, psychology, crisis studies, and so forth. This study finds sufficient validity and reliability of the proposed model through the PLS-SEM approach, which suggests that this model can be adopted in other similar studies as well. Researchers may also adopt other antecedent factors that lead to consumer purchase intention for improving the predictive power of the model. The findings suggest that managers will be able to prioritize the factors that are considered by consumers when they decide on e-shopping. E-shopping decisions of the consumers are largely influenced by their psychology ($\beta = 0.242$), followed by governmental factors ($\beta = 0.241$), health factors ($\beta = 0.231$), product factors ($\beta = 0.186$), and payment factors ($\beta = 0.095$). The study also suggests that the psychology of consumers plays a crucial role as a mediating variable, indicating that decision-makers should take measures to attain a favorable attitude from consumers regarding online shopping.

6.1 Implications

6.1.1 Theoretical implications

The findings of this research, utilizing partial least squares structural equation modeling (PLS-SEM), provide several important theoretical implications for understanding consumer behavior in the context of electronic shopping in Bangladesh: Firstly, the findings indicate that electronic buying choices are highly impacted by a blend of exterior components (governmental, health, product, and payment) and interior psychological factors. This evidence confirms the idea that consumer behavior in the digital marketplace is influenced not just by physical external factors but also by intangible psychological processes. This is consistent with the Theory of Planned Behavior (TPB), which proposes that external stimuli (independent variables) impact interior psychological states (mediating variables), which subsequently influence shopping behavior (dependent variables). Secondly, the role of consumer psychology in mediating the interaction between governmental, social, and product aspects and electronic purchasing decisions is important, emphasizing the significance of psychological constructs in consumer decision-making processes. This

discovery highlights the importance of the Technology Acceptance Model (TAM), which emphasizes the crucial impact of psychological perceptions (such as perceived ease of use and perceived usefulness) in determining technology adoption behaviors. Thirdly, the inclusion of psychological mediators should be considered in order to enhance classic consumer behavior theories and account for the beneficial mediation impact of consumer psychology. This integration offers a more sophisticated comprehension of how different exterior inputs are converted into real purchasing decisions through psychological processes, in accordance with consumer behavior theory. Fourthly, the results offer detailed and particular information about the online shopping habits of consumers from Bangladesh. The correlation between governmental and health issues and e-shopping decisions highlights the distinct socio-economic and regulatory landscape of Bangladesh. Consumer behavior theories should consider contextual variables, as proposed by the Health Belief Model (HBM) and the Fear-Avoidance Model (FAM). These models emphasize the influence of health-related perceptions on behavioral choices. Fifthly, this study supports the idea of taking a comprehensive approach to studying e-shopping behavior by demonstrating that it is influenced by a combination of psychological and external factors. The results endorse the incorporation of many theoretical frameworks, including TPB, TAM and UTAUT, to comprehensively capture the complex nature of consumer decision-making in the digital era. Finally, the theoretical implications of this study indicate that future research should further investigate the intricate relationship between external environments and consumer psychology in order to gain an ample understanding of electronic buying behaviors. Implementing this holistic strategy can result in the development of more resilient consumer behavior models that possess enhanced capabilities to forecast and elucidate the dynamics of the digital marketplace. These conclusions suggest a requirement for more cohesive and extensive theoretical frameworks that take into account the complex charm of online buying behavior, including the interaction between psychological elements and other determinants.

6.1.2 Practical implications

The results of the PLS-SEM analysis offer several practical implications for businesses, policymakers, and stakeholders involved in the electronic shopping environment in Bangladesh: Firstly, businesses should prioritize comprehending and utilizing consumer psychology to improve the online purchasing experience. Companies can enhance the effectiveness of their marketing strategies by acknowledging the important role of consumer psychology. This involves customizing their approaches to consider psychological elements like trust, perceived ease of use, and contentment, which can have a big impact on purchasing decisions. Secondly, the strong correlation between governmental characteristics and electronic buying decisions suggests that government policies and laws have a pivotal impact on determining consumer behavior. Policymakers must prioritize the implementation of legislation that fosters a secure and nurturing atmosphere for e-commerce. These policies should specifically tackle concerns related to consumer protection, data privacy, and cyber security in order to cultivate consumer trust and assurance in online shopping. Thirdly, the impact of health variables on e-shopping decisions implies that firms should take into account health-related features while designing their products or services. For example, offering comprehensive health and safety data on products, guaranteeing sanitary packaging, and highlighting health advantages might appeal to health-conscious consumers, particularly in the context of a post-pandemic society. Moreover, the utilization of consumer psychology to mediate social aspects implies that organizations can get advantages from employing social proof tactics. By promoting user-generated content, utilizing social media influencers, and nurturing online communities, businesses can boost social validation and effectively affect consumer psychology, resulting in a rise in online purchase behavior. Fifthly, marketers should create focused ads that strongly connect with the psychological characteristics of certain consumer groupings. Targeted marketing,

utilizing consumer preferences and psychological characteristics, can significantly enhance engagement and conversion rates in online retail. Companies should utilize data analytics to acquire insights into consumer behavior and psychology. Through the analysis of consumer data, businesses may discern recurring trends and individual preferences, enabling them to make well-informed choices that improve the overall shopping experience for consumers and boost sales. Furthermore Stakeholders, such as corporations, government entities, and industry associations, should work together to establish a favorable environment for the expansion of e-commerce. Collaboration endeavors to tackle regulatory obstacles, enhance infrastructure, and promote innovation have the potential to significantly enhance the electronic commerce industry in Bangladesh. In conclusion, these practical consequences indicate that a thorough strategy, encompassing external variables and consumer psychology, is crucial for fostering electronic commerce in Bangladesh. By implementing tactics that follow these insights, enterprises and regulators may successfully improve the online shopping experience and stimulate e-commerce growth.

7. Limitations and further study

Despite the contribution of the research to the existing literature, this research has some limitations. Because of the non-probability (purposive sampling method) aspect of sampling applied in this research, the power of generalizability of the findings from the sample in a larger context is limited. Future studies may adopt a probability sampling approach with a larger sample size for higher precision of the results. The study examined the subjective perception of the consumers towards e-shopping, which may not guarantee actual purchase decisions. Therefore, a longitudinal study may be undertaken in the future to see the link between intention and the actual behavior of the consumers. The study provides a unique contribution to the existing body of knowledge by validating consumers' psychology as a mediating variable between e-shopping decisions and their antecedents. A future study may verify the study model in other contexts, such as in different industries or countries, and extend the model by including more mediating and/or moderating variables.

Author contributions

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Data availability statement

Data will be provided upon request.

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Authors declare there is no conflict of interest.

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