Digital Consumerism in Times of Crisis: Exploring the Shift in Online Shopping Behaviour

Abstract

Purpose: This research delves into consumer online shopping behaviour during the different phases of the COVID-19 pandemic, utilising the Theory of Planned Behaviour and the Behavioural Inhibition System.

Design: A unique and comprehensive repeated cross-sectional methodology was meticulously employed, capturing the nuances of consumer online shopping behaviour across three distinct phases of the pandemic: the initial phase following the outbreak of COVID-19, the transition phase marked by the relaxation of restrictions, and the adaptation phase as society moved towards a new normal. The study involved a sample of 1,155 participants. Structural equation modelling was used to analyse the effects of behavioural attitudes, subjective norms, perceived behavioural control, and the moderating role of pandemic-induced consumer anxiety on online purchase intention.

Findings: The impact of behavioural attitudes on online purchase intentions increased continuously from the initial phase to the adaptation phase. In contrast, the influence of subjective norms on online shopping intentions gradually declined over the same period. During the early stages of the pandemic, consumer anxiety amplified the influence of personal attitudes towards online shopping while diminishing the impact of social pressures on the same behaviour.

Originality: This study's originality lies in its nuanced analysis of how online purchase

intentions evolved across different stages of the COVID-19 pandemic, integrating insights from both the Theory of Planned Behaviour and the Behavioural Inhibition System. The study offers a comprehensive understanding of the shifts in consumer behaviour over time. It enables more strategic and proactive marketing tactics in a changing environment.

Keywords: online shopping, consumer behaviour, COVID-19, purchase intention, health crisis

1. Introduction

The emergence of a global health crisis in 2019, culminating in the COVID-19 pandemic, has significantly altered consumer behaviours, particularly highlighting the shift toward online shopping (Bartók *et al.*, 2021; Mehta *et al.*, 2020). As physical retail faced restrictions, consumers rapidly adapted to online platforms, underscoring the critical role of e-commerce during such global emergencies. This shift, far from being a temporary response, is a pivotal change in consumer trends, signalling a lasting transformation in the consumer landscape.

This mosaic of previous research provided a comprehensive picture of the evolving online consumer behaviour during a global health crisis. These studies synthesised diverse perspectives and methodologies, illustrating how pandemic-induced factors have reshaped online shopping behaviours worldwide. Especially, pandemic-induced fear, stress, anxiety, and depression, as highlighted by Brewer and Sebby (2021), have led to shifts in the healthcare, social, and economic spheres, subsequently affecting people's future outlook. These heightened

concerns likely increased online purchases as consumers sought to minimise socialising and disease exposure, providing a unique perspective on the interplay between psychological states and consumer behaviour in the face of unexpected crises. This study enhances our understanding of the surge in online shopping as a response to the crisis-induced mental strain and societal changes. It combines the Theory of Planned Behaviour (TPB) with the Behavioural Inhibition System (BIS). It considers TPB's focus on behavioural attitudes, subjective norms, and perceived control. It introduces pandemic-induced consumer anxiety according to the BIS's insights on how unexpected events, like the pandemic, trigger behavioural inhibition and anxiety. Although various previous studies investigated consumer online shopping behaviours during the pandemic from different perspectives (Addo *et al.*, 2020; Ara Eti *et al.*, 2021; Bouarar *et al.*, 2021; Gao *et al.*, 2020; Pillay and Mayayise, 2021; Wang and Chapa, 2021), this study analyses evolving online purchase intentions during different stages of the pandemic and seeks to answer the research question of *how consumers' online purchasing intentions develop and differ across the pandemic's initial, transitional, and adaptation phases.*

In this study, we employed a repeated cross-sectional approach. We administered the same survey to different samples of participants during the three phases of the pandemic: initial, transitional, and adaptation. We targeted individuals who had engaged in online shopping at least once during the specific phase in Turkey. Our approach allows for a unique exploration of changes in consumer online shopping behaviour over time, specifically examining the impact of behavioural attitudes and pandemic-induced consumer anxiety, a perspective not fully addressed

in previous studies.

From a practical standpoint, understanding the factors influencing online shopping during the pandemic is vital for marketing professionals, as it offers insights into consumer behaviour during crisis periods. This knowledge is essential for developing effective strategies in similar scenarios in the future and assisting consumer services currently affected by the pandemic. This repeated cross-sectional study provides a foundation for anticipating changes in consumer perceptions as the pandemic is controlled, allowing for more informed and proactive marketing approaches in the evolving landscape. These practical implications demonstrate the study's relevance in shaping future marketing practices and consumer engagement strategies.

2. Literature Review

2.1. Online Purchase Intention During Crisis

Online shopping involves consumers buying products or services from an online store or website for e-commerce transactions (Usman & Kumar, 2021). It is characterised as a commercial activity conducted online via the Internet. On the other hand, online purchase intention refers to the likelihood or predisposition of individuals to buy products or services through the Internet. This concept encompasses the motivation or decision-making process that leads individuals to plan or contemplate purchasing an online product or service before the actual transaction occurs.

In a crisis, emergency, or pandemic scenario, online purchase intentions can undergo

significant shifts, primarily influenced by changes in consumer priorities, perceptions of safety, and the availability of products or services. For instance, a study by Menozzi *et al.* (2013) investigated food purchasing behaviours after earthquakes in Italy. They analysed the impact of attitude, moral attitude, descriptive norms, perceived behavioural control, intention, quality warranty, sense of belonging, formal trust, informal trust, food scarcity, health status, and wealth status. The researchers found that several variables contribute to explaining and shaping the solidarity dimension in its most comprehensive meaning. In another study, Hyun and Choi (2018) analysed consumers' intentions to purchase cosmetic products following the Fukushima nuclear incident. Through a two-group experiment and structural equation modelling, they revealed that the incident did not affect the firm's reputation and brand image. However, it was perceived as a significant health and product safety threat, negatively affecting purchasing intentions. Jung *et al.* (2016) also assessed how an epidemic outbreak, specifically MERS, affected consumer spending in Korea. The researchers examined the influence of an epidemic outbreak on consumer spending patterns. Utilising scanner panel data from debit and credit card transactions, the authors found that customers adapted their behaviours to minimise the risk of infection. Moreover, Forster and Ya Tang (2005) delved into the significance of online shopping and order fulfilment during the 2003 SARS crisis in Hong Kong. Analysing data from Hong Kong's most significant online supermarket, the findings revealed that the demand for online shopping surged during the SARS outbreak in response to increasing concerns about infection.

Recent studies in the context of COVID-19 have shed light on consumer behaviours,

mainly focusing on food purchasing patterns. These investigations explored how external crises, like a pandemic, influence consumer decisions and behaviours. For example, Öztürk (2020) examined the repercussions of hedonic and utilitarian values in the context of a mortality threat. In this cross-sectional investigation, the study explored how a perceived threat could influence online purchase intentions for food products amidst the COVID-19 pandemic in Turkey in 2020. According to the results of an online survey of 556 food consumers, this investigation proved that a serious perceived threat to life, such as in the case of the COVID-19 pandemic or other high-risk factors, would result in the intention to buy foods providing hedonic or utilitarian value, which promotes online shopping. Gao *et al.* (2020) focused on food purchases in another study. They collected data from 770 users through an online survey on WeChat. They combined this data with city-level data involving population, number of COVID-19 cases, and distance to Wuhan city. Findings from their analysis highlighted some points that the government should support and focus on food safety, infection, financial support to people experiencing poverty, and technical skills for online shopping. Bouarar *et al.* (2021) also conducted a study from the perspective of online food buying. In this study, the authors analysed 278 responses from Algeria with multiple regression analysis. They found that the fear of COVID-19, trust, attitude, and subjective norms affected consumers' intentions to use online food delivery.

Some studies collectively explored the intersection of technology adoption models and consumer behaviour, demonstrating the value of combining diverse perspectives for a more comprehensive understanding of how various factors influence purchasing decisions. For

example, Ait Youssef *et al.* (2020) developed a model based on the technology acceptance model, TPB, and structural assurance to understand the factors affecting online purchase intentions during a health crisis, specifically during COVID-19 in Morocco. The results from 302 respondents revealed that perceived ease of use, perceived usefulness, structural assurance, and social influence significantly impacted customers' intentions to use online shopping during the COVID-19 crisis. Pillay and Mayayise (2021) combined the technology acceptance model and unified theory of acceptance and use of technology 2 to prove the moderating impact of COVID-19 on online consumers' purchase intentions in South Africa with a sample of 368 consumers. The results confirmed the moderating effect of COVID-19 on risk, trust, perceived usefulness, perceived ease of use, and price value.

Additionally, studies collectively delved into various facets of online consumer behaviour during the pandemic, contributing unique insights into how the pandemic has transformed shopping habits. They encompassed a range of methodologies and global perspectives, highlighting the nuanced ways in which pandemic-related factors like fear, decision-making speed, and cognitive reactions have reshaped the online shopping landscape. For example, Addo *et al.* (2020) directed their attention to fear appeal, social presence, and e-loyalty within the context of online shopping during the pandemic. To comprehensively investigate purchasing behaviour trends, the authors scrutinised 834 daily data points from 40 live-streaming shops, alongside daily nCoV case figures from the China Centre for Disease Control and Prevention, as published on Baidu. The findings substantiated that fear appeal fosters social presence as

individuals seek affection, acceptance, and social information. Gu *et al.* (2021) identified the most influential factors in consumers' purchasing behaviours during the pandemic. They collected data through a questionnaire from 3,042 online shoppers in countries with high electronic commerce growth. The results revealed that online consumers have become more experienced. Kursan Milaković (2021) analysed consumer resilience in Croatia during the pandemic. According to regression analysis results with a sample of 400 online consumers, gender played a significant role in consumer resilience, optimism, and innovativeness. Wang and Chapa (2021) analysed post-pandemic impulse buying behaviour in a sample of 322 online consumers in China. The results pointed out that pandemic cues sent to consumers have impacted consumers' cognitive and affective reactions. Lastly, Pollák *et al.* (2021) gathered data across three distinct timeframes to examine the influence of seasonality and the evolution of consumer behaviour patterns during the pandemic. The researchers analysed consumer Facebook activities on their profiles and fan pages during the initial wave, peak, and subsequent decline of the second wave of the pandemic. The findings demonstrated a distinct pattern of heightened online consumer anxiety at the onset of the pandemic. However, as the pandemic continued, consumer behaviours on social media gradually stabilised.

2.3. Theory of Planned Behaviour and The Behavioural Inhibition System

The Theory of Planned Behaviour (TPB) and the Behavioural Inhibition System (BIS) represent two pivotal frameworks in psychological research, focusing on understanding human behaviour from complementary perspectives. The TPB, rooted in the broader Theory of

Reasoned Action, aims to predict deliberate behaviour (Ajzen, 1991), while the BIS Theory, embedded in Gray's biopsychological theory of personality, focuses on the neurobiological processes that lead to inhibition of behaviour in response to signals of punishment or non-reward (Gray and McNaughton, 2007).

The TPB posits that behavioural intentions, shaped by attitudes, subjective norms, and perceived behavioural control, are the most proximate determinants of human action. Attitudes reflect the degree to which a person has a favourable or unfavourable evaluation of the behaviour in question. Beliefs about the outcomes of the behaviour and evaluations of these outcomes determine the attitudes Subjective norms involve the perceived social pressure to perform or not perform the behaviour. Subjective norms are influenced by normative beliefs, which are expectations from significant others and motivation to comply with these expectations. Perceived behavioural control relates to the perceived ease or difficulty of performing the behaviour, determined by control beliefs. This component is crucial as it can directly influence behaviour and intentions, especially for behaviours over which people have incomplete volitional control.

Recent research employing the TPB illuminates the diverse facets of online shopping behaviours, demonstrating the theory's broad applicability and adaptability. For instance, Koay and Cheah (2023) leveraging the TPB framework, delved into the factors influencing consumers' intentions to revisit bubble tea stores. They found that attitudes, subjective norms, and perceived behavioural control significantly predicted revisit intentions. Tian *et al.* (2023) explored the use of Alipay, focusing on the largest e-wallet platform in the world. This research integrated the

TPB with the Technology Acceptance Model, perceived trust, and perceived service quality, examining their impact on Alipay usage among Malaysian consumers. The study concluded that all assumed relationships were valid, except for the moderating effect of perceived trust, thus extending knowledge on e-wallet adoption in emerging economies. In another study, Khan *et al.* (2023), aimed to investigate the impact of various types of motivational factors on consumers' behaviour regarding the purchase and consumption of organic food by integrating self-determination theory and the TPB. All the variables extracted from the TPB (attitude, subjective norm) appeared to have a significant impact. Hamid *et al.* (2023) examined consumers' behavioural intentions to order food and beverage items using e-commerce during COVID-19 by incorporating trust with the TPB. The empirical results showed that attitude, subjective norms, and trust significantly and positively influence behavioural intention, while perceived behavioural control was insignificant. Moreover, Munawaroh *et al.* (2024) extended the TPB to analyse consumer behaviour towards purchasing potato doughnuts, incorporating service quality as a pivotal factor, suggesting that service quality significantly influences online purchasing decisions beyond traditional TPB predictors. Lastly, Petkowicz *et al.'s* (2024) study of the purchasing intentions of sustainably packaged products among Brazilian consumers applied the TPB to environmental concerns, revealing how modern consumers' ethical and ecological considerations shape online shopping intentions. Together, these studies validate the TPB's relevance in various online shopping contexts and highlight its flexibility in integrating additional factors to understand better and predict consumer behaviour in the digital age. On the

other hand, while the TPB is robust in various contexts, it sometimes oversimplifies the complexity of human behaviour, neglecting emotional, moral, and unconscious factors that might influence decision-making (Conner and Armitage, 1998). Moreover, the theory's reliance on self-reported intentions can lead to discrepancies between stated intentions and actual behaviours (Sheeran, 2002).

The BIS, part of Gray's (1982) biopsychological theory of personality, describes a neurological system that governs organisms' responses to signals of punishment, non-reward, and novel stimuli. This theory suggests that two primary neurological systems govern most behaviour: the BIS and the Behavioural Activation System (BAS). The BIS is particularly sensitive to cues of punishment, novelty, and non-reward, leading to behaviours characterised by inhibition, increased arousal, and vigilance. The BIS activates in response to signals of punishment, non-reward, or novel situations. This activation results in behavioural inhibition - stopping ongoing actions, increased attention and scanning of the environment, and physiological arousal to assess potential threats. The BIS is closely associated with anxiety sensitivity. High BIS sensitivity may predispose individuals to higher levels of anxiety, as they are more reactive to potential threats or adverse outcomes. While the BIS inhibits behaviour in response to threats, the BAS promotes behaviour in response to signals of reward or escape from punishment. The balance between these two systems can explain various personality traits and behaviours. Studies on the BIS have deepened the understanding of anxiety disorders, risk-averse behaviours, and individual differences in sensitivity to negative stimuli. Some recent studies

have adopted the BIS in the context of online shopping. For instance, Omar *et al.* (2021) underscored the role of the BIS in panic buying, suggesting that the BIS triggers anxiety in response to negative stimuli, leading individuals to engage in panic buying as a coping mechanism to avoid anxiety-provoking situations. This study laid the groundwork for understanding the psychological underpinnings of panic buying, indicating that it is a response to perceived threats and scarcity, amplified by the BIS's influence on anxiety levels. Heffernan *et al.* (2024) extended the understanding of the BIS by examining its impact on compulsive shopping behaviours. The study revealed that compulsive shoppers exhibit significant impairments in executive functions, such as inhibitory control, which was associated with higher activity of the BIS. This suggested that the BIS not only influenced panic buying in response to external crises but also underpinned compulsive shopping behaviours, highlighting a broader spectrum of BIS-related behavioural responses. Bacon and Corr (2020) further elaborated on the role of the BIS during the COVID-19 pandemic, focusing on consumers' reactions, such as panic buying. The study discussed how uncertainty, perceptions of scarcity, and severity influenced consumer anxiety, with the BIS mediating this relationship. The findings suggested that the BIS's activation in response to pandemic-related fears exacerbates panic buying behaviour, emphasising the BIS's central role in consumer behaviour during crises. Together, these studies affirm the pivotal role of the BIS in mediating consumer behaviour during times of crisis, underscoring its influence in driving anxiety-induced shopping patterns. On the other hand, critics of the BIS highlight the difficulty in isolating BIS activity from other neurobiological

systems in empirical research. Furthermore, some argue that the theory's predictions are sometimes too broad or not sufficiently specific to account for the variability in individual responses to threats or punishment signals (Corr, 2004).

Although the TPB and BIS originate from different psychological domains, they intersect in conceptualising how behavioural decisions are made and inhibited. Both theories can be integrated to understand complex behaviours, particularly those involving risk or social disapproval. While the TPB explains how behaviour is a rational choice derived from intentions and attitudes, the BIS adds a layer of complexity by highlighting how biological and emotional responses to potential threats can inhibit or modify these behaviours. For instance, in a situation where the TPB might predict behaviour based on positive attitudes and social norms, the BIS might inhibit this behaviour if the individual perceives a significant risk or threat associated with it. Specifically, incorporating the BIS constructs into the TPB could yield a more nuanced understanding of the role of fear, anxiety, and risk perception in behavioural intention and control. This synthesis necessitates further empirical validation but promises a more holistic approach to studying and influencing complex behaviours.

2.2. Theoretical Framework

Figure 1 shows that the theoretical framework involves five components: online purchase intention, behavioural attitude, subjective norms, perceived behavioural control, and pandemic-induced consumer anxiety. In the context of the study, online purchase intention refers to the

likelihood or propensity of individuals to engage in purchasing products through online platforms during the COVID-19 pandemic. This intent encompasses transactions across a broad spectrum of product categories, including but not limited to food items, healthcare products, electronics, household essentials, and personal care items.

Behavioural attitude, a determinant of online purchase intentions, is an individual's positive or negative evaluation of a specific behaviour (Ajzen, 1991). This evaluative process results in a favourable or unfavourable disposition towards the behaviour, influencing the likelihood of its enactment. Attitudes are shaped by beliefs and past experiences, playing a pivotal role in decision-making (Rehman *et al.*, 2019). Empirical literature consistently shows a positive correlation between favourable attitudes and online purchasing intentions (Chin and Goh, 2017; Dutta and Bhat, 2016; Ha *et al.*, 2019; Hsu *et al.*, 2006; Küster *et al.*, 2016; Rehman *et al.*, 2019; Singh and Srivastava, 2018; Wu *et al.*, 2017). In the study context, attitude encompasses consumers' perceptions of the attractiveness of online shopping in the pandemic environment. In this environment, risks associated with physical stores and lockdown measures have significantly influenced attitudes towards online shopping, leading to altered purchasing habits (Öztürk, 2020). Thus, we hypothesised that:

H1: Behavioural attitude affects consumers' online purchase intentions during the pandemic.

Subjective norms, another essential precursor to behavioural intentions, are based on an individual's perception of social acceptance and willingness to comply with a particular

behaviour (Redda, 2019). These norms are shaped by an individual's belief about the expectations of influential figures like family and friends (Rehman *et al.*, 2019). Such norms can exert social pressure, positively or negatively influencing behaviour (Chiu *et al.*, 2018). We define subjective norms as consumer perceptions regarding the acceptance and practice of online shopping within their social circle during the pandemic (Pavlou and Fygenson, 2006). During periods of uncertainty, individuals often look to their social circles for cues on how to behave. If peers or family members are seen to be adopting online shopping more frequently, an individual may perceive online shopping as a more acceptable and normative behaviour. The unique context of a pandemic, with social distancing and lockdown measures, creates a shift in social norms towards more digital engagement (Chan *et al.*, 2021). As online shopping becomes a socially endorsed behaviour due to the circumstances, individuals are more likely to align their purchase intentions with these new norms. Thus, we hypothesised that:

H2: Subjective norms affect consumers' online purchase intentions during the pandemic.

Perceived behavioural control is a critical determinant, focusing on individuals' beliefs about their capability to perform a specific behaviour alongside the necessary resources and opportunities (Hsu *et al.*, 2006; Rehman *et al.*, 2019). Defined as consumers' assessments of the ease or difficulty of online shopping (Pavlou and Fygenson, 2006), this factor becomes especially pertinent in COVID-19. The transition to online shopping requires a certain level of technical proficiency and familiarity with e-commerce platforms. During a pandemic, individuals who perceive themselves as capable of efficiently using these platforms are more likely to have

higher intentions to shop online, particularly as online shopping is perceived as a safer alternative to physical stores during the pandemic (Öztürk, 2020). In this sense, we proposed that:

H3: Perceived behavioural control affects consumers' online purchase intentions during the pandemic.

Unexpected events can influence behavioural inhibition and neurological systems, which are strongly related to anxiety and change (Gray, 1975; Gray and McNaughton, 2007). Anxiety, as an emotional response, originates from both internal cognitive and external environmental stimuli (Craighead *et al.*, 1976). It is a consequence of stress combined with the perceived threat of adverse outcomes, which may not be tangible (Stephan *et al.*, 1999). For example, during the pandemic, uncertainties in healthcare and economic and social lives increased consumer anxiety. Social distancing, lockdowns, mask mandates, and quarantines caused consumers to experience different emotions, including more stress, uncertainty, fear, sadness, missing people, distrust, anxiety, and less joy (Addo *et al.*, 2020; Long and Khoi, 2020; Sadiku-Dushi and Skeja, 2020). Anxiety can influence behaviour in varied ways, either leading to awkward responses or enhancing effectiveness through the promotion of proactive actions. For example, it led to shifts in purchasing intentions and an increased preference for online shopping, even among previously hesitant consumers (Bartók *et al.*, 2021; Gu *et al.*, 2021; Mehta *et al.*, 2020). Therefore, we introduced the construct of pandemic-induced consumer anxiety, which is defined as a heightened state of concern and stress experienced by consumers precisely due to the

uncertainties and disruptions caused by the pandemic. This anxiety stems from factors such as health risks, changes in social and economic conditions, and alterations in daily routines.

The onset of a pandemic introduces a heightened state of consumer anxiety, characterised by concerns over health risks, economic instability, and significant changes in daily life. This anxiety does not exist in isolation but interacts with existing attitudes, altering the straightforward path from attitudes to purchase intentions. For consumers with a positive attitude towards online shopping, pandemic-induced anxiety can amplify the urgency and necessity of acting on these attitudes. The fear of health risks associated with in-person shopping and the desire to maintain social distancing can make the convenience and safety of online shopping even more appealing. In this case, anxiety reinforces and heightens the positive link between favourable attitudes and purchase intentions. Conversely, for individuals with initially neutral or slightly negative attitudes towards online shopping, pandemic-induced anxiety might mediate this relationship differently. The crisis context could compel them to reassess their attitudes in light of new information and circumstances. The urgent need for social distancing and avoiding physical stores could mitigate their reservations, leading to a reluctant but necessary shift towards online shopping.

Pandemic-induced consumer anxiety might mediate the impact of subjective norms on online purchase intentions by either enhancing or inhibiting the influence of social pressures. For some consumers, the anxiety stemming from the pandemic might amplify the influence of subjective norms on online purchase intentions. In seeking to mitigate their anxieties related to

health risks and maintaining social cohesion, individuals may be more inclined to adhere to the perceived social shift towards online shopping. The motivation here is twofold: reducing personal health risks and aligning with the behaviour of their social group to avoid social disapproval. Conversely, for other individuals, pandemic-induced anxiety could inhibit the impact of subjective norms on online purchase intentions. This occurs when the anxiety over navigating online platforms, potential financial strains, or the efficacy of online shopping to meet immediate needs outweighs the perceived social pressure to shop online. In such cases, even strong subjective norms favouring online shopping may not suffice to increase online purchase intentions among highly anxious consumers.

Over the course of the pandemic, individuals' experiences with online shopping, whether positive or negative, can lead to adjustments in both their level of perceived behavioural control and the extent to which anxiety mediates this relationship. For some individuals, anxiety about the pandemic (e.g., getting infected in physical stores) may heighten their value on perceived control aspects of online shopping, such as avoiding crowds and reducing health risks. In this scenario, anxiety mediates by making perceived behavioural control more salient, thus enormously motivating online purchase intentions as a form of coping mechanism. Conversely, for others, the same anxiety might underscore perceived barriers or lack of control (e.g., concerns over not being able to return products quickly), which can inhibit online purchase intentions. Here, anxiety highlights perceived limitations rather than competencies, dampening the positive impact of perceived behavioural control on purchase intentions.

In summary, we hypothesised that:

H4: Pandemic-induced consumer anxiety moderates the relationship between behavioural attitude and online purchase intentions.

H5: Pandemic-induced consumer anxiety moderates the relationship between subjective norms and online purchase intentions.

H6: Pandemic-induced consumer anxiety moderates the relationship between perceived behavioural control and online purchase intentions.
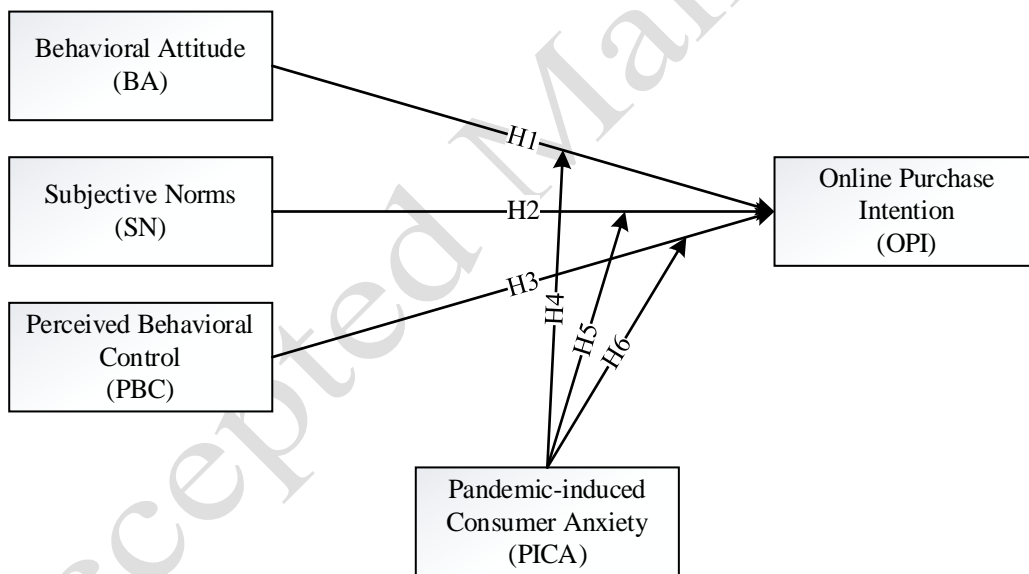

Figure 1. Research model

3. Methodology

3.1. Data Collection

We adopted a repeated cross-sectional approach to answer the study's research question. We administered the same survey to different samples of participants during the three phases of the pandemic: initial, transitional, and adaptation. We targeted individuals who had engaged in online shopping at least once during the specific phase in Turkey. We specifically targeted individuals who have purchased from diverse categories, ensuring that our outreach encompassed individuals with varied shopping needs and preferences. Our focus included those who bought items ranging from essentials such as meat, seafood, fruits, and vegetables to milk and dairy products, food items and candies, and beverages. Our targeted consumer base also extended to individuals seeking products for home and life, entertainment, pet supplies, electronics, and apparel, including clothes, shoes, accessories, and healthcare products.

During each phase, we administered a web-based survey via Qualtrics in Turkish. The initial data collection phase, which started on April 3, 2020, was critically timed to assess consumer behaviour in Turkey in the immediate aftermath of the country reporting its first COVID-19 cases on March 11, 2020. The data collection continued until the targeted sample size was achieved, which was on April 10, 2020. This period was characterised not only by the burgeoning impact of the pandemic on daily life and consumer habits but also by the significant political and social responses within Turkey and across the globe. During this time, the Turkish government, like many others, grappled with the dual challenge of managing the public health

crisis while trying to mitigate the economic fallout. The government's approach included implementing lockdown measures, travel restrictions, and the temporary closure of non-essential businesses. This prompted a swift pivot to online shopping for various products, from groceries to healthcare items. Moreover, the absence of a COVID-19 vaccine during this initial phase heightened public anxiety and uncertainty, further influencing consumer behaviour. People turned to online shopping as a safer alternative to traditional shopping methods, avoiding crowded places like markets and shopping centres.

The second transition phase of the study, conducted from July 13, 2021, to July 29, 2021, was set against a backdrop of significant changes in Turkey's approach to managing the COVID-19 pandemic. This phase commenced following the Turkish government's announcement on July 1, 2021, to lift all pandemic-related curfews, marking a pivotal shift towards normalcy after months of stringent lockdowns and restrictions to curb the spread of the virus. This period was characterised by a renewed sense of optimism, fuelled by the increased availability of COVID-19 vaccines and a concerted effort towards mass vaccination. The lifting of curfews and the easing of restrictions allowed for a gradual resumption of in-person activities and businesses, providing a unique opportunity to assess how consumer behaviour and online purchasing intentions were adapting to this new phase of the pandemic. The focus of the study during the transition phase was to understand the dynamics of consumer online shopping behaviour in an environment where the immediate pressures of lockdowns were removed. Yet, the presence of the virus and the ongoing vaccination campaigns continued to influence decision-making processes. Data

collection during this phase aimed to capture the nuances of how consumers balanced the convenience and safety of online shopping with the re-emergence of the option to shop in person.

Data collection during the adaptation phase, from April 3, 2022, to May 28, 2022, occurred during a significant transition and adjustment in Turkey as the country navigated the evolving dynamics of the COVID-19 pandemic. This phase was markedly characterised by the government's relaxation of mask mandates in various settings, reflecting a broader global trend towards easing pandemic-related restrictions. This decision was underpinned by high vaccination rates across the population, indicating a successful rollout of the vaccination campaign and an important milestone in the country's fight against COVID-19. Data collection during this period provided critical understanding of the long-term impacts of the pandemic on consumer behaviour, especially concerning online shopping habits developed or intensified during the height of the pandemic. With the easing of restrictions and a general move towards normalcy, the adaptation phase reflected how consumers were navigating the transition from an environment dominated by safety and health concerns to one where such measures were gradually being lifted.

We employed a convenience sampling method to recruit participants. We disseminated the survey through social media platforms, including Twitter, Facebook, and LinkedIn. These social media posts provided an overview of the study's focus and included a hyperlink directing potential respondents to the questionnaire. As a result, we collected a total of 407, 400, and 350 valid responses in each of the three phases of the study, respectively.

3.2. Instrument Development

The survey's initial section was designed to acquire demographic information from the respondents. This section included questions about age, gender, income bracket, educational completion, professional occupation, current employment status, and the frequency of engaging in online shopping during the COVID-19 pandemic. Participants were also asked to identify the categories of products they purchased online. We identified these product categories based on popular online shopping platforms in Turkey.

The subsequent section of the survey aimed to gather insights into the respondents' intentions regarding online purchases amid the pandemic, as outlined in the accompanying Appendix. To ensure the relevance of the survey to the specific context, we adapted items about behavioural attitude, subjective norms, and perceived behavioural control from the work of George (2004). Items assessing behavioural intention were incorporated based on Turan's (2011) study. In line with the extensive literature review, four items were formulated to evaluate participants' pandemic-induced anxiety, specifically focusing on social life, regulatory and legal changes, healthcare dynamics, and economic impact. The responses to all items were measured using a five-point Likert scale, where 1 represented 'Strongly Disagree' and 5 signified 'Strongly Agree'.

3.2. Data Analysis

The dataset analysis used the structural equation modelling (SEM) approach, which combines confirmatory factor analysis (CFA) and path analysis. This method is adept at

explaining the intricate relationships among multiple variables (Kim *et al.*, 2009). IBM SPSS AMOS 25 was employed for the implementation of SEM.

CFA was applied as the initial step in evaluating the measurement model. This process entailed a comprehensive assessment of several key metrics: composite item reliability, construct validity, convergent validity, discriminant validity, and multicollinearity, using the methodologies established by Fornell and Larcker (1981) and Hair *et al.* (2010). Subsequently, the model's fit was scrutinised by examining various quality indices, as suggested by Hair *et al.* (2010). This examination included calculating the goodness of fit index (GFI), the root mean square error of approximation (RMSEA), the normed Chi-square, the normed fit index (NFI), the comparative fit index (CFI), and the adjusted goodness of fit index (AGFI).

As Collier (2020) outlined, upon the validation of the measurement model, a multi-group analysis was conducted to answer the research question. This phase involved computing the regression weights for the three distinct pandemic phases and comparing them across these periods. The study investigated whether the relationships between the variables exhibited significant variations across the different study periods.

4. Results

4.1. Descriptive Statistics

Table I delineates the descriptive statistics and provides a detailed profile of the participants in each phase of the study. Across all phases, the demographic composition was

predominantly characterised by individuals aged between 25 and 34 years, with a majority being male and holding a college degree. These participants typically reported an income of 5,000 Turkish Liras or more and were employed in full-time positions.

During the initial phase of the COVID-19 pandemic, a notable shift in work patterns was observed, with 31.2% of the participants transitioning to remote work from their homes. Despite this, a slightly higher percentage (32.9%) continued to commute to their workplaces. In contrast, the transition and adaptation phases witnessed a substantial increase in on-site work, with 41.0% and 44.5% of participants primarily working from office locations.

Figure 2 presents a heatmap that reveals the distribution of online purchases across various product categories during each phase of the pandemic. This visual representation effectively quantifies the proportionate expenditure in each category relative to the total purchases within each phase. The data notably reveals a consistent preference among participants for purchasing clothing, shoes, and accessories online throughout all periods. During the initial phase of the pandemic, a pronounced inclination towards purchasing household essentials and beauty products was observed. This category included toilet paper, wet wipes, towels, napkins, cosmetics, cologne, and personal care products. Contrastingly, there was a significant decline in healthcare-related expenditures (including vitamins, medical masks, and hand sanitisers) in the subsequent transition and adaptation phases compared to the initial phase. In the realms of electronics and home, life, entertainment, and pet (encompassing products like books, magazines, stationery, sports and outdoor items, home decoration, kitchen utensils, pet shop

items, hardware, lightbulbs, and automobile accessories), participants demonstrated a higher

spending pattern in the initial and transition phases. However, expenditure in these categories

diminished during the adaptation phase. The study also identified marginal variations in

expenditures on categories such as fruits and vegetables, meat and seafood, milk and dairy

products, food, and candy (including items like pasta, oil, soup, bakery products, frozen meals,

canned goods, candies, and snacks), beverages, cleaning supplies, and baby and toy products
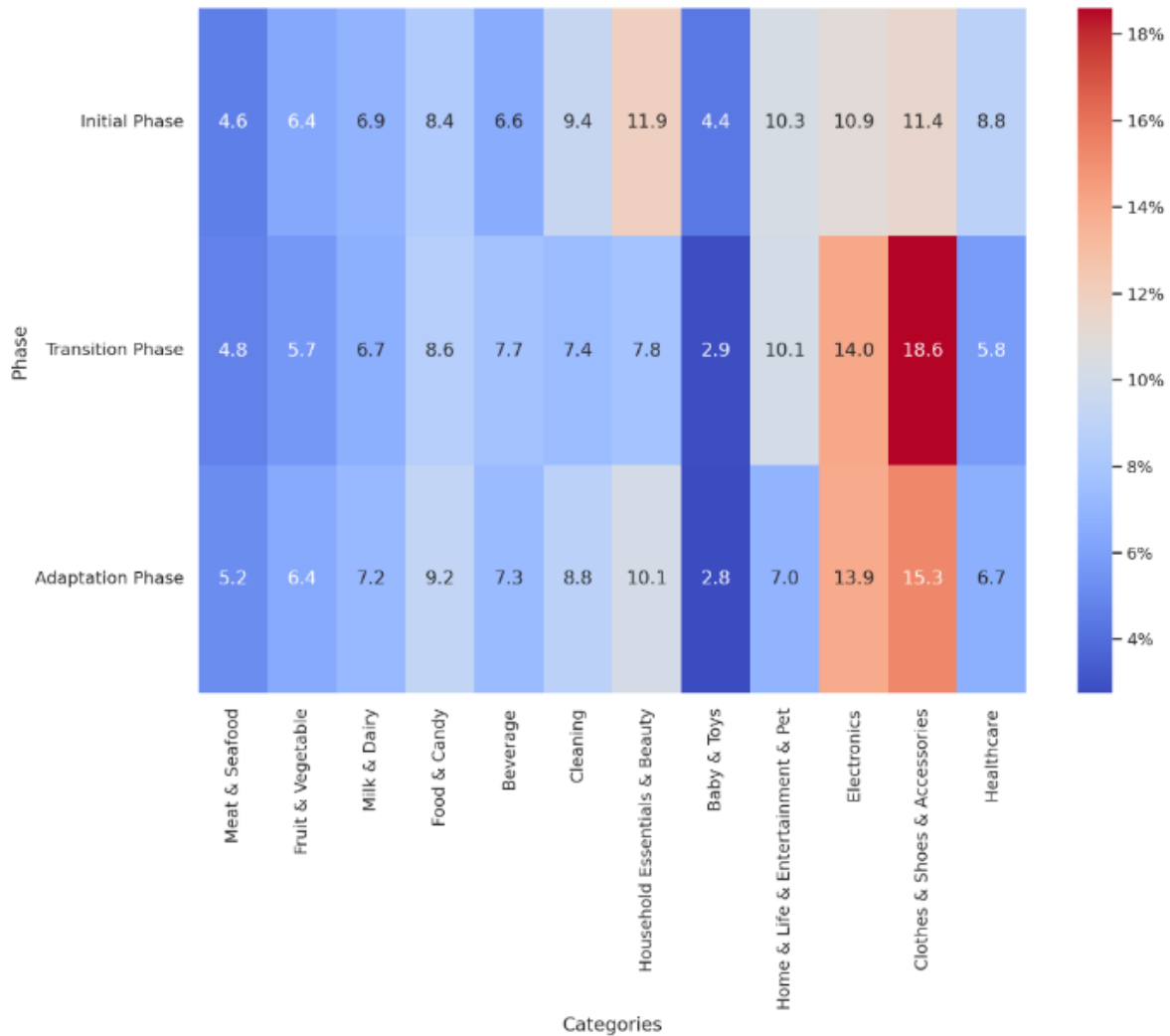
across the three phases.

Insert Table I about here

Figure 2. The proportion of each category out of the total purchases in each phase

4.2. Confirmatory Factor Analysis

Table 2 captures the outcomes of the confirmatory factor analysis. Composite reliability, serving as an indicator of internal consistency, followed the established threshold of 0.7, as suggested by Hair *et al.* (2010). Values exceeding this benchmark for each latent construct

indicated a commendable level of internal consistency within the scales.

Construct validity was scrutinized by examining the factor loadings for each observed variable. These loadings were all statistically significant, with p-values reaching 0.001, and ideally exceeded the recommended threshold of 0.7 (Hair *et al.*, 2010). Notably, the factor loading for PICA 4 stood at 0.68, which, while slightly below the ideal, was considered acceptably close to the threshold. Convergent validity was further confirmed by calculating each construct's average variance extracted (AVE), with all AVE values surpassing the ideal minimum of 0.5. Discriminant validity was assessed, as detailed in Table 3. This analysis involved comparing the correlation estimates between latent variables (shown below the diagonal) against the square roots of the AVE values (displayed along the diagonal). The findings indicated that the correlation estimates were consistently lower than the corresponding square root values of the AVE, confirming discriminant validity. The analysis also addressed the potential issue of multicollinearity among the latent constructs. This was evaluated by examining the variance inflation factors (VIFs), as per Kline (2016). As indicated in Table 2, all VIF values were comfortably below the threshold of 5.0, thereby negating concerns about multicollinearity (Hair *et al.*, 2010). Lastly, Table 4 presents the model fit statistics. All goodness-of-fit indices, except the normed Chi-Square, met the acceptable criteria. As Hair et al. (2010) recommended, the validation of at least three fit indices confirmed the model's validity, thereby underscoring the soundness and reliability of the measurement model. These various assessments collectively affirmed the robust construction of the measurement model.

Insert Tables II, III, and IV about here

4.3. Hypothesis Testing

According to Table 5, although behavioural attitudes and subjective norms positively impacted consumers' online purchase intentions, we could not find any impact of perceived behavioural control. Specifically, the strength of this relationship between behavioural attitude and online purchase intentions, as indicated by the beta coefficients (β), varied across the three phases. In the initial phase, the impact of behavioural attitude on online purchase intentions was substantial, with a beta coefficient of 0.62. This influence became more pronounced in the transition and adaptation phases, where the beta coefficient increased to 0.70 and 0.80, respectively. On the other hand, in the initial phase, the influence of subjective norms on online purchase intentions was marked with a beta coefficient of 0.30. During the transition phase, the impact of subjective norms on online purchase intentions decreased, as indicated by a lower beta coefficient of 0.15. In the adaptation phase, the beta coefficient further declined to 0.12. The study's outcomes revealed a nuanced role of pandemic-induced consumer anxiety in moderating the relationships between behavioural attitudes and online purchase intentions and between subjective norms and online purchase intentions. However, this moderating effect was uniquely observed during the initial phase of the pandemic and did not extend into the later phases. The results of this multi-group analysis revealed a notable finding. The influence of behavioural attitudes on online purchase intentions was the only factor that demonstrated significant

differences across the three phases.

Insert Table V about here

5. Theoretical Implications

At the onset of the COVID-19 pandemic, marked by the emergence of the first cases, consumer shopping preferences exhibited a distinct shift towards household essentials and beauty products such as toilet paper, wet wipes, towels, napkins, cosmetics, cologne, and personal care products, which witnessed a surge in demand. Following the lifting of government-imposed curfews and lockdowns, a further shift in consumer preferences was observed. There was a pronounced increase in clothing, shoes, accessories, and electronics purchases. In the phase termed *the new normal*, as consumers adapted to the post-pandemic environment, the preference for shopping online for clothing, shoes, and accessories remained high. Consumer electronics, household essentials, and beauty products continued to be popular. Previous research has indicated that consumers prioritise fulfilling their fundamental requirements, such as rent, groceries, and medications, in times of crisis (Wilson, 2020). During this initial phase, there was a pronounced inclination toward buying healthcare items such as vitamins, medical masks, hand sanitisers, cleaning supplies, household essentials, and beauty products. However, as the situation evolved into the transition period, the spending on these categories decreased. Moving into the adaptation period, there was a slight resurgence in expenditure on these items, but the levels did not match the heightened demand observed during the initial outbreak. This trend

suggests that consumer priorities shifted in response to the immediate concerns posed by the pandemic's onset. The initial emphasis on hygiene and cleaning products, as noted by Mehta *et al.* (2020), reflects a heightened awareness and concern for health and safety during the early stages of the pandemic. As the situation progressed, these concerns, while still present, became less dominant in driving purchasing decisions.

Theoretically, the study confirms the substantial relationships between subjective norms, behavioural attitudes, and consumers' intentions towards online shopping, particularly during the COVID-19 pandemic. This confirmation of relationships resonates with findings from various studies conducted in diverse contexts (Akar, 2021; Ha *et al.*, 2019; Redda, 2019; Rehman *et al.*, 2019; Singh and Srivastava, 2018). The observed escalation in the influence of behavioural attitudes suggested a growing personal conviction or positive disposition towards online shopping as the pandemic progressed. This trend could be attributed to factors such as increased familiarity with online platforms, appreciation of the convenience and safety of online shopping, or a shift in lifestyle and shopping preferences necessitated by prolonged pandemic conditions.

Subjective norms seem to have had a diminished influence on online purchasing decisions as the pandemic progressed. Initially, social influences and peer opinions might have played a significant role in shaping consumer behaviour in the uncertain early days of the pandemic. However, over time, these social influences appeared to have decreased, potentially due to individuals becoming more self-assured in their decision making or the dilution of traditional social interactions due to social distancing and lockdown measures.

The research could not find the influence of perceived behavioural control on online purchase intentions. Perceived behavioural control in online shopping encompasses the comprehension and execution of tasks like navigating online platforms, completing transactions, and effectively receiving goods and services (Pillay and Mayayise, 2021). This study's findings suggest that consumers may have minimised the perceived challenges associated with online shopping. This downplaying of perceived behavioural control could be attributed to the constraints of the pandemic, where online shopping became a necessity rather than a choice. As Öztürk (2020) notes, the lack of alternatives and the need to avoid physical stores and crowded spaces to mitigate the risk of viral transmission likely altered consumer perceptions. In such a scenario, the challenges of online shopping were overshadowed by the pressing need to adapt to this mode of purchasing, thus influencing purchase intentions.

Pandemic-induced consumer anxiety – stemming from uncertainties and health concerns – intensified the relationship between behavioural attitude and online purchase intention. Consumers with a positive attitude towards online shopping might have perceived it as a safer alternative to in-person shopping. On the other hand, while subjective norms might typically encourage online shopping (as a safer alternative to in-store shopping), the anxiety overlay changes this dynamic. High anxiety can lead individuals to focus more on immediate personal concerns and less on adhering to social expectations. Anxiety may also impair cognitive processing and decision making, making individuals less responsive to social influences. They might prioritise personal safety and comfort over social conformity, especially in a rapidly

changing environment where subjective norms are in flux.

6. Practical Implications

The advent of the COVID-19 pandemic has precipitated significant alterations in consumer purchasing patterns, as evidenced by a substantial increase in online shopping activity. This shift can largely be attributed to the closure of brick-and-mortar retail outlets and the imposed restrictions on physical proximity and social interactions Addo *et al.* (2020). These changes have markedly influenced the landscape of consumer behaviour, particularly in the context of online shopping. For example, during the initial phase of the pandemic, the frequency of online shopping among participants was relatively sporadic, with most consumers engaging in online purchases either infrequently or occasionally. This pattern, however, underwent a notable transformation in the subsequent phases of the pandemic. There was a noticeable shift toward more frequent online shopping in both the transition and adaptation phases. The majority of consumers in these latter stages demonstrated a clear preference for engaging in regular online shopping activities. A parallel study by Stephens *et al.* (2021) confirms these findings, indicating that a substantial proportion of consumers—over 75%—have maintained or increased their frequency of online shopping post-pandemic. This trend reflects a significant shift in consumer behaviour towards digital platforms for purchasing needs. Additionally, a report in *Forbes* highlights a consequential response from the retail sector to this shift (Loeb, 2020). Retailers have begun actively reducing their physical store presence, adapting to the burgeoning trend of

online shopping. This strategic adjustment signifies recognition of the changing landscape of consumer preferences and the increasing reliance on online retail channels, a transformation accelerated by the pandemic.

Given the significant shift toward online shopping, retailers should focus on enhancing their digital platforms. Marketing campaigns should emphasise the safety and health benefits of online shopping. Retailers should remain agile in their inventory management, aligning product offerings with the evolving needs of consumers during a crisis. For instance, during the initial outbreak phase, they should focus on essentials and health-related products, and then gradually, they can introduce more discretionary items like clothing and electronics as consumer confidence rebuilds. To counteract the diminished influence of subjective norms, retailers should leverage reviews, testimonials, and user-generated content more prominently. These elements can be powerful motivators for purchase decisions without traditional social shopping experiences. Personalised marketing becomes even more crucial, with a noted increase in behavioural attitudes positively influencing online shopping. Tailored emails, dynamic ads, and personalised shopping experiences can make consumers feel uniquely valued, increasing engagement and loyalty. With the reduced impact of perceived behavioural control, ensuring that customer support is more accessible and effective can alleviate any anxieties related to online shopping. Enhancing virtual support through chatbots and live chat options and ensuring a quick response time can help provide a seamless shopping experience.

To effectively address the consumer anxiety heightened by the pandemic and its impact

on purchasing behaviour, it's crucial for both businesses and policymakers to adopt specific strategies. Major healthcare reforms could be instrumental due to the heightened focus on health and safety. Policies aimed at improving healthcare infrastructure, increasing the availability of public health information, and ensuring the affordability and accessibility of healthcare can alleviate consumer concerns related to health risks, which in turn could positively affect consumer confidence. Businesses should proactively communicate how they respond to these policy changes and the measures they take to ensure customer safety and support. Regular updates about health and safety protocols, changes in service or delivery, and how they adapt to new economic and healthcare policies can help build trust.

7. Conclusion

Employing a repeated cross-sectional research design, our study methodically explored the dynamics of consumers' intentions to engage in online shopping throughout various stages of the COVID-19 pandemic, explicitly focusing on the initial, transition, and adaptation phases. This investigation was anchored in integrating the TPB and the BIS. The study assessed the influence of behavioural attitudes, subjective norms, and perceived behavioural control influenced consumers' online purchasing intentions. It also examined the moderating role of pandemic-induced consumer anxiety on online purchase intentions. The results highlighted the unique and significant moderating influence of pandemic-induced consumer anxiety on the relationships between behavioural attitudes, subjective norms, and online purchase intentions, but notably only

during the pandemic's initial phase. This finding underscores the heightened role of consumer anxiety in shaping online shopping behaviours at the onset of the pandemic. The study established the continuous influence of behavioural attitudes and subjective norms on consumers' online purchase intentions throughout the pandemic. These factors consistently shaped consumer behaviour, even though with varying degrees of impact across different phases. A critical aspect of our findings emerged from the multi-group analysis, which indicated that the impact of behavioural attitudes on online purchase intentions exhibited significant variance across the three phases of the pandemic. This variation points to the evolving nature of consumer attitudes in response to the changing circumstances of the pandemic.

We recognise some limitations that should be considered. The research was constrained by the geographic specificity of the sample, which primarily encompassed participants from a particular region. This limitation potentially restricts the generalizability of our findings to broader, more diverse populations. Given this constraint, we recommend that future research endeavours incorporate more heterogeneous samples encompassing a more comprehensive range of geographic areas. Such an approach would not only bolster the generalizability of the findings but also enrich the cultural depth and applicability of the study.

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Appendix

Online Questionnaire

Constructs	Items	Questions	Reference
Behavioural Attitude (BA)		*With the occurrence and spread of COVID-19…*	George (2004)
	BA1	I think that online shopping is a good idea.	
	BA2	I think that online shopping is a smart move.	
	BA3	I think online shopping is a more beneficial move.	
Subjective Norms (SN)		*With the occurrence and spread of COVID-19…*	George (2004)
	SN1	The people who are important to me think that I need to shop online.	
	SN2	The people who are important to me approve of my online shopping.	
	SN3	The people who are important to me think online shopping is a good idea.	
Perceived Behavioral Control (PBC)		*With the occurrence and spread of COVID-19…*	George (2004)
	PBC1	I have the knowledge and skills to shop online.	
	PBC2	It is easy for me to shop online when I consider my online shopping experience.	

	PBC3	I have complete control and decision during online shopping.	
Pandemic-Induced Consumer Anxiety (PICA)		*To prevent and stop the spread of COVID-19…*	
	PICA1	I think that the relevant laws and rules should be enforced more strongly.	
	PICA2	I think that significant changes are necessary for social life.	
	PICA3	I think that a major policy change in the economic field is required.	
	PICA4	I think that a major policy change in healthcare is required.	
Online Purchase Intention (OPI)		*With the occurrence and spread of COVID-19…*	Turan (2011)
	BI1	I intend to shop online in the near future.	
	BI2	I plan to shop online more frequently.	
	BI3	I think I would prefer to shop online rather than traditional shopping.	

Tables

Table I. Descriptive statistics

	Initial Phase N=407		Transition Phase N=400		Adaptation Phase N=350	
	Freq	**Pct**	**Freq**	**Pct**	**Freq**	**Pct**
Age						
<= 24	95	23.3%	109	27.3%	71	20.4%
25-34	238	58.5%	180	45.0%	185	53.2%
>= 35	74	18.2%	111	27.8%	92	26.4%
Gender						
Female	119	29.2%	62	15.5%	45	12.9%
Male	288	70.8%	338	84.5%	303	81.1%
Educational Level						
High school graduate or lower	76	18.7%	92	23.0%	59	17.0%
University graduate	264	64.9%	238	59.5%	232	66.7%
Master/Ph.D. graduate	67	16.5%	70	17.5%	57	16.4%
Income Level						

	Freq	Pct	Freq	Pct	Freq	Pct
< 1,000 Turkish Liras	62	15.2%	76	19.0%	39	11.2%
1,000 – 1,999 Turkish Liras	27	6.6%	17	4.3%	13	3.7%
2,000 – 2,999 Turkish Liras	38	9.3%	23	5.8%	5	1.4%
3,000 – 3,999 Turkish Liras	63	15.5%	40	10.0%	13	3.7%
4,000 – 4,999 Turkish Liras	57	14.0%	44	11.0%	21	6.0%
>= 5,000 Turkish Liras	160	39.3%	200	50.0%	257	73.9%
Occupation						
Full-time job	282	69.3%	247	61.8%	250	71.8%
Part-time job	17	4.2%	23	5.8%	14	4.0%
Unemployed	108	26.5%	130	32.5%	84	24.1%
Work Status during COVID-19						
I started to work remotely	127	31.2%	86	21.5%	96	27.6%
I had already been working remotely	12	2.9%	14	3.5%	14	4.0%
I was fired	3	0.7%	19	4.8%	8	2.3%
My employer requested unpaid leave	39	9.6%	12	3.0%	9	2.6%
I kept going to my work	134	32.9%	164	41.0%	155	44.5%
I had already been unemployed	92	22.6%	105	26.3%	66	19.0%
Online Shopping frequency during COVID-19						
Rarely	152	37.3%	59	14.8%	34	9.8%
Sometimes	126	31.0%	136	34.0%	111	31.9%
Usually	113	27.8%	159	39.8%	135	38.8%
Always	16	3.9%	46	11.5%	68	19.5%

*N= Number of observations, Freq = Frequency, Pct= Percentage within the period

Table II. Confirmatory factor analysis results

Unobserved Variable	Observed Variable	Factor Loading	p- Value	Construct Reliability	AVE	VIF
Pandemic-induced Consumer Anxiety (PICA)	PICA 1	0.85	0.001	0.88	0.65	1.13
	PICA 2	0.89	0.001			
	PICA 3	0.78	0.001			
	PICA 4	0.68	0.001			
Behavioural Attitude (BA)	BA1	0.92	0.001	0.96	0.88	1.96
	BA2	0.96	0.001			
	BA3	0.94	0.001			
Subjective Norms (SN)	SN1	0.82	0.001	0.93	0.81	1.76
	SN2	0.94	0.001			
	SN3	0.93	0.001			
Perceived Behavioural Control (PBC)	PBC1	0.82	0.001	0.87	0.68	1.40
	PBC2	0.91	0.001			
	PBC3	0.75	0.001			
Online Purchase Intention (OPI)	OPI1	0.86	0.001	0.91	0.77	1.13
	OPI2	0.91	0.001			
	OPI3	0.87	0.001			

Table III Discriminant validity results

Unobserved Variable	PICA	BA	SN	PBC	OPI
PICA	**0.81**				
BA	0.29	**0.94**			
SN	0.24	0.67	**0.90**		
PBC	0.29	0.56	0.49	**0.82**	
OPI	0.28	0.83	0.64	0.50	**0.88**

Values below the diagonal are correlation estimates. Correlation estimates are significant at 0.001. Diagonal elements are the square root of AVE.

Table IV Model fit indices

Goodness of Fit Index	Value	Acceptable Fit
Chi-Square	454.058	
Degrees of Freedom	94	
P-value	0.001	
Absolute Fit Measures		
GFI	0.95	$0.90 \leq GFI$
RMSEA	0.06	$RMSEA \leq 0.08$
Normed Chi-Square	4.83	$Chi\text{-}Square/df \leq 3$
Incremental Fit Indices		
NFI	0.97	$0.90 \leq NFI$
CFI	0.98	$0.90 \leq CFI$
Parsimony Fit Indices		
AGFI	0.93	$0.85 \leq AGFI$

Table 5. Hypothesis testing results

	Regression Weight			
Hypothesis	Initial Phase	Transition Phase	Adaptation Phase	Multi-group Analysis P-values
H1: BA -> OPI	0.62***	0.70***	0.80***	0.003**
H2: SN -> OPI	0.30**	0.15***	0.12***	0.15
H3: PBC -> OPI	0.06	-0.02	0.04	0.44
H4: PICA x BA -> OPI	0.09*	0.04	-0.007	0.55
H5: PICA x SN -> OPI	-0.08*	-0.006	0.06	0.23
H6: PICA x PBC-> OPI	0.01	0.01	0.04	0.44

*Significance level: *** <= 0.01 ** <= 0.05 * <= 0.10*