RESEARCH OF CONSUMER BEHAVIOR DURING THE PANDEMIC: DIGITAL SOLUTIONS IN THE LOCKDOWN ERA*

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Abstract

The COVID-19 pandemic crisis has been one of the most important and devastating events in the past two years. Scientists from various fields have studied the consequences of this crisis using comparative and analytical research methods. Based on their findings, it can be concluded that digital transformation is now a prerequisite for any company's activities. Social media has been important in society prior to the pandemic, but is now gaining even more momentum. Companies from various industries can develop an advantageous interaction and promotional channel on social networks. For small businesses, utilizing social media to sell groceries for home delivery is an effective way to embark on a digital transformation process. For larger organizations, digital social media can assist in building societies around their brands, particularly during times of uncertainty and high user traffic. In addition, organizations need to consider ways to minimize consumer risks, which can be divided into two main types: risks of infection and risks of fraud and data abuse in e-commerce transactions. The risk of infection is expected to decrease as a result of massive vaccination campaigns. To address the risk of fraud in online transactions, businesses can eliminate probable fraud risks through security protocols, integrations, and a blend of communications, technologies, and promotion through licensed operators.

Keywords: consumer behavior, digital solutions, digitalization, pandemic

1. Introduction

The COVID-19 pandemic, which developed in the first quarter of 2020, was one of the most destructive recent decades’ events. The global economic and social impact of the pandemic is immeasurable. Huge damage was inflicted on the world's population: at the end of October 2021, the death toll from infection amounted to more than 4.5 million people. The economic impact of the pandemic is also significant. According to forecasts of the International Monetary Fund (IMF), GDP around the world had a recession in 2020, and it will continue to decline by the end of 2021 (Guthrie et al., 2021).

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The indicated social and economic consequences of the pandemic, as well as the peculiarities of its course, caused a surge in research in various disciplines, and one of the important directions was the analysis of consumer behavior. Some authors have expressed, for example, that the crisis scenario has radically changed consumer behavior, which is now beginning to develop on a technology base (Ahmed et al., 2020). In previous global events related to the development of various social, pandemics and behavioral science research has concentrated strictly upon prevention and health behavior. In contrast, scant attention has been paid to consumer behavior. Over the course of the current pandemic associated with the development of COVID-19, the situation has changed radically, and the authors began to pay more attention specifically to consumer behavior formed in the context of the development of coronavirus infection (Alshuaybat, 2021; Galanakis et al., 2021). Recent theoretical studies have generated a worldwide and joint outlook on consumer behavior over the course of Coronavirus era. Researchers offer probable phases of behavior through comparing new and old consumption habits, or to define behavior on the basis of similarities to other devastating events and crises, including other wars or pandemics, as well as natural catastrophes (Okon, 2021; Sayyida et al., 2021).

However, apart from the similarities with other devastating events, the Coronavirus crisis holds multiple basic differences. Firstly, its peculiarity is determined by its global nature, and secondly, its development coincides with the intensive development of several digital technologies and the formation of the digital age (Alaimo et al., 2020; Finston and Thompson, 2021; Quiroz-Gomez et al., 2022). A thorough comprehension of consumer behavior in a pandemic era needs to be explored through the macro-, micro-environment and consumer behavior policy itself. In this regard, government laws and technology function as major forces at the macro level. At the micro level, particular technology usages are highlighted, such as business platforms and social media, pressure from social groups, families and marketing strategies.

Most of the psychological and personal characteristics assist in evaluating how consumers handle external effects and decide at the consumption level. In addition, as part of the development of consumer behavior, using and implementation of the technologies such as e-commerce platforms take place prominently in consumer behavior over the course of the pandemic (Vermeulen et al., 2020). Accordingly, the purpose of this study is to research the characteristics of consumer behavior during the development of pandemic taking into account various digital solutions in the era of lockdown.

2. Materials and methods

In the process of writing the article, comparative and analytical research methods were applied, and the sources of statistical and analytical information for 2020-2021 were studied, revealing the characteristics of consumer behavior during the development of a pandemic, taking into account the intensification of the development of various digital solutions.

3. Results

Many studies of consumer behavior regarding extreme events precede the Coronavirus crisis. The term "extraordinary event" means a position leading to substantial changes in relation to the analyzed unit, hence, it can be applied to organizations, customers, society or industries. Extraordinary events may be divided in accordance with their essence (for example, war, pandemic, natural and personal catastrophe).

Following disasters or adverse events such as the loss of loved ones, illness, or divorce, consumers tend to dispose of items that remind them of the difficult times and purchase new goods. While this research is of some interest, it fails to fully capture consumer behavior during the Coronavirus crisis. To gain a better understanding of pandemic-induced consumer behavior, past
exceptional events, including other natural disasters, pandemics, or excessive social violence and terrorism, can be examined, as they affect a larger number of consumers in a similar way.

Natural catastrophes such as floods, earthquakes, typhoons, and hurricanes are prevalent and have a significant impact on economies, infrastructure, and human lives. As a result, they provide an extended period for examining consumer behavior. Some natural catastrophes, such as hurricanes, are highly monitored and predictable in their occurrence. Consumers tend to accumulate essential items in anticipation of such events (Barnes et al., 2021). During such extraordinary events, consumers may lose family members and all their property, which can lead to impulsive, therapeutic, and substitutional purchases. Natural disasters are distinguished primarily by their destructiveness and scale, which can be significant. Extreme social violence and so-called terrorism are another category of destructive events affecting a region or country. Terrorism includes the violent actions of an aggressive group of people seeking domination, which seeks to destabilize the situation in the country. Such violent acts often adversely affect people's lives, economies and infrastructure (Baumert et al., 2020). Although terrorist activities have a significant impact on the infrastructure and economy, their effect upon consumer behavior is short-term, leading to avoidant behavior because of particular consumption choices they perceive to be more significant. Previous outbreaks of disease in recent decades, such as influenza A, SARS, and H1N1, demonstrate another kind of excessive event that consumer behavior researchers have greatly overlooked. Present understanding of human behavior over the course of disease spread has its origins in other social sciences and humanities.

Thus, two types of consumer behavior were observed: buying basic essentials and needed equipment and limiting leisure activities out of home. For instance, purchases of protective equipment (such as masks and personal care items) and food were found to increase substantially throughout the H1N1 and A influenza spreads as people stockpiled. Nonetheless, concerning SARS in China, it was discovered that people have altered their leisure time, travel modes and the resorted they paid a visit to (Campbell et al., 2021). In fig. 1. the features of influence on consumer behavior of extraordinary events of various nature are presented.

![Fig. 1. Features of the impact on consumer behavior of extraordinary events of various nature](attachment:image.png)

The Coronavirus disaster, similar to other former devastating events, has remarkably affected the people's lives and economy. Having said that, contrary to natural catastrophes and terrorism, it (like former spreads) doesn't deteriorate physical infrastructure. In addition, it is featured by its persistence: in particular, the duration of the present pandemic has already been more than one and a half years. Nevertheless, the Coronavirus disaster is exceptional in its worldwide reach. Furthermore, it is taking place regarding substantial technological progresses known in the business world as “digital transformation”. The COVID-19 pandemic’s scale and technological advances is anticipated to generate a specific and unique consumer behavior.

655
4. Discussion

The center of analysis in the research process is the consumer directly, while the consumer microenvironment is shaped by companies and people’s groups close to the consumer (for example, media, companies, friends and family).

The determining factors of consumer behavior in modern conditions are five main forces:
1) Coronavirus disaster,
2) technological environment,
3) legal and political environment,
4) financial environment
5) socio-cultural environment.

Technological, political and legal environment are connected to the COVID-19 pandemic. Several investigations show how the fusion of COVID-19 and accessible technologies has prompted consumers to quickly and massively perceive and utilize technologies and raise their use of digital business formats. In addition, technology has allowed social relationships to evolve in the face of the pandemic, reflecting the increased use of social media platforms (Cruz-Cárdenas et al., 2021). The political and legal environment is closely related to economic performance. Over the course of social distancing and quarantines, and limitations on educational services, many governments issued regulations through which a number of restrictions were introduced. Nevertheless, not all governments have resorted to isolation measures. Nonetheless, the economy fell in several arenas because of changes in consumer behavior. It should be noted that purchases of food and hygiene items have increased. Effective public service announcements mitigate the effects of negative feelings such as anxiety and feelings of control loss in the face of buying anxiety (Foroudi et al., 2021).

Diagnostics of the state of knowledge about the factors of the macroenvironment allows to see a significant amount of research on political, legal and technological factors. However, the COVID-19 crisis is dynamic. Many governments have now partially reversed isolation measures, betting heavily on social distancing as a new phase of mass vaccination begins. In addition, cultural issues need to be investigated during the COVID-19 crisis, although culture is another defining force in consumer behavior (Khorsandi et al., 2021). Moreover, social media promote shopping anxiety, particularly throughout periods of isolation. Peer advice, perceptions of product shortages, the spread of COVID-19, official announcements, and world news inspire consumers to do this. In addition, social media, news, and partners also affect the usage of technology when shopping on company pages, platforms or in apps (Jeżewska-Zychowicz et al., 2020). So, while social and mainstream media have contributed to the rise in panic buying, they have also contained the spread of COVID-19. Extensive knowledge about the impact of the microenvironment on consumer behavior has come primarily from previous irrelevant research on social media.

Marketing influence plays a significant role in the consumer's microenvironment. Marketing tools are crucial since almost all companies can control and develop them. Hence, consumer behavior patterns tend to be considered separately from other effects. The primary marketing means is the service product, the rest are pricing, communication and distribution strategies.

Two fundamental factors of marketing strategies throughout the pandemic are:
1) decreasing different risks
2) raising perceived consumer interests.

The two main risks to consider in marketing strategies include:
1) co-infection
2) online transactions.

In addition, the studies reviewed examine action patterns for two kinds of hazards. Hence, when the perceived hazard of Coronavirus rises the probability of online purchasing, the perceived hazard of online transactions mitigates this relation (Sheth, 2020). Thus, the application of
technology to digitize procedures or goods and decrease physical contact with staff or other consumers has spurred consumer purchasing in the course of the Coronavirus pandemic. For instance, technology that permits consumers to reserve hotels by cellphones decreases perceived health hazards, thereby raising the probability of reserving. Moreover, modern technologies reduce the impact of the human factor on the intentions to use services.

During the quarantine period in the majority of nations worldwide, consumer need was focused on personal care, food, and disinfection. As a result, introducing or enhancing the promotion of non-priority products is the proposed strategy. For small organizations that utilize technology less intensively, the pace of digital transformation and adaptation seems crucial. Several tiny businesses survived through employing rudimentary digital transformation approaches in the shape of a blend of home delivery services and social media sales (Troise et al., 2020). Therefore, while there are interesting results, the transcendental importance of consumer research marketing strategy needs more attention. As the pandemic is dynamic, companies must continually adapt their strategies. Some studies use case studies or experimental techniques that are suitable for examining the effects of marketing strategies.

The personal features of consumers (for example, gender, age, educational and income level) and their psychological features (for example, attitudes, motivation, and perceptions) define how they infer incentives. For example, many studies have focused on gender issues. A research from Colombia demonstrates that men usually do the most panic purchases. In contrast, a research from Hong Kong attributes this behavior to women. European studies generally show that sex differences are not relevant to the inclination to do additional purchases. The inconsistency can be connected with cultural matters. Nonetheless, methodology can also be related to conflicting outcomes. For instance, while in one of the studies the survey of respondents concerned the purchases made by them in general, in another study the survey was conducted on the basis of data on food purchases, in the third the authors were interested in consumers' purchases related to food, drugs, items, hygiene etc. The same mismatch in panic and gender buying applies to the age variable, since no reliable results have been presented on the effect of age on consumer behavior in a pandemic.

Many studies are also investigating adverse psychological status and feelings stemming from the Covid-19. The perceived hazard and information overload in regards to Coronavirus has resulted in anxiety, sadness, and cognitive dissonance (Yang, 2020). The perceived intensity of the disaster results in isolation. Detrimental psychological status undergone by the consumer are related to cumulative behavior. Over-concern for health results in over-buying and hygiene and food items’ accumulation. Adverse and sad emotions promote over-purchasing, particularly the buying of basic essentials, while they keep them from utilizing contact services. For instance, dread of contracting Coronavirus was central to the fall in demand for air travel during the pandemic. Consumer characters also have been crucial to perceiving consumer behavior over the course of Coronavirus pandemic. Personality traits, including complaisance (attentiveness or responsiveness), resulted in a denial to consume. Accordingly, some consumers refused to consume, which could negatively affect third parties.

The pandemic has also stimulated consumer-friendly attitudes in terms of environment and health. The dread of Coronavirus and the uncertainty hold a desirable impact on individuals' pro-ecological mindset, which in turn raises trust in ‘green’ brands. Having said that, although consumers put slight emphasis upon the food’s nutritional value in the early periods of the pandemic, there was a rise in health knowledge and more vigilant food selections by consumers in the next months. Despite the strong interest in the personal and economic procedures of consumers, the purchasing decision-making process received less attention.

There are three main kinds of decision-making procedures: impulse, panic, rational choice. Thus, consumer behavior, as it associates with the psychological and personal consumers’ characteristics, has been widely examined, in particular in association with the initial phases of Coronavirus, featured by isolation and social distancing. An extensive foundation of former
understanding about consumer behavior and the use and implementation of technology assist such research. Research should expand the discussion of personal and psychological processes with the dynamics of the pandemic era and its entry into new stages, including vaccination and social distancing. The imposition of restrictions has resulted in increased purchases of beverages, food, medicines and hygiene items resulting to frequent stockpiling. That behavior took place in prior to and throughout measurements and has been vastly affirmed around the world. After isolation and the transition to social distancing, moderate stockpiling could be expected.

Another important point is the choice of the purchase method. To reduce the risk of contamination, various buying methods have been implemented, with consumers opting for online shopping changing their choice of physical retailers. Blocking and then social distancing inspired many consumers to rapidly adopt technology-mediated buying behaviors (such as online shopping), creating “online awareness” among the population. Digital buying methods have been extended to categories that were not previously widely represented on the Internet. Thus, online purchases of food, drinks and cleaning products have grown. Another change in consumer buying behavior was in the physical point of sale. This change happened because consumers tried to reduce the number of trips to usual offline stores. In some countries and cities, consumers have stopped buying from large retailers and places where there may be many people, preferring instead to smaller local retailers. Consequently, there is a strong global consolidation of procurement technologies (e.g. online shopping) and strengthening of small local retailers. Another key characteristic of consumer behavior is waste management, the results of which are very interesting. During isolation, food waste is reduced, more due to future supplies than environmental considerations. However, serious health precautions have increased the use of disposable protective items, and the rise in e-commerce transactions has increased the amount of waste generated by packaging material. Thus, from a social and environmental point of view, the impact of the pandemic on product waste is ambiguous.

It can be concluded that the crisis has so far stimulated intensive consumer education, especially in the utilization of technology (psychological and personal factors). In addition, while technology can gratify both utilitarian and hedonic demands, some consumer demands keep unmet, especially social ones. Nonetheless, public vaccination campaigns and their protective impact upon the people may well decrease population's dread and avoidance behavior of particular services and products (psychological and personal factors).

Consequently, new consumer behavior will not lead to a steady return to a pre-pandemic state. Instead, consumer’s technology exploration, impaired avoidance behavior, and unmet demands point to consumer practices that have a tendency to blend pre-COVID-19 behavior (some of which are exacerbated by levels of unmet needs) with brand-new technology-based behavior (including e-commerce, e-banking, e-learning, and social media). Nonetheless, that combination of old and new consumer trait is probable to be active (in differing proportions) and innovative as consumers must undergo new phases of the pandemic highlighted by uncertainty. This so-called pandemic, in regards to exceptional events afflicting human beings, has not only similarities with other destructive events, but also unique features. Like any extraordinary event, it deeply affected societies. Its unique characteristics include a truly global scale and the emergence of “digital transformation” in the context of technological progress.

With regard to consumer behavior, comparing the research results with behavior seen in other extreme events provides interesting insights. Panic and impulsive purchasing appears to be inherent in all destructive events. Therapeutic shopping seems to be more related to natural catastrophes where physical property is affected. Avoidance behavior for particular goods and items seems to be more associated with pandemics and terrorism. Nonetheless, in spite of that similarity, the role of technology in purchasing has sparked unique consumer behavior in the Coronavirus era. As a matter of fact, in the context of COVID-19, technology has impacted different consumer behavior. Research on consumer behavior and Coronavirus is featured by 3 main thematic fields:
- technology utilization and consumer behavior;
Research of consumer behavior during the pandemic: digital solutions in the lockdown era

- buying and managing of essential stuff, protective and hygiene items;
- external and internal impacts on consumers.

Consequently, research priorities will necessarily change due to new pandemic’s stages. For instance, considering vaccination campaigns, interest in buying and managing fundamental necessities and protective tools will reduce in next research. In addition, there will be increased interest in the investigation of recreational behaviors. Having said that, utilizing technology in consumption would remain the focus throughout the pandemic.

An important outcome of the COVID-19 pandemic is the unprecedented increase in the investigation and adoption of technology on a global scale, owing to its prolonged duration. This comprehensive study of technology usage will have an impact on the credibility of pre-pandemic knowledge related to key topics such as consumer behavior and technology usage. Prior to the pandemic, several studies in various countries used different scales, such as the Technology Readiness Index, to evaluate consumer segments in technology markets. These studies showed significant results across consumer segments and their sizes. Given the dynamic adoption of technology during the pandemic, the obvious question is how relevant this pre-pandemic knowledge is. Therefore, future research could examine how the COVID-19 pandemic has changed the configuration of consumer segments in technology usage, how their significance has changed, and whether it is necessary to revise the current measurement tools (scales).

Moreover, the digital divide, which refers to the gap in access and usage of technology between different social sectors, was widely studied before the pandemic. For example, older people and those with low incomes were found to use technology-based services less frequently. This information is useful for developing profitable and social marketing strategies. However, the extensive technology research stimulated by the pandemic may overlook a section of society.

5. Conclusion

The study indicates that companies should incorporate swift digital transformation into their business practices. Social media had already played a significant role in society prior to the COVID-19 crisis, but its importance has now been amplified. A diverse range of companies can utilize social networks as a profitable channel for communication and promotion. Small businesses can leverage social media to sell groceries for home delivery, thus initiating a digital transformation process. For larger organizations, digital social media can create communities around their brands, particularly during periods of high user activity and uncertainty.

Furthermore, organizations must consider ways to reduce consumer perceived risk. This perceived risk can be divided into two main categories: the risk of fraud and infection, and the abuse of data in e-commerce transactions. The perceived risk of infection is expected to decrease as a result of widespread vaccination campaigns. However, organizations can eliminate the perceived risk of fraud in online transactions through the use of security protocols, integrations, a combination of technologies, and communication and promotional tools.

Additionally, enhancements aimed at reducing costs and increasing benefits have proven beneficial throughout the pandemic for consumers who are uncertain about virtual transactions.

Finally, considering the uncertain and non-linear nature of the crisis, consumer behavior at all stages of the pandemic seems to be a blend of old and new behaviors. This highlights the need for organizations to modernize their operations and corporate culture, and fully align their strategies with digital transformation initiatives.

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