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THE IMPACT OF THE CORONAVIRUS PANDEMIC ON THE PERFORMANCE OF THE GLOBAL TRANSPORT AND LOGISTICS SECTOR: A CASE STUDY OF AMAZON

KORONAVIRÜS PANDEMISININ KÜRESEL ULAŞTIRMA VE LOJISTIK SEKTÖRÜNÜN PERFORMANSI ÜZERINE ETKISI: AMAZON ÖRNEĞI

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Abstract
The COVID-19 outbreak, which began to spread in 2020, significantly hurt the global economy and raised attention to the implications of new health problems on business operations. Since the pandemic's beginning, several studies have been conducted to determine the impact of this calamity on various areas of human existence. This article, which is a component of the project, attempts to give rough orders of magnitude of the impact of the pandemic on the performance of the transport and logistics industry by using Amazon as an example of a worldwide e-commerce firm. The COVID-19 pandemic's effects on the global logistics and transportation sectors were additionally highlighted by this study. The implications of the global border closure brought on by the health crisis at the beginning of 2020 must thus be examined in this contribution. We are interested in learning more about how the coronavirus affects transportation, supply networks, and these services. Additionally, how did this pandemic affect the global economic downturn?
Keywords: Impact; COVID-19; performance; transportation; e-logistics.

Özet
2020 yılında yayılmaya başlayan COVID-19 salgını, küresel ekonomiye önemli ölçüde zarar vermiş ve yeni sağlık sorunlarının işletme faaliyetleri üzerindeki etkilerine dikkat çekmiştir. Salgının başlangıcından bu yana, bu felaketin insan varoluşunun çeşitli alanları üzerindeki etkisini belirlemek için çeşitli çalışmalar yürütülmüştür. Bu makale, projenin bir bileşeni olarak, Amazon'u dünya çapında bir e-ticaret şirketi örneği olarak kullanarak, salgının ulaşım ve lojistik sektörünün performansı üzerindeki etkisinin kabaca büyüklük sırasını vermeye çalışmaktadır. COVID-19 salgınının küresel lojistik ve ulaşım sektörleri üzerindeki etkileri de bu çalışmada vurgulanmıştır. Bu nedenle, 2020 yılı başında sağlık krizi nedeniyle uygulanan küresel sınır kapatılmasının etkileri bu çalışmada ele alınmaktadır. Koronavirüsün ulaşımı, tedarik ağlarını ve bu hizmetleri nasıl etkilediği hakkında daha fazla bilgi edinmek istiyoruz.

Ek olarak, bu salgının küresel ekonomik düşüşü nasıl etkilemiştir?
Anahtar Kelimeler: Etki; COVID-19; performans; ulaşım; e-lojistik

1. INTRODUCTION

The year 2019 ended with news of a mysterious respiratory disease that appeared in China in the city of Wuhan. Since then, the virus, which has taken the official name of "2019 coronavirus disease," has spread to more than 200 countries and regions around the world affecting more than 85 million people and causing the deaths of more than 1.87 million as of December 31, 2020. In addition to human lives, the pandemic has severely affected the global economy and caused the largest economic contraction since the Great Depression (Gautam, 2020; Ranga Rao, 2020).

The sanitation measures put in place by national governments caused the suspension of non-essential economic activities for several months. The world has fallen into an unprecedented crisis in the real economy, affecting the two engines of growth, supply, and demand. Despite measures taken to support household incomes and business activity, the IMF (International Monetary Fund) expects global growth to decline to 4.5% and 3.9% by the end of 2021 and 2022. The closure of several regions in China and the speed of the global spread of the virus, have disrupted supply chains and reduced business activity (Hobbs, 2020; Kumar & Mishra, 2020; Sohrabi et al., 2020).

In a global economy shaken by the health crisis, the transportation and logistics sector was one of the hardest hit by the coronavirus pandemic, which proved critical to maintaining the supply chain. Moreover, while it continued to function and cope despite the difficulties, it became progressively disorganized under the dual impact of ever-increasing demand and widespread product shortages.

Travel restrictions and border closures have resulted in lower freight volumes, delays, and delivery cancellations. COVID-19 had a significant impact on transportation and e-logistics worldwide, particularly on transportation and delivery services. The pandemic resulted in a significant decrease in travel, which negatively affected air, sea, and land transportation; many transportation and logistics companies were forced to downsize or shut down completely [1].

Amazon was one of the companies most affected by the coronavirus pandemic, demand for its products increased dramatically and the company had to adapt quickly. Amazon invested in digital technologies to improve its operations and provide more efficient services, the demand for its products increased dramatically and the company had to adapt quickly [1].

In this research work, we will present the results of an analytical study conducted to measure the impact of the coronavirus pandemic on the performance of the transport and e-logistics sector in the world. After presenting the research methodology adopted and the working hypotheses chosen, we will present the conceptual framework of this study. The study's findings will be examined, and recommendations will be made to widen the scope of this endeavor's potential.

2. LITERATURE REVIEW

By 2020, the number of e-commerce publications had almost tripled compared to 2000. At the same time, it increased 1.4 times over the past year. This tendency indicates a rise in academic interest in e-commerce during the COVID-19 period.

Seven clusters were found through the analysis of e-commerce publications (Figure 1). These clusters are distributed as follows [2]:

- Cluster 1 (shown in red) is the largest and encompasses 307 items, which appear fewer than 5 times in the studied papers. Scholars have paid considerable attention to issues associated with Internet advancement, concentrating in particular on security. The red cluster is related to business models and strategies, business process optimization and management, competitiveness, legislative regulation, possible barriers and risk assessment, technological readiness, etc.

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- Cluster 2(green, 57 items) embraces the interests in consumer satisfaction, policy communication, data protection, and related issues. Particular attention is devoted to marketing, in particular, B2B (business-to-business) and B2C (business-to-consumer) initiatives.
- Cluster 3 (blue, 45 items) is dedicated to business ethics. Publications in this cluster focus more on pricing, improving online platforms, attracting customers, increasing their loyalty, enhancing the quality and reliability of services, boosting reputation, personalizing the customer experience, and more.
- Cluster 4 (yellow, 42 items) is related to big data processing, artificial intelligence, deep learning, text mining, social networking, information systems, information security, and such.
- Cluster 5 (purple, 34 items) includes the works about the relationship between purchaser pleasure, customer loyalty and retention, and the e-service quality of e-commerce platforms.
- Cluster 6 (blue, 14 items) contains papers dedicated to online selling through social networks, e-loyalty, online marketing, web design, and more.
- Cluster 7 (orange, 7 items) is the smallest cluster with papers that explore the relationship between neural networks, game theory, simulation, and C2C (consumer-to-consumer) e-commerce.

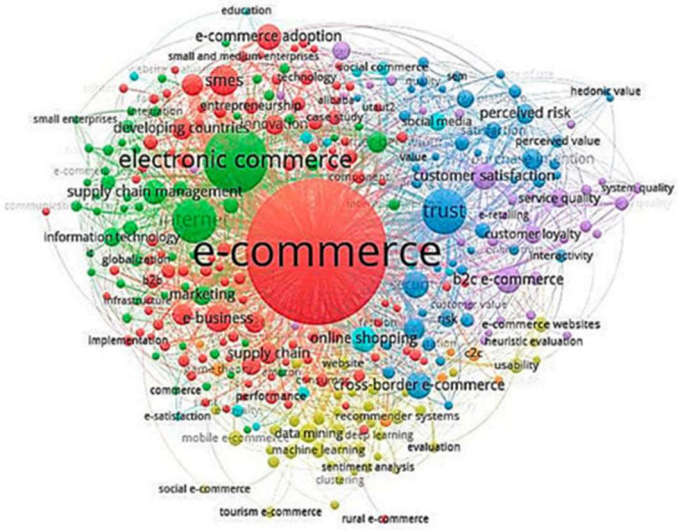

Figure 1. A map showing thematic focuses of scientific publications released between 2000 and 2020.
Source: Adapted from [2].

The systematization of scientific publications made it possible to single out several studies that play a fundamental role in the development of e-commerce and online shopping behavior theories. Some scientists concluded that motivation, environment, political factors [3, 4], accessibility, and communication [5] have a substantial influence on the attitude of online consumers toward e-services. Other scholars have devoted themselves to consumer trust and its effect on online shopping behavior [6, 7]. In particular, trust is a major driver of the long-term buyer-seller relationship [8].

A range of factors, objective and subjective, influences shopper behavior. Last year, the pandemic was one such factor. The growth of COVID-19 cases and its consequences (such as quarantine, isolation, social distancing, and community containment) affected not only the attitude of people toward health but also their buying behavior [9].

People in lockdown were ordering online more often than normal. They also reduced their discretionary costs, became more selective, and shifted to local brands [10]. Demand for digital technologies (e.g., satellite broadband and video conferencing applications) has surged [11, 12].

As most consumers were forced to eat at home during the lockdown period, the food and beverage industry saw an increase in online sales. With many online shoppers reporting a decline in income [13], it is no surprise that affordable brands were preferred at that point [14].

If earlier a consumer basket included a wide range of goods and services, then during the pandemic the focus was on essential items, medication, antiseptics and disinfectants, delivery services, etc. [15]. Shopping patterns specific to the holiday season also underwent substantial changes. The average budget for holiday shopping was smaller during the pandemic as compared with previous years, and many shoppers (nearly all generations) turned to contactless shopping [16]. The basic purchasing criteria remained the price, availability, and convenience, and a new criterion has emerged—hygiene [17]. Along with the growth of food sales, the pandemic saw an increase in the sales of medical supplies, children's products, sporting items, and entertainment goods [18]. The percentage of spontaneous purchases decreased, and the percentage of planned purchases increased [19]. The rationalization of shopping behavior during the pandemic encouraged most companies to rethink their business strategies and consider a new situational driver of procurement to retain and attract new customers [20].

Consumer behavior was influenced both by the COVID-19 pandemic itself and by government restrictions. Consumers of all generations during the COVID-19 crisis were more likely to buy goods and services digitally [21]. Overall, there was a significant shift toward e-commerce spending. The frequency of shopping also increased [22]. Factors that drive online consumer behavior during the COVID-19 pandemic include strong and sustained growth in the number of Internet users and increased awareness of online shopping, increasingly active online product releases, low prices due to bulk purchases, etc. [23]. The COVID-19 pandemic, social distancing, and staying at home are expected to push consumers to shop online. However, uncertain consumer demand and supply chain issues could affect the e-commerce industry. The COVID-19 pandemic issue may also affect large merchants, who are experiencing a decrease in casual shopping, supply chain disruption, and increased purchases of essential hygiene and disinfection products, groceries, and other products [24].

Considering the changes in consumer behavior caused by COVID-19, marketing research in this area has also changed. More and more marketing research on consumer behavior is taking place online (online questionnaires, call center surveys, and focus groups conducted via video conferencing or telephone conversations). Entrepreneurs had to adapt quickly and find innovative ways to interact with customers [25]. Although the situation has been unpredictable, and decisions are not always easy to make, the current changes themselves cannot be called fundamentally new. Real-time analysis of changing consumer behavior, integration of online and offline channels, automation, flexibility, and attention to community values have all been discussed before. The pandemic simply resulted in increased scientific interest in these activities. In the new world, the role of online analytics increases significantly: total quarantine is reflected in user behavior. Without understanding what exactly has changed, companies cannot plan their future actions [26]. This applies to both marketing and sales in general. Whatever the world, the new kinds of research, methods, and technologies learned during the pandemic are not temporary but are being confidently implemented and opening up a new space for managing online consumer behavior.

Companies must focus on the digital capabilities of their consumers and identify where they need to gain their trust [27]. Each of the trends above has accelerated significantly with the onset of the pandemic. As research shows, the cumulative impact of the pandemic on consumer behavior has significant implications for business. Companies can no longer defend their pricing policies with factors that no longer have a benefit and are not crucial to a consumer in the new reality [28].

In general, based on the reviewed modern sources of literature, one can identify the following areas of research on online consumer behavior:

- Marketing factors (e.g., product design, price, promotion, packaging, positioning, and distribution) [29];
- Personality characteristics (such as age, gender, education, and income) [30];
- Psychological drivers (purchase motives, product perception, and attitude to the product) [31];
- Situational framework (the physical environment at the time of purchase, the environment, and the time factor [32];
- Social determinants (social status, reference groups, and family) [33];
- Cultural factors (religion, social class) [34];
- Intergenerational behavior [35].

3. METHODOLOGY OF WORK

The study presented in this article seeks to assess the impact of COVID-19 on the performance of the transport and e-logistics sector worldwide. Within this framework, the analysis method used in this reflection is descriptive and analytical.

Indeed, it is based on the processing of data collected from different sources related to the research topic, and scientific literature dealing with the subject.

Finally, this study focused on the actions deployed by the company Amazon to face the crisis in terms of short-term strategies and long-term solutions.

4. HYPOTHESIS

The COVID-19 crisis has influenced the operations of all businesses regardless of their size or sector of activity. Since the early 2000s, no economic or health crisis has had such an effect on the economic structure of our country (World Bank Group, 2020).

To assess the extent of this impact on their operations, we focused on Amazon, a firm that stands for the core of economic activity. Two hypotheses serve as the basis for this investigation:

- **Hypothesis 1 (H1)** The first can be formulated as follows: the crisis has severely affected the operating activity of the transport and logistics sector, and its level of impact on the performance of these two large and important areas.
- **Hypothesis 2 (H2)** The second hypothesis, focuses on the different nodes of e-commerce and will be declined in the following way: E-commerce is one of the solutions to the border closures brought on by the COVID-19 health issue.

5. CONCEPTUEL FRAMEWORK

This section will present a conceptual framework that successively addresses six strands that guide this research, namely:

- The management of crises
- Impact of COVID-19 on the transport sector
- E-commerce and e-logistics
- The impact of COVID-19 on the e-logistics pole
- The impact of containment on online shopping
- Amazon and e-commerce as a potential answer to the closing of international borders

5.1. Management of Crises

The world of crises and disasters is mutating to incorporate new risks. The frequency, nature, and consequences of these unpredictable events are evolving (Lagadec & Boin, 1970; Missiroli, 2006; Richard A. Posner, 2016).

A crisis is an unusual and sudden situation that presents a high risk of instability for the company and that implies specific governance to return to a regular and usual way of functioning (Shaluf et al., 2001).

Crisis management is the process by which an organization manages any major unpredictable event that threatens harm to the organization, its stakeholders, or the general public (O.Oparanma & Wechie, 2014).

A crisis is a dynamic phenomenon that evolves and has common characteristics (Chartier et al., 2010; Evans & Elphick, 2005; Weisath et al., 2002):

- Uncertainty and complexity
- Time pressure and duration of the situation (human exhaustion)
- Decisions made in a hurry
- Emergency plans overwhelmed by the magnitude of the situation
- Implementation of significant emergency resources
- An alteration of the cognitive capacities of the interveners following the stress generated by the situation
- Unusual triggering events causing a sense of surprise

Crisis management therefore implies the implementation of operational measures (monitoring and alert system, ad-hoc organization, crisis exit plan, material means, communication plan, steering process...) allowing foreseeing the operating modes and the necessary resources before, during, and after the occurrence of disruptive events and thus to reduce the impact on the company and its stakeholders [36].

Crisis management strategies emphasize the ability to anticipate potential risks. This preparation or pre-crisis phase, involves a preventive policy to minimize likely damage (Coombs & Laufer, 2018). It aims to identify risks that could disrupt the organization's operations, reputation, or stakeholders. It involves detecting signals, preparing action plans, and training teams.

During the crisis, the action plans are implemented and adjusted to minimize the damage to the survival of the company. The aftermath of the crisis is a period of restructuring and repair, the evaluation of the situation experienced must be scheduled to strengthen the maturity and resilience of the organization [37].

5.2. Impact of COVID-19 on the Transport Sector

The transport and logistics sector concerns activities related to the transport, regular or not, of passengers and goods, by rail, road, water, or air and related activities, such as the operation of transport infrastructures, freight handling, warehousing, etc. The objective of these activities is to provide the customer with the product he or she needs, at the place and time he or she needs it, in the quantity and quality he or she requires, and at the right cost. It also concerns the movement of people [38]. The Covid-19 pandemic has had a significant impact on land, sea, and air borders. Travel restrictions are very strict, travelers and businesses must take extra precautions to protect themselves from the virus. Governments around the world are encouraged to take steps to prevent the spread of the virus. Travelers and businesses should also take steps to protect themselves against the spread of the virus and follow safety guidelines imposed by local authorities [38].

In light of this idea, we discuss how the coronavirus epidemic has harmed the closure of land, sea, and air borders in this study stream as well as its effects on the transportation industry.

5.2.1. Border Closures and Deprivation of Liberty Measures

In the whole world, from March to May 2020, we are witnessing unilateral closures of borders by a large number of States and coercive recommendations of restriction of public space to the complete society. This situation translates into the limitation of the mobility of people within the different national territories, the valorization of barrier measures, and physical or social distancing [39].

5.2.2. The Closing of Borders

Due to the significant risk of the virus spreading internationally due to external factors, the majority of government authorities, as a precaution, have a state of health emergency in their respective territories.

The pandemic of COVID-19 has had a considerable impact on land, sea, and air borders. Governments around the world have been forced to close their borders to prevent the spread of the virus, travel restrictions are very strict and travelers must present documentation to justify their travel. Borders are also closed to vehicles and goods to prevent the spread of the virus.

5.2.3. Public Space Restriction Measures

Faced with the epidemic of COVID-19, government authorities have adopted various strategies, it is mainly a state of emergency, total or partial containment, sanitary measures, and simple recommendations, all these measures are taken to reduce social interactions, that is, "the number of daily contacts of each person with others" (Pumain, 2020).

To curb the spread of COVID-19, containment is the other main measure chosen by several states; it is a radical measure that designates both "the action of enclosing a danger and that of enclosing the populations that must be protected from it" (Debarbieux, 2020). More precisely, it consists of keeping individuals in an enclosed space to circumscribe the dispersion of the disease in the population.

The confinement can be total or partial, in which case the government authorities define a time slot. In practice, it forces citizens, except with special authorization, to remain in their homes all day.

In practical terms, a quarantine "segregates healthy, asymptomatic individuals who have been exposed to an infectious disease during the incubation period to limit its spread" (Coomes, Leis, Gold, 2020).

In the upcoming section, we are interested in citing an analytical approach to the impact of COVID-19 on the e-commerce and e-logistics sectors.

5.3. E-commerce and E-logistics

5.3.1. E-commerce

In traditional commerce, the customer goes to the point of sale to acquire goods and generally leaves with them, thus ensuring part of the logistical flow. The customer goes to the goods, and the customer thus ensures the downstream logistics of the point of sale [40].

In e-commerce, it is the opposite: the goods go to the customer. We are therefore witnessing a reversal of the physical flow on the downstream logistics part. This phenomenon is not without consequences for the management of logistics flows [40].

E-commerce is, therefore, an opportunity for physical commerce to develop its customers worldwide; it is also a method of purchase appreciated by some consumers who find a wider range of products regular promotions, and lower prices through an ability to compare prices, constraints to others who find risky and uninteresting. In addition to its particularity of the physical absence of a seller, an interpersonal relationship replaces a man-machine interaction [41].

5.3.2. E-logistics

Before learning more about the concept of e-logistics, we must first define the term logistics. Logistics refers to the global management act of acquiring, storing, and transporting the resources necessary to achieve a predefined objective. For this purpose, logistics covers different actions ranging from purchasing (supplier management), through stock management to delivery, to satisfy a customer's need [42].

E-logistics, therefore, follows the same logic as logistics, but with skills related to resource management in a digital environment. The notions of immediacy, dynamics, and customer satisfaction are essential in e-logistics. Indeed, e-logistics uses data such as the "NPS" (Net Promoter Score) for customer loyalty, but also technological and internet tools to create instant and complex relationships with all the partners of the Supply Chain [42].

The supply chain, which can also be called Supply Chain, is a mesh, a network, woven between a company and its suppliers to produce and distribute the product/service to the customer. This process includes a set of steps that begin when a customer places an order and ends once the product is delivered [42].

E-logistics has its specificities and is a strategic axis in e-commerce that should not be neglected. Today, many e-commerce sites put forward their logistics offer in the same way as their product offer. First, since these are immaterial purchases, the customer has no physical contact with the seller, so the customer has an idea of the quality of service only through the quality of delivery (respect for deadlines, integrity of the products, and price of the service), so the logistics set up is essential in terms of loyalty. In addition, logistics allows one to have a competitive advantage with equal products compared to competitors. For all these reasons, logistics is a major axis in e-commerce [43].

5.4. The Impact of COVID-19 on the E-logistics Pole

In 2020, the whole world suffered an exceptional economic shock, due to the COVID-19 crisis. Indeed, and as we have already mentioned in the previous points, the closure of the borders, the controls and the suspensions of mobility adopted from March 2020, and the prohibition of the social interactions derived from it to contain the health crisis have a strong economic and social impact in many countries. Confronted with these measures, the closure of borders has identified major difficulties of e-logistics dedicated to the sale by the Internet are linked to both physical distribution.

Secondly, the first thing to keep in mind is that online consumers have different behaviors and requirements than consumers of physical distribution networks. Because Internet users cannot touch a product, their demands will be strong, whether it is on the quality of the product or on the delivery (deadlines to be met), and if the promises are not kept, the penalty can quickly occur for the e-retailer, 35% of customers who have experienced a negative delivery experience will change e-commerce site (Fevad).

This can also result in a bad customer review. This is harmful to an online store when you know that 88% of consumers consult reviews before a purchase (IFOP study).

It is then necessary to summarize the major points of the effect of the coronavirus pandemic on the e-logistics cluster; we will quote them below [44]:

- Real Gross Domestic Product (GDP) declined for the first time in over thirty years (-2.6% in 2020)
- The contraction of GDP per capita fell by -4.7
- The decline in commodity prices has resulted in a contraction of activity in African economies by -5% and growth has fallen sharply to 2.6% from 3.3% in 2019

Regarding the border closure, this move has had a detrimental impact on business economies.

5.5. The Impact of Containment on Online Shopping

It has been shown that the disease caused by the coronavirus has a great influence on shoppers and their online behavior. Currently, the COVID-19 pandemic is causing an explosion in e-commerce worldwide. To this purpose, a study was recently conducted in the first quarter of 2020 using the platform: Experience Analytics Content Square, which analyzed 4.4 billion users worldwide.

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Indeed, it was found that the transactions recorded between the first weeks of the year 2020 and the second week of March of the same year had increased by 57%. It should also be noted that the overall distribution saw the largest increase in sales; the banking and insurance sector comes just after, with a growth of 45%.

The figure below shows explicitly the ranking of needs in order of importance, based on the Maslow pyramid. It is also necessary to specify that, according to this pyramid, for consumers to satisfy their basic needs (physiological and security needs), they essentially buy food and sanitary products, and try to acquire all the necessary equipment, such as electronic devices and others, allowing them to remain comfortable at home. However, the relative needs at the top of the pyramid, such as jewelry and ready-to-wear clothing corresponding to non-essential products and services are decreasing [45].

The COVID-19-induced economic crisis has become a powerful trigger event that fueled business digitalization. Tight quarantine restrictions prioritized the primary benefits of e-commerce, such as contact, better pricing, portability, and scalability. The high penetration of social media and digital marketing provided companies with additional advantages when finding and attracting new customers at global, national, and local levels. At the same time, they offered clear opportunities for significant reduction of operational costs by removing the need to invest in real estate or hire many employees. The current trends in e-commerce revolve around convenience and security [46].

Globally, the COVID-19 pandemic has driven consumers to digitalization and reshaped their shopping habits. The massive shift online of people's shopping behaviors has affected all e-commerce subsectors. Figure 1 shows estimates of the effect COVID-19 had on e-commerce traffic by industry. The travel industry was the hardest hit. Travel service companies encountered a 43.7% decrease in traffic, while other industries suffered smaller losses. Media companies experienced an estimated loss of 13.2%, and the fashion industry faced a 10.3% drop in traffic. Even retailers of jewelry and watch brands, luxury goods, and household items saw a better traffic situation, with losses of 8.2, 3.2, and 3.1%, respectively. Supermarkets, on the other hand, enjoyed a 34.4% rise in web traffic. At the same time, Internet users became more interested in sports equipment, retail services, beauty products and cosmetics, and financial services, with an estimated percent change of 23.6, 7, 3.7, and 1.8, respectively [47].

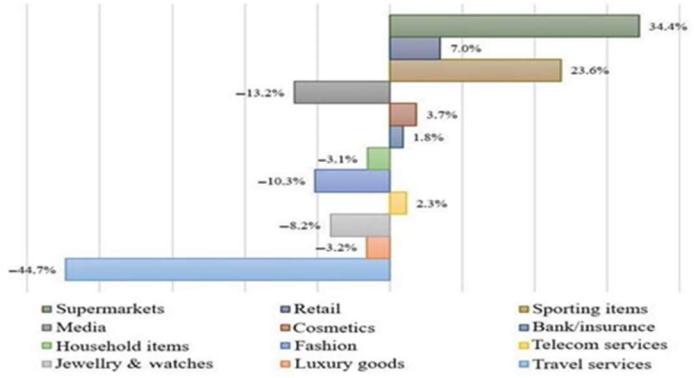

Figure 2. Effects of COVID-19 on global e-commerce by industry. Estimated average percent change in web traffic from October 2020 to January 2021. Source: adapted from [48, 49].

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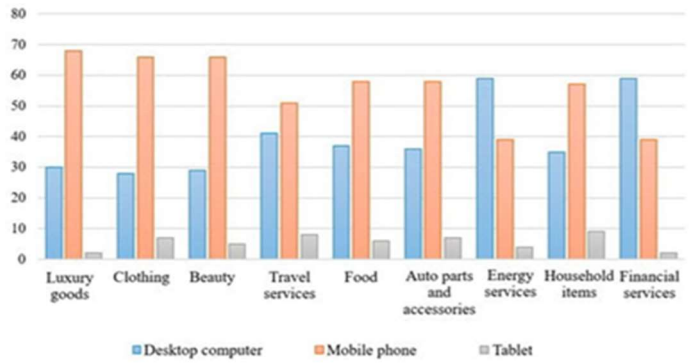

Figure 3. Percentage of web traffic from desktop computers, mobile devices, and tablets in 2019 by industry.
Source: adapted from [48, 49].

In 2019, most consumers chose to use mobile devices to search online for a product or service (Figure 2), mostly luxury goods, clothing, beauty products, travel services, food, auto parts and accessories, and household items [50]. Desktop computers and laptops were the preferred choices when searching for energy and financial services. Note that the website traffic that tablets account for was low regardless of the product category.

January 2021 saw a substantial rise in online transactions (Figure 3). In general, Internet users became more confident when shopping online and more interested in buying high-quality products at lower prices. At the same time, shoppers tended to prefer online stores with a broad range of items. The number of transactions on supermarket and retail sites surged by 73.4 and 49.9%, respectively. Increases were seen for household products (28.7%), jewelry and watches (26.4%), sporting goods (26.2%), etc. Meantime, online transactions involving travel services, fashion products, and luxury goods experienced a decrease, of 33, 5.2, and 2.8%, respectively. The growing activity of Internet users, including consumers in e-commerce, required a high level of security and a flexible payment system that would support cross-currency payments [51].

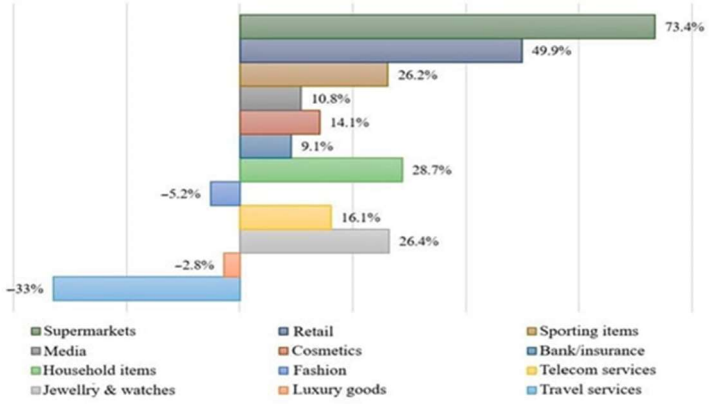

Figure 4. Change in e-commerce transactions by industry.
Source: adapted from [48, 49].

The study's findings suggest that since the epidemic, internet buying has been ingrained in people's consumer culture.

5.6. Amazon and E-commerce as a Potential Answer to the Closing of International Borders

In light of this, we are attempting to provide an answer to the question: How can Amazon assist in resolving the issue of international border closure?

Amazon can help solve the problem of closed international borders by providing an international e-commerce platform. The platform offers businesses and individuals the ability to sell and buy products and services around the world without worrying about borders. In addition, Amazon offers marketing and promotional services to help businesses achieve their business goals and increase international sales. Amazon's marketing and promotional services help businesses connect with customers around the world [2].

Amazon Web Services (AWS) [52]:

- **Amazon E-Commerce Service**: Exploration for inventory, recovery item information, photos, and reviews from customers. Get a preferred detail, wedding safe. And find sellers and offers
- **Alexa Web Information Service:** Get information like page rankings, and relevant websites that are targeted by URLs
- **Amazon Simple Queue Service:** Distributed supply manager to store web accommodation results
- **Advantages of AWS:** Purchase every used model, Moment viability, Very Consistent and safe, Most facilities access through basic SOAP API, and Ongoing technical backing

5.6.1. Amazon in figures before the Pandemic

- With operations in 15 countries and 341,000 employees, the company has a market value of $427 billion [49]
- Retail sales account for two-thirds of the company's revenue (67%) [49]
- Retail sales to a third-party merchant are the second largest component, accounting for 17% of revenue [49]
- The company currently accounts for 37% of e-commerce and is expected to reach 50% by 2021 [49]

5.6.2. Amazon in Figures during the COVID-19 Crisis

Amazon, which released its Q3 2020 results, confirms its status as the big winner of the health crisis, with the world's number one online retailer reporting net sales of $96.1 billion in the latest quarter (ended September) as the surge in online shopping related to the health crisis will most likely continue [49].

The giant's sales in the third quarter of 2020 jumped 37% compared to the same period in 2019 and the American tripled its net profit, with a record amount of $ 6.3 billion over the period. Similarly, the firm of Jeff Bezos generated more than $ 14 billion in the first three months of 2020, which is already more than in the whole of 2019, which had nevertheless been a record year with a net profit of $ 11.59 billion [49].

The next section will outline the many findings of this research, as well as include discussions on e-commerce, the coronavirus pandemic, and Amazon as a potential remedy for the crisis-related closing of international borders.

6. RESULTS AND DISCUSSION

The method presented in this study makes it possible to ascertain how likely it is for consumers to copy other people's behavior during a pandemic. The normalized factors discovered by the poll, however, are unique to online buyers who have not made any transactions (yet), and therefore might not apply to other kinds of customers.

However, the findings cannot generalized to customers who just made an online purchase since the chosen characteristics do not specifically address the intensification of online shopping activity.
The results of the current study demonstrated that a person's propensity to make more online purchases depended on whether or not they are reflexive consumers.
On the one hand, the study's conclusions were consistent with those of other researchers who have shown that consumers in the new COVID reality place more online orders for products and services, cut back on discretionary spending, and prioritize their security. In contrast, the study showed a decline in consumers' commitment to introversion. Indirectly, these findings reflect the reality that price, availability, convenience, and cleanliness continue to be the primary factors influencing consumer decisions during pandemics.
According to the research, social isolation and the challenging conditions associated with confinement have had a huge impact on people's shopping behaviors. People started buying their necessities online, which has greatly increased e-commerce businesses' sales. As a result, Amazon's sales have increased globally as well as in its primary market of the United States as e-commerce has expanded as a result of health regulations and continued closures.
This study may be used as a foundation to develop a method for evaluating the economic effectiveness of reflexive management techniques used to influence customers' purchasing decisions. Future studies should concentrate on calculating the income obtained following the integration of the practices in question, their integration costs, and the actual income earned before the merger. The current plan has state-level implications. It can assist in identifying the major patterns in consumer behavior that will subsequently be utilized to create e-commerce development plans or strategies and provide public services online.

7. CONCLUSION

The epidemic has brought to light how crucial the logistics and transportation industry is to the ongoing operation of the world economy. She also emphasized the necessity to mobilize more sophisticated technology tools and the need to consider new threats. The development of business transactions is unstable due to the complexity of the logistics and transport sectors.
Our second hypothesis, which asserts that e-commerce via Amazon, is unquestionably seen as a remedy to the closing of land, sea, and air borders, is supported by the observed rise in Amazon sales during the epidemic.
This study can serve as the foundation for a rigorous evaluation of the economic effectiveness of incorporating conceptual provisions of reflexive management of customers' purchasing behavior in the marketing operations of businesses in the future. Given the disparity between the revenue obtained for the same period before the adoption of the mechanism, the expense of doing so, and the income received after that, this seems plausible. Finding significant trends in consumer behavior at the state level might be beneficial for creating customized regulations or e-commerce plans for particular sectors of the economy as well as for the delivery of online public services.

SOURCE

1. A Comparative Study Of The E-Commerce Platforms Of Amazon And eBay. Available from: https://www.researchgate.net/publication/367966036_A_Comparative_Study_Of_The _E_ Commerce_Platforms_Of_Amazon_And_Ebay [Researchgate]
2. Alhaimer, R. Fluctuating attitudes and behaviors of customers toward online shopping in times of emergency: The case of Kuwait during the COVID-19 pandemic. J. Internet Commer. 2021, in press. [Google Scholar]
3. Alhaimer, R. Fluctuating attitudes and behaviors of customers toward online shopping in times of emergency: The case of Kuwait during the COVID-19 pandemic. J. Internet Commer. 2021, in press.

4. Armando, R.L.C. Disruption in consumer decision-making? Critical analysis of the consumer's decision-making and its possible change by COVID-19. Turk. J. Comput. Math. Educ. 2021, 12, 1468–1480. [Google Scholar]

5. B. Othman, R. Driss, et S. Karim, « L'IMPACT DE LA COVID-19 SUR LA CHAINE LOGISTIQUE MAROCAINE », *International Journal of Accounting, Finance, Auditing, Management and Economics*, vol. 2, nº 3, p. 165, 2021, doi: 10.5281/zenodo.4817869.

6. Barbu, C.M.; Florea, D.L.; Dabija, D.-C.; Barbu, M.C.R. Customer experience in Fintech. J. Theor. Appl. Electron. Commer. Res. 2021, 16, 1415–1433. [Google Scholar]

7. Cai, R.; Leung, X.Y. Mindset matters in purchasing online food deliveries during the pandemic: The application of construal level and regulatory focus theories. Int. J. Hosp. Manag. 2020, 91, 102677. [Google Scholar]

8. Contentsquare. 2020. Available online: https://contentsquare.com/

9. Dabija, D.C.; Bejan, B.; Tipi, N. Generation X versus Millennials communication behavior on social media when purchasing food versus tourist services. Ekon. Manag. 2018, 21, 191–205. [Google Scholar]

10. Dabija, D.C.; Bejan, B.; Tipi, N. Generation X versus Millennials communication behavior on social media when purchasing food versus tourist services. Ekon. Manag. 2018, 21, 191–205.

11. Dabija, D.C.; Bejan, B.; Tipi, N. Generation X versus Millennials communication behavior on social media when purchasing food versus tourist services. Ekon. Manag. 2018, 21, 191–205.

12. Doustkam, M.; Pourheydari, S.; Mansouri, A.; Shahraki-Mohajer, A.; Ebrahimi, A.; Goli, F.; Afshar-Zanjani, H.; Hekmatipour, B.The mediating role of psychosomatic symptoms in the relationship between personality characteristics and marital conflicts. Int. J. Body Mind Cult. 2021, 8, 19–27.

13. Eger, L.; Komárková, L.; Egerová, D.; Mičík, M. The effect of COVID-19 on consumer shopping behavior: Generational cohort perspective. J. Retail. Consum. Serv. 2021, 61, 102542. [Google Scholar]

14. Filimonau, V.; Beer, S.; Ermolaev, V.A. The Covid-19 pandemic and food consumption at home and away: An exploratory study of English households. Socio Econ. Plan. Sci. 2021, in press. [Google Scholar]

15. Fletcher, R.; Park, S. The impact of trust in the news media on online news consumption and participation. Digit. J. 2017, 5, 1281–1299. [Google Scholar]

16. Goswami, S.; Chouhan, V. Impact of change in consumer behavior and need prioritization on retail industry in Rajasthan during COVID-19 pandemic. Mater. Today Proc. 2021, in press. [Google Scholar]

17. Goswami, S.; Chouhan, V. Impact of change in consumer behavior and need prioritization on retail industry in Rajasthan during COVID-19 pandemic. Mater. Today Proc. 2021, in press.

18. Goswami, S.; Chouhan, V. Impact of change in consumer behavior and need prioritization on retail industry in Rajasthan during COVID-19 pandemic. Mater. Today Proc. 2021, in press.

19. Hobbs, J.E. Food supply chains during the COVID-19 pandemic. Can. J. Agric. Econ. 2020, 68, 171–176. [Google Scholar]

20. https://aws.amazon.com/fr/solutions/case-studies/makemytrip/

21. Hudimova, A.; Popovych, I.; Baidyk, V.; Buriak, O.; Kechyk, O. The impact of social media on young web users' psychological well-being during the COVID-19 pandemic progression. Amazon. Investig. 2021, 10, 50–61. [Google Scholar]

22. Hudimova, A.; Popovych, I.; Baidyk, V.; Buriak, O.; Kechyk, O. The impact of social media on young web users' psychological well-being during the COVID-19 pandemic progression. Amazon. Investig. 2021, 10, 50–61.

23. Islam, T.; Pitafi, A.H.; Arya, V.; Wang, Y.; Akhtar, N.; Mubarik, S.; Xiaobei, L. Panic buying in the COVID-19 pandemic: A multi-country examination. J. Retail. Consum. Serv. 2021, 59, 102357. [Google Scholar]

24. Ismagilova, E.; Slade, E.; Rana, N.P.; Dwivedi, Y.K. The effect of characteristics of source credibility on consumer behavior: A meta-analysis. J. Retail. Consum. Serv. 2020, 53, 101736. [Google Scholar]

25. Janssen, M.; Chang, B.P.; Hristov, H.; Pravst, I.; Profeta, A.; Millard, J. Changes in food consumption during the COVID-19 pandemic: Analysis of consumer survey data from the first lockdown period in Denmark, Germany, and Slovenia. Front. Nutr. 2021, 8, 60.

26. Jílková, P.; Králová, P. Digital consumer behavior and eCommerce trends during the COVID-19 crisis. Int. Adv. Econ. Res. 2021, 27, 83–85. [Google Scholar]

27. Joia, L.A.; Lorenzo, M. Zoom in, zoom out: The impact of the COVID-19 pandemic in the classroom. Sustainability 2021, 13, 2531. [Google Scholar]

28. Khan, M.M.; Shams-E-Mofiz, M.; Sharmin, Z.A. Development of e-commerce-based online web application for COVID-19 pandemic. iBusiness 2020, 12, 113–126. [Google Scholar]

29. Király, O.; Potenza, M.N.; Stein, D.J.; King, D.L.; Hodgins, D.C.; Saunders, J.B.; Griffiths, M.D.; Gjoneska, B.; Billieux, J.; Brand, M.; et al. Preventing problematic internet use during the COVID-19 pandemic: Consensus guidance. Compr. Psychiatry 2020, 100, 152180. [Google Scholar]

30. Loxton, M.; Truskett, R.; Scarf, B.; Sindone, L.; Baldry, G.; Zhao, Y. Consumer behavior during crises: Preliminary research on how coronavirus has manifested consumer panic buying, herd mentality, changing discretionary spending and the role of the media in influencing behavior. J. Risk Finance. Manag. 2020, 13, 166. [Google Scholar]

31. lusarczyk, B.; Nathan, R.J.; Pypłacz, P. Employee Preparedness for industry 4.0 in the logistic sector: A cross-national study between ´Poland and Malaysia. Soc. Sci. 2021, 10, 258.

32. Masaeli, N.; Farhadi, H. Prevalence of Internet-based addictive behaviors during COVID-19 pandemic: A systematic review. J. Addict. Dis. 2021, in press. [Google Scholar]

33. Muangmee, C.; Kot, S.; Meekaewkunchorn, N.; Kassakorn, N.; Khalid, B. Factors determining the behavioral intention of using food delivery apps during COVID-19 pandemics. J. Theor. Appl. Electron. Commer. Res. 2021, 16, 1297–1310. [Google Scholar]

34. Muangmee, C.; Kot, S.; Meekaewkunchorn, N.; Kassakorn, N.; Khalid, B. Factors determining the behavioral intention of using food delivery apps during COVID-19 pandemics. J. Theor. Appl. Electron. Commer. Res. 2021, 16, 1297–1310.

35. Naeem, M.; Ozuem, W. Customers' social interactions and panic buying behavior: Insights from social media practices. J. Consum. Behav. 2021, in press. [Google Scholar]

36. Naeem, M.; Ozuem, W. Customers' social interactions and panic buying behavior: Insights from social media practices. J. Consum.Behav. 2021, in press.

37. Pop, R.; Palacean, Z.; Dabija, D.C.; Alt, A.M. The impact of social media influencers on travel decisions: The role of trust in consumer decision journey. Curr. Issues Tour. 2021, in press. [Google Scholar]

38. Prasetyo, Y.T.; Tanto, H.; Mariyanto, M.; Hanjaya, C.; Young, M.N.; Persada, S.F.; Miraja, B.A.; Redi, A.A.N.P. Factors affecting customer satisfaction and loyalty in online food delivery service during the covid-19 pandemic: Its relation with open innovation. J. Open Innov. 2021, 7, 76. [Google Scholar]

39. Punyatoya, P. Effects of cognitive and affective trust on online customer behavior. Mark. Intell. Plan. 2019, 37, 80–96. [Google Scholar]

40. Rai, P. Consumers buying behavior and challenges faced by consumers during COVID-19 pandemic regarding FMCG products (during Indian lockdown). Turk. J. Comput. Math. Educ. 2021, 12, 3403–3412. [Google Scholar]

41. Shah, A.K.; Ravichandran, P.; Ravichandran, P. COVID-19 pandemic: Insights into human behavior. Int. J. Community Med. Public Health 2020, 7, 4213.

42. Shamim, A.; Siddique, J.; Noor, U.; Hassan, R. Co-creative service design for online businesses in post-COVID-19. J. Islam. Mark. 2021, in press. [Google Scholar]

43. Shestak, V.; Gura, D.; Khudyakova, N.; Shaikh, Z.A.; Bokov, Y. Chatbot design issues: Building intelligence with the Cartesian paradigm. Evol. Intell. 2020. [Google Scholar]

44. Shvidanenko, O.; Sica, E.; Busarieva, T. Creativity as a new production factor of the world economy. Manag. Theory Studi. Rural Bus. Infrastruct. Dev. 2019, 41, 127–134. [Google Scholar]

45. Sim, J.; Saunders, B.; Waterfield, J.; Kingstone, T. Can sample size in qualitative research be determined a priori? Int. J. Soc. Res. Methodol. 2018, 21, 619–634.

46. Ślusarczyk, B.; Nathan, R.J.; Pypłacz, P. Employee Preparedness for industry 4.0 in logistic sector: A cross-national study between Poland and Malaysia. Soc. Sci. 2021, 10, 258. [Google Scholar]

47. Sohn, S. A contextual perspective on consumers' perceived usefulness: The case of mobile online shopping. J. Retail. Consum. Serv. 2017, 38, 22–33. [Google Scholar]

48. Statista. 2020. Available online: https://www.statista.com/

49. Sumarliah, E.; Khan, S.U.; Khan, I.U. Online hijab purchase intention: The influence of the Coronavirus outbreak. J. Islam. Mark. 2021, 12, 598–621. [Google Scholar]

50. Zaidan, B.B.; Zaidan, A.A. Comparative study on the evaluation and benchmarking information hiding approaches based multi-measurement analysis using TOPSIS method with different normalization, separation and context techniques. Measurement 2018, 117, 277–294.

51. Zhang, X.; Liu, H.; Yao, P. Research jungle on online consumer behavior in the context of Web 2.0: Traceability, frontiers, and perspectives in the post-pandemic era. J. Theor. Appl. Electron. Commer. Res. 2021, 16, 1740–1767. [Google Scholar]

52. Zhang, X.; Liu, H.; Yao, P. Research jungle on online consumer behavior in the context of Web 2.0: Traceability, frontiers, and perspectives in the post-pandemic era. J. Theor. Appl. Electron. Commer. Res. 2021, 16, 1740–1767.