

The Impact of Covid-19 on E-Commerce Platforms and The Opportunities and Challenges They Face

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Abstract. Since the outbreak of Covid-19 in 2019, many countries set policies to deal with Covid-19. Because of these policies, many people were restricted from going out. Hence, E-commerce platforms are the preferred way of shopping for many people during Covid-19. The aim of this paper is to examine the impact of Covid-19 on E-commerce platforms and how they can be improved in response to the epidemic. According to the financial status of several E-commerce platforms, sales and revenue increased during the Covid-19 period compared to the past. Furthermore, essential goods are the items that most people preferred to buy during the epidemic time. Mounika Veeragandham's research shows that 50% of respondents chose to buy essential goods during the epidemic time, which is the highest compared to other purchases. And more people prefer to shop on E-commerce platforms than on traditional ways. To better respond to Covid-19, many E-commerce platforms have taken some measures such as shared employees and online consultation. Based on the above phenomenon and its analysis, this paper hopes to provide some reference for the development of E-commerce platforms in the epidemic situation.

Keywords: Covid-19; E-commerce platforms; Financial state analysis; Customer buying conduct.

1. Introduction

Ever since Covid-19 first appeared in 2019, it has spread around the world. It is extremely contagious and infected 4,806,299 people [1]. 318,599 people died because of it as of 20 May 2020 [1]. To successfully stop Covid-19 from spreading, the lockdown policy is required to avoid exposing people to the virus [2]. For example, the UK, Italy, France, and some other countries around the world were the countries that chose to apply full lockdown policies [3]. Furthermore, out of a sense of self-preservation, many people chose not to go to crowded places during the epidemic period. Because of these two main reasons, the convenient and fast way for people to buy things they need is by shopping on E-commerce platforms. E-commerce is much broader than shopping online and E-commerce has integrated many things. E-commerce is taking place with the help of the Internet and it has experienced great growth since the beginning [4]. It is predicted that E-commerce sales may grow to 599.2 billion USD by 2024 [4]. However, the whole world experienced Covid-19 since 2019. Would sales on E-commerce platforms rise as predicted before Covid-19? Hence, the state of E-commerce platforms and how Covid-19 affected them is of great concern to the community. The customers are essential elements of E-commerce platforms. What items do consumers tend to buy during Covid-19? How do consumers tend to buy? An exploration of these issues is of great relation to the future development of E-commerce platforms in the context of Covid-19.

In the first part, this essay discusses how Covid-19 has affected E-commerce platforms by analyzing the financial reports of several typical E-commerce platforms. Furthermore, this essay analyses the impact of consumer behaviour on E-commerce platforms by examining the changes in consumer behaviour in the context of the epidemic. In the following part, this essay states the implemented and potential strategies for E-commerce platforms in Covid-19. Through the analysis and study of these three components, this essay makes some corresponding recommendations for E-commerce platforms during the epidemic, as well as for the merchants and the customers on the platforms.

2. The influence of Covid-19 to E-commerce platforms

Since the break of Covid-19 in 2019, many E-commerce platforms have been influenced by this epidemic and the nature of business has changed to some extent. One main factor that may be changed by Covid-19 could be the customer numbers using E-commerce platforms. This is not only because of the lockdown policies of some countries but also because of people's fear of Covid-19. According to Anam Bhatti's paper, 52% of customers avoid going to places that are crowded [5]. 36% of customers reduce or even avoid offline shopping before vaccination [5]. The declining number of offline shoppers presents opportunities for E-commerce platforms. Furthermore, the types of goods people buy on E-commerce platforms and the supply chain of these platforms may also be influenced by Covid-19, then the financial status of E-commerce may be influenced. Overall, according to Anam Bhatti's conclusion, despite some negative influences, Covid-19 made E-commerce grow rapidly [5]. In order to see the current state of E-commerce platforms in Covid-19 and how Covid-19 influenced E-commerce platforms in more detail, this part examines the financial position and user numbers of two major E-commerce platforms in the years before and after Covid-19.

Since 2019, the Amazon platform has seen a significant increase in sales compared to the absence of Covid-19. According to data from Amazon's expense indicator from 2018 to 2020 selected by Zixuan Qin [6] and the data in Amazon's 2021 annual report [7], the table below clearly shows how Covid-19 influenced the financial status of Amazon.

Table 1. Net sales and growth rate of Amazon

Item/Year	2017	2018	2019	2020	2021
Consolidated net sales	177,866	232,887	280,522	386,064	469,822
Growth rate of net sales	NA	31%	20%	38%	22%
Net income/total net sales	1.71%	4.32%	4.13%	5.50%	7.10%

From Table 1, the net sales of Amazon increased significantly during the epidemic years. Especially in the year 2020, the year-to-year growth rate of net sales is nearly twice of last year. Furthermore, after a slight decrease in the ratio of net income to total net sales from 2018 to 2019, this ratio increased in 2020 and 2021. It is calculated that $(7.10\%-4.13\%)/4.13\%$, this ratio has a 71.91% increase in 2021 compared to 2019, which also indicates that Covid-19 has a huge impact on sales and income of E-commerce platforms.

Amazon Prime US annual subscribers have increased from 93 million to 147 million between the years 2018 and 2021. It indicates that more people are using the Amazon E-commerce platform during Covid-19 [8].

The second E-commerce platform to be analyzed is Alibaba. According to the financial analysis by Josko Lozić [9], which is in Table 2, the value of revenue, gross profit, and net income, all increased during the epidemic year. Especially the net income has a faster growth rate compared to the year 2019, which had a growth rate of 61.50% in 2020.

Table 2. Financial ratios and growth rate of Alibaba

	2017	2018	2019	2020
Revenue	22.994	39.898	56.152	71.985
Revenue growth rate	—	$(39.898-22.994)/22.994=73.51\%$	$(56.152-39.898)/39.898=40.74\%$	$(71.985-56.152)/56.152=28.20\%$
Gross profit	14.352	22.833	25.319	32.107
Gross profit growth rate	—	$(22.833-14.352)/14.352=59.09\%$	$(25.319-22.833)/22.833=10.89\%$	$(32.107-25.319)/25.319=26.81\%$
Net income	6.345	10.201	13.053	21.080
Net income growth rate	—	$(10.201-6.345)/6.345=60.77\%$	$(13.053-10.201)/10.201=27.96\%$	$(21.080-13.053)/13.053=61.50\%$

According to the data reached by Josko Lozić, the number of users of Alibaba platforms has gradually increased during Covid-19. The number of users has increased from 636 million to 779 million from 2018 to 2020 [9].

3. Customer conduct analysis in Covid-19

During the time of Covid-19, many countries around the world adopted the lockdown policy and impose social distancing. In order to comply with the relevant national regulations and for the purpose of protecting themselves, there have been a number of changes in where consumers shop and what they shop for in Covid-19.

To verify what types of items consumers, prefer to buy during Covid-19, Mounika Veeragandham and his team members conducted a study of 223 people of all ages and from different occupations [10]. Their main method of data collection is through questionnaires and Google forms. In addition to the data obtained from the questionnaires, Mounika Veeragandham and his team members collect related data from some journals and newspapers [10].

According to Mounika Veeragandham's research, the data on which items customers prefer to buy and how they prefer to shop is plotted in Fig. 1 and Fig. 2. [10].

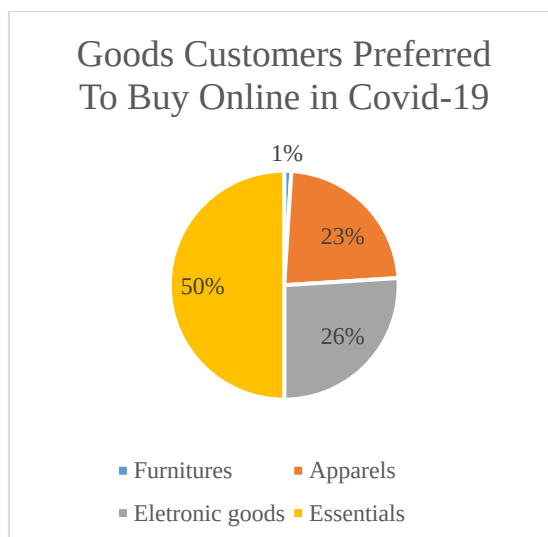


Figure 1. Goods customers prefer to buy online in Covid-19 (Photo credit: Original)

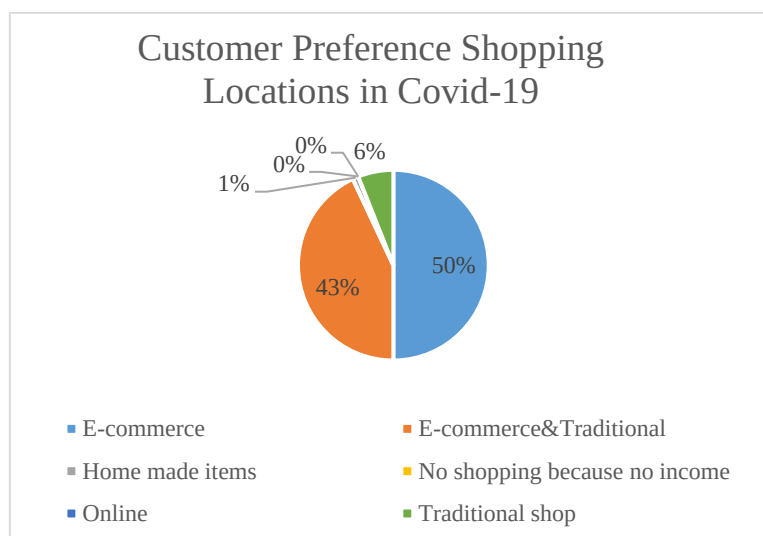


Figure 2. Customer preference shopping locations in Covid-19 (Photo credit: Original)

From Fig. 1, the conclusion can be reached that the number of people favouring the purchase of essential goods during Covid-19 was the highest since 50% of the respondents preferred to buy essential goods during the Covid-19 period, while almost no respondents preferred to buy furniture during Covid-19. The number of respondents who preferred to buy apparel and electronic goods is almost the same. The entire sample size of respondents who preferred to buy apparel and electronic goods is almost the same as the number of respondents who preferred to buy essentials. Furthermore, the number of purchased goods such as masks and hand sanitizer has increased during Covid-19 [11].

Fig. 2 presents customers' preference for shopping locations during Covid-19 [10]. Compared to several other shopping channels, E-commerce platforms were the choice of most respondents, with a number of halves of the respondents. 43% of respondents chose to shop both in the ways of traditional shops and E-commerce platforms. While extremely few respondents chose to shop in a traditional shop, only 6% of respondents chose to shop in this way [10].

Furthermore, Mounika Veeragandham's team also conducted a study on whether Covid-19 had made a difference in customers' perceptions of what they were buying [10]. The conclusion reached by their team is that 46% of respondents felt that their perception had changed towards E-commerce platforms in Covid-19, while 39% of the respondents assumed that their perceptions did not change [10]. From these data, Covid-19 indeed changed the mindset of some people about shopping locations.

The statement above indicates that Covid-19 has changed consumer behaviour to some extent. According to Ludvík Eger's team, in Covid-19, customers' changes in impulse shopping conduct are in relation to their fear [12]. Customers' fears and the changes in buying conduct are positively related to each other: more fear, more changes [12]. Health and economic status are the two main aspects of people's fear [12].

4. Implemented and potential strategies for E-commerce platforms

Since the outbreak of Covid-19, many E-commerce platforms are having new opportunities. Many countries adopted lockdown policies during the period of Covid-19. This has resulted in many people being unable to go to offline supermarkets to buy essential items. Many customers are forced to buy their essentials online. There is no doubt that it is a good opportunity for E-commerce platforms. At the same time, E-commerce platforms have encountered a number of challenges.

In response to the challenges and threats posed by Covid-19, E-commerce platforms have taken a number of countermeasures. Firstly, many E-commerce platforms have seen an increase in sales during Covid-19, but this has also placed a burden on the platforms' vehicle scheduling and shipping processes [13]. To meet this challenge, many E-commerce platforms choose to integrate with artificial intelligence and some smart devices. With the help of artificial intelligence, it is more convenient and efficient for E-commerce platforms to transport goods. Delivering goods to customers in a timely manner during Covid-19 can help customers solve the problem of shortages of essential items. It will also increase customer loyalty to E-commerce platforms.

A new model of shared staff has emerged on some E-commerce platforms during the Covid-19 period [13]. During the epidemic time, some SMEs had difficulty returning to work and the employees of these companies worked on a shared model as short-term labour with some E-commerce platforms with labour shortages. This new model has not only solved the difficulties of some employees who were unable to work for profit, but has also helped to alleviate the labour shortage in some E-commerce platforms.

While there will be some new opportunities for E-platforms during Covid-19, the epidemic also poses some challenges for E-commerce. Since the outbreak of Covid-19, many hospitals are overcrowded, and it is difficult for people to get prompt medical treatment. Tianhong Yang represents that the Suning platform adopted an online consultation approach [13]. People were able to consult doctors online to learn more about Covid-19 and their own health conditions, thus reducing social panic. It also brings some relief to the crowded situation in offline hospitals. Overall, it is an extremely

good opportunity for E-commerce platforms as online visits can increase the number of times customers visit E-commerce platforms.

In order to reduce human contact during the outbreak, one strategy that E-commerce platforms have done is to take contactless delivery of goods [14]. This service is effective in reducing the spread of Covid-19, hence the service of E-commerce has developed and gained attention.

5. Suggestions

Covid-19 has profound and large implications for society. Until now, the epidemic has not ended. People and E-commerce platforms are still feeling the effects of Covid-19 today. In order to better respond to the epidemic, this paper offers suggestions for E-commerce platforms, the merchants on E-commerce platforms, and customers.

5.1 E-commerce platforms

During the epidemic time, the prices of some essential goods sold on E-commerce platforms were maliciously increased [15]. At the same time, there was an excessive rush to buy some medical supplies, such as masks, thus making them unavailable to some people. One suggestion to solve this problem is that E-commerce platforms can make relevant regulations that govern the maximum number of medical supplies to be purchased per person. Furthermore, E-commerce platforms should also strengthen the regulation of merchants on the platform, to prevent some unscrupulous merchants from maliciously increasing the prices of some essential items during the epidemic.

Another suggestion for E-commerce platforms is that E-commerce platforms should expand the range of items sold on the platform to provide consumers with a wider variety of products. Because of the lockdown policy, many people were not able to go to the market to buy fresh products during the epidemic period. The vast majority of food products sold on E-commerce platforms are quick-serve products or foods with a long shelf life. There are not many merchants selling fresh products on the platform. To solve this challenge, E-commerce can expand the range of items sold on the platform by collaborating with a number of fresh produce manufacturers and increasing the number of fresh produces sold on the E-commerce platform.

5.2 Merchants

To have a healthy and harmonious E-commerce sales environment, there is some suggestion for merchants selling on E-commerce platforms. Due to the shortage of essential products sold on E-commerce platforms in Covid-19, some sellers of these essential products have taken the opportunity to increase their prices significantly, resulting in unreasonable pricing for the entire industry selling these products. Therefore, the merchants who sell on E-commerce platforms are advised to consciously comply with the regulations made by the platforms. In addition to this, the merchants on E-commerce platforms are suggested that do not take advantage of the opportunity to make some unethical money by pricing maliciously during Covid-19.

5.3 Consumers

During the period of Covid-19, especially at the beginning of the outbreak, many people are fearful for their health. There has been an excessive hoarding of essential items by many consumers. This has resulted in some consumers not being able to purchase some of the medical and household essential goods. To reduce this phenomenon, consumers are suggested to buy only the right number of essential items. Furthermore, many E-commercial platforms also make some regulations to limit the number of essential goods consumers can buy. Consumers are suggested to follow the regulations made by the E-commerce platforms consciously, thus reducing social panic due to the unavailability of essential goods on E-commerce platforms.

6. Conclusion

Covid-19 has profound implications for E-commerce platforms. This is not reflected in the changes in revenue and sales of the E-commerce platforms, but also in the changes in consumer buying behaviour in Covid-19.

This paper finds that most E-commerce platforms saw an increase in sales and revenue after the outbreak of Covid-19. Meanwhile, many customers chose to shop online because of some reasons such as lockdown policy and their fear of Covid-19. Therefore, the number of people using E-commerce platforms increased during Covid-19. Essential goods were the most purchased items by customers during the epidemic time. In response to Covid-19, some E-commerce platforms have taken measures such as contactless delivery and online consultation.

The research implication of this paper is to understand the impact of Covid-19 on E-commerce platforms by studying the changes in different aspects of E-commerce platforms prior to and following the epidemic. At the same time, this paper may provide a degree of reference for the future development of E-commerce platforms and provide some help for the subsequent improvement of E-commerce.

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