

Analysis of the Impact of the COVID-19 on E-commerce

Xinyu Zhao ^{1,*}

¹Fisher college of Business, Ohio State University, Columbus, Ohio, The United States

*Corresponding author: zhao.3683@osu.edu

Abstract: E-commerce is an assembly for trading goods or services on the Internet, and he breaks the traditional trading model. With the advent of the information age and the rapid development of technology, e-commerce has become a common form of transaction. However, from 2019, COVID-19 has affected various industries around the world, among which E-commerce has been greatly influence. Some researchers have found that when most industries were affected by the epidemic and income depression, e-commerce not only did not receive the impact, but also developed better. In this article, it is found that the development of e-commerce was not limited but developed rapidly during COVID-19 because people's travel was restricted by the epidemic, some public places were forcibly closed, and e-commerce itself could break through the time and place restrictions. E-commerce may be able to influence or change people's consumption habits and the way buyers and sellers transact in the near future, so it is necessary to study e-commerce during the COVID-19. These results shed light on guiding further exploration of impact analysis for COVID-19.

Keywords: E-commerce, COVID-19, International.

1. Introduction

After the connection the Internet, human beings are available to choose the favorable goods pay for them, receive them, and buy the good just the touch of a finger under the era of E-commerce. Compared to traditional trading models, buyers and sellers need to trade in a specific environment, in a mall, in front of a stall, etc. Consumers need to select their favorite products from various stores throughout the mall, which undoubtedly takes a lot of time and effort. Merchants also need to spend a series of costs, e.g., renting stores and hiring salesman. However, the emergence of e-commerce has changed the previous situation, eliminating some of the drawbacks of the traditional trading model.

E-commerce is a transaction between buyers and sellers on the Internet. Different scholars have their own understanding and definition of e-commerce, but most of them are similar. According to Roger Clark, e-commerce is the transaction of goods and services through telecommunications and tools with telecommunications, while Jerry Ellison considers e-commerce as an electronic contract using information and communication technology for value exchange [1]. Simplicity, it is the use of Internet information and technology by people to sell and buy goods or services. Although they are all referred to as e-commerce, they can be broken down into the following categories [2]:

- Business-to-Business (B2B): Trading products between businesses
- Business-to-Consumer (B2C): Businesses sell products to customers
- Business-to-Government (B2G): Businesses sell products to the government
- Consumer-to-Business (C2B): Consumers sell products to businesses
- Consumer-to-Consumer (C2C): Sale of products between customers
- Consumer-to-Government (C2G) Consumer to Government (C2G) Selling products to government

The majority of the e-commerce types are B2B and B2C, and the focus of this paper is on these two types. The largest electronic trade today is business-to-business (B2B), which mainly involves large companies setting up online exchanges to buy industrial inputs, such as steel, chemical or automotive parts [3].

E-commerce is booming in every country due to the development and spread of information technology. Based on the data worldwide, Asia has the largest population using the Internet (also due to high population density and rapid spread of technology), and Europe and North America are second

only to Asia in terms of the number of users. These two continents are technologically advanced and provide a good basis for the development of e-commerce. During the period from 2014 to 2017, worldwide, e-tailing sales showed a steady upward trend (1336 billion dollars - 2304 billion dollars) [1].

In early 2019, an epidemic brought about by a new coronavirus affected the world. Due to a number of factors such as the transmission rate and lethality of the virus, various industries such as tourism, catering and finance have been affected or impacted in one way or another. Fear of the epidemic has reduced people's shopping behavior. However, the emergence of e-commerce has brought many benefits to both buyers and sellers during this special period. First, the cost of opening an online store is much lower than opening a physical store. Opening an online store reduces the cost of renting a store, warehouse and hiring a large number of employees. This reduced cost can directly affect the pricing, in the case of guaranteed profits, merchants can reduce pricing to improve their competitiveness in the industry. Second, e-commerce is more convenient than traditional trading models. Both buyers and sellers do not need to physically go to a specific location to buy and sell goods and services. Buyers can browse many merchants' products on one website at the same time, rather than having to visit every store, which largely saves time and energy. For sellers, a single seller can answer questions or process transactions for multiple customers online at the same time, even if they don't have many employees and don't have to spend too much time with customers. Finally, e-commerce provides people with more choices. As mentioned earlier, customers can browse more merchants in less time and compare prices, quality, appearance, service, brands, etc. E-commerce provides consumers with more choices of products and merchants. However, this variety of choices is not one-sided. While customers have more stores to choose from, merchants also have more opportunities to choose from consumers. Since browsing websites requires less effort than visiting a physical store, customers can browse many websites, and sellers get more views, greatly increasing the chances of their goods being sold. Because e-commerce has few regional restrictions, both buyers and sellers get the opportunity to transact across borders [4].

The advantages of these e-commerce are even more pronounced during an epidemic. Both buyers and sellers were skeptical about whether they should conduct face-to-face transactions, but e-commerce is not restricted by time and place and does not require offline transactions, thus excluding the possibility of some virus transmission. According to the surveys, during electronic transactions during the epidemic, customer demand for kitchen supplies, necessities and hygiene products increased significantly [5]. While making more and more people choose to buy necessities online, the possibility for customers to buy other products on the Internet has also increased significantly. This has become one of the reasons why e-commerce revenues increased rather than decreased during the epidemic.

E-commerce differs from traditional business models in that this model has been around for a short time, has a relatively new format, has a high level of acceptance worldwide, and can bring many conveniences to both buyers and sellers. In addition to some of the advantages mentioned above, e-commerce may also greatly facilitate the international flow of many services [4]. This paper will explore how e-commerce will affect the main trends and habits of the future by analyzing and comparing different cases before and during COVID-19.

2. Overview of the Impact of COVID-19

COVID-19 is an infectious disease known as severe acute respiratory syndrome coronavirus, which has caused a worldwide epidemic. To date, 525,467,084 people have been diagnosed and 6,285,171 have died, with 220,422,863 cases in Europe, 156,560,365 in the Americas, 59,636,597 in the Western Pacific, 58,107,621 in South-East Asia, and 21,621 in Eastern-Mediterranean, 107,621 cases in Western Pacific; 58, 107,621 cases in South-East Asia; 21,762,008 cases in Eastern-Mediterranean; and 8,976,866 cases in Africa [6]. Owing to the rapid and widespread spread of the virus, people's lives have undergone many changes, and their consumption habits have shifted from

buying in brick-and-mortar stores to online shopping due to the closure of some public places, the requirement of self-isolation, etc. According to the survey, 52% of consumers avoid shopping in brick-and-mortar stores and crowded places. In addition, 36% said they would not shop at a brick-and-mortar store before receiving the new crown vaccine [7]. This change in consumer behavior undoubtedly brings many opportunities and challenges to e-commerce. In the aftermath of the outbreak, e-commerce platforms were used by customers mainly to purchase necessities, such as daily necessities, masks, disinfectants, etc. [8]. It saves the time of both buyers and sellers, and also avoids direct contact between customers and merchants, customers, and people can get the goods they need or earn money while keeping themselves safe. E-commerce will also not be shut down because of the epidemic, affecting operations. Therefore, in some areas, with some brick-and-mortar stores forced to close, people are starting to use online shopping for their daily needs. According to an online survey through Google forms, during the blockade, people in India experienced the largest increase in the number of electronics ordered online, followed by food and beverages, and finally luxury goods [8]. Although the growth varies, there is an overall trend of growth in the number of transactions through e-commerce for all types of products. Walmart grocery e-commerce increased by 74% during the epidemic [7]. The Table. 1 shows the top ten e-retailers during the epidemic and their sales.

Table. 1 Top retail e-commerce websites in pandemic.

Sr. no	Retail Website	Millions
1	Amazon.com	4059M
2	Ebay.com	1227M
3	Rakuten.co.jp	804M
4	Samsung.com	648M
5	Walmart.com	614M
6	Appel.com	562M
7	Aliexpress.com	532M
8	Etsy.com	395M
9	Homedepot.com	292M
10	Allegro.pl	272M

Top list of retail websites by traffic
Location: Global | Time range: March 2020

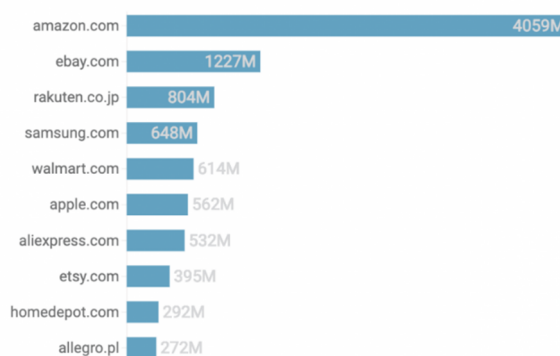


Figure 1. Top list retail website by traffic [8].

Additionally, according to SEMrush, different categories in the e-commerce industry received different levels of impact, with books and literature seeing the biggest increases at around 16%. This was followed by health (9%), which is not difficult to understand, as people want to ensure their health while working, studying and playing at home due to the series of effects brought about by the epidemic. Home décor came in third, with about 7% growth, just behind health. Then came retail (6%) and fashion (5%). It is inferred that people want to satisfy their spiritual needs first when they are blocked. Health can be guaranteed to some extent due to staying at home, but still needs to be strengthened. Since there is no need to go out, people's need for fashion comes last [8]. The top list retail websites and volumes are presented in Fig. 1 and Fig. 2.

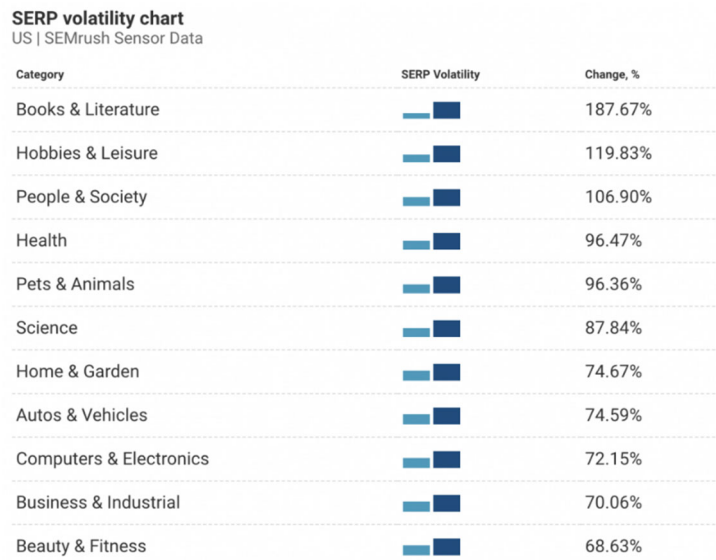


Figure 2. Traffic and online search volume for different types of products [8].

In addition to developed countries with advanced information technology and widespread Internet access, e-commerce customers are also increasing in some developing countries. For example, e-commerce in Pakistan started in 2000, and has only been developed for about 22 years today. Locally, only about 3% of the population shops online, but according to reports, Internet users in Pakistan increased by 15% during the epidemic, and e-commerce grew by 10% in a single day, with an overall upward trend [7]. E-commerce is rapidly emerging worldwide, and researchers can further analyze and predict the potential and future development of e-commerce by examining the growth rates of people buying different types of products online during the epidemic, so that e-commerce can bring more convenience as well as benefits to both buyers and sellers.

3. Case of Amazon

Amazon is the largest online electronics company in the United States and was one of the first companies to start operating e-commerce. Amazon offers its customers a large variety of products, such as household goods, fitness equipment, entertainment equipment, etc. Most of the goods people need can be found on Amazon. In addition to these, in recent years Amazon also cooperated with Whole food, fresh and other Grocery stores, so that people can buy food and some groceries online. This has certainly also greatly improved Amazon's competitiveness during the epidemic.

Since the beginning of the epidemic, Amazon's spending has increased by 120% for building warehouses, researching technology, and investing in it. Nevertheless, the benefits of this are also huge, according to Amazon's report, its profits increased by nearly 200% and sales increased by 37% compared to 2019. According to the data to the second quarter of 2020, Amazon's sales increased by 40% year-on-year [8].

With such satisfactory results, Amazon also wants to forecast the next revenue in order to make operational adjustments. According to S&P Global Market Intelligence, Amazon's revenue is inferred to be 37% higher than the fourth quarter of 2019, which would also bring them \$118.45 billion. Besides, the firm's analysts estimate that Amazon's total revenue will reach \$379.87 billion in 2020, up 35% from \$280.52 billion in 2019 (seen from Fig. 3) [8].

In addition to the opportunity presented by the epidemic to Amazon, the business itself has taken advantage of this opportunity well. Attributed to the blockade or isolation in some areas, customers who were used to offline shopping are flooding into Amazon, which is a challenge for them in addition to the large amount of revenue the business brings - how to meet the large amount of demand in such a short period of time. If not handled well, it may affect the future reputation and development. Boler Davis believes that machine learning and artificial intelligence play a crucial role at Amazon. During the epidemic, AI learns and helps Amazon predict when customers will book their next order,

which helps Amazon plan its operations [9, 10]. As the world's leading e-commerce platform, Amazon has done a good job of showing how to respond to a crisis or opportunity that it has never encountered more than once based on experience and innovation in this epidemic. Amazon's handling of the situation may be useful for the future development of e-commerce.

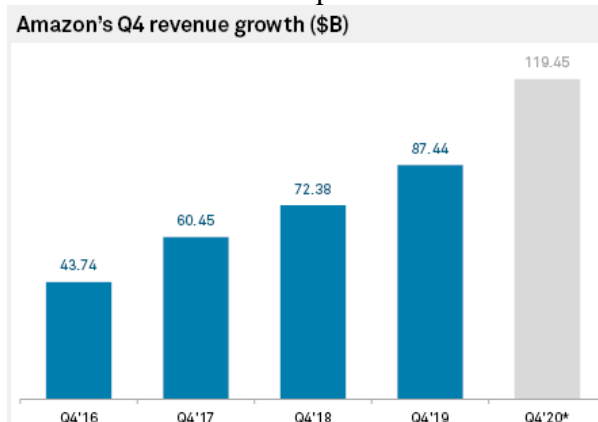


Figure 3. Amazon's Q4 revenue growth (\$B).

4. Case of Alibaba

Alibaba is a Chinese company that provides Internet-based services. Alibaba's services include, but are not limited to, B2B trade, online retail, shopping search engine, third-party payment, etc. Its Taobao and Tianmao are among the larger retailers in the world. However, different from Amazon, Alibaba received the impact of the outbreak, with the slowest quarterly growth in its eight years of being listed.

Alibaba's chairman and CEO said April (the first month of Alibaba's fiscal year 2022), was a month when the outbreak measures hit China very hard, with some areas receiving restrictions on logistics services in order to control the spread of the virus from province to province. It also affected Alibaba's key supply chain and logistics centers. Although delivery services resumed in May, there was still a backlog of packages and other factors that prevented Alibaba's operations from resuming for a while. Alibaba said the risks associated with the outbreak are outside the company's control and difficult to predict, so it would be imprudent to provide financial guidance for the year ahead, hence Alibaba will not make forecasts for the fiscal year being. The company reported a 9 percent increase in revenue from January to March to \$30.35 billion, the slowest growth for Alibaba since its IPO. The slow sales were caused by consumers curbing their spending [11].

5. Limitation and Future Prospects

On account of the uncertainty of the epidemic, different national policies, and different operating models and strategies, e-commerce platforms in different countries receive different impacts from the epidemic. Some e-commerce platforms will grow rapidly during this period, while others will be negatively impacted. It is difficult to judge whether a company's response strategy is correct based on these data.

The success of a business is difficult to replicate because of the many different conditions. Similar to Amazon's marketing strategy is difficult to be applied to Alibaba's operation, some conditions will be restricted by policies. Moreover, consumer behavior after the epidemic is over is also an uncertainty. It is difficult to predict whether consumers will rapidly pick up traditional consumption behavior because they have not done so for too long and go to the mall in person, or whether consumers have become accustomed to online shopping, allowing e-commerce to continue to grow smoothly.

In addition, there are some disadvantages of e-commerce. As mentioned earlier, for example, in Pakistan, not everyone is proficient in using online shopping and the Internet is not fully popular. On

this basis, if e-commerce becomes the mainstream mode of transaction, what should these people who cannot use e-commerce do. For various reasons, it is still unknown whether e-commerce can replace the traditional trading model.

6. Conclusions

In summary, this paper examines e-commerce during the epidemic by analyzing the cases of e-commerce platforms in different countries during the epidemic. Specifically, the changes in turnover of Amazon and Alibaba are evaluated during the epidemic to analyze the impact of the epidemic on e-commerce. Although the development of e-commerce can be analyzed based on the cases, it is difficult to predict its future development due to the uncertainty in many aspects. Overall, with the booming development of information technology, e-commerce is being accepted by more and more consumers. These results offer a guideline for future study focusing on E-commerce.

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