

Analyzing Consumer Behavior towards Purchasing Pharmaceutical Products Online

Ana-Maria Neculai

Alexandra Popa

„Ovidius” University of Constanța, Romania

ana.dumitrescu89@yahoo.com

alexandrapopa946@gmail.com

Luiza-Mădălina Cima

„Titu Maiorescu” University of Bucharest, Romania

„Ovidius” University of Constanța, Romania

luizacaracostea@gmail.com

Abstract

Globalization, technical progress, the trend towards digitization are phenomena with a strong impact on markets all over the world. To a large extent, the trends of digitization and online purchases were accelerated during the COVID-19 pandemic, causing major changes in consumption habits. The objective of this paper is to study the new trends in consumer behavior regarding the purchase of pharmaceutical and cosmetic products, as well as the influence of factors from the online environment on the purchase decision and on the perceptions and attitudes of the respective consumers.

Key words: consumer behavior, online pharmacies, e-commerce

J.E.L. classification: M30

1. Introduction

The Internet has revolutionized and changed the way we communicate, interact with individuals and companies and our purchasing habits. The ever-increasing number of Internet users, wider Internet access across the globe, technological progress and the aftermath of the Covid-19 pandemic are factors which contributed to changes in consumer behavior, our concern towards health and generated undisputed trends related to acquisition of products and services.

The online pharmaceutical and cosmetics supply has developed in many ways and in depending on different models from every part of the world. This is due to the various regulatory, economic, social and cultural environments. In the US, the pharmacy market (online and offline) is based mainly on prescription, while throughout Europe, this segment takes various forms according to a model based on non-prescription. The global accessibility of online pharmacies offers new perspectives, legislative and economic-wise, that need to be taken into consideration according to circumstances in every country, around the world, hence we are all talking about health products that are crossing jurisdictional boundaries- therefore, operating companies should be evaluated. While there is an ascending trend of online purchase for healthcare and cosmetic products, safety concerns among the population is a primary aspect to focus upon. In this study, we aim to identify the factors that may influence the purchasing behavior of consumers of pharmaceutical products and cosmetics in the online and offline environment. The research was carried out by launching a questionnaire created in the Google Forms platform, being distributed through social media networks, whatsapp and e-mail.

The variables taken into consideration were the frequency with which consumers purchase pharmaceutical and cosmetic products from different locations, sources of information (offline and online) about the respective products, elements from the online environment that can determine purchase decision, the way of purchasing different categories of pharmaceutical products and

cosmetics and the advantages and disadvantages perceived by consumers in relation to online and offline purchases of these products.

2. Literature review

Online pharmacy customers are growing rapidly due to the convenience and lower cost of electronically purchasing prescription drugs, especially in initial setups. However, there are questions about the quality of prescription drugs sold online and the legality of online pharmacies. The use of prescription drugs without the supervision of a licensed physician may harm consumers.

The number of online pharmacies has been increasing over the years. The Internet has enabled patients and consumers to purchase a range of medicines from online pharmacies at a lower cost than retail pharmacies. However, some illegal websites in many countries impersonate legitimate pharmacies and use the Internet (Fittler, 2013) to sell adulterated and substandard medicines (Alwon et al., 2015). In addition, some drugs are sold illegally without a prescription (Alwon et al., 2015). This phenomenon should be a cause for concern, as low-quality medicines may not be safe. In addition, unattended and self-administration exposes consumers to harmful side effects and increases the risk of morbidity and mortality (Lee et al., 2017).

The availability and accessibility of substandard and counterfeit medicines may vary by country. Countries with good drug regulatory and quality assurance systems generally have lower prevalence of counterfeit and substandard products than countries with poor regulatory systems. For example, the availability of counterfeit medicines is low in Japan and South Korea, but high in countries such as China and India (Attaran et al., 2011; Al-Worafi et al., 2021). A large number of counterfeit and substandard medicines are reported on the market (Kumaran et al., 2020). India has the highest reported prevalence of counterfeit medicines at 35%, followed by Nigeria (23.1%) and Pakistan (13.3%) [Attaran et al., 2011]. Nonetheless, counterfeit medicines are still available on the black market in countries with advanced drug regulatory regimes (Sharma et al., 2017).

The World Health Organization (WHO) has established several factors that affect the availability of counterfeit medicines on the black market. These factors include insufficient national regulation of drug distribution and manufacturing, limited enforcement of drug laws, insufficient criminal penalties for drug law violations, and poor export country regulation. Other important factors are complex transactions involving many intermediaries, high demand and high cost of therapeutic and preventive medicines, and inefficient collaboration among stakeholders (Attaran et al., 2011).

Online pharmacy patronage is increasing due to the easy availability of medicines through these online platforms and their relatively lower cost than brick-and-mortar pharmacy products (Fittler et al., 2018). Nonetheless, issues related to the quality of online prescription drugs remain a major public health concern. Furthermore, the legality of selling medicines in online pharmacies may be questionable (Orizio et al., 2011). Of paramount importance is consumer safety, as the inappropriate use of prescription drugs can cause potential harm (Baig et al., 2020; Elkalmi et al., 2021). Therefore, it is important to assess consumer attitudes towards these aspects, which are included in this study.

With the spread of the COVID-19 pandemic and the growing importance of e-commerce, research on online consumer behavior is particularly important. The aim of this study was to develop a methodological approach to assess the relationship and impact of factors that activate online consumer buying behavior in the context of the COVID-19 pandemic (Gu, 2021).

The global economy in general, and international trade in particular, has suffered and will continue to suffer enormously from the coronavirus pandemic. The uncertainty that companies and end users find themselves in is compounded by a number of factors. These include declining incomes, cross-border travel restrictions, changes in consumer demand, and changes in the behavior of market participants (Leach et al., 2021). Global lockdowns, social distancing, and other measures to limit the spread of the COVID-19 pandemic have prompted consumers to shop more in online marketplaces (Alessa et al., 2021). As such, the business environment faces rapid changes during the quarantine period. Ultimately, the Covid-19 crisis has accelerated the growth of digital commerce. A new kind of immersive digital consumer has emerged globally, a more selective one.

Lost revenue, restricted transportation and reduced supplier activity due to COVID-19 containment measures are forcing B2B manufacturers and sellers to cut production and marketing costs, find new suppliers at home and abroad, and speed up decision-making. National firms have

the opportunity to diversify their product portfolios for import substitution purposes and provide necessary resources to other firms and affiliates of foreign firms (Wanasida et al., 2021; Borodin et al., 2021). On the other hand, the purchasing power and cross-border liquidity of the B2C market have declined. Additionally, consumers are turning to health and safety while maintaining their preference for cheap goods and services (Guthrie et al., 2021). Products that bring comfort and comfort into living spaces are receiving more attention than usual. Lost revenue, restricted transportation and reduced supplier activity due to COVID-19 containment measures are forcing B2B manufacturers and sellers to cut production and marketing costs, find new suppliers at home and abroad, and speed up decision-making. National firms have the opportunity to diversify their product portfolios for import substitution purposes and provide necessary resources to other firms and affiliates of foreign firms (Wanasida et al., 2021; Borodin et al., 2021). On the other hand, the purchasing power and cross-border liquidity of the B2C market have declined. Additionally, consumers are turning to health and safety while maintaining their preference for cheap goods and services (Guthrie et al., 2021). Products that bring comfort and comfort into living spaces are receiving more attention than usual.

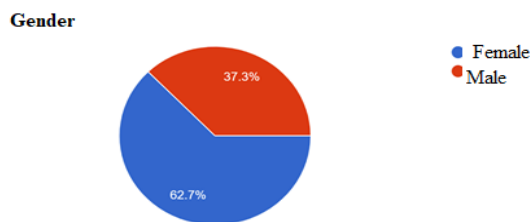
3. Research methodology

The study was conducted in July 2022 through an online questionnaire designed on the Google Forms platform and distributed through two major social networks, Facebook and WhatsApp, targeting people over the age of 18. The sample size consisted of 60 respondents with the following demographic characteristics: The majority of respondents (62.7%) were female, while male respondents comprised 37.3% of the sample size.

4. Findings

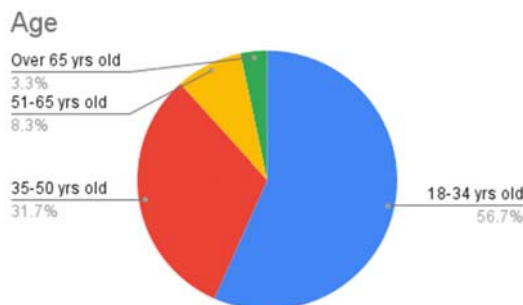
Regarding age category, the young segment category(18-34 years) was the most prominent (56.7%), followed by the age category 35-50 years (31.7%).Few respondents were received from elder audiences-8.3% completed the questionnaire belonging in the 50-65 years old category and 3.3% of the respondents were those that are over 65 years old.

Figure no.1 Gender of the respondents



Source:processed by authors

Figure no.2 Age of the respondents



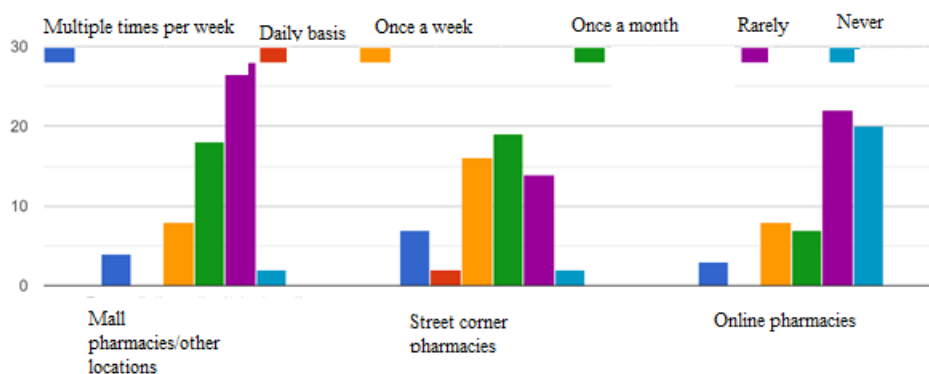
Source:processed by authors

An important aspect to which we directed our attention, namely the frequency of purchases of pharmaceutical products from different locations, is highlighted in figure no. 3. Thus, the data presented indicate that only 5% of respondents purchase pharmaceutical products from the environment several times a week online, 8.3% once a week, and 11.7% once a month. The majority of respondents stated that they rarely buy pharmaceutical products online (36.6%), while 33.3% answered that they never buy these products via the Internet.

In the case of physical purchases, two types of locations were taken into account, namely pharmacies in malls and other such points of sale and street pharmacies. A relatively high purchase frequency is observed in the case of street pharmacies (approximately 32% of respondents purchase medicines once a month from these locations and 26.7% once a week).

A similar trend was also registered in the case of mall-type locations, 30% of the respondents answered that they purchase the products mentioned above once a week. However, the highest percentage registered belongs to people who rarely buy pharmaceutical products from malls and other locations, representing 46.7% of the sample.

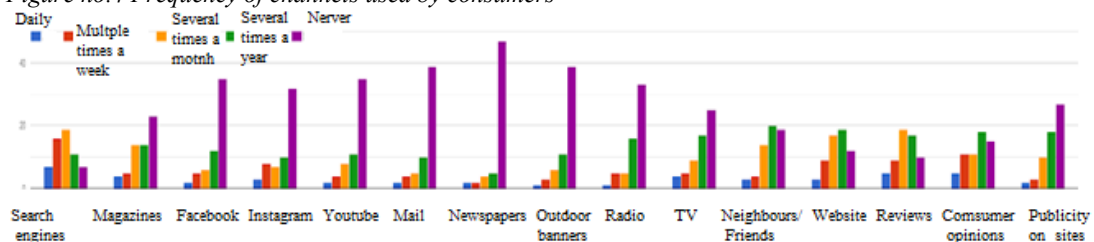
Figure no.3 The frequency of purchases of pharmaceutical products from different locations



Source: processed by authors

The next aspect to which we directed our attention was the frequency with which consumers access certain channels in order to inform themselves about the pharmaceutical products they intend to buy. Search engines are often used, according to respondents, 26.7% accessing them multiple times a week and 31.7% several times a month, a percentage which was also recorded in case of reviews. Similar, manufacturer’s website was identified as a means of information by 28.3%, who access them several times a month. The results indicate a rare utilisation of social media platforms (58.3% of respondents never use Facebook and Youtube as a means of information, 53.3% never use Instagram, 65% never use their e-mail. A negative trend was registered also in the case of newspapers (78% of respondents stated that they never take into consideration newspapers ads as a means of information), outdoor banners (also 65%), radio (55%) and TV (41.6%). The results might be an indicator of the fact that consumers would rather trust a professional (doctor or pharmacist) when it comes to getting information about the medication they intend to buy.

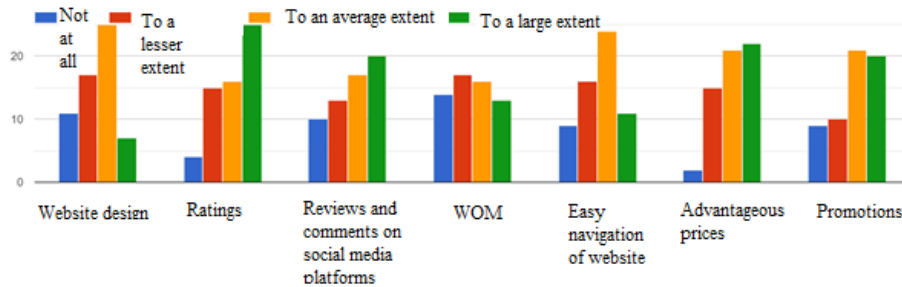
Figure no.4 Frequency of channels used by consumers



Source: processed by authors

In order to identify the factors that might influence consumers' buying decision of pharmaceutical or cosmetic products online, we took into consideration the following variables: website design, ratings, reviews and comments on social media, WOM, easy navigation of the producers' websites, advantageous prices and promotions. The survey participants were required to state the degree of importance of the above-mentioned variables in their buying process. Ratings were nominated by most respondents (41.7%) as the variable which influence their decision to buy online, followed by Advantageous prices (36.7%), along with reviews and promotions (33.3%). To an average extent, 41.7% of the respondents stated that factors such as website design influence their buying decision, as well as easy navigation (40%).

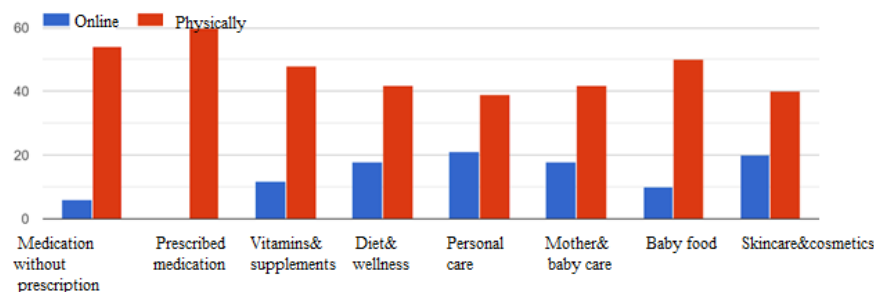
Figure no.5 Factors influencing consumers' buying decision



Source: processed by authors

Regarding the way of purchasing different categories of pharmaceutical and cosmetic products, we can see from the figure no. that most product categories (especially medicines, according to the answers of over 90% of the respondents) are bought by consumers from physical locations. Small percentages were recorded in the case of personal care products (35%), diet and wellness and mother and child care (30%) and in the case of dermatocosmetics and cosmetics (33.3%).

Figure no.6 Acquisition ways for different product categories

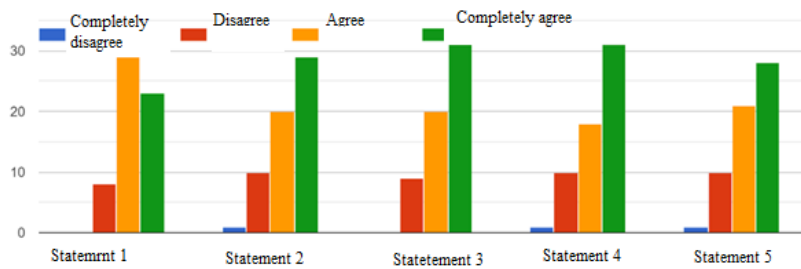


Source: processed by authors

In order to find out the attitudes and perceptions of consumers regarding the advantages and disadvantages of purchasing pharmaceutical products and cosmetics, the Likert scaling method was used. The results were the following: 48.3% of the respondents partially agreed, while 38.3% agreed with the statement according to which the purchase of pharmaceutical products and cosmetics online is very advantageous due to the lack of necessity to go to a physical location (Statement 1); 48.3% of the respondents totally agreed with the statement that online purchases of pharmaceuticals and cosmetics are very advantageous due to the lack of constraints related to the opening hours of physical pharmacies, while 33.3% partially agreed (Statement 2).

More than half of the respondents totally agreed with the fact that purchasing pharmaceuticals and cosmetics online is very advantageous due to the possibility to compare prices and the possibility to view reviews and opinions (Statement 3 and 4), and 46.7% totally agreed with the fact that purchasing pharmaceuticals and cosmetics online is very advantageous due to the promotions carried out on the website (Statement 5).

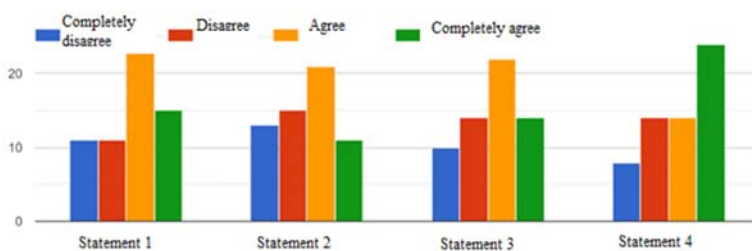
Figure no.7 Consumers’ perceptions regarding the advantages of online acquisition of pharmaceutical and cosmetics products



Source:processed by authors

As for the disadvantages of purchasing pharmaceutical and cosmetic products online, 38.3% of respondents partially agreed with the fact that purchasing pharmaceutical and cosmetic products online is very disadvantageous due to the lack of interaction with a specialized person who can advise you, in while 25% totally agreed (Statement 1); 18.3% specified that they do not agree at all with this statement.35% of respondents partially agree and 18.3% totally agree with the fact that purchasing pharmaceuticals and cosmetics online is very disadvantageous due to the fact that the products can be contaminated/expired/counterfeit, while 25% disagree with this statement and 21.7% expressed a strong degree of disagreement (Statement 2).23.3% of the respondents fully agree and 36.7% partially agree with the statement according to which purchasing pharmaceutical and cosmetic products online is very disadvantageous due to the fact that some online stores that sell them are not registered as pharmacies; and 23.3% do not they agreed with this statement (Statement 3).Regarding the risk of purchasing certain medicines and cosmetics online that may have contraindications or are not recommended by specialists and may harm health, 40% of respondents expressed a strong degree of agreement, and 23.3% partially agreed .The same percentage was recorded in the case of people who did not agree with this statement (Statement 4).

Figure no.8-Consumers’ perceptions regarding the disadvantages of online acquisition of pharmaceutical and cosmetics products



Source:processed by authors

5. Conclusions

The COVID-19 pandemic has led to a dramatic shift in consumer behavior, as traditional in-person healthcare has gone virtual and online prescription purchases have gone from a simple convenience to a lifesaver. Pharmaceutical e-commerce shows no signs of slowing down in a future post-pandemic world, as many consumers are now accustomed to the convenience of remote prescribing — and often at a lower cost.

E-commerce giants and telehealth startups are recognizing opportunities in the online pharmacy market, creating a competitive environment between established pharmacies and other healthcare providers.

Consolidation in the e-commerce industry, rising customer expectations across all industries, and competition are rapidly changing the pharmacy landscape. As the post-pandemic era approaches, e-commerce platforms are no longer a great convenience; they are an indispensable tool for doing business in today’s digital economy. As the role of pharmacists in more patient-centered care continues to grow, the need for better technology to support this care—including telehealth capabilities - is critical to the health of pharmacies and their patients.

To thrive in this growing market, pharmacy executives must understand the challenges and opportunities associated with transitioning to an e-commerce model, as well as the recommended best practices for pharmacies to launch a successful e-commerce platform.

6. References

- Abid, A.; Jie, S., 2021. Impact of COVID-19 on agricultural food: A Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis. *Food Front*, in press. [CrossRef];
- Afonasova, M.A.; Panfilova, E.E.; Galichkina, M.A.; Slusarczyk, B., 2019. Digitalization in economy and innovation: The effect on social and economic processes. *Pol. J. Manag. Stud.* 19, pp. 22–32;
- Alessa, A.A.; Alotaibie, T.M.; Elmoez, Z.; Alhamad, H.E., 2021. Impact of COVID-19 on entrepreneurship and consumer behaviour: A case study in Saudi Arabia. *J. Asian Financ. Econ. Bus.* 8, 201–210. *J. Theor. Appl. Electron. Commer. Res.* 2021, 16 2279;
- Alwon, B.M.; Solomon, G.; Hussain, F.; Wright, D.J., 2022. *A detailed analysis of online pharmacy characteristics to inform safe usage by patients*, pp. 148–158. [CrossRef] [PubMed];
- Al-Worafi, Y.M.; Alseragi, W.M.; Ming, L.C.; Alakhali, K.K.M., 2022. Drug Safety in China. Available online: <https://www.sciencedirect.com/science/article/pii/B9780128198377000285> (accessed on 10 August 2022). *Pharmacy* 10, 42 13 of 15;
- Attaran, A.; Bate, R.; Kendall, M., 2011. Why and how to make an international crime of medicine counterfeiting. *J. Int. Crim. Justice* 9, 325–354. [CrossRef];
- Baig, M.R.; Al-Worafi, Y.M.; Alseragi, W.M.; Ming, L.C. A Siddique, 2020. Chapter 25. *Drug safety in India*. In *Drug Safety in Developing Countries*, Al-Worafi, Y., Ed.; Cambridge, MA, USA: Academic Press; pp. 327–334. Available online: <https://www.sciencedirect.com/science/article/pii/B978012819837700025X> (accessed on 10 October 2021);
- Borodin, A.; Shash, N.; Panaedova, G.; Frumina, S.; Kairbekuly, A.; Mityushina, I., 2019. The impact of the publication of non-financial statements on the financial performance of companies with the identification of intersectoral features. *Entrep. Sustain. Issues*, pp. 1654–1665. [CrossRef];
- Dannenberg, P.; Fuchs, M.; Riedler, T.; Wiedemann, C. Digital transition by COVID-19 pandemic? The German food online retail, 2020. *Tijdschr. Econ. Soc. Geogr.* 111, pp. 543–560. [CrossRef];
- Elkalimi, R.M.; Al-Worafi, Y.M.; Alseragi, W.M.; Ming, L.C. A Siddique, 2020. Chapter 21 *Drug safety in Malaysia*. In *Drug Safety in Developing Countries*; Al-Worafi, Y., Ed.; Cambridge, MA, USA: Academic Press; pp. 245–253. Available online: <https://www.sciencedirect.com/science/article/pii/B9780128198377000212> (accessed on 10 August 2021);
- Fittler, A.; Bosze, G.; Botz, L., 2013. Evaluating aspects of online medication safety in long-term follow-up of 136 Internet pharmacies: Illegal rogue online pharmacies flourish and are long-lived. *J. Med. Internet Res.* 15, e199. [CrossRef] [PubMed];
- Fittler, A.; Vida, R.G.; Kaplar, M.; Botz, L., 2018. Consumers Turning to the Internet Pharmacy Market: Cross-Sectional Study on the Frequency and Attitudes of Hungarian Patients Purchasing Medications Online. *J. Med. Internet Res.* 20, e11115. [CrossRef];
- Guthrie, C.; Fosso-Wamba, S.; Arnaud, J.B., 2021. Online consumer resilience during a pandemic: An exploratory study of e-commerce behavior before, during and after a COVID-19 lockdown. *J. Retail. Consum. Serv.* 61, 102570. [CrossRef];
- Im, J.; Kim, H.; Miao, L., 2021. CEO letters: Hospitality corporate narratives during the COVID-19 pandemic. *Int. J. Hosp. Manag.* 92, 102701. [CrossRef];
- Mumarani, H.; Long, C.S.; Bakrin, F.S.; Tan, C.S.; Goh, K.W.; Al-Worafi, Y.M.; Lee, K.S.; Lua, P.L.; Ming, L.C., 2020. Online pharmacies: Desirable characteristics and regulations. *Drugs Ther. Perspect.* 36, pp. 243–245. [CrossRef];
- Leach, M.; MacGregor, H.; Scoones, I.; Wilkinson, 2021. A. Post-pandemic transformations: How and why COVID-19 requires us to rethink development. *World Dev.* 138, 105233. [CrossRef]

- Lee, K.S.; Yee, S.M.; Zaidi, S.T.R.; Patel, R.P.; Yang, Q.; Al-Worafi, Y.M.; Ming, L.C., 2017. Combating sale of counterfeit and falsified medicines online: A losing battle. *Front. Pharmacol.* 8, p. 268. [CrossRef];
- Orizio, G.; Merla, A.; Schulz, P.J.; Gelatti, U., 2011. Quality of online pharmacies and websites selling prescription drugs: A systematic review. *J. Med. Internet Res.* 13, e74. [CrossRef];
- Schafflein, S.; Hanna, R., 2021. Is e-commerce the prescription for the future of pharmacies?. *Ernst&Young blog*, available at :https://www.ey.com/en_us/life-sciences/why-e-commerce-may-be-the-future-of-pharmacies;
- Sharma, D.; Patel, R.; Zaidi, S.; Camerino, G.; Moraes, L., 2017. Interplay of the quality of ciprofloxacin and antibiotic resistance in developing countries. *Front. Pharmacol.* 8, 546. [CrossRef];
- Tran, L.T.T., 2021. Managing the effectiveness of e-commerce platforms in a pandemic. *J. Retail. Consum. Serv.* 58, 102287.[CrossRef];
- Wanasida, A.S.; Bernarto, I.; Sudibjo, N.; Purwanto, A., 2021. The role of business capabilities in supporting organization agility and performance during the COVID-19 pandemic: An empirical study in Indonesia. *J. Asian Financ. Econ. Bus.* 8, pp. 897–911;
- Xayrullaevna, S.N.; Pakhritdinovna, K.D.; Anvarovna, B.G., 2020. Digitalization of the economy during a pandemic: Accelerating the pace of development. *JCR 2020* 7, pp. 2491–2498.