PARTICULARITIES OF CONSUMER`S BEHAVIOR IN THE CONTEXT OF COVID 19 PANDEMIC

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Abstract. Marketing activities often influence the given circumstances in the given settings in order to emphasize or gradually create the predictable consumers' behaviour. It works very well, if the context of available opportunities, overall structure and logic are principally stable and unchanging.

Coronavirus has blown up everyone's mind, destabilizing the settings all over the world. If the disease spreads over, the rate of instability subject to constant changes increases and world functions without a predictable context or models. A human being adapts to changing, unstable environment and takes different decisions.

The sales increased and the flow of new customers rocketed literally. Online shopping probably was a part of daily life of the people of the new millennium; however, COVID -19 pandemic has also encouraged the older generation to buy the tickets online, and many of them did this for the first time in their lives.

E-commerce offers to the consumers not only the comfort, but also the opportunity to find the best offers, which is particularly valuable in today's insecure financial situation. At the same time, despite certain precaution measures, many consumers show openness and curiosity.

The aim of the research is to study the behaviour of the consumers and basing on theoretical concepts and ideas to study the particularities of consumers' behaviour in the context of COVID -19 impact as well as draw conclusions and give recommendations. The tasks are: 1) explore theoretical aspects based on consumer behaviour in the COVID -19 context; 2) describe secondary data from statistical report of consumer behaviour of COVID -19 context; 3) draw conclusions and recommendations. The methodology of the research will include a monographic method, analysis of statistical data, deductive and graphic method.

Key words: *behaviour, consumer, COVID-19, products.*

Jel code: D12, D91

Introduction

The 2020 pandemic COVID-19 that originated from Wuhan city in China in December 2019 has dramatically changed the world at almost every aspect of life for individuals, businesses, industries, and countries. Various but similar measures were taken to prevent the spread of COVID-19 infections including travel bans, lockdowns or curfews, quarantine measures, and social distancing. Bin et al. (2020) classify these measures as the lock-down policy (LDP) and the timed intervention policy (TIP). LDP refers to total lockdown, which can be effective in controlling the spread of the virus in a shorter period, during which time mitigation strategies (e.g. vaccine, increases in the capacity of virus combat facilities) can be developed. However, this policy can result in substantial and unintentional financial, economic, and social consequences at both macro and micro levels (Ozili, Arun, 2020).

The initial appearance of COVID-19 and its European spread in 2020 has changed the lives of millions of people. COVID-19 is not only a risk for global human health but also for the social and economic balance in each affected country. (Addo, Jiaming, Kulbo, Liangqiang, 2020) Without a doubt, the virus is one of the greatest crises for humanity within the past 100 years and influences consumer behavior (Abiad, Arao, Dagli, 2020). As a reaction to the isolation provoked by COVID -19 and changing shopping routines during the pandemic, many companies re-oriented their business toward online trade that means direct interaction with consumers (model D2C or *Direct-to-Consumer*), providing daily deliveries of goods.

Literature Review

There have been several epidemic outbreaks in recent world history, for example, Ebola, SARS, MERS, swine flu, and dengue fever (Balinska, Rizzo, 2009). Most prominently, the outbreaks have had an impact on two categories of human behavior: consumer behavior (Miri et al., 2020) and health risk mitigation behavior (La Torre, 2019). In addition, severe macroeconomic implications typically follow in areas hit by a pandemic causing unemployment, uncertainty, and an economic recession. On the impact of epidemics on human behavior is summarized in Table 1.

Table 1

The literature on pandemics and consumers behavior

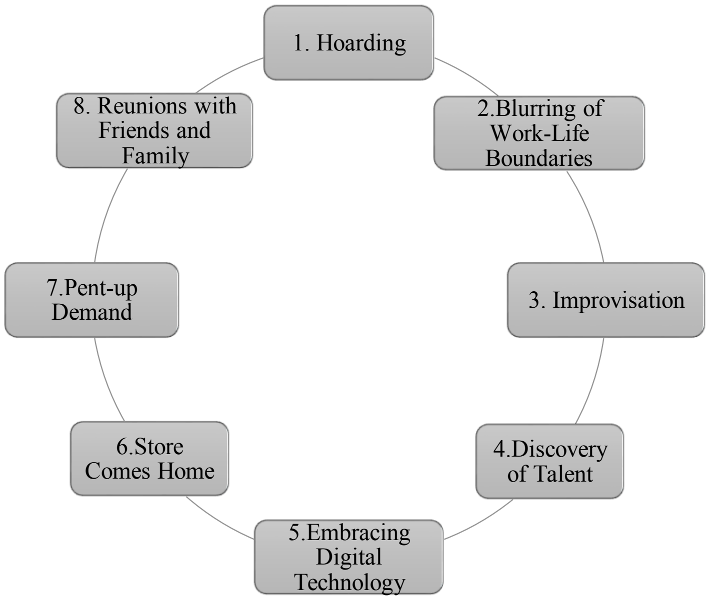
Theory	Selected findings	Country	Epidemic	Authors(s)
RANAS model	Critical psychological factors influence the adoption of consumers' avoidance measures. Beliefs and social norms were identified as the two most important factors.	Gambia	Ebola	Gamma et al. (2020)
RANAS model	Perceived severity and health knowledge are predictors for adopting prevention behaviors. Campaigns propagating health knowledge of consumers had less impact than expected.	Guinea-Bissau	Ebola	Gamma et al. (2017)
Protection-motivation theory, self-determination theory	Individuals' acceptance of government measures for curbing the pandemic and perceived severity of the pandemic correlate with adoption of recommended health behaviors to consumers.	Finalnd	COVID-19	Laato et al. (2020a)
No theory specified or explicitly mentioned	Response to swine flu was seen at the population level with reduced travel and increased purchasing of face masks and food.	Malaysia	Swine-flu (Influenza A H1N1)	Goodwin et al. (2009)
No theory specified or explicitly mentioned	Quarantine and vaccines are perceived as better countermeasures than personal hygienic measures.	Australia	Swine-flu (Influenza A H1N1)	Seale et al. (2009)
No theory specified or explicitly mentioned	Few people changed their as consumers behavior during the early stage of the swine flu epidemic. Perceived severity increased action, while lack of trust in officials and self-efficacy lowered it.	United Kingdom	Swine-flu (Influenza A H1N1)	Rubin et al. (2009)
Protection-motivation theory	The individual coping appraisal is a significant factor in influencing prevention consumers behavior such as self-isolation.	Sweden	None specified	Timpka et al. (2014)
Protection-motivation theory	Protection motivation leads to adoption of avoidance behavior. However, perceived severity was not related to protection motivation.	Iran	Swine-flu (Influenza A H1N1)	Sharifirad et al. (2014)

Source: authors based on literature

One model used in pandemic literature to explain behavior is the RANAS model. This model was developed to systematically understand health-related behavior by taking risks, attitudes, norms, abilities, and self-regulation into consideration (Mosler, 2012). The model has been applied to understand consumers behavior during pandemics. Social norms, perceived severity, response beliefs, and health knowledge predict adoption of individual prevention measures (Gamma et al., 2017, 2020). In addition to the health measures mentioned, outbreaks and pandemics are expected to have a significant impact on consumer behavior. Scholars have reported increases in purchasing of food, face masks, hand sanitizer, and other items perceived to be important for surviving the pandemic (Goodwin et al., 2019). In addition to RANAS, the protection-motivation theory (PMT) has been employed for understanding the underlying motives of human action during epidemic situations (Farooq et al., 2020; Laato et al., 2020a; Timpka et al., 2014).

Previous researchers focused heavily on preventive health behavior, and consumer behavior has received less attention. the COVID-19 pandemic situation is unprecedented and unique, it allows to gain insight into human behavior during a global pandemic event of massive scale where individuals have considerable uncertainty about how to act with no clear point of reference. (Sheth, 2020). Consumer theories give insight into how environmental stimuli related to the pandemic leads to unusual purchasing (Rogers, 1975).

Panic of buying is often a consequence of a large scale, severe disaster (e.g. hurricanes, snowstorms) or pandemics such as COVID-19. Consumers tend to stockpile staples (e.g. rice, pasta, flour) and other essential items that they perceive may help them sustain themselves through the crisis period and in anticipation of supply shortages. (Yoona et al., 2018) Some may simply fear a significant price increase caused by the disaster. (Su, 2010) Previous research has attempted to understand the causes and behaviors of panic buying (e.g. Wang et al., 2019; Zheng et al., 2020). From a social learning perspective Zheng et al. (2020) pointed out that consumers tend to mimic others who are physically (in person) and virtually (online) influential and social media posts can play a significant role in the proliferation of mimicking and purchase behaviors. The panic of buying is a psychological reaction to a current crisis and the fear of an interruption to the supply chain. However, very few studies have been undertaken to examine the relationship between government crisis intervention measures and panic buying. Therefore, understanding this relationship has implications for policy makers, the relevant authorities, and marketers to identify the most appropriate measures and strategies to mitigate the undesirable consequences and minimise the potential side effects. Immediate impact of Covid-19 on consumption behavior can see Fig.1.



Source: Author`construction based on Sheth, 2020

Fig. 1.**Immediate impact of COVID-19 on consumption Behavior**

1.Hoarding. Consumers are stockpiling essential products for daily consumption resulting in temporary stockouts and shortages. This includes toilet paper, bread, water, meat, disinfecting and cleaning products.

2.Blurring of Work-Life Boundaries. Consumers are prisoners at home with limited space and too many discrete activities such as working, learning, shopping, and socialization. This is analogous to too many needs and wants with limited resources. Consequently, there is blurring of boundaries between work and home and between tasks and chats. Some sort of schedule and compartmentalization are necessary to make home more efficient and effective.

3.Improvisation. Consumers learn to improvise when there are constraints. In the process, existing habits are discarded and new ways to consume are invented. The coronavirus unleashed the creativity and resilience of consumers for such tradition bound activities as weddings and funeral services. Sidewalk weddings and Zoom funeral services substitute for the traditional location centric events. This was also true for church services especially.

4.Discovery of Talent. With more flexible time at home, consumers have experimented with recipes, practiced their talent and performed creative. variants and new ways to play music, share learning, and shop online more creatively. With some of them going viral, consumers are becoming producers with commercial possibilities (Bin, Cheung, Crisostomi, Ferraro, Myant, Parisini, Shorten, 2020). There is also time shortage as the discretionary time of the homemaker is now nondiscretionary due to her employment. This time shortage has resulted in consumers ordering online and have products delivered at home. Similarly, vacations are no longer two or three weeks at a time but are more minivacations (Carlsson-Szlezak, Reeves, Swartz, 2020).

5.Embracing Digital Technology. Out of sheer necessity, consumers have adopted several new technologies and their applications. The obvious example is Zoom video services. Just to keep up with family and friends, most households with the internet have learned to participate in Zoom meetings. Of course, it has been extended to remote classes at home for schools and colleges and to telehealth for virtual visits with the physician and other health care providers. Most consumers like social media including Facebook, WhatsApp, YouTube, WeChat, LinkedIn, and others. The internet is both a rich medium and has global reach. The largest nations in population are no longer China and India. They are Facebook, YouTube, and WhatsApp.

6.Store Comes Home. Due to complete lockdown in countries like India, South Korea, China, Italy, and other nations, consumers are unable to go to the grocery store or the shopping centers. Instead, the store comes home. So does work and education. This reverses the flow for work, education, health and purchasing and consumption. In home delivery of everything including streaming services such as Disney, Netflix, and Amazon Prime is breaking the odd habits of physically going to brick and mortar places. It is also enhancing convenience and personalization in consumer behavior (Sheth, 2020).

7.Pent-up Demand. During times of crisis and uncertainty the general tendency is to postpone purchase and consumption of discretionary products or services. Often, this is associated with large ticket durable goods such as automobiles, homes, and appliances. It also includes such discretionary services as concerts, sports, bars, and restaurants. This results in shift of demand from now into the future. Pent up demand is a familiar consequence when access to market is denied for a short period of time for services such as parks and recreation, movies, and entertainment. While economists have studied impact of pent up demand on the GDP growth, there is very little research in consumer behavior about the nature and scope of pent up demand(Miri, Roozbeh, Omranirad, Alavian, 2020).

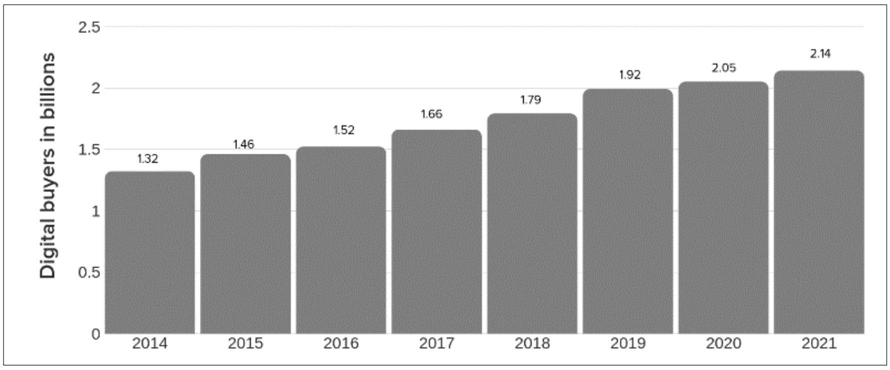
8.Reunions with Friends and Family. One major impact of the coronavirus is to get in touch with distant friends and family, partly to assure that they are okay but partly to share stories and experience. What is ad hoc event to keep in touch is now regular and scheduled get togethers to share information and experiences. The global reach of the social get togethers through social media such as Zoom and WhatsApp is mind boggling.

Overall can conclude that Habits are modified. In most cases, existing habits of grocery shopping and delivery will be modified by the new guidelines and regulations such as wearing masks and keeping the social distance (Hasanat, Hoque, Shikha, Anwar, Hamid, Tat, 2020).

Companies are trying to counteract the current situation with new sales and service solutions to secure at least a minimum level of business. Some have adapted to the current situation by changing their business models (e.g., implementation of online shops, digital customer service, etc.). In doing so, companies not only execute long-standing but never-introduced plans, but are also reacting to alleged changes in consumer behavior. Exemplary numbers prove them right. During the COVID-19 crisis, 13 % of the people who normally buy medicine offline have bought it online instead (Statista, 2020), and more than half of Girocard payments have recently been contactless compared to one-third in 2019 (Niazi, Shahid, Naqvi, 2020).

Research results and discussion

Consumers are changing their behavior during the crisis, and the crucial questions are: Does the crisis have the power to change consumer behavior not only in the short term but also in the medium and long term, and what will the behavior look like once restrictions on con- tact and store openings have been eased? These questions are especially important for B2C companies, which need to find a fast recovery and resolute way out of the COVID-19 crisis (Prentice, Chen, Stantic, 2020). Finding the right answers to the questions is essential to building a lasting competitive advantage and a sustainable business model for the future. As people have embraced social distancing as a way to slow the spread of the pandemic, would seem to mean there would likely be an increase in online shopping as people turn to e-commerce to purchase the items they might have otherwise purchased in person. Fig.2. shows Digital buyers worldwide from 2014-2021.



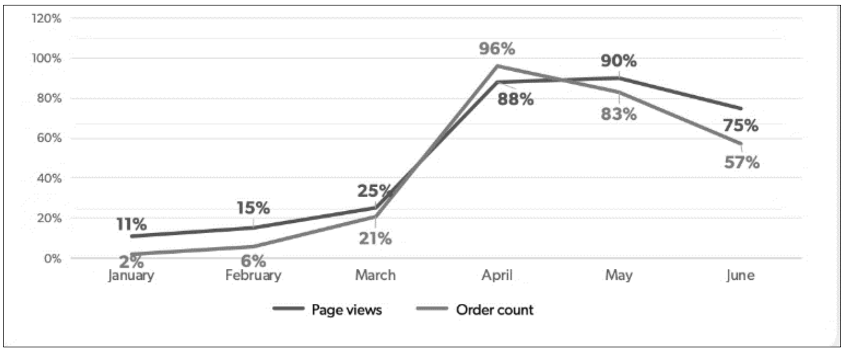
Source:Statista, 2020
forecast -2020;2021

Fig.2. **Digital buyers worldwide from 2014-2021 (in billion)**

With the rise of e-commerce, it's only natural that the number of online shoppers worldwide rises along with it. In 2020, the number of digital buyers is expected to be 2.05 billion. That makes 26.28% of the 7,8 billon people in the world. In other words, one out of every four people you see around you is an online shopper. The number of online shoppers could be 2.14 billion by 2021. With an expected world population of 8 million, that means 26.8 % of the global population will be digital buyers – a .52 % point increase from 2020 (Clement, 2020). This should come as no surprise, as internet connectivity penetrates the world and online shopping becomes increasingly convenient.

Internet users can choose from various online platforms to browse, compare, and purchase the items or services they need. While some websites specifically target B2B (business-to-business) clients, individual consumers are also presented with a vast number of digital possibilities (Andrienko, 2020). As of 2020, online marketplaces account for the largest share of online purchases worldwide. Leading the global ranking of online retail websites in terms of traffic is Amazon: The Seattle-based e-commerce giant that offers e-retail, computing services, consumer electronics, and digital content registered over 5.2 billion unique visitors in June 2020. In terms of gross merchandise value (GMV), however, Amazon ranks third behind Chinese competitors Taobao and Tmall. Both platforms are operated by the Alibaba Group, the leading online commerce provider in Asia (Laato, Islam, Farooq, Dhir, 2020).

The COVID 19 pandemic continues to have a significant influence on e-commerce and online consumer behavior around the world. As millions of people stayed home in early 2020 to contain the spread of the virus, digital channels have become the most popular alternative to crowded stores and in-person shopping. In June 2020, global retail e-commerce traffic stood at a record 22 billion monthly visits, with demand being exceptionally high for every-day items such as groceries, clothing, but also retail tech items (Hottenroth, 2020). How online usage, purchasing habits, and the overall future of e-commerce and the global retail industry will look like in 2021 and beyond will largely depend on the further progression of COVID-19.(Clement, 2020b) Monthly shopping activity, global (year-over- year-(YOY)) can see Fig.3.



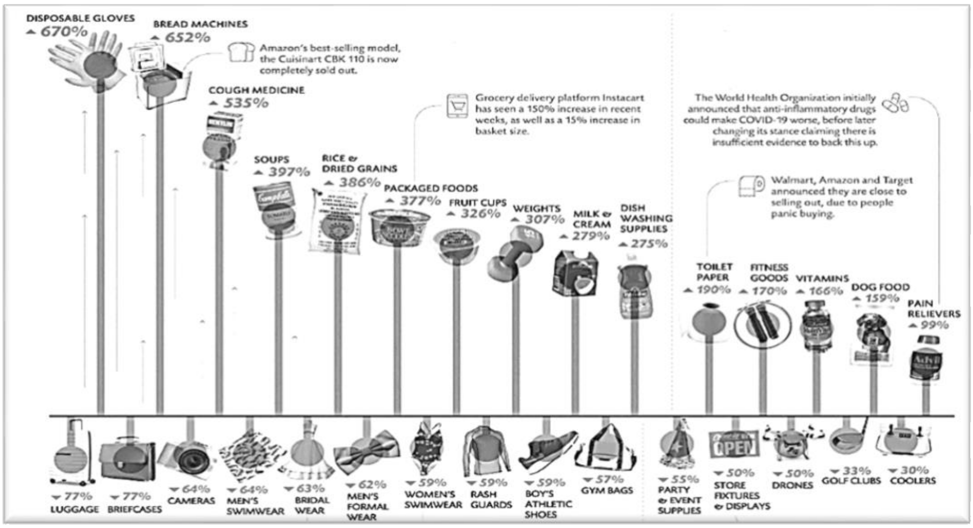
Source: Laato, Islam, Farooq, Dhir, 2020

Fig. 3. **Monthly shopping activity, global (year-over- year) percent growth 2020 v.2019**

Page views are up 75% year-over-year and order count is up 57% for the same time period. While this growth is down from April and May, it's still more significant than the growth pre-pandemic. January saw 11% YOY growth for page views and 2% growth for order count, and February saw 15% YOY growth in page views and 6% growth in order count**.**

Shopers are focused on home and garden improvements. Business and Industrial and Toys and Games are still seeing growth, but not as significant as it was during the pandemic. The effect of the COVID-19 crisis on e-commerce is not uniform across product categories or sellers. In the United States, for example, a surge in demand was observed for items related to personal protection (e.g. disposable gloves), home activities, groceries, or ICT equipment, while demand dropped for items related to travel, sports or formal clothing (e.g. suitcases, bridal clothing, gym bags, etc.) (OECD, 2020a). Shifts towards e-commerce have been observed in several countries, in particular along the food supply chain, including farmers who started using digital technologies to sell their produce directly to consumers or restaurants that switched to providing food or grocery delivery services (OECD, 2020b).

In Germany online sales grew significantly for medicines and groceries, historically laggard sectors in terms of e-commerce, while overall online sales contracted by around 18 percent in March 2020 in comparison to the previous year (OECD, 2019). In Korea, where official statistics are available, the e-commerce transaction value rose by 15.8% between July 2019 and July 2020. Significant increases were observed for food services (66.3%), household goods (48%), and food and beverages (46.7%), whereas online transactions involving culture and leisure services or travel arrangements and transportation services declined significantly, by 67.8% and 51.6% respectively. In China, food products were the single biggest winner in e-commerce, with an increase in accumulated sales from January to April 2020 of 36%, relative to the previous year. In contrast, total online sales over January to April 2020 remained almost constant compared to the same period in 2019 (+1.7%), after having grown significantly over 2018-19 (17.8%). Accumulated sales of clothing products contracted by 16% compared to 2019, after significant growth from 2018-19 (23.7%). Top 10 fastest growing e- commerce products categories can see Fig.4.



Source: Jones, 2020

Fig. 4. **Top 10 fastest growing e- commerce products categories (March 2019 vs March 2020)**

Retail sales of e-commerce shows that COVID-19 has significant impact on e-commerce and its sales are expected to reach $6.5 trillion by 2023. (Jones, 2020) Furthermore, there are many products that significantly impacted by virus such as disposable gloves, cough and cold, bread machine, soups, dried grains and rice, packaged food, fruits cups, weight training, milk and cream, dishwashing supplies, paper towel, hand soaps and sanitizer, pasta, vegetables, flour, facial tissues and allergy medicine and many more. On the other hand, the products that declines by coronavirus are luggage and suitcase, briefcase, cameras, men's swimwear, women swimwear, bridle dress, men formal dress, gym bags, rash guards, boys, athletic shoes, toys, lunch boxes, wallets, watches, girl's jackets and coats, boy's top's and caps etc. (Bhatti, Akram, Khan,2020). COVID-19 has significant impact on e-commerce of the world and in some cases negative impact but overall e-commerce is growing rapidly because of virus. Coronavirus compelled to customers to use internet and make it habit in their daily routine. (Abiad, Arao, Dagli, 2020) Furthermore, many challenges facing by retailers in e-commerce, such as extend the delivery time, difficulty face during movement control, social distance and lockdown. (Hasanat et al., 2020) The process of shipment and supply is quite slow now, but still people buying because they do not have another alternative. Hence, people moving towards technology due to virus. Furthermore, some products are very high in demand in market. (Akhtar, Akhtar, Usman, Ali, Siddiqi, 2020) Even retailers cannot fulfill the customer's demands such as hand sanitizers, toilet papers, disposable gloves, grocery, and dairy products. On the other hand, negative effect of COVID-19 on tourism industry, flights are in loss, also international trading is very slow.

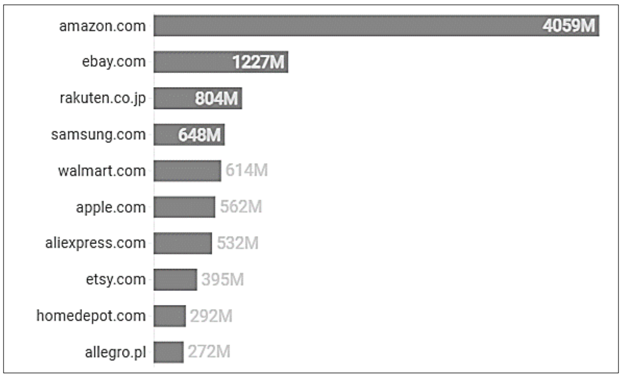
Consumer priorities have become centered on the most basic needs, sending demand for hygiene, cleaning and staples products soaring, while non-essential categories slump. The factors that influence brand decisions are also changing as a "buy local" trend accelerates. Digital commerce has also seen a boost as new consumers migrate online for grocery shopping – a rise that is likely to be sustained post-outbreak. It comes as no surprise that personal health is the top priority for the consumers, followed by the health of friends and family. Food and medical security, financial security and personal safety were other leading priorities.

Consumers are responding to the crisis in a variety of ways. Some feel anxious and worried, fueling panic-buying of staples and hygiene products. At the other extreme, some consumers remain indifferent to the pandemic and are continuing their business as usual, despite recommendations from government and health professionals. Companies will need to understand how their own consumers are reacting, and develop customized and personalized marketing strategies for each.

Some of the biggest retail chains have already been announcing that they are expanding their ecommerce sales. But COVID-19 has expedited this process. And although these businesses may seem to be better equipped to serve the novel customer needs, due to the pandemic, this shift is spanning out of control. Consumers start purchasing in categories that weren't forecasted to see such a rapid rise in online shopping (Bin, Cheung, Crisostomi, Ferraro, Myant, Parisini, Shorten, 2020).

In 2019 the most purchases, by a third or more of e-shoppers, involved clothes and sports goods (65 %), travel and holiday accommodation (54 %), household goods (46 %), tickets for events (41 %) and books, magazines and newspapers (33 %). Fewer than one in five e-shoppers bought computer hardware (17 %), medicines (16 %) and e-learning material (8 %). (e-commerce statistics for individuals, 2020) Early in the pandemic, shoppers were focused on buying masks, toys to keep kids ones entertained at home, and stocking up on groceries (Hottenroth, 2020).

So, with the long-awaited yet accelerated shift towards online shopping, consumer behavior at the time of the COVID-19 pandemic is mostly about user behavior. It may seem like a 5% increase in traffic is nothing, but retail is the category with over 14 billion monthly traffic. So, just within three months, it gained over 1.5 billion new visitors (Sheth, 2020). Top list of retail websites by traffic (global) can see Fig.5.



Source: authors based on Ecommerce Region Report, 2020

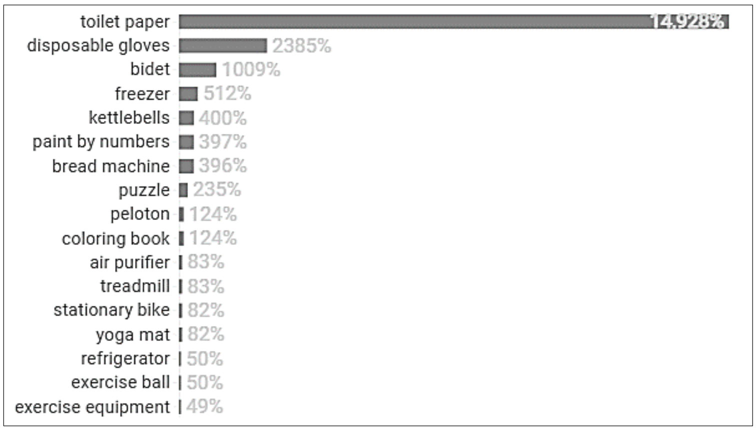
Fig. 5. **Top list of retail websites by traffic (global) March 2020**

Online retail websites have made strong traffic gains due to the global coronavirus pandemic as large parts of the population are staying at home and ordering items online which they usually would purchase in-store. Amazon.com had almost 5.22 billion visitors in June 2020, followed by eBay.com with 1.52 billion visits (Statista, 2020).

When almost all brick-and-mortar retail is shut down or considered dangerous to visit, all the everyday necessities — from groceries to that new iPhone charger — have to be purchased online. Amazon, eBay, Walmart, Apple, and Aliexpress — all of these companies are absolute winners of this coronavirus crisis.

Stay-at-home order did not discourage consumers from thinking about fashion. After all, will all get through this coronavirus crisis and leave houses eventually. Moreover, many clothing brands have promoted big discounts and sales to drive consumer demand. Almost 2.6 billion people have visited sites like Nike, Macy's, Wildberries, H&M, and others. Fashion is a 5% increase in traffic (Statista, 2020).

Home appliances, hobbies, and sports gear product categories are topping the list, as people shift their leisure activities indoors and turn their homes into an all-in-one space. The monthly searches for products from these categories have doubled and sometimes quadrupled. The sports gear's biggest spike belongs to kettlebells searches that have risen four times just within one month. The rest of the products are straightforward — Peloton, stationary bikes, and other exercise equipment. Fig.6. shows fast growing goods by Google search volume growth.



Source: Ecommerce Region Report, 2020

Fig. 6. **Fast growing goods by Google search volume growth (global), February 2020 - March 2020**

Would expect to see air purifiers, freezers, and refrigerators to become more popular when people tend to stock up their houses with food and spend an unprecedented amount of time at home. What is puzzling, though, (puzzles take #2 spot in growth in the Hobbies product category).

It is already clear that the coronavirus crisis will bring a long-term boost for e-commerce businesses, given they manage to stay in business during the shrinking consumer purchasing power. The economic difficulties will pass, while consumer behaviors will continue. So, even in the short-term, may feel discouraged to invest in building an e-commerce future for the business. In the long-term, are likely to double on the benefits.

Conclusions, proposals, recommendations

1. Consumers attitudes, behaviors, and purchasing habits are changingand many of these new ways will remain post-pandemic.
2. While purchases are currently centered on the most basic needs, people are shopping more consciously, buying local, and are embracing digital commerce.
3. Entrepreneurs to foster e-commerce participation by the most vulnerable, for example by introducing community-based delivery programs for the elderly and reserved delivery slots. Ensure that vulnerable consumers are protected from unfair business practices and unsafe products.
4. Legislators to support the creation of innovative e-commerce business models, ensuring that regulatory frameworks remain flexible enough to accommodate combinations of online and offline business functions. Reduce regulatory uncertainty and promote transparency through information sharing.
5. Entrepreneurs have to use multichannel: try to make sure that product is present across various platforms — from marketplaces like Amazon, eBay, Aliexpress, Google Shopping, Facebook Shopping to social media to review forums. This will bring you scalability and ensure you are everywhere your customers want you to be.
6. Entrepreneurs to get a more market share - has to place the product on the most active marketplaces for the product category. Amazon, eBay, Aliexpress, Google Shopping, Facebook Shopping, and Instagram's Shop feature.

Bibliography

Abiad, A., Arao, R. M., Dagli, S., 2020. The Economic Impact of the COVID-19 Outbreak on Developing Asia. *ADB briefs*, 128(6), 1-14.

Addo, P.C., Jiaming, F., Kulbo, N. B., Liangqiang, L., 2020. COVID-19: Fear Appeal Favoring Purchase Behavior towards Personal Protective Equipment, *The Service Industries Journal*, 40(7-8), 471-490.

Akhtar, N., Akhtar, M. N., Usman, M., Ali, M., Siddiqi, U. I., 2020. COVID-19 Restrictions and Consumers' Psychological Reactance toward Offline Shopping Freedom Restoration, *The Service Industries Journal*, 40(13-14), 891-913.

Andrienko, O., 2020. *Ecommerce & Consumer Trends During Coronavirus*. [Online] Available at: https://www.semrush.com/blog/ecommerce-covid-19/[Accessed 08.09.2020].

Balinska, M., Rizzo, C., 2009. Behavioural Responses to Influenza Pandemics: What do We Know? *Journal of Medicine,* 1(5), 14-19.

Bhatti, A., Akram, H., Khan, A.U., 2020. E-commerce Trends during COVID-19 Pandemic. *International Journal of Future Generation Communication and Networking*, 13(2), 1449-1452.

Bin, M., Cheung, P., Crisostomi, E., Ferraro, P., Myant, C., Parisini, T., Shorten, R., 2020. On Fast Multi-Shot Epidemic Interventions for Post Lock-Down Mitigation: Implications for Simple Covid-19 Models arXiv preprint arXiv:09930.

Carlsson-Szlezak, P., Reeves, M., Swartz, P., 2020. Understanding the Economic Shock of Coronavirus. *Harvard Business Review.* Available at: https://hbr.org/2020/03/understanding-the-economic-shock-of-coronavirus [Accessed 06.11.2020].

Clement, J. 2020a. *E-Commerce Worldwide - Statistics & Facts*. [Online] Available at: https://www.statista.com/topics/871/online-shopping//[Accessed 08.11.2020].

Clement, J. 2020b. *COVID-19 Impact on Global Retail e-Commerce Site Traffic 2019-2020*. [Online] Available at: https://www.statista.com/statistics/1112595/covid-19-impact-retail-e-commerce-site-traffic-global/[Accessed 08.11.2020].

Eurostat, 2020. *E-Commerce Statistics for Individuals*. [Online] Available at: https://ec.europa.eu/eurostat/statistics-explained/pdfscache/46776.pdf [Accessed 09.10.2020].

Farooq, A., Laato, S., Islam, A.N., 2020. Impact of Online Information on Self-Isolation Intention during the COVID-19 Pandemic: Cross-Sectional Study. *Journal of Medicine Research*, 22(5), 191-198.

Gamma, A.E., Slekiene, J., von Medeazza, G., Asplund, F., Cardoso, P., Mosler, H.J., 2017. Contextual and Psychosocial Factors Predicting Ebola Prevention Behaviours using the RANAS Approach to Behaviour Change in Guinea-Bissau. *BMC Public Health,* 17(1), 446.

Gamma, A.E., Slekiene, J., Mosler, H.J., 2020. The Impact of Various Promotional Activities on Ebola Prevention Behaviors and Psychosocial Factors Predicting Ebola Prevention Behaviors in the Gambia Evaluation of Ebola Prevention Promotions. *International Journal of Environmental Research* and *Public Health*, 16(11), 1-18.

Goodwin, R., Haque, S., Neto, F., Myers, L.B., 2019. Initial Psychological Responses to Influenza A, H1N1 ("Swine flu"). *BMC Infectious Diseases*, 9(1), 166.

Hasanat, M. W., Hoque, A., Shikha, F. A., Anwar, M., Hamid, A. B. A., Tat, H. H., 2020. The Impact of Coronavirus (Covid-19) on E-Business in Malaysia. *Asian Journal of Multidisciplinary Studies,* 3(1), 85-90.

Hottenroth, V., 2020. *The Impact of COVID-19 on e-Commerce by Category*. https://www.bazaarvoice.com/blog/the-impact-of-covid-19-on-e-commerce-by-category/ [Accessed 06.09.2020].

Jones, K., 2020. *COVID-19The Pandemic Economy: What are Shoppers Buying Online During COVID-19?* Available at: https://www.visualcapitalist.com/shoppers-buying-online-ecommerce-covid- 19/[Accessed 09.10.2020].

La Torre, G., Di Thiene, D., Cadeddu, C., Ricciardi, W., Boccia, A., 2009. Behaviours Regarding Preventive Measures against pandemic H1N1 Influenza among Italian Healthcare Workers. October 2009. *Journal of Euro Surveill*, 14(49), 1-3.

Laato, S., Islam, A.N., Laine, T.H., 2020a. Did Location-Based Games Motivate Players to Socialize during COVID-19? *Journal of Telematics and Informatics,* 54, 1-12.

Laato, S. M., Islam, N., Farooq, A., Dhir, A., 2020. Unusual Purchasing Behavior during the Early Stages of the COVID-19 Pandemic: The Stimulus-Organism-Response Approach. *Journal of Retailing and Consumer Services*, 57, 1-12.

Mosler, H. J., 2012. A Systematic Approach to Behavior Change Interventions for the Water and Sanitation Sector in Developing Countries: a Conceptual Model, a Review, and a Guideline. *International Journal* of *Environmental Health Research*, 22(5), 431–449.

Miri, S.M., Roozbeh, F., Omranirad, A., Alavian, S.M., 2020. Panic of Buying Toilet Papers: a Historical Memory or a Horrible Truth? Systematic Review of Gastrointestinal Manifestations of COVID-19. *Journal of Hepatitis Monthly*, 20(3), e102729.

Mosler, H.J., 2012. A Systematic Approach to Behavior Change Interventions for the Water and Sanitation Sector in Developing Countries: a Conceptual Model, a Review, and a Guideline. *International Journal* of *Environmental Health Research*, 22(5), 432–446.

Niazi, A., Ali., M., Shahid, A., Naqvi, H., 2020. *The Pandemic is e-Commerce's Time to Shine. But will it Last*? Available at: https://profit.pakistantoday.com.pk/2020/05/04/the-pandemic-ise-commerces-time-to-shine-but-will-it-last/[Accessed 01.09.2020].

OECD, 2019. *Unpacking E-commerce: Business Models, Trends and Policies*. OECD Publishing, Paris, Available at: https://doi.org/10.1787/23561431-en. /[Accessed 09.10.2020].

OECD, 2020a. *Coronavirus (COVID-19): SME Policy Responses", OECD Policy Responses to Coronavirus (COVID-19)*. Available at: https://read.oecd-ilibrary.org/view/?ref=119_119680-di6h3qgi4x&title=Covid-19_SME_Policy_Responses. /[Accessed 09.10.2020].

OECD, 2020b. *COVID-19 and the Retail Sector: Impact and Policy Responses, OECD Policy Responses to Coronavirus (COVID-19)*, OECD Paris. Available at: http://www.oecd.org/coronavirus/policy-responses/covid-19-and-the-retail-sector-impact-and-policy-responses-371d7599/./[Accessed 09.10.2020].

OECD, 2020c. *Food Supply Chains and COVID-19: Impacts and Policy Lessons*. *OECD Policy Responses to Coronavirus (COVID-19)* Available at: http://www.oecd.org/coronavirus/policy-responses/food-supply-chains-and-covid-19-impacts-and-policy-lessons-71b57aea//[Accessed 09.10.2020].

Ozili, P.K., Arun, T., 2020. *Spillover of COVID-19: Impact on the Global Economy*. Available at: https://papers.ssrn.com/sol3/papers.cfm?id=3562570. [Accessed 12.09.2020].

Prentice, C., Chen, J., Stantic, B., 2020. Timed Intervention in COVID-19 and Panic Buying. *Journal of Retailing and Consumer Services,* 57, 1-11.

Rogers, R.W., 1975. A Protection Motivation Theory of Fear Appeals and Attitude Change1. *Journal of Psychology*, 91(1), 93–114.

Sheth, J., 2020. Impact of Covid-19 on Consumer Behavior: Will the Old Habits Return or Die? *Journal of Business Research*, 117, 280–283.

Statista, 2020. *Number of Digital Buyers Worldwide from 2014 to 2021* [Online] Available at: https://www.statista.com/statistics/251666/number-of-digital-buyers-worldwide/ [Accessed 06.10.2020].

Su, X., 2010. Intertemporal Pricing and Consumer Stockpiling. *Operations Research*, 58(4), 1133–1147.

Timpka, T., Spreco, A., Gursky, E., Eriksson, O., Dahlstrom, O., Stromgren, M., Holm, E., 2014. Intentions to Perform Non-Pharmaceutical Protective Behaviors during Influenza Outbreaks in Sweden: a Cross-Sectional Study Following a Mass Vaccination Campaign. *Public Library of Science*, 9(3), 5234-540.

Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., McIntyre, R.S., Choo, F.N., Tran, B., Ho, R., Sharma, V.K., Ho, C., 2020. A Longitudinal Study on the Mental Health of General Population during the COVID-19 Epidemic in China. *Journal of Brain*, *Behavior, and Immunity – Health*, 87, 40–48.

Yoona, J., Narasimhan, R., Kima, M.K., 2018. Retailer's Sourcing Strategy under Consumer Stockpiling in Anticipation of Supply Disruptions. *International Journal* of *Production Research*, 56(10), 3615–3635.

Zheng, R., Shou, B., Yang, J., 2021. Supply Disruption Management under Consumer Panic Buying and Social Learning Effects. *Omega*, 101, 102238.