HOW COVID-19 INFLUENCED CUSTOMER BUYING BEHAVIOUR AND BUSINESS RESULTS OF E-SHOPS

Ing. Daniel Kvíčala

Department of Business Economics and Management
Obchodně podnikatelská fakulta v Karviné
Slezská univerzita v Opavě
Univerzitní náměstí 1934/3, 733 40 Karviná
kvicala@opf.slu.cz

Abstract:
The aim of this paper is to compare customer purchasing behaviour and marketing activities and the results of selected e-shops offering different product categories in periods of 2019 and 2020. For this purpose, values such as number of visits, number of transactions, sales volume, and conversion rates of individual customers will be analysed. Furthermore, the total investment in online marketing communication and selected online marketing channels, as well as the impact of these channels on the overall performance of the e-shops, will also be analysed. Values such as cost per e-shop visit and customer acquisition, cost per transaction, investment-to-twist ratio, average number of purchases, and average order value will also be used for comparison. As a result, the author will provide insights into the real impact of the COVID-19 pandemic on customer buying behaviour, e-shop business results, and the performance of their online marketing channels.

Introduction

The development of the e-Commerce market has been attracting the attention of academics and practitioners for some time now and has given room for the creation of new companies, among other things, due to the ease of entry into this environment. As a result of the COVID-19 pandemic, the growth of the e-commerce market has been even more dynamic as firms across the market have been forced by government restrictions to rethink their marketing strategies and, where possible, move their activities to the online environment, which is unfamiliar to many firms. The e-Commerce environment also brings differences in customer purchase behaviour and needs, which firms need to take into account. At the same time, this environment offers the possibility of collecting and analysing data that can be used to further develop and optimize marketing strategies. Thanks to tools and platforms such as Google and Facebook, it is also possible to undertake sophisticated marketing and communication activities based on data, from creating an e-shop to communicating with customers, for example, using social networks or implementing marketing campaigns targeted according to detailed and specific customer characteristics and their online behaviour. From an academic point of view, the consequences of the pandemic have brought new factors that influence what happens in the market and it is essential that they are investigated. The aim of this paper is to use empirical data analysis of several e-shops to explain the impact of the COVI-19 pandemic

on the performance of a few selected e-shops from different product categories, and to compare customer buying behaviour, e-shop marketing activities and the results of specific marketing channels.

1. Review of the Literature

In 2019, 1.92 billion people shopped online. Total e-commerce sales reached $3.535 trillion and represented 14.1% of total retail sales (e-commerce, 2019). The forecast for 2023 is $6.542 trillion and a 22% share of total retail sales. However, it should be noted that real results may be affected by the impact of the COVID-19 pandemic (Kvíčala and Starzyczná, 2020). The first electronic stores in the country were established in 1996. At the end of 2020, there were more than 40,000 e-shops on the Czech market (Czech e-commerce, 2020). The turnover of Czech e-commerce in 2019 reached CZK 155 billion and its share in total retail sales was 12.7% (Liang et al., 2008).

Specifics of the e-commerce market

The basic specificity of the e-commerce market is the Internet environment in which the companies operate. This environment offers customers unlimited possibilities to move between e-shops in a matter of seconds and also an almost unlimited volume of available products and e-shops as such, which customers can compare with each other. This creates pressure to optimize product offerings and the shopping environment as a whole to motivate customers as much as possible to purchase from a given e-shop (Toufaily et al., 2013). However, there is no possibility of physical contact with the seller or the products, so all interactions are virtual. Therefore, e-shops must offer sufficient volume and quality of information to be able to gain the attention, interest, and trust of customers (Valvi and Fragkos, 2012). In an e-commerce environment, an e-shop can be established or disappear in a very short period of time, which creates very low barriers to entry and thus a highly competitive environment (Liang et al., 2008). If an e-shop has sufficient capital, it can also very quickly launch a series of on-line marketing communication activities, the volume and form of which are limited only by finances and the ability to work with available platforms and tools such as Google Ads, Analytics, Sklik, or Facebook. This gives e-shops the ability to collect customer data such as interests, marital status, education, job title, favourite movie, football club or band, shopping preferences and behaviour, current location or travel intention, among many others, in addition to geographic data (Redkina, 2017). This data can then be used by e-shops to target advertising campaigns. In addition, e-shops have the ability to track customer activity in their e-shop and then respond to this behaviour with remarketing campaigns or automated incentives directly in the e-shop environment. Another very valuable benefit is the ability of these platforms to automatically collect and analyse data, which is further used to optimize campaigns without the need for human intervention (Liang et al., 2008). As such, the Internet also contains countless sources of information and content that can be used for strategy development, designing re-promotion campaigns, or training in, for example, working with advertising platforms. The absence of physical contact with customers can be partly compensated by communicating and sharing content in a range of available formats from articles, virtual tours or augmented reality. The results of the author's previous qualifying research suggest that the awareness and knowledge of e-shop operators in the area of customer shopping behaviour in Czech e-commerce contains significant reserves, which results in a reduced ability to analyse this behaviour and take steps to stimulate it in order to improve business results (Kvíčala and Starzyczná, 2020).

Customer purchase behaviour in e-commerce

The aforementioned possibility of unrestricted movement of customers between e-shops around the world, comparing product prices, quality or friendliness of a given e-shop gives customers a strong position and forces e-shops to continuously improve their marketing activities to meet the increasingly demanding needs of customers (Chou et al., 2010). The whole shopping process is also much faster, as customers can visit or leave the e-shop within seconds, for example at the time of payment. According to some authors, one of the cornerstones of success in e-commerce is gaining customer trust (Yun and Good, 2007). Of course, trust is also crucial in the offline environment, but it is much more important in e-commerce due to the fact that it does not provide the opportunity to touch, try, or even physically take away the product, which may raise concerns about product unsuitability or even fraud (Yen, 2011). Another disadvantage is waiting for the purchased product. For the e-shop, there is also the risk that the customer will not take delivery of the purchased product, and if they have not paid for it, the e-shop incurs lost costs (Toufaily et al., 2013). To remove these barriers, new technologies and ways to make the customer experience as pleasant as possible are constantly being developed (Chou et al., 2010). Some authors argue that customers are more price sensitive in e-commerce precisely because of the possibility of comparison, especially for undifferentiated products (Yen, 2011). On the other hand, there is a chance that an e-shop can reduce this sensitivity and increase the perceived value of products by communicating product benefits and additional content (Valvi and Fragkos, 2012). Regarding customer loyalty in e-commerce, authors' opinions are divided into two groups, with some claiming that loyalty is higher (Gefen, 2002, Srinivasan, 2012, Tahal, 2014), but their claims are not supported by empirical data and are mainly based on the results of a questionnaire survey. The second group of authors claim that customer loyalty is lower in e-commerce and support their claims with research on corporate data on purchasing behaviour (Romaniuk, 2011, Sharp, 2017). In the Czech market, this is confirmed, for example, by a study that states that e-shop customers usually shop at a given e-shop only once (Kvíčala and Starzyczná, 2020). However, the relevance of this study is limited by the number of e-shops included and the total volume of data.

The Impact of the COVID-19 pandemic on Customer Purchase Behavior

The impact of COVID-19 on shopping behaviour or activities of e-shops or e-commerce as such has been the subject of several studies. Bhatti et al. (2020) demonstrated general growth in the e-commerce market quantified by purchase volume and revenue. Elrhim and Elsayed (2020) focused on changes in revenue or market value of specific firms, namely the largest global e-commerce players such as Amazon, Alibaba, Rakuten, and Zalando, where pandemic-influenced growth was also demonstrated. Furthermore, there have been significant logical needs of customers and with them companies to move their activities online, to make services or product sales more accessible online and to increase the credibility, logistics, and technical aspects of customer contact, hence sales, which are often barriers to successful e-commerce market operations (Shahzad et al. 2020, Beckers et al., 2021, Dinesh and MuniRaju, 2021). However, none of these studies work with internal e-commerce data that directly describe customer buying behavior and quantify companies' online marketing activities. Thus, the paper provides relatively unique data and metrics (discussed in more detail in the next section of the paper) that are not part of any of the previously published research in this area. It should also be noted that, apart from one article, all of the aforementioned do not deal with the European e-commerce market. Therefore, these facts

distinguish the paper from previous publications and offer new insights into the impact of the COVID-19 pandemic on e-commerce.

In the context of research on customer purchasing behaviour in e-commerce, the author published an article (Klepek and Kvíčala, 2020) which deals with the impact of the pandemic on customer buying behaviour. The limitation of this research is that it contains data from only one B2C e-shop that offers sportswear and accessories. Therefore, the results are not entirely relevant and generally applicable but suggest that the effects of the COVID-19 pandemic positively affect the number of transactions and the sales volume of the e-shop. The research sample for that study included data from nearly 15,000 customers who made more than 49,000 transactions and more than 77 million sales between 2019 and March-May 2020, when pandemic-related restrictions were in place.

Research methodology

E-commerce research can benefit from the almost infinite amount of data that is not only growing daily but is also automatically collected by the tools mentioned above. However, it must be added that there are very few academic studies that process these data, almost none in the Czech Republic, despite the fact that the Czech Republic is one of the countries with a very high number of e-shops per capita. Thus, by linking academic methods and data from practice, there is potential for a new di-resort of research that will help to significantly enrich the state of knowledge while providing practical insights for e-shop management and may help to mitigate the economic consequences of the pandemic.

The aim of this paper is to investigate the impact of the COVID-19 pandemic and its associated consequences on customer buying behaviour and business performance of e-shops. This will be done by analysing secondary data from e-shops using basic statistical methods. The data analysed will be divided into periods before and during the pandemic and then compared to meet the research objective. Thus, the object of the research is the customers shopping at the selected e-shops, as well as the e-shops in question in the context of what online marketing activities they are carrying out and in what volume, and what their business results are.

The research will analyse and compare data from 5 B2C e-shops for the period 2019 and 2020 using basic statistical methods that are likely sufficient for this purpose. It will also include data on the e-shops' investment in PPC advertising and social media and the impact of these channels on e-shop performance. To protect commercial confidentiality, e-shops will be anonymised and abbreviated. Only the product categories offered by the e-shops will be listed. To have the broadest possible view, e-shops from different product categories will be included. The DS e-shop offers gift candles, NS sports equipment, NP fitness supplements, HP pet products and BL bicycles and cycling clothing.

The dataset contains data on more than 4.5 million customers, 8 million visits to the e-shop, more than 125,000 transactions, sales of more than CZK 212 million, and investments in online marketing communication of almost CZK 17 million. The data comes from e-shop platforms, Google analytics tools, and Google Ads, Sklik, and Facebook platforms.

Research metrics will be divided into 6 categories:
  a) Overall e-shop performance - total investment in marketing communications, revenue, and cost share of e-shop turnover.
  b) Overall customer results - total number of customers, e-shop visits, transactions, sales volume, and conversion rate (ratio of visits to purchases.
  c) Average customer values – average number of visits, transactions, order value, and sales per customer.
  d) Costs associated with customers – cost per e-shop visit and cost per transaction.
  e) Results of selected channels – organic visits, PPC campaigns, social media, and others (email, direct, referral, etc.) - investment, number of visits, number of transactions and sales are shown for each channel.
  f) Cost of paid channels – PPC and social - includes cost per visit, cost per transaction, and cost to sales.

These metrics are further broken down for 2019 and 2020.

Results

For better clarity, the survey results are divided by category. No major changes were found in the overall scale except for a few cases, which are described in the following section.

Overall e-Shops' Performance

In terms of revenue, all e-shops generated more revenue in 2020 than in 2019. With the exception of the BL e-shop, all e-shops invested more in 2020 than in 2019. DS and NP e-Shops invested approximately double the amount, with DS also generating twice the amount of revenue. NP's sales only grew by 50%. HP invested a comparable amount, and its sales increased by 25%. For NS, both investments and sales increased by around 50%. BL invested a slightly lower amount, but generated 50% more revenue.

Figure 1: *Overall e-Shops' performance*

Overall e-shops' performance										
	DS		NS		NP		HP		BL	
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Investments (thous. CZK)	700	1 357	4 722	7 784	234	650	435	465	309	289
Revenue (thous. CZK)	6 663	11 584	54 366	80 199	3 748	5 445	7 913	9 779	13 482	19 645
CRR	10,5%	11,7%	8,7%	9,7%	6,2%	11,9%	5,5%	4,8%	2,3%	1,5%
Profit increase (thous. CZK)		4 264		22 771		1 281		1 836		6 183
Profit increase (%)		71,51%		45,87%		36,45%		24,55%		46,94%

Source: Own processing

The share of costs in turnover has slightly increased for all e-shops except BL and HP, but we cannot draw a relevant conclusion from this as we do not know the other costs of e-shops on which the final profit is based.

Overall customer results

All e-shops in 2020 recorded a higher number of customers, visits, transactions and sales, confirming the findings of the author's previous research mentioned above.

Figure 2: *Overall customer results*

Overall customer results										
	DS		NS		NP		HP		BL	
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Customers	147 016	223 894	1 312 788	1 717 757	49 393	106 007	99 336	115 406	327 345	422 043
Visits	215 496	360 023	2 307 883	3 055 559	79 245	162 486	149 503	188 067	680 420	815 784
Transactions	5 009	8 271	36 562	45 455	3 724	6 197	7 209	8 881	1 534	2 326
Revenue	6 663	11 584	54 366	80 199	3 748	5 445	7 913	9 779	13 482	19 645
CR	2,32%	2,30%	1,58%	1,49%	4,70%	3,81%	4,82%	4,72%	0,23%	0,29%

Source: Own processing

The customer conversion rate for the 3 e-shops is almost identical to the previous period. For BL, this metric has increased slightly. The largest decrease was recorded by NP a, by almost 1 percentage point.

Average customer values

With the exception of NP and BL, all customers made a slightly higher number of visits on average. The average number of transactions was also slightly higher, with the exception of the NP e-shop. The average order value increased slightly for 3 e-shops.

Figure 3: *Average customer values*

Average customer values										
	DS		NS		NP		HP		BL	
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Visits	1,47	1,61	1,76	1,78	1,60	1,53	1,51	1,63	2,08	1,93
Transactions	0,03	0,04	0,03	0,03	0,08	0,06	0,07	0,08	0,00	0,01
Trans. value	1 330	1 401	1 487	1 764	1 006	879	1 098	1 101	8 789	8 446
Revenue	45,32	51,74	41,41	46,69	75,88	51,36	79,66	84,74	41,19	46,55

Source: Own processing

NP registered the highest percentage decrease, which was also found for BL. Except for NP, where a decrease in average revenue per customer of CZK 20 was found, this value increased slightly for all e-shops.

Costs associated with customers

The differences in these values are only in tens of crowns, but in the total volume such a change can mean a difference of hundreds of thousands of crowns. The price per visit was 0.5 CZK lower for DS and NS e-shops, while for BL it was 0.1 CZK lower.

Figure 4: *Costs associated with customers*

Costs asociated with customers										
	DS		NS		NP		HP		BL	
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
CPV	3,25	3,77	2,05	2,55	2,95	4,00	2,91	2,47	0,45	0,35
CPT	139,75	164,07	129,15	171,25	62,84	104,89	60,34	52,36	201,43	124,25

Source: Own processing

NP paid on average CZK 1 more per visit, and HP CZK 0.5 more. The price per transaction increased for DS, NS and NP between CZK 20 and CZK 45. There was a decrease in CZK 8 for HP and CZK 80 for BL.

Results of selected channels

Here, it can be seen that with the exception of eight cases, the values for all e-shops have increased. In this category, the focus is primarily on financial indicators. DS invested three times more in PPC ads, where it gained seven times more revenue. In the case of social networks, both investments and revenues increased by approximately 500 thousand CZK. It also recorded increased revenues from organic traffic (+10%) and other channels (+70%).

NS invested 3 million more (63%) in PPC campaigns, which generated 70% more revenue. It invested about 400% more in social media, with sales up 100%. Revenue from organic traffic and other channels grew by 10% and 27%, respectively; interestingly, revenue from others grew by a relatively high percentage despite a decrease in traffic of about 5%.

Figure 5: *Results of selected channels*

		DS 2019	DS 2020	NS 2019	NS 2020	NP 2019	NP 2020	HP 2019	HP 2020	BL 2019	BL 2020
Organic	Investment	x	x		x	x	x	x	x	x	x
	Traffic	39 977	65 959	516 728	566 998	17 465	28 661	14 129	17 872	271 722	403 559
	Transactions	2 427	2 468	5 275	5 493	680	807	492	749	579	876
	Revenue	3 145 320	3 466 432	6 615 536	9 135 281	728 192	759 166	579 442	911 605	4 557 382	6 685 819
PPC	Investment	50 000	190 000	4 682 000	7 594 000	181 000	483 000	353 000	374 000	232 000	222 000
	Traffic	14 141	74 883	1 046 974	1 731 824	32 904	87 159	93 568	121 700	256 250	214 752
	Transactions	476	2 799	16 449	23 910	938	2 595	3 707	4 510	429	554
	Revenue	575 957	3 984 157	24 960 440	41 612 499	695 359	1 969 771	3 861 590	4 782 720	4 390 483	4 958 522
SoMe	Investment	650 000	1 167 000	40 000	190 000	53 000	167 000	82 000	91 000	77 000	67 000
	Traffic	135 754	187 392	22 324	77 939	2 891	6 603	3 498	9 649	24 452	30 213
	Transactions	1 425	1 974	329	660	111	154	94	130	34	67
	Revenue	2 077 391	2 683 385	501 647	1 104 729	125 909	154 789	129 238	147 613	239 077	552 718
Other	Investment	x	x	x	x	x	x	x	x	x	x
	Traffic	25 624	31 789	721 857	678 798	25 985	40 063	38 308	38 846	127 996	167 260
	Transactions	681	1 030	14 509	15 392	1 995	2 641	2 916	3 492	492	829
	Revenue	864 332	1 450 026	22 288 377	28 346 491	2 198 540	2 561 274	3 342 730	3 937 062	4 295 058	7 447 941

Source: Own processing

Overall, NP invested 200% more, organic search revenues increased by 5%, other channels by 17%, PPC campaigns invested 160% more and generated 180% more revenues. HP invested an almost identical amount, while organic search revenues grew by 56%, it invested an almost identical amount in PPC and generated 26% more revenues, it invested 10% more in social media and grew revenues by 30%, while revenues from other channels grew by 18%.

Overall, BL invested 20,000 CZK (approximately 7%) less and earned approx. 46% more. Revenue grew for organic traffic (25%), PPC campaigns (14%), social (130%), and other channels (74%).

The author considers it important to highlight that all e-shops saw an increase in revenue from organic search and other channels not directly affected by paid campaigns (PPC and SoMe).

Costs of Paid Channels

Costs tracked were cost per visitor visit (CPV), cost-per-transaction (CPT) and cost per revenue (CRR) for PPC and social media channels.

Figure 6: *Costs of Paid Channels*

		DS		NS		NP		HP		BL	
Cost of paid channels											
		2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
PPC	CPV	3,54	2,54	4,47	4,38	5,50	5,54	3,77	3,07	0,91	1,03
	CPT	105	68	285	318	193	186	95	83	541	401
	CRR	8,68%	4,77%	18,76%	18,25%	26,03%	24,52%	9,14%	7,82%	5,28%	4,48%
SoMe	CPV	4,79	6,23	1,79	2,44	18,33	25,29	23,44	9,43	3,15	2,22
	CPT	456	591	122	288	477	1 084	872	700	2 265	1 000
	CRR	31,29%	43,49%	7,97%	17,20%	42,09%	107,89%	63,45%	61,65%	32,21%	12,12%

Source: Own processing

PPC

DS, NS and HP E-shops registered a reduction of CPV by CZK 1, CZK 0.09 and CZK 0.7. NP and BL registered an increase in CPV of CZK 0.04 and CZK 0.12, respectively. Within the CPT, the values decreased for DS (by CZK 37), NP (by CZK 7), HP (by CZK 8) and most of all for BL (by CZK 140). Only NS registered an increase in CPT (by CZK 33).

CRR values decreased by units of percentage points for all e-shops except NS. For DS it was 3.91, NP 1.51, HP 1.32 and BL 0.8. In the case of NS, it was a slight increase of 0.5 percentage points.

Social Media

CPV was higher for the DS (1.44), NS (0.65) and NP (6.96) e-commerce sites. HP saw a notable decline, down to to CZK 14.1, while BL was down CZK 0.93. The CPT value increased for the DS (by CZK 135), NS (by CZK 166) and NP (by CZK 607) e-shops. The decreases were recorded in the HP (by CZK 28) and BL, where the decrease was very significant, by CZK 1,265.

Changes in CRR for individual e-shops ranged up to tens of percentage points. Increases in values were recorded for the DS (by 12.2), NS (by 9.23), and HP (by 1.8), and the highest for NP (by 65.8). Only BL showed a decrease of 20.09 percentage points.

Summary

The changes for the subcategories vary and have been described in more detail in the previous section, but the most important finding in line with the aim of the paper is quite clear. All e-shops saw an increase in the number of customers, visits, transactions, sales, which is in line with the results of the author's previous research (Klepek and Kvíčala, 2020) and also invested more compared to 2019. The changes in the sub-values for each channel were different; whether they were increases or decreases, in most cases they were rather moderate. However, it is definitely worth noting that all e-tailers saw an increase in sales for all channels. For paid channels, this may be directly affected by increased investment, then it is important to monitor the ratio in which both financials increased to avoid inefficient investment. In addition to an increase in investment, an increase in sales may also be due to an increase in demand for a given product category or an increase in the volume of purchases in e-shops in general. In fact, the Czech e-commerce industry recorded a 26.5% increase in sales in 2020 (Business info, 2020).

Taking only investments and sales into account, all e-shops also recorded higher profits, DS by 71%, NS by 46%, NP by 36.5%, HP by 24.6%, and BL by 47%. In absolute terms, profits increased the most for NS (by CZK 22.8 million), BL by CZK 2 million, DS by CZK 3 million, HP by CZK 1.8 million and NP by CZK 1.2 million.

The impact of the COVID-19 pandemic on e-commerce results is quite clear. In 2020, all e-shops that were significantly affected by the pandemic, for example, by restrictions and other

measures that led to, among other things, a shift of purchases to the online environment, saw an increase in the number of visits, customers, transactions, investment, and sales volumes and, in theory, profits, if we consider only the costs of implementing campaigns and sales. For a full quantification, other costs associated with running an e-shop would also need to be taken into account. From this perspective, it can be argued that the COVID-19 pandemic has had a positive impact on the performance of e-shops. Customer behaviour in the e-shop was very similar in both periods, so no major changes were observed as a result of the pandemic. The costs associated with implementing online marketing campaigns for individual e-shops and specific channels increased and decreased, so the impact of the COVID-19 pandemic cannot be confirmed here.

The research results also suggest a number of managerial implications. One of the main findings is that the shift of business to the online environment is putting pressure on companies to focus on their online activities. This creates more competition in e-commerce, which is followed by increased investment. Therefore, companies should not delay in implementing online marketing activities, in contrast. However, it should also be noted that companies should not follow general recommendations and generalisations but should focus on their own data or data from their product category. This is due to the nature of the product as well as, for example, seasonality or the breadth or depth of the product portfolio. The results also show that increased investment in specific channels may not translate into increased sales from that channel, but may translate into increased sales in other channels such as organic traffic or other channels. Therefore, they should not judge each channel by the same criteria. At the same time, the total costs associated with running an e-shop should also be taken into account, without which it is not possible to make a relevant assessment of whether the e-shop's activity is profitable. Businesses also need to consider the potential of the market and see whether increasing investment also leads to increasing profits, which are limited by the potential of the market. As the volume of competition increases, differentiation, for example in the quality of the service associated with the purchase or the information provided, should also be taken into account, which, according to the findings of the literature search, may lead to a reduction in price sensitivity or an increase in trust towards the retailer. When planning future activities and developing strategies, e-shops must also take into account the current market situation, which is directly affected by pandemic government measures such as the lockout, which has already led to a shift of purchases to the online environment in the past. The more the measures are relaxed, the more offline purchases will theoretically increase, which may lead to a decrease in demand for products in e-shops.

Among the limitations of the research is the fact that the overheads and margins of e-shops are not known, which makes it impossible to estimate the profit of individual e-shops. Comparisons between e-shops are hampered by differences in the products and product categories offered, the size of e-shops, the length of time e-shops have been in business, or brand awareness or market share. Data also do not allow us to assess the impact of individual channels on overall performance or know the specific channels that were included. Nor is the market share of individual e-shops, brand strength, or the activity and strength of competitors known. The research also could not assess the breadth and depth of the portfolio, the price level of the products offered, the nature of the customer segments or the quality of service and level of user-friendliness of the e-shops. Despite these limitations, the author considers the research results sufficiently relevant to assess the impact of the COVID-19 pandemic on customer buying behaviour and e-shop performance in Czech e-commerce.

Literature:

BECKERS, J., WEEKX, S., BEUTELS, P., & VERHETSEL, A. COVID-19 and retail: The catalyst for e-commerce in Belgium? Journal of Retailing and Consumer Services, 62, 102645. (2021).

BHATTI, A., AKRAM, H., BASIT, H., KHAN, A., MAHWISH, S., NAQVI, R., & BILAL, M. E-commerce trends during COVID-19 Pandemic. International Journal of Future Generation Communication and Networking, 13 (2020).

BUSINESS info, https://www.businessinfo.cz/clanky/ceska-i-evropska-e-commerce-zazivaji-boom-e-shopum-pomaha-covid/

CZECH E-COMMERCE in 2020, https://www.ceska-ecommerce.cz/

DINESH, S., & MUNIRAJU, Y. SCALABILITY OF E-COMMERCE IN THE COVID-19 ERA. International Journal of Research -*GRANTHAALAYAH*, *9*(1), 123–128 (2021).

ELRHIM, M., & ELSAYED, A. The Effect of COVID-19 Spread on the E-Commerce Market: The Case of the 5 Largest E-Commerce Companies in the World. SSRN Electronic Journal (2020).

GALHOTRA, B., & DEWAN, A. Impact of COVID-19 on digital platforms and change in E-commerce shopping trends. Fourth International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC), 861–866 (2020).

GEFEN, D.: Customer Loyalty in E-Commerce. Journal of the Association for Information Systems (2002).

GLOBAL ECOMMERCE, https://www.emarketer.com/content/global- ecommerce-2019.

CHOU, S., CHEN, C.-W., & LIN, J.-Y. (2015). Female online shoppers: Examining the mediating roles of e-satisfaction and e-trust on e-loyalty development. Internet Res. (2015).

KLEPEK, M., & KVICALA, D.: How Covid19 Crisis Shaked Customer Loyalty in E-Commerce? In Z. Kvetanova, Z. Bezakova, & A. Madlenak (Ed.), *Marketing Identity: Covid-2.0*, pp. 248–256. Univ Ss Cyril & Methodius Trnava-Ucm Trnava (2020).

KVÍČALA, D., STARZYCZNÁ, H. E-Store Owners' Perception Of Customer E-Loyalty. Decision Making For Small And Medium-Sized Enterprises. 3rd., pp. 328-341. Silesian University In Opava, School Of Business Administration In Karviná (2020).

KVÍČALA, D., STARZYCZNÁ, H. The customer loyalty in e-commerce (loajalita zákazníků v e-commerce). Working papers in interdisciplinary economics and business research, (2020).

KVÍČALA, D., STARZYCZNÁ, H.: Exploring Customers' E-Loyalty In Czech B2c E-Commerce. Dokbat 2020 - 16th Annual International Bata Conference For Ph.D. Students And Young Researchers, 2020. pp. 332-342 UTB Zlín (2020).

LIANG, C.-J., CHEN, H.-J., WANG, W.-H.: Does online relationship marketing enhance customer retention and cross-buying*? The Service Industries Journal* 28, 769–787 (2008).

LIANG, C.-J., CHEN, H.-J., Wang, W.-H.: Does online relationship marketing enhance customer retention and cross-buying? The Service Industries Journal 28, 769–787 (2008).

REDKINA, N. S.: The Development Tendencies of Web Analytics Tools. Automatic Documentation and Mathematical Linguistics, 51(3), 112–116 (2017).

ROMANIUK, J.: Are You Blinded by the Heavy (Buyer) Or Are You Seeing the Light? Journal of Advertising Research. 51.4: 561-56 (2011).

SHAHZAD, A., HASSAN, R., ABDULLAH, I., HUSSAIN, A., & FAREED, M. COVID-19 IMPACT ON E-COMMERCE USAGE: AN EMPIRICAL EVIDENCE FROM MALAYSIAN HEALTHCARE INDUSTRY. Humanities & Social Sciences Reviews, *8*, 599–609 (2020).

SHARP, B., WRIGHT, M., KENNEDY, R., & NGUYEN, C.: Viva la revolution! For evidence-based marketing we strive. Australasian Marketing Journal (AMJ), 25(4), 341–346 (2017).

SRINIVASAN, S.S., ANDERSON, R., PONNAVOLU, K.: Customer loyalty in e-commerce: an exploration of its antecedents and consequences. Journal of Retailing 78, 41–50 (2012).

TAHAL, R.: Loyalty programs in n E-commerce and their Perception by the Young Adult Internet Population. Journal Central European Business Review, 3(2), 7-13 (2014).

TOUFAILY, E., RICARD, L., PERRIEN, J.: Customer loyalty to a commercial website: Descriptive meta-analysis of the empirical literature and proposal of an integrative model. Journal of Business Research, Advancing Research Methods in Marketing 66, 1436–1447 (2013).

VALVI, A.C., FRAGKOS, K.C.: Critical review of the e-loyalty literature: a purchase-centred framework. *Electron Commer Res* 12, 331–378 (2012).

YEN, Y.-S.: How does perceived risks complement switching costs in e- commerce? African Journal of Business Management 5, 2919–2929 (2011).

YUN, Z., & GOOD, L. K.: Developing customer loyalty from e-tail store image attributes. Managing Service Quality: An International Journal, 17(1), 4–22 (2007).

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