

## ANALYZING FUNCTIONS AND SERVICES IN ONLINE TRADING

<sup>a</sup>JIŘÍ KUČERA, <sup>b</sup>PETR ŠMOLÍK

<sup>a</sup>*Faculty of Operation and Economics of Transport and Communications, University of Žilina, Univerzitná 8215/1, 010 26 Žilina, Slovakia*

<sup>b</sup>*School of Expertness and Valuation, Institute of Technology and Business in České Budějovice, Okružní 517/10, 370 01 České Budějovice, Czech Republic*

email: <sup>a</sup>kucera.j@mail.vstecb.cz, <sup>b</sup>29348@mail.vstecb.cz

**Abstract:** Currently, we have eagerly been seizing the opportunity of online shopping. Buying goods via the internet is much more comfortable than hours wasted roaming through the shopping centre. After the economic crisis triggered by the onset of the Covid-19 pandemic, the online world penetrated all spheres of our lives. The presented article explores functions and services to keep customers satisfied and loyal. The methods involved a questionnaire evaluated by correlation analysis, revealing more demanding requirements imposed on e-shops to make the web more credible. Further research should focus on expanding the data portfolio and comparing acquired data with previous results and findings from online traders.

**Keywords:** e-commerce; online consumer behaviour; enterprise; e-shopping competitiveness; customer services

### 1 Introduction

E-commerce has become an integral part of our everyday life (Skorepa and Vochozka, 2008), shaping the future of business strategies of many small and large companies (Horak et al., 2019). Introducing new and advanced internet technologies facilitated transactions between the seller and purchaser (Ahmed, Zairi and Alwabel, 2006). The end of the last decade saw a widespread occurrence of this phenomenon, triggered by the Covid-19 pandemic (Adams and Krulický, 2021). The crisis led to buoyant demand for goods in e-shops, imposing more stringent requirements for the provided services (e.g. home delivery) (Rossolov, Alošynskij and Lobašov, 2022).

According to Pollak et al. (2020), this scenario made companies think about new ways of beating the competition. These advantages involve sale technologies, specific services and goods logistics (Ciechomski, 2014). Increasing customer demands for quality services compel companies to tap into multiple methods to explore the segment, e.g. benchmarking (Rousek and Haskova, 2020).

E-commerce services offer easy access to products. Benchmarking helps the company forecast customer needs and desires to satisfy demands customers impose on e-shops (Krulický and Kypra, 2022).

Consumer behaviour is highly personal in the online world, informing enterprises about customer satisfaction (e.g. a review) (Ai et al., 2017). The company should then accommodate the findings to fight the competition (Krulický and Kypra, 2022).

The article explores whether services and functions provided by e-shops in the Czech Republic after the Covid-19 pandemic keep customers satisfied. To fulfil this objective, I formulated three hypotheses: 1) Do e-shops face more stringent requirements? 2) What functions should e-shops have to be competitive? 3) Can a product review increase an e-shop's reputation?

### 2 Literature research

Online shopping has always been a widely discussed issue (Kucera and Smolkova, 2022), emerging in the first decade of the 21st century. Yet, companies in the online world often could not meet the stringent criteria online shopping imposes (Horak, Machova, 2018). They include a lack of face-to-face contact, information system overloading, exorbitant fees, a strong need for technical support and expert knowledge and management's lack of understanding and reluctance to implement relevant information technologies (IT) (Ahmed, Zairi and Alwabel,

2006). Although the financial meltdown in 2008, which affected all sectors, badly upset online trading, we could not ignore an abrupt surge of newly emerged e-shops, contrary to other industries. This remarkable recovery of e-commerce gave rise to many new online stores going into fierce competition. Small absorptive market capacities provoked increased competitiveness between e-shops (Ciechomski and Wieslaw, 2014). Addressing a massive rise in online shops, Wu and Yu (2020) suggested analysing consumer behaviour during an online search using sequence analysis to explore their trajectory throughout the shopping behaviour. The authors revealed that consumers driven by the overall purchase need followed a more straightforward path than differently orientated groups (Wu and Yu, 2020). Consumers focused on an online survey demonstrated research online, purchase offline (ROPO) trend analysed by Kowalczyk (2019), comparing habits of Poles and Germans. He used average testing and comparative analysis, disclosing customers' background as a decisive factor when shopping online. Other authors consider this cultural aspect only secondary, prioritising the aesthetic and professionalism of the websites. Discussing the aesthetic of e-shops, Nia and Shokouhvar (2020) presented results acquired by stimulus-organism-response (SOR), revealing that the website design is imperative for perceiving the quality and inspiring confidence in the website. Yet, results show that the web's aesthetic slightly affects consumer behaviour, proposing to trade customer enticement for a better shopping experience (Gauri et al., 2021) and gain a competitive advantage.

It involves tailoring innovations, marketing, and collaborative and absorptive relationships to online shopping needs (Chenm Sun and Chen, 2021). Mofokeng (2021) processed data on customer satisfaction when shopping online, disclosing that the information quality, security, range and delivery of products bring comfort and win customer loyalty. Bobalca et al. (2021) examined the customer satisfaction factor, conducting two analyses: factor analysis (describes satisfaction factors) and regression analysis (determines the crucial decisive factors). The results proved the significance of the web's reputation, supplementing Mofokeng's parameters. Ren, Hel and Huang (2021) carried out extensive literature research, devising an assessment method of essential elements (customer, strategy, management and technology) and assessment criteria (system quality, information quality and service quality) shaping the success of e-commerce. Addressing the methods, Svatošová (2022) conducted a questionnaire on changes in online customer behaviour in the Czech Republic during the Covid-19 pandemic, indicating substantial behavioural alterations (Svatošová, 2022). All these parameters, including the confidence factor, reflected in reviews, ensure a successful web and provide customers with satisfaction. (Izogo and Jawawardhena, 2018). Even thumbs-up (together with previous criteria) help enterprises develop strategies to be competitive in online trading (Svobodova and Rajchlova, 2021).

Svatošová's questionnaire (Svatošová, 2022) presents the best method to decide upon the essential elements of a successful e-shop, testing whether product reviews enhance the confidence of the e-shop.

### 3 Data and Methods

#### 3.1 Data

I acquired the relevant data from a questionnaire designed by Google Forms platform from Google, processing them in Microsoft Office Excel. The gathered data and answers formed lines and columns linked to appropriate questions. Their construction and arrangement observed the resulting responses. I divided the questionnaire into four parts, addressing different issues in a logical order to avoid confusion and retain relevance. The first part classified the respondents by age and sex, while the second form comprised four questions concerning experience

with online shopping before and after the Covid-19 pandemic. The third part involved seven questions exploring used services and purchased products, including e-commerce. The fourth form comprised eight questions probing product review platforms focusing on the functionality of the thumbs-up phenomenon. The questionnaire involved 21 queries altogether. The author reserves the right to all acquired data, claiming no use of any external sources.

### 3.2 Methods

I compiled a detailed questionnaire for the data collection, ensuring respondents' anonymity. The method is convenient for its economy and time efficiency, gaining a lot of information from many respondents. The technique can also provide answers to qualitative questions. Then, I compared and evaluated the results, contrasting the responses by their values to answer the hypotheses.

The questionnaire designed in Google Forms involved pertinent questions divided into four distinct categories. I uploaded the results to Microsoft Excel, dividing them into lines and columns; lines refer to the respondents, whereas columns contain the queries. Upon filtering the answers, I calculated numeral values from the responses to the questions via Google Forms. I compared the figures using a table and graph where I presented the results.

### 4 Results

The questionnaire involved 34 respondents including 22 women and 12 men, with the strongest representation between 18 and 25 years. The follow-up age categories are 26-35 and 50 and older. Table 1 compares the number of purchases per month with their increased amount after the Covid-19 pandemic. The lines depict numbers of purchases per month, while columns refer to the increase rates of online purchases.

Table 1: Number of purchases and increase rates of online purchases

Number of purchases	Increased purchases of respondents			
	Greatly	Partly	Slightly	N/A
1x to 2x per month	4(11.77)	7(20.58)	9(26.47)	3(8.83)
3x to 5x per month	2(5.88)	2(5.88)	2(5.88)	1(2.94)
5x and more per month	3 (8.83)	0	0	1(2.94)

Source: Author

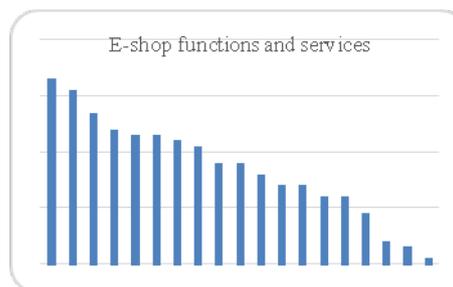
The table suggests 11.77% of respondents 1x to 2x per month in the Greatly entry, 20.58% in the Partly entry, 26.47% in the Slightly entry and 8.83% of respondents answered not at all. The item 3x to 5x per month recorded 5.88% of respondents in the Greatly entry, 5.88% in the Partly entry, 5.88% in the Slightly entry and 2.94% responded not at all. The item 5x and more per month contains 8.83% in the Greatly entry, 0% in the Partly entry, 0% in the Slightly entry and 2.94% not at all.

Subsequently, the respondents recounted the goods frequently purchased on the internet. The results are as follows: 20 respondents most frequently buy electronics, 27 respondents - clothes and shoes, five respondents - sportswear, 11 respondents - food, two respondents - drugs, 11 respondents - drugstore goods, 13 respondents - books, nine respondents - games and one respondent - cloth and haberdashery. Then, the respondents evaluated the service quality of today's e-shops. One respondent pointed out low quality, nine respondents variable, 22 respondents good and two respondents outstanding quality.

Graph 1 depicts the preference of functions and services for e-shops, indicating credit card online payments as an essential function. Reviews rank second, followed by special offers, home delivery, curbside pickup, payment transfer, vouchers, newsletters, PayPal, fidelity rebates, delivery places, SMS notification, watchdog, online counselling, quantity discounts,

telephone counselling, same-day shipping and mail order respectively.

Graph 2: E-shop functions and services

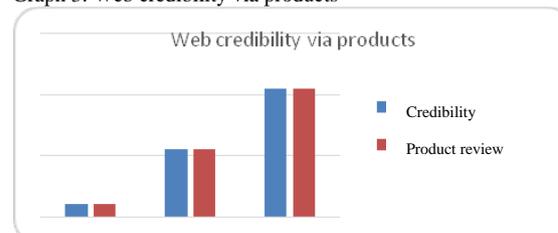


Source: Author

Subsequently, the respondents reflected upon an increase in the service quality of e-shops after the Covid-19 pandemic, indicating that 15 respondents observed no quality increase, 16 discerned a slight quality increase, and three noticed a dramatic increase in the service quality. Regarding reviews, two respondents give no importance to written opinions, 11 think it is not a decisive factor, and 21 respondents attach to the public judgements great importance, including written reviews - 26 respondents, stars - nine respondents and points - 0 respondents. As for thumbs-up, 26 do not think them influential, whereas nine consider them decisive. Regarding if thumbs-up ensures the product quality, 28 respondents expressed a negative opinion. Four said the contrary, while one person pointed out the balance between thumbs-up and thumbs-down. The web reputation is essential for 31 respondents, while three ignore this factor. A good shopping experience always brings 15 respondents back to the website, whereas 19 people do not always revisit the web page.

Graph 2 assesses the web credibility via products, revealing that 21 respondents claimed that product reviews add credibility to the web. Eleven people allocated little importance to product reviews, while two persons paid no attention to written opinions. Furthermore, 21 respondents replied that product reviews are highly impactful on their purchase decisions, 11 people admitted only a slight influence, while two respondents do not feel swayed at all.

Graph 3: Web credibility via products



Source: Author

### 5 Discussion

The findings obtained by the questionnaire survey provided answers to the hypotheses.

#### *Do e-shops face more stringent requirements?*

The results (Table 1) show that e-shops have encountered stricter requirements, facing a massive influx of online purchases. 53% of respondents declare that they buy goods online more than before the Covid-19 pandemic.

#### *What functions should e-shops have to be competitive?*

E-shops must provide all necessary services and functions to fight the competition, including online credit card payment, reviews, special offers, home delivery, free delivery, curbside

pickup, payment transfer and vouchers. These essential elements ensure the competitiveness of the e-shop.

#### *Can a product review increase e-shop's reputation?*

Graph 2 suggests that an e-shop's reputation scales with product reviews, indicating a strong correlation between public judgements and an e-shop's credibility.

Svatošová (2022) arrived at the same results, arguing that 40% of the respondents preferred online shopping after the Covid-19 pandemic. Our research revealed that 53% of the respondents increasingly went on shopping online.

## 6 Conclusion

The present paper explored whether e-shop's functions and services offered on company websites are up to customer satisfaction.

The objective was thereby fulfilled. The result chapter suggests graphs indicating a significant increase in online purchases after the Covid-19 pandemic, imposing stricter requirements on the provided services. E-shops must serve functions including credit card payment, product reviews, special offers etc., to guarantee competitiveness. The findings also revealed that the web reputation scales with review mood.

The present work can be a stepping stone for companies not to waste time and money analysing the online environment. All the suggested results are within the limits of one questionnaire, requiring more inquiries and comparisons to test the acquired data in practice. This issue needs extensive research on expanding the data portfolio and subsequent testing in a corporate system.

#### Literature:

- Adams, D., & Krulicky, T. (2021). Artificial Intelligence-driven Big Data Analytics, Real-Time Sensor Networks, and Product Decision-Making Information Systems in Sustainable Manufacturing Internet of Things. *Economics, Management, and Financial Markets*, 16(3) 81-93.
- Ahmed, A.M., Zairi, M., & Alwabel, S.A. (2006). Global benchmarking for internet and e-commerce applications. *Benchmarking-An International Journal*, 13(1-2), 68-80.
- Ai, Q.Y., Zhang, Y.F., Bi, K.P., Chen, X., & Croft, W.B. (2017). Learning a Hierarchical Embedding Model for Personalized Product Search. *Proceedings of the 40th International Acm Sigir Conference on Research and Development in Information Retrieval*, 40, 645-654.
- Bobalca, C.S., Tugulea, O., Ifrim, M., & Maha, L.G. (2021). Analysing the predictors of the young buyers' satisfaction in the e-retailing apparel sector. *International Journal of Retail & Distribution Management*, 49(12), 1597-1620.
- Ciechowski, W. (2014). E-shops as a condition for the evolution of the trade. *Logforum*, 10(1), 109-115.
- Gauri, D.K., Jindal, R.P., Ratchford, B., Fox, E., Bhatnagar, A., Pandey, A., Navallo, J.R., Fogarty, J., Carr, S., & Howerton, E. (2021). Evolution of retail formats: Past, present, and future. *Journal of Retailing*, 97(1), 42-61.
- Horak, J., & Machova, V. (2018). Business enterprises and generators of their value. *18th International Scientific Conference on Globalization and Its Socio-Economic Consequences*. Žilina, Slovakia: Žilina University of Žilina, 547-554.
- Horak, J., Machova, V., & Vrbka, J. (2019). Analýza súčasného stavu trhu práce v kontextu digitalizácie, automatizácie a robotizácie [Analysis of the current state of the labor market in the context of digitization, automation and robotics]. *Trendy v Podnikání*, 9(2), 44-52.
- Chen, H.C., Sun, S.Y., & Chen, L.S. (2021). Impact of Capabilities on Firm Value Offering in the E-Commerce Service Setting. *International journal of Information Systems in the Service Sector*, 12(3), 19-33.
- Izogo, E.E., & Jayawardhena, C. (2018). Online shopping experience in an emerging e-retailing market. *Journal of Research in Interactive Marketing*, 12(2), 193-214.
- Kalinova, E., & Milova, T. (2022). Loyalty cards as a form of sales promotion for retail chains and their impact on customers. *Littera Scripta*, 15(1), 1-18.
- Kowalczyk, J. (2019). The Evolution of Online Consumer Behavior: The ROPO and Reverse ROPO Effect in Poland and Germany. *Journal of Management and Business Administration-Central Europe*, 26(3), 14-29.
- Krulicky, T., & Kypra, M. (2022). Price's availability drugstores and the differences between online and offline shopping. *Littera Scripta*, 15(1), 19-32.
- Kucera, J., & Smolkova, M. (2022). Online communication within a company: Case study of small company. *Littera Scripta*, 15(1), 35-55.
- Li, C.Y., & Ku, Y.C. (2018). The power of a thumbs-up: Will e-commerce switch to social commerce. *Information & Management*, 55(3), 340-357.
- Mofokeng, T.E. (2021). The impact of online shopping attributes on customer satisfaction and loyalty: Moderating effects of e-commerce experience. *Cogent Business & Management*, 8(1).
- Nia, M.R., & Shokouhyar, S., (2020). Analyzing the effects of visual aesthetic of web pages on users' responses in online retailing using the VisAWI method. *Journal of Research in Interactive Marketing*, 14(4), 357-389.
- Pollák, F., Dobrovic, J., Vachal, J., Strakova, J., & Partlova, P. (2020). Crisis management of corporate reputation-analysis of selected e-commerce entities in times of global pandemics. *IDIMT 2020: Digitalized Economy, Society and Information Management - 28th Interdisciplinary Information Management Talks*. Linz, Österreich: Trauner Verlag Universitat, 297-304.
- Ren, X.C., He, J., & Huang, Z.L. (2021). An empirical study on the behavior of e-commerce strategic planning based on deep learning algorithm. *Information Systems and E-Business Management*, 1-19.
- Rossolov, A., Aloszynski, Y., & Lobosov, O., (2022). How COVID-19 Has Influenced the Purchase Patterns of Young Adults in Developed and Developing Economies: Factor Analysis of Shopping Behavior Roots. *Sustainability*, 14(2), 941.
- Rousek, P., & Haskova, S. (2020). *The methodology of simple comparisons as a replacement for comprehensive benchmarking in controlling*. SHS Web of Conferences: Innovative Economic Symposium - Potential of Eurasian Economic Union (IES). Les Ulis, France: EDP Sciences.
- Skorepa, L., & Vochozka, M. (2008). Several notes about food e-commerce in the Czech Republic. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis*, 6(14).
- Svatosova, V. (2022). Changes in Online Shopping Behavior in the Czech Republic During the COVID-19 Crisis. *Journal of Competitiveness*, 14(1), 155-175.
- Svobodova, Z., & Rajchlova, J. (2021). Strategic Behavior of E-Commerce Businesses in Online Industry of Electronics from a Customer Perspective. *Administrative Sciences*, 10(4), 78.
- Wu, I.C., & Yu, H.K. (2020). Sequential analysis and clustering to investigate users' online shopping behaviors based on need-states. *Information Processing & Management*, 57(6), 102323.

#### Primary Paper Section: A

#### Secondary Paper Section: AH