Impact of COVID-19 Pandemic on Use of ICT in Marketing in Montenegro

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Abstract: *COVID-19 caused significant changes in daily lives, including, but not limited to the limitation of movement and working from home. As a consequence of spending more time at home, more time is spent in front of internet-enabled devices. This paper is trying to address whether the COVID-19 pandemic caused accelerated application of ICT in marketing in Montenegro. One of the findings presented in the paper is that micro-companies had a significant increase in internet marketing budget, while mini-companies reduced spending on it. Using data from original research, the clear conclusion is that the pandemic had such influence in Montenegro, especially in the field of e-commerce through increased presence in its own online shops.*

1. INTRODUCTION

Novel Corona Virus Desease 2019 (COVID-19) became a worldwide pandemic, as stated by the World Health Organization, in March 2020, affecting all aspects of human life, including business activities (Craven et al., 2020) and the global economic situation (Carlsson-Szlezak et al., 2020). More research in health science will be preferred, but in the area of economic, management, and business studies, the impact of COVID-19 is also important to be analyzed (Manajemen, 2020).

The main method of this research was a scientific research (survey) based on an original questionnaire, created for this research. Based on the survey, respondents present data on the use of ICT technologies in marketing (advertising on digital media, use of influencers, online sales, etc.) before the pandemic and during 2021. By comparing the responses "before" and "after" the pandemic, an attempt is made to determine the increase in the use of ICT technologies in marketing as a consequence of the COVID-19 pandemic. The assumption is that the growth is a consequence of the pandemic, given that the "before" and "after" periods are relatively short, and no significant increase in the use of these technologies is expected as a result of the passage of time.

The sample in this research is a non-probability convenience/volunteer one. The author had access to a limited number of contacts (email addresses) of companies to whom he sent an invitation to participate in the research (convenience sample). Those companies that were interested in participating in the research responded to the invitation (volunteer sample). Considering that there is no central database with contacts of all companies, the author of the paper could not apply probability sampling.

The anonymous survey was created on the Google Forms survey platform and consisted of 28 questions, including classification questions. The questions were closed-ended with suggested

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answers. The survey questions, in addition to the information needed to classify the sample, were focused on comparing the use of information and communication technologies before and during the pandemic for the purpose of sales and advertising and concluded with questions about post-pandemic plans.

The adequacy of the sample could have been affected by the fact that the survey was distributed via email, so it preferred companies that are more oriented towards the use of ICT technologies in their daily business. Nevertheless, the number of companies to which the survey was sent is significant (about 5% of the total set), and 12% of the companies to which it was delivered responded to the survey.

According to the data of the Statistical Office of Montenegro (MONSTAT), there were 37,255 registered business entities in Montenegro in 2020, while according to the data of the Central Bank of Montenegro on December 31, 2020, in Montenegro, there were 18,846 blocked legal entities and entrepreneurs, that is, there were 18,409 active companies. The survey was sent to more than 850 email addresses (that is, 4.6% of active companies), and was conducted in the period from August 30th until September 23rd, 2021. The survey has been answered by 102 respondents, i.e., the sample consists of 12% of addressed companies or 5.54‰ active companies (0.54%).

Also, according to the data of the above-mentioned statistical office in Montenegro in 2021, 99.4% of companies used computers in their operations, of which 100% had access to the Internet. According to the same survey (Maltez, 2021), 84.6% of companies had their internet portal, 62.5% of companies had links or company references on social network profiles, and 73.0% provided access to product catalogs or price lists.

The geographical analysis of the sample shows that 89 are companies from the central region of Montenegro (the municipalities of Podgorica, Nikšić, Danilovgrad, and Cetinje), 9 from the south (municipalities of Bar, Budva, Herceg Novi, Kotor, and Tivat) and 4 from the north region (Pljevlja, Berane and Bijelo Polje).
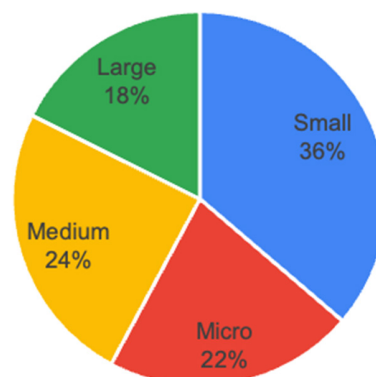

Figure 1. Analysis of the sample by company size
Source: Own research

The classification by size of the company, as shown in Figure 1., was done according to the definition of small and medium-sized companies published in the Recommendation of the European Commission number 2003/361/EC, as summarized in Table 1, which classified companies into micro, small, medium and large companies. According to the EU classification, the sample included 22 micro, 37 small (micro and small enterprises make up 60% of the sample),

25 medium (22% of medium enterprises in the sample) and 18 large enterprises (or 18% of the sample). For comparison, the structure of companies by size in Montenegro in 2020, according to MONSTAT data (Raičević, 2021), was 98.9% of small companies, 0.9% of medium, and 0.2% of large companies. It is important to note that in its statistics, MONSTAT recognizes only small, medium and large enterprises.

Table 1. Definition of company size

Category	No. of employees	Revenue
Large	over 250	over 50 mil. €
Medium	50 to 250	10 mil. € to 50 mil. €
Small	10 to 50	2 mil. € to 10 mil. €
Micro	up to 10	up to 2 mil. €

Source: Own research

The survey questions for the classification of the sample by activity sector, as shown in Figure 2, were done following the simplified Classification of Activities KD 2010, which fully corresponds to the Classification of Activities NACE Rev.2 used in EU countries (Eurostat, 2008). Simplification was done to simplify the questionnaire and the classification was reduced from 21 sectors to 7.
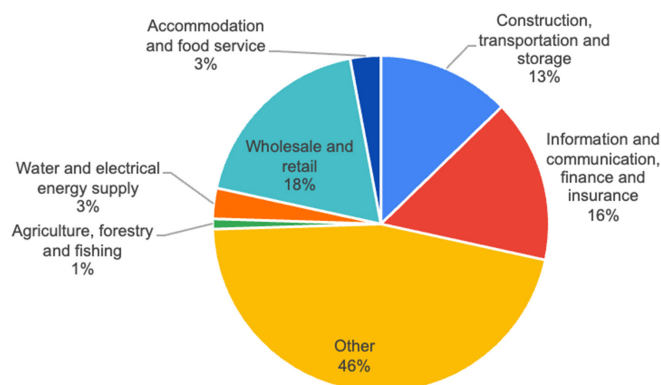

Figure 2. Analysis of the sample by industry

Source: Own research

The analysis of the research results was carried out in the Microsoft Excel software, while the statistical processing of the results was done in the IBM SPSS software.

2. RESEARCH HYPOTHESIS

The hypothesis of the work is defined as "the COVID-19 pandemic and the measures used to suppress it have significantly accelerated the digitization of the service-trade sector through the increased use of ICT technologies in marketing". This will represent an alternative hypothesis in statistical hypothesis testing.

3. RESEARCH RESULTS

The results of the research indicate a significant growth in the number of companies that invested in internet advertising only among micro-enterprises, as shown in Figure 3. In contrast to micro-enterprises, small enterprises reported a decline in the use of the Internet for advertising, while there were no changes in medium-sized and large enterprises.
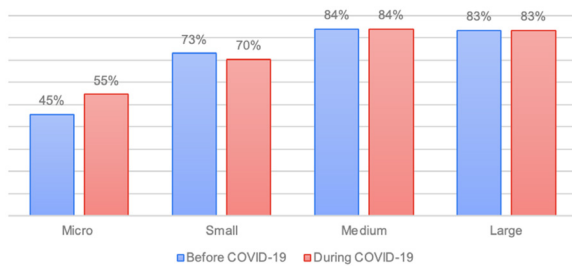
Figure 3.

Internet use for advertising by company size
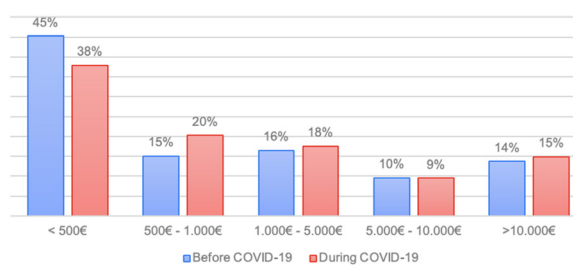
Source: Own research

Figure 4.

Internet marketing budget

Source: Own research

Based on the answers to the question on the budget used for internet advertising, as well as the number of companies that used the internet for advertising before and during the pandemic, it is concluded that companies that recognized the advantages of internet advertising before the pandemic itself, invested additionally in this type of advertising during the pandemic through increasing the budget, while companies that had no experience with internet advertising had a hard time deciding to invest in this type of advertising, not wanting to risk a potential loss of investment, which is shown in Figure 4.
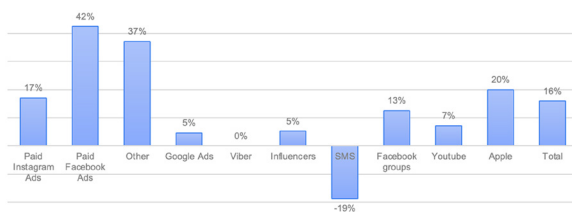

Figure 5.

Comparison of the use of individual ICT channels for advertising before and during the pandemic
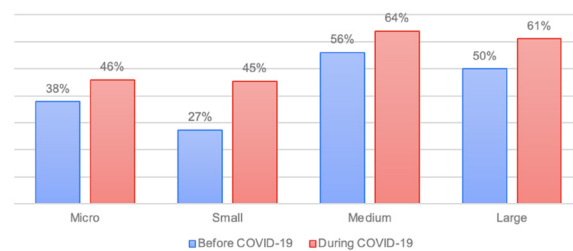
Source: Own research

Figure 6.

Use of Internet for sales by company size

Source: Own research

The aforementioned conclusion is supported by the data from Figure 5, which illustrates a significant increase in the use of various digital communication channels, with the only exception being the usage of SMS.

A significant result of the research, in terms of proving the hypothesis of the work, provides an answer to the question of using the Internet to sell products before and during the COVID-19 pandemic, which is shown in Figure 6. In contrast to the use of ICT technologies, where growth was noted practically only in the segment of micro enterprises, the answers to the question about the use of the Internet for selling products before and during the pandemic show growth in all categories of enterprises.

Based on this data, it can be concluded that the restrictions on the movement of the population as well as the shortening of the working hours of shops have forced companies to offer their products on the digital market, which in the virtual world can work 24 hours a day, 7 days a week.

This conclusion is aligned with the data showing an increase of 28% in the number of companies that sold products through their internet portal, indicating a large fragmentation of online

stores, where practically every company has its store, as depicted in Figure 7. This approach makes it difficult for consumers to buy products of different categories because they cannot do it in one "virtual" place.
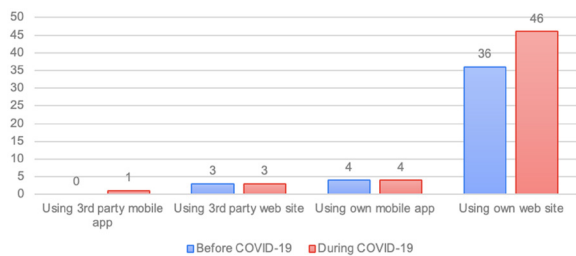

Figure 7.

Ways to use Internet for sales
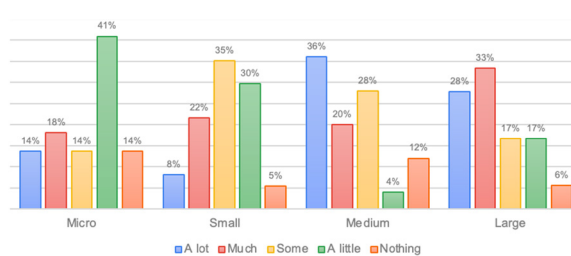
Source: Own research

Figure 8.

Perception of benefits
from internet advertising by company size

Source: Own research

There is a clear conclusion that the popularity of online shopping in Montenegro would improve significantly with the introduction of multi-brand online stores such as, for example, Amazon.

Questions about the perception of the importance of Internet advertising and Internet sales differ significantly depending on the size of the company. Companies that used these types of ICT marketing had the option to answer the question about importance with "none" (1), "a little" (2), "some" (3), "much" (4) and "a lot " (5).

From Figure 8, it can be concluded that the perception of the importance of Internet advertising increases with the increase in the size of the company. It can be assumed that this perception is in direct correlation with the funds invested in digital marketing, as can be seen in Figure 9, that is, that micro-enterprises do not invest enough in digital marketing to experience its benefits.
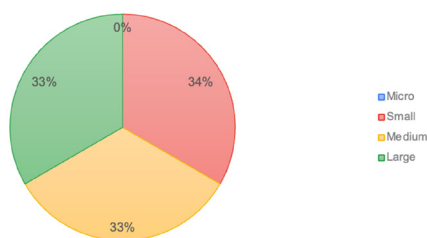

Figure 9.

Division of entities with
digital marketing budget over 5,000€ per year

Source: Own research
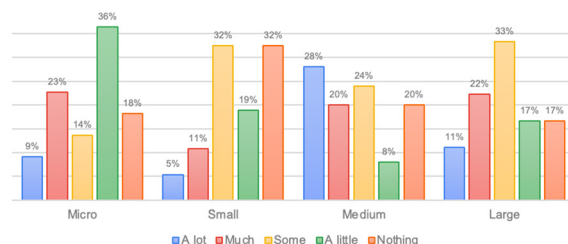
Figure 10.

Perception of benefits
from internet sales by company size

Source: Own research

The size of the company also influenced the perception of the importance of the impact of sales using ICT technologies on the company's business, with the same trend as with the use of digital marketing, as shown in Figure 10.

As shown in Figure 11., the rating of the most useful ICT channel for accessing customers by company size generally corresponds to the perception of the term "benefit" from Internet advertising, where we have an increase in the rating of usefulness with the increase in company size.

When evaluating the most useful channel for accessing customers, a significant percentage of micro-enterprises rated the mobile application as the most useful channel. However, it should be emphasized that most of the surveyed micro-companies answered the question "Which mobile application did you use?" with "Instagram", which is a digital advertising platform.
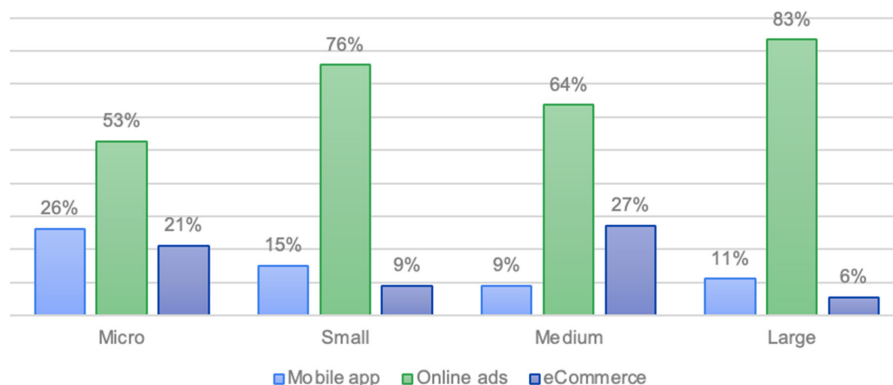

Figure 11. Evaluation of the most useful ICT approach for customers
Source: Own research

4.   RESEARCH IMPLICATIONS

According to Abiad et al. (2020), the coronavirus has forced consumers to stay at home, causing a change in customer behavior (Zwanka & Buff, 2021), which has forced retailers to modernize and offer their products online, which is in line with this research and research by Vázquez-Martínez et al. (2021), which shows an evident shift in purchasing habits of customers from physical to online stores. Also, this research states that especially micro and small, companies that have not previously used ICT technologies in advertising and sales were cautious and unwilling to invest in, for them, new and unproven technologies, which is in line with research by Vuță et al. (2022).

5.   PERSPECTIVES IN THE APPLICATION OF ICT TECHNOLOGIES IN MARKETING

The survey showed that the majority of surveyed companies used their internet portal for online sales. However, statistics in Montenegro and around the world show that consumers prefer a different approach.

Finding One: In Montenegro, as many as 68% of consumers buy via smartphone (Investitor, 2021), which indicates that the correct approach to consumers in Montenegro would be through a mobile application, not an internet portal. This is, perhaps, partially reflected in the intention of an additional 20% of surveyed companies to use their application for mobile phones in the near future.

Finding Two: According to the information from Statista (2019), the most popular trading platform in the United States by far is Amazon (80.64%), followed by Walmart with 46.08% and eBay with 33.28%. Customers prefer multi-brand platforms for many reasons, such as delivery security, return of defective products, product quality, as well as reviews from other customers. If we comprehend the primary causes of this connection, it becomes evident that Montenegro's online sales could experience significant growth with the presence of a multi-brand trading platform. According to Lazaroiu et al. (2020), such a platform would facilitate client access and build greater trust in online shopping. In addition to the mentioned advantages, such a platform

would allow more companies to access clients using ICT technologies, eliminating the need to invest in the necessary prerequisites for starting such sales.

It is clear from the research that, although they follow modern trends in the use of ICT technologies in the world, marketing and sales managers in companies in Montenegro need a little more education and information about the needs of the market, i.e., consumers.

Looking further, technological disruptions such as Artificial Intelligence (AI), Internet of Things (IoT), Big Data Analytics (BDA) have offered digital solutions to attract and maintain a user base (Anshari et al., 2019). New technologies provide a competitive advantage (Rouhani et al., 2016) by enabling users access to the offer of products and services (Balaji & Roy, 2016). According to Gans (2016), in the current business scenario, fierce competition and technological disruptions have changed the way companies operate. A globally oriented approach to clients focused on customers' needs, plays a key role in the company's growth (Vetterli et al., 2016). Artificial intelligence is a widely used new technology that helps organizations monitor real-time data to analyze and quickly respond to customer requests (Wirth, 2018). It offers companies insight into consumer behavior essential to attracting and retaining customers. One such example is the online service Netflix, in which movie and series recommendations are one way of encouraging users to continue using that service. AI prompts the customer to take the next step and redefines the overall experience (Verma et al., 2021).

6.   DISCUSSION AND CONCLUSION

For the purposes of statistical analysis of this research, Student's t-test and McNemar's test were used, while McNemar's test is recognized as more adequate for "YES/NO" surveys (Pembury Smith & Ruxton, 2020). McNemar's test is a test for evaluating the significance of the difference in the frequencies of a dichotomous characteristic of two dependent samples and is often called the Test of Independence in two dependent samples.

If we compare the results of the same group "before" and "after", as shown in Table 2, or if we compare the same group in two different activities, then it is likely that there is a correlation between the first and second result (Petz et al., 2012, p. 264).

Table 2. Results on a sample of 102 surveyed companies

		During COVID-19 pandemics		
		Use	Do not use	Total
Before COVID-19 pandemics	Use	41	2	43
	Do not use	13	46	59
Total		54	48	102

Source: Own research

We define the null hypothesis as H_0: **the COVID-19 pandemic did not influence the increase in the use of ICT technologies in marketing in Montenegro**, while the alternative hypothesis is defined as H^a: **the COVID-19 pandemic influenced a significant increase in the use of ICT technologies in marketing in Montenegro**.

In this particular case, by using a statistical tool the p-value (the probability that the results from the sample data occurred by chance) was determined as p=0.0098, leading to the conclusion that the null hypothesis can be rejected, that is, that the COVID-19 pandemic did influence the

increase in the use of ICT technologies in marketing in Montenegro, which confirms the hypothesis of this research.

In order to further confirm whether the mean values of these two groups of data (before and during the COVID-19 pandemic) are statistically significantly different from each other, the Student's t-test was used. The null and alternative hypotheses were set, similar to the previous test, that there will be no increase in the use of ICT technologies in marketing in Montenegro, as a result of the COVID-19 pandemic, or alternatively, that there will be an increase.

To quantify the results of the research, the answers "yes" and "no" are reduced to "1" and "0". In the statistical tool, the value of t (ratio of mean difference and standard error) is 2.16, and the degrees of freedom df = 101.

Using Student's t-distribution table, it is concluded that the p-value is between 0.025 and 0.01. Since the p-value is also below 0.05 in this case, we again conclude that the initial hypothesis can be rejected in favor of the alternative hypothesis.

Following this research, and based on the presented results of the same, theoretical knowledge and opinions regarding digital marketing and the impact of the COVID-19 pandemic on it, it is possible to conclude that **"There is an evident increased growth in the use of ICT technologies in digital marketing during the COVID- 19 pandemic. This is particularly reflected through the use of the Internet for the purchase of goods and services, but also a greater online presence in advertising."**

Social networks Instagram and Facebook are especially popular for advertising on the internet in Montenegro with SME companies, through paid ads, while large companies prefer to use influencers on social networks. Online sales are mostly done through their internet portals, although micro-enterprises prefer the use of social networks as a kind of combination of advertising and sales.

Companies in Montenegro adapted to the social specifics of the market during the COVID-19 crisis through an increased presence on the Internet, either in the form of promotional activities on social networks or through online sales platforms.

There is obvious room for progress in the use of ICT technologies on the Montenegrin market through greater representation of applications for smart mobile phones and the eventual creation of multi-vendor online stores.

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