

TRŽNI UČINKI UPORABE IKT V GOSTINSTVU ČRNE GORE - PRIMER MONTENEGRO STARS HOTELS GROUP

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Povzetek:

Namen - Glavni problem raziskave je kvantifikacija vpliva IKT in marketinških učinkov v hotelski industriji Črne gore.

Oblikovanje - Cilj je bil ugotoviti tržne učinke uporabe sodobnih tehnologij kot tudi trenutno raven in različni načini uporabe IKT v črnogorskih hotelih.

Metodologija - Kvantitativna raziskava je bila izvedena s spletnim vprašalnikom v prvem četrtletju 2021. Pridobljeni podatki so bili obdelani s programoma IBM Statistical Package for Social Science (SPSS) in Excel. Statistična obdelava rezultatov raziskave je vključevala korelacijsko in regresijsko analizo, ki je preverjala razmerje med marketinškimi učinki in stopnjami uporabe IKT.

Pristop - Glavni cilj empirične raziskave je bil ugotoviti različne vplive IKT na poslovne procese in zagotavljanje hotelskih storitev ter povezanost IKT s strateškimi vprašanji upravljanja hotelskih sistemov. Raziskava je namenjena oceni vpliva uvedbe IKT na trženjsko uspešnost ter uspešnost črnogorskih hotelov v finančnih in nefinančnih rezultatih.

Ugotovitve - Ta raziskava je ena prvih raziskav v Črni gori na področju gostinstva, ki nudi praktične dokaze o vplivu IKT sistemov na tržne učinke najluksuznejših hotelov v Črni gori. Raziskava je identificirala diskriminirane rešitve IKT v hotelih s tremi, štirimi in petimi zvezdicami ter analizirala njihov potencial za izboljšanje marketinške uspešnosti hotelov.

Rezultati - Dobljeni rezultati kažejo na neposredno povezavo med različnimi stopnjami vlaganj v IKT rešitve in realizacijo višjih poslovnih prihodkov ter boljših tržnih učinkov za hotelsko podjetje. Opozarjajo tudi na obstoj določenega časovnega okvira, ko gre za hotelske prihodke in tržne učinke.

Omejitve / implikacije raziskave - Turizem in gostinstvo sta ena glavnih strateških usmeritev celotnega gospodarskega razvoja Črne gore, tako da marketinške aktivnosti črnogorskih hotelov pomembno sodelujejo v skupnih marketinških aktivnostih, ki naj bi Črno goro bolje pozicionirale na mednarodnem turističnem trgu.

Praktične in/ali družbene implikacije - Empiričnih raziskav, ki se ukvarjajo z vprašanjem stopnje uporabe IKT v hotelski industriji v državah v tranziciji, je relativno malo. Ta raziskava se osredotoča na več sistemov IKT, ki jih uporabljajo hotelski objekti, in njihove marketinške učinke.

Izvirnost raziskave/Izvirnost/Vrednost - Ta raziskava je pomembna, ker menedžerjem v hotelski industriji zagotavlja zanesljive informacije za boljše razumevanje uporabe različnih IKT rešitev in tržnih rezultatov. Rezultati raziskave se lahko uporabijo tudi pri oblikovanju IKT strategije na področju turizma in gostinstva.

Ključne besede: Gostinstvo, IKT, hoteli, tržni učinki, Črna gora.

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MARKET EFFECTS OF ICT APPLICATION IN THE HOSPITALITY INDUSTRY OF MONTENEGRO - EXAMPLE OF MONTENEGRO STARS HOTELS GROUP

Abstract:

Purpose - The main problem of the research is the quantification of the impact of ICT and marketing effects in the hotel industry of Montenegro.

Design - The aim was to determine the market effects of the application of modern technologies as well as the current level through different ways of applying ICT in Montenegrin hotels.

Methodology - Quantitative research was conducted with an online questionnaire during the first quarter of 2021. The obtained data were processed using the IBM Statistical Package for Social Science (SPSS) and Excel. Statistical processing of research results included correlation and regression analysis that examined the relationship between marketing effects and levels of ICT application.

Approach - The main goal of the empirical research was to identify the different impacts of ICT on business processes and the provision of hotel services, and the connection of ICT with strategic issues of hotel systems management. The research is intended to assess the impact of the adoption of ICT on the marketing performance and performance of Montenegrin hotels in financial and non-financial results.

Findings - This research is one of the first research in Montenegro in the field of hospitality, which offers practical evidence of the impact of ICT systems on the market effects of the most luxurious hotels in Montenegro. The research identified discriminated ICT solutions in three, four, and five-star hotels and analyzed their potential for improving the marketing performance of hotels.

Results - The obtained results indicate a direct connection between different levels of investment in ICT solutions and the realization of higher business revenues and better market effects for the hotel company. They also point to the existence of a certain time frame when it comes to hotel revenues and market effects.

Research limitations / Implications - Tourism and hospitality are one of the main strategic directions of the overall economic development of Montenegro, so that the marketing activities of Montenegrin hotels significantly participate in the overall marketing activities that should better position Montenegro in the international tourism market.

Practical and/or Social implications - There is a relatively small number of empirical studies that address the issue of the level of application of ICT in the hotel industry in countries in transition. This research focuses on several ICT systems used by hotel facilities and their marketing effects.

The originality of the research / Originality / Value - This research is relevant because it provides managers in the hotel industry with reliable information to better understand the application of different ICT solutions and market results. The results of the research can also be applied when formulating the ICT strategy in the field of tourism and hospitality.

Keywords: Hospitality industry, ICT, hotels, market effects, Montenegro.

DOI: 10.5281/zenodo.8247435

Introduction

The hotel and catering industry is one of the industries that is closely related to the progress in the use of ICT. In recent decades, ICT has been seen as a strategic resource and tool. The technological development of ICT is increasingly recognized as a key component of the strategic plan of a hotel business (Reino et al., 2013; Law, Buhalis, Cobanoglu, 2014; Rasoolimanesh et al., 2019). The issue of ICT application in the hotel industry is multidimensional because it includes various external and internal influences, which are manifested through technical, technological, economic and social aspects. An analysis of the available literature shows that a certain author points out that it is necessary to carefully analyze the different understandings of the application of ICT in hotels by employees. This is especially important for hotel owners and managers because in cases of inviting understandings or recognizing the benefits of ICT, there is a real usefulness or facilitation of work and a greater degree of synchronization of different business activities (Ip, Leung, Lav, 2011; Zsarnoczki, 2018). Examples from large hotel industries in different countries across America and Europe show how the application of ICT is through different customer relationship management systems, central reservation systems, computer supply chains or management of the most important hotel resources and even to the level of automation of various administrative activities in hotels (Khan, Hossain, 2018). Some authors point out that there are still differences in the application of ICT in developed and developing countries. They believe that the application of ICT in countries in transition should take place differently, ie that key functions in hotels should be examined first and then integrated with the relevant ICT (Mupfiga, 2015; Al-Naimat et al., 2020). computer supply chains or management of the most important hotel resources and even to the level of automation of various administrative activities in hotels (Khan, Hossain, 2018). Some authors point out that there are still differences in the application of ICT in developed and developing countries. They believe that the application of ICT in countries in transition should take place differently, ie that key functions in hotels should be examined first and then integrated with the relevant ICT (Mupfiga, 2015; Al-Naimat et al., 2020). computer supply chains or management of the most important hotel resources and even to the level of automation of various administrative activities in hotels (Khan, Hossain, 2018). Some authors point out that there are still differences in the application of ICT in developed and developing countries. They believe that the application of ICT in countries in transition should take place differently, ie that key functions in hotels should be examined first and then integrated with the relevant ICT (Mupfiga, 2015; Al-Naimat et al., 2020). Due to limited financial and human resources in developing countries, including Montenegro, it is believed that Montenegrin hotels will continue to use ICT systems at the core business level.

To understand how ICT affects business processes and communication with strategic issues in hotels, this research focuses on hotel companies and how they perceive the conceptualization of modern information and communication technology. The research aimed to assess the impact and importance of modern ICT in the work of "Hotels Group Montenegro Stars" DOO, Budva (Hotel Splendid, Hotel Montenegro, and Hotel Blue Star) providing a clearer perspective on the impact of ICT and suggesting possible solutions. problems that may arise. The presented literature review reveals three critical areas in the relationship between ICT and marketing performance in the context of the hotel industry: limitations in assessing marketing performance, choice of ICT dimensions, and limitations that exist in the context of developing countries. Based on the above, it is evident that there is a clear need for further research on the relationship between ICT and hotel performance. Most authors agree that this relationship is extremely complex due to different analytical approaches and management practices of complex hotel systems. The main goal of the research is to get a picture of the actual application of ICT and marketing effects in the leading Montenegrin hotels through the analysis of the obtained data. That is, a conceptual research framework is proposed that considers the application of ICT and its market effects. This framework views ICT systems and hotel characteristics as independent variables, while the market views effects as a dependent variable. Based on the previously defined problem, subject, and goal of the research, one main hypothesis was formulated, which reads:

- H0: Greater investment in ICT allows for greater market effects on the hotel business.

Based on the main hypothesis, two auxiliary hypotheses were derived:

- H1: There is a positive correlation between the realized revenues of the hotel and the market effects of the hotel company.
- H2: There is a positive correlation between hotel characteristics and ICT use.

The empirical part of the research was realized through an online survey as a research tool for primary data collection. The questionnaire refers to the main research question that aimed to check the correlation between the use of ICT and marketing effects on the example of leading Montenegrin hotels. Eight basic dimensions of ICT as financial and non-financial measures of marketing effects were examined. The research sample consisted of 125 respondents. The management of three hotels belonging to the company "Montenegro Stars Hotels group" DOO Budva was interviewed. The snowball sampling technique was applied as a non-probability method based on the recommendations of the initial subjects to obtain another subject. The paper is conceived in five parts. After the introduction, the first part of the paper provides an overview of current research related to different ways of applying ICT in the hotel industry. The second part of the paper gives an overview of the methodology and results of empirical research. After that, in the third part, a discussion of the obtained results and concluding remarks are given, which give suggestions related to the further application of ICT in the hotel industry.

Literature review

When it comes to the application of ICT in the hotel industry, it can be said that it began half a century ago when more intensive application of various central reservation systems, global distribution systems, but also hotel resource management systems and financial information systems. The main goal of the application of such technologies was to create the integrity and synchronization of various business functions, accelerating the overall business. An analysis of the available literature shows that the use of the Internet in tourism and hospitality is mentioned only in the early 1990s, when there was a kind of revolution in the global hotel industry (Ip, Leung, Lav, 2011). By analyzing the available literature in the field of ICT application in the hotel industry, three different approaches to examining the relationship between ICT and market effects can be identified (Mihalič, Praničević, Arnerić, 2015). First, the results of some research indicate that different ICT systems are significant resources of competitive advantage (Karadag, Dumanoglu, 2009). Most authors who support this way of thinking argue that the impact of ICT systems on competitiveness can be direct and indirect (indirect) and recognize investing in ICT as the ability to reduce costs and increase productivity. In contrast, some researchers argue that investments in ICT do not have a significant impact on the value or effect of an enterprise and its competitive advantage, generally supporting the theory of the ICT paradox. On the other hand, some earlier research indicates that ICT negatively affects business performance by suggesting that in the period after the implementation of ICT companies regularly experience a decline in competition either in market share or profit (Kettinger et al., 1994). However, almost all research emphasizes the importance of ICT for the tourism and hotel industry. Certain research has shown that ICT is intensively applied in tourism and hospitality (Mihalič, Praničević, Arnerić, 2015), but the tourism and hotel industry also has an impact on the development of ICT applications (Seng, 2015). Globally, the rapid development of ICT has changed the very structure of the tourism industry (Reino et al., 2013).

The available literature is predominantly focused on research that studies how ICT can create problems or that systems are broader than the technology itself and involve human interaction within a social context. Some authors who have analyzed the impact of ICT in hotels consider broader business issues and how ICT affects them, while others examine staff roles and the social context of technology (Brotherton, Turner, 2001; Luck, Lancaster, 2003; Sigala, Lockwood, Jones, 2001). Even where there are problems with ICT, they are usually seen as training issues and not as a possible symptom of a fundamental conflict between ICT and what is being sought. It seems that it is not accepted that the application of ICT is wrong or that they are poorly implemented or integrated, but it seems to be a common opinion that people should change their fields of action to respond to the demands of technology. Of the cited articles, in one article that discussed staff, a solution to the problem of adapting technology to enterprises by additional staff training was proposed. This adjustment is not intended to diminish the importance of training. As some authors note even where technology fits the task well, a lack of knowledge will mean that technology is not used well (Lam, Cho, Qu, 2007). This illustrates the demand for both technical and social elements. Personal experience in ICT support and training has enabled us to observe the challenges of users to learn to use ICT systems. In many cases, the problem was not the users but the systems, which did not follow their expectations or match the way they acted on the company as a whole. These observations were returned to the program team and requested changes to the software to allow it to more closely follow the mental models of the users. Troubleshooting was often addressed through training, thus reducing the number of support calls while still meeting business requirements. Alternatively, where software changes were not possible, training could be modified to identify users' mental models, address their deviations from software models, and facilitate users' interactions with the software. These and similar experiences have indicated that the integration of ICT into business depends on the mental models of users as well as business requirements. It has become important to discover how these factors interact with the wider hotel business environment and to see whether managers of modern hotel systems experience modern ICT systems.

Methodology

The main goal of the research was to analyze the issues defined in the introduction, ie how the level of application of different ICT solutions in the hotel industry of Montenegro can affect marketing effects, ie different marketing metrics. Quantitative research was conducted among the employees of three hotels of the company "Montenegro Stars Hotel Group" using an online survey questionnaire distributed via e-mail during the first quarter of 2021. The main reason for using the online questionnaire is that it allows fast collection of large amounts of data, and easy coding and analysis. The data obtained were processed using the IBM Statistical Package for Social Science (SPSS) version 20 software. Statistical analysis of the obtained research results included determination of the mean value, chi-square test, t-test for the independent sample, and Eta Square. All questions in this questionnaire were formulated in accordance with the main research hypothesis, ie they aimed to examine the correlation between the application of different ICT solutions and the achieved effects of marketing in representative Montenegrin hotels. Data analysis began with descriptive statistics to identify the profile of respondents and the overall picture of the level of use of ICT respondents and their marketing performance. The next part of the data analysis conducted parametric statistics using an Excel package in which charts were also made, to investigate the links between the use of ICT and marketing metrics. These statistics were also used to quantitatively investigate whether any factors related to hotel characteristics affect ICT use and market effects. The questionnaire was also intended to identify the characteristics of hotels and respondents that may have an impact on the use of ICT in these hotels. Employee managers in the company "Montenegro Stars Hotels group" DOO Budva all

three hotels were interviewed. The target population for this study was four- and five-star hotels in Montenegro. These categories were chosen. After all, they are considered the most innovative and dynamic hotels, because they have a wider range of potentials and opportunities, so they are more inclined to adopt ICT. In addition, these hotels have unique characteristics given their size and the types of tourism they deal with.

Results

In the following, statistical analysis (correlation and linear regression) is used between the variables: investments in ICT, marketing, ie. market effects, and realized financial effects, ie. revenue of the hotel business.

Table 1. Overview of the relationship between investment over time in Marketing, IT, and revenues in the period 2011-2020. years

Years	Investing in ICT (x 1000)	Market effects (x 1000)	Revenues (x 1000)
2011	377 €	561 €	18.200 €
2012	337 €	526 €	18.900 €
2013	316 €	599 €	20.517 €
2014	365 €	534 €	18.033 €
2015	330 €	447 €	17.961 €
2016	336 €	479 €	18.815 €
2017	328 €	482 €	19.478 €
2018	337 €	549 €	20.407 €
2019	324 €	592 €	19.978 €
2020	311 €	359 €	6.679 €

Source: Research results

Correlation analysis of the data obtained in Table 1 analyzed the relationship between the observed parameters and formed a correlation matrix shown in Table 2. Pearson's correlation coefficient was used to calculate the degree of correlation, which if the coefficient is +1 is a perfect positive correlation if -1 is a perfect negative correlation, and if it is about 0 there is no correlation between the variables.

Table 2. Correlation matrix between variable years / Marketing / ICT and Revenue

	Investing in ICT (x 1000)	Market effects (x 1000)	Revenues (x 1000)
Investing in ICT (x 1000)	1		
Market effects (x 1000)	0,324921	1	
Revenues (x 1000)	0,274822	0,809414	1

Source: Research results

The data shown in Table 2 confirm the existence of a positive, although a not very large correlation between volatile ICT investments and marketing investments (0.323421), as well as between ICT investments and hotel revenues (0.274822). However, there is an extremely large (0.809414) positive correlation between variable investments in achieving market effects and the realized revenues of the hotel company.

Given that, there is a positive, although a not very significant positive correlation between variable ICT and market effects indicates that greater investment in ICT allows for the greater market performance of the hotel business. The correlation coefficient between ICT and investment in achieving market effects in the amount of 0.323426 confirms that the economic effects of the interdependence of these variables are visible only after a few years, which was discussed in more detail in previous chapters of this paper. The correlation coefficient confirms the auxiliary hypothesis H1. The high degree of positive correlation confirms the assumption that the realized hotel revenues are related to the manifested market effects (0.809414). This confirmed the initial hypothesis H0. It was proved that there is a correlation and linear regression was applied in further analysis. The linear regression method was also performed on the data shown in Table 3 and shown in Chart 1.

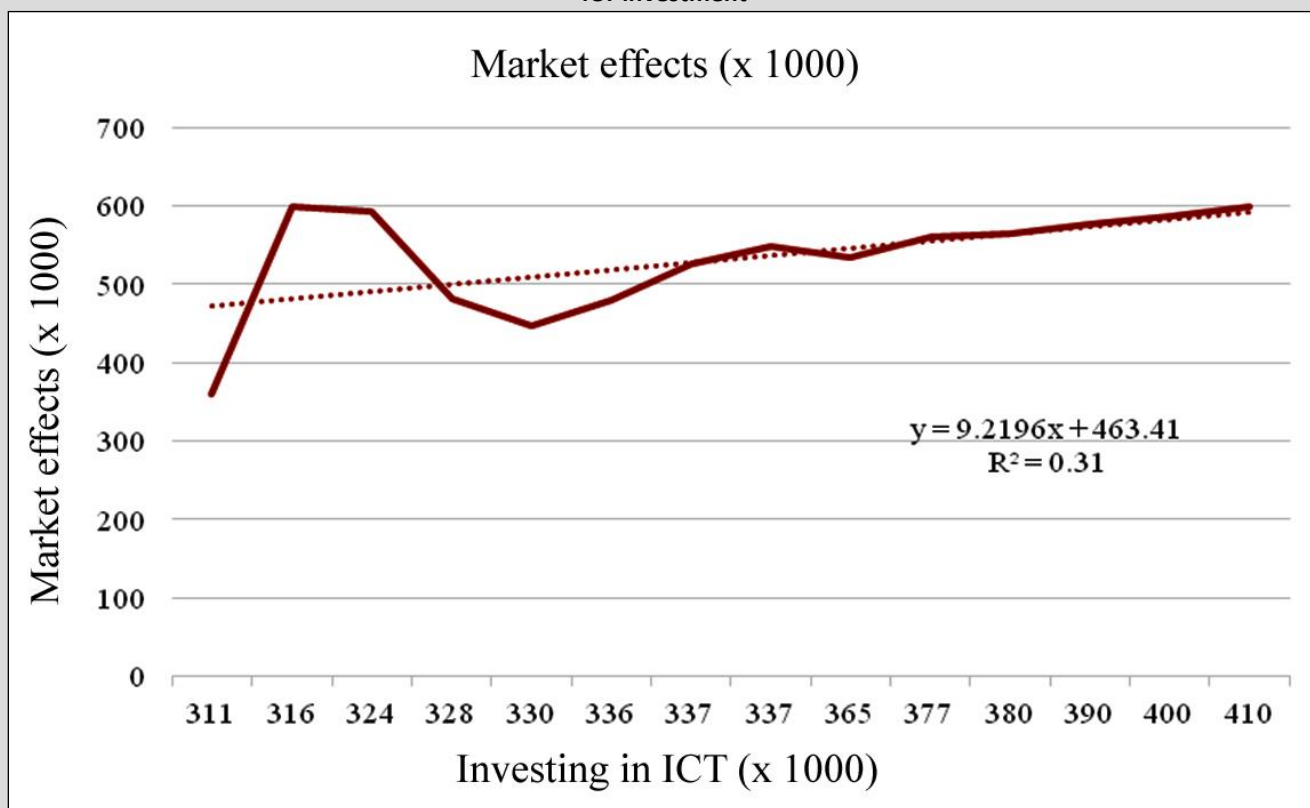
Table 3. Relationships between investments in ICT and market effects of forecasting them

Investing in ICT (x 1000)	Market effects (x 1000)
311	359
316	599
324	592
328	482
330	447
336	479
337	526
337	549
365	534
377	561
380	564
390	576
400	588
410	600

Source: Research results

Using linear regression, Table 3 shows the ratios for different amounts of ICT investment (from 311,000 to 410,000 euros) and the results of forecasting investments in achieving market effects.

Chart 1. Overview of the dependence of ICT investment and market effects as a result of regression analysis for different amounts of ICT investment



Source: Research results

The linear regression method was also performed on the data shown in Table 4 and shown in Chart 2.

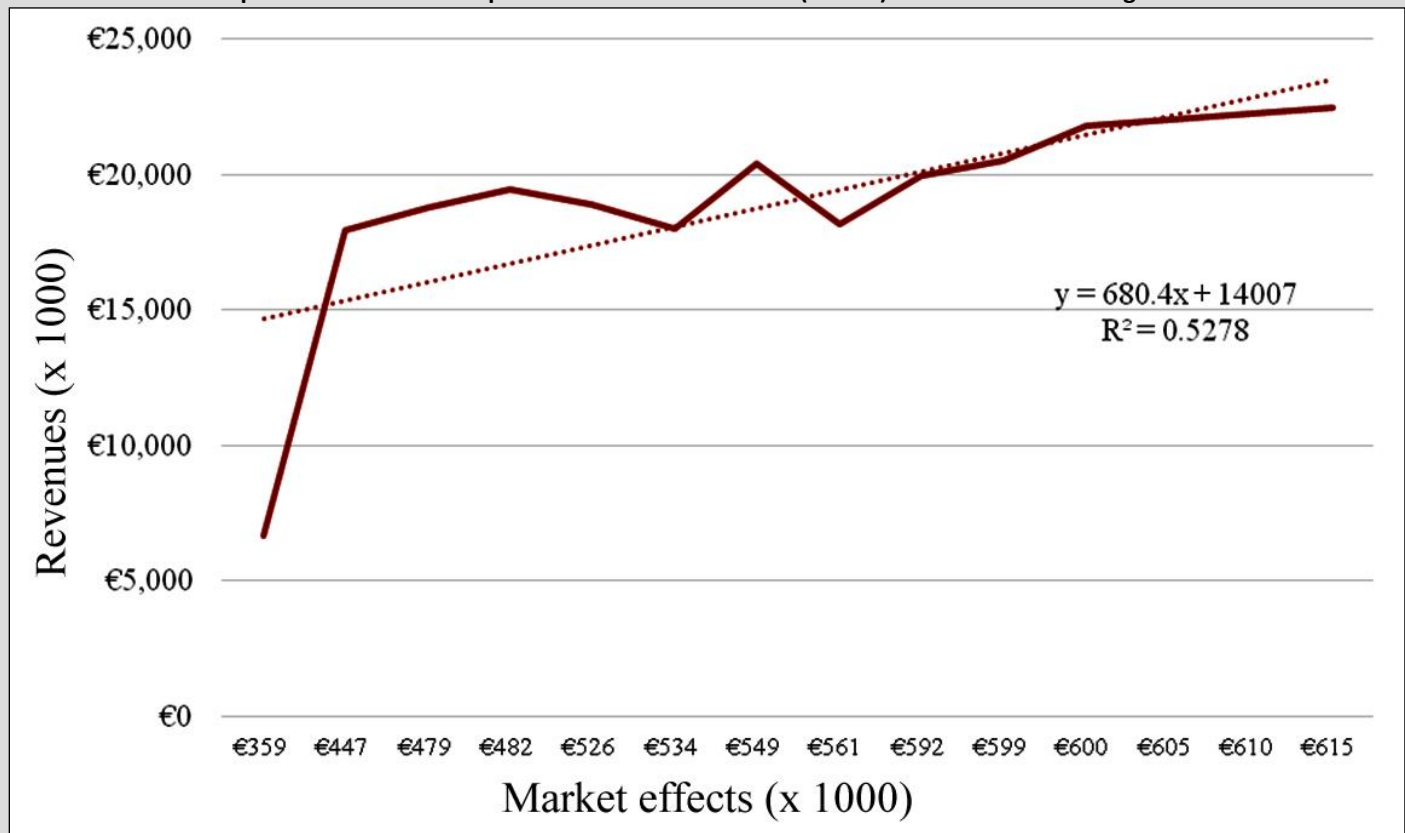
Table 4. Relationships between Market Effects (x 1000) and Hotel Company Revenue

Market effects (x 1000)	Revenues (x 1000)
359 €	6.679 €
447 €	17.961 €
479 €	18.815 €
482 €	19.478 €
526 €	18.900 €
534 €	18.033 €
549 €	20.407 €
561 €	18.200 €
592 €	19.978 €
599 €	20.517 €
600 €	21.806 €
605 €	22.031 €
610 €	22.255 €
615 €	22.479 €

Source: Research results

It has been proven that there is a correlation between investing in market effects (investing in marketing) and realized revenues, the question arises as to what this connection is, whether and in what form a connection can be established mathematically. Linear regression was used to answer this question. Based on the data from Table 4, a scatter plot and an equation linking the variable investment in marketing (x) and company profit (y) were obtained.

Chart 2. Representation of the dependence of Market effects (x 1000) and Revenue with regression results



Source: Research results

If we compare the obtained equation with the linear equation $y = ax + b$, it can be concluded that the parameters $a = 680.4$ (x1000) and $b = 14007$ (x1000). If the investment in marketing were zero euros, a profit of 14007 (x1000) euros can be expected. This is not possible, because we know that today we cannot imagine any business without investing in marketing.

If the investment in marketing were increased by 1 (x1000), an increase in annual revenue by 680.4 (x1000) could be expected. The 680.4 (x1000) parameter is very important as it gives instructions on whether to invest in marketing and what to expect. The obtained equation is linear, while the points shown on the graph represent the real situation and are not in a straight line, which is why it is not possible to confirm but a certain profit can be expected because the representativeness is 0.5278, which shows a reliability of 52.78%.

Table 4 presents possible marketing investments and we get the values for the profit we can expect. The question is which is more reliable, whether to invest in the marketing of 600 (x1000) or 615 (x1000). The investment of 600 (x1000) is more reliable because it is closer to the interval from 359 to 599 (x1000) based on which the equation was obtained.

One may invest in marketing and the company gets into a situation when the market is saturated, that is. we can invest in marketing as much as we want but no market would be affected by that marketing in that case the equation would be $y = \text{const}$. Therefore, all forecasts that are related to investment in marketing, and are closer to the interval based on which the equation is obtained are always more reliable than values that are far from that interval

Discussion

This empirical research tried to determine the existence of a direct link between the application of various ICT solutions in the hotel industry in Montenegro and the marketing effects of the analyzed hotels. The obtained results of the conducted research indicate the need for an integrated approach when it comes to different ways of applying modern technologies in the hotel business. Similar research in this area confirms that the intensity of application of various ICT solutions in the hotel industry is growing, but due to its dynamism, this area is still insufficiently researched and requires further research. For this research, ICT was analyzed from the perspective of the hotel industry and the managerial aspect. Other stakeholders such as guests, service users, business partners, and vendors of various ICT solutions, training, and coaching service providers were not considered. It must be noted that their views and attitudes in terms of the application of different ICT solutions in the hotel industry are likely to differ, but this research focuses on the impact of ICT in hotels at the strategic level. Also, the analysis of the obtained research results leads to certain conclusions that indicate that it is necessary to consider factors such as the time frame and the total number of financial investments in ICT. It can be said that modern ICT solutions are one of the basic means for achieving better business results and a more favorable position in the market. A large number of sources from the available literature confirm such a statement. However, the results of the research confirm the need to analyze the application of different ICT solutions and that the intensity of implementation, funds allocated for investment in ICT solutions, and time frame also have different impacts and can lead to certain variations in business results. The analysis of the obtained research results about the set research hypotheses can include the following findings related to the application of various ICT solutions in the hotel industry of Montenegro and the achieved market effects:

The main research hypothesis (*H0: Higher investment in ICT allows greater market effects on the hotel business*) can be fully accepted based on the data shown in the previous tables which indicate that there is a significant positive correlation ($r = 0.809414$) between different levels of investment in modern ICT solutions and realized market effects, ie realization of higher revenues of the hotel company. Also, the results of regression analysis confirmed the main research hypothesis.

The first auxiliary hypothesis (*H1: There is a positive correlation between hotel revenue and market effects of the hotel company*) can be partially accepted because based on the data shown in previous tables and graphs it is evident that there is a positive correlation, but not very significant when it comes to revenue hotel and market effects ($r = 0.323426$) which leads to the conclusion that the economic results represent the ratio of these variables that are visible but only after a certain time frame of a few years.

The second auxiliary hypothesis (*H2: There is a positive correlation between hotel characteristics and ICT use*) can be partially accepted because the data obtained in the tables confirm the existence of a positive, although a not very large correlation between volatile ICT investment and marketing investment ($r = 0.323421$), as well as between investments in ICT and realized revenues of the hotel company ($r = 0.274822$).

The results of empirical research indicate the connection between the application of different ICT solutions and the achieved marketing effects of this application. This research practically tested the model related to the evaluation of marketing performance in the field of hospitality, but it can also be used as a confirmation of another model related to marketing efficiency (Ambler, Kokkinaki, 2002). Certainly,

this research can be further used as a solid basis for future research that will analyze the issue of quantification of marketing in the field of hospitality under the influence of modern ICT.

Conclusion

We are witnessing the exponential application of modern information and communication technologies and the Internet is leading to a kind of revolution in the international tourism and hotel market. Different possibilities of applying modern ICT solutions in modern business are one of the most important challenges faced by owners and managers in the hotel industry. Modern technologies lead to the creation of new scientific paradigms for the development of tourism and hospitality based on modern technical and technological trends. The results of this study indicate that awareness of the importance of the application of different ICT in the hotel industry is at a fairly high level. The strategic directions of Montenegro's development are based on tourism and hospitality as the main economic activities, so that the marketing effects of representative hotels play an important role in positioning Montenegro as a recognizable tourist destination. On the other hand, it is evident that the hotel industry is developing and becoming extremely competitive under the influence of modern ICT, which requires an optimal combination of available technologies in order to provide better service and achieve better results in the market. The success of any modern business system, including hotels, increasingly depends on the best combination of different ICT solutions to meet customers and their diverse needs. It is for this reason that it is concluded that the efficient and effective application of ICT solutions in the field of marketing is extremely important for business. The focus of the research was on assessing the impact of the application of different ICT solutions in representative Montenegrin hotels and marketing effects and performance in financial and non-financial results. The results of the research indisputably indicate that there is a connection between the degree of application of different ICT solutions and the marketing effects of the analyzed hotels. The results of this research can be used by hotel owners and managers to intensify the application of various ICTs or in formulating ICT strategies, all in the direction of achieving operational and strategic business goals. The conducted research is based on several most important ICT systems that are in use in hotels and catering facilities. However, it should be noted that there are relatively few similar studies on the quantification of the application of ICT solutions in developing countries. This research is a solid basis for further research in this area because it indicates the link between the application of modern ICT systems and market effects achieved by leading hotels in Montenegro. This research also contributes to the methodology of examining the contribution of ICT to marketing performance within the hotel industry. In addition to the above, it fills the gap in the requirements for research into the application of ICT in different business contexts but also illustrates the impact of modern technologies on achieving significant marketing effects in the hotel business. This research also opened some new questions regarding the application of ICT, which should be further considered in the context of modern technologies at all levels of management in the hotel business. Certainly, this research found that ICT systems are potential elements of improving the marketing performance of hotel companies, which can encourage hotel managers to explore better ways to invest in ICT systems and help the tourism industry make decisions about restructuring ICT strategies in hotels. Results of the research also contribute to ICT management, which in turn raises other issues to be analyzed in future research, while providing empirical evidence on critical issues related to ICT adoption to improve organizational performance. Further research could be focused on measuring ICT and measuring marketing performance from the same sample based on the perspective of customers and/or the perspective of employees. This would help more in researching the relationship between ICT and the marketing scale of performance. Another study could test the relationship between ICT and internal marketing (i.e., productivity and performance of service innovation) based on employee perspectives. Research could also be conducted to measure the satisfaction of external customers with the adoption of ICT from a customer perspective. Future research can therefore be conducted in the field of tourism to determine whether a hotel is competitive and whether it can attract and satisfy potential visitors.

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