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TOURISM IN FUNCTION OF DEVELOPMENT OF THE REPUBLIC OF SERBIA

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**THEMATIC
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**UNIVERSITY OF KRAGUJEVAC
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THE ROLE OF E-COMMERCE IN TOURISM DEVELOPMENT OF THE REPUBLIC OF SERBIA *

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Abstract

Tourism belongs to the group of information-intensive sectors and the development of information-communication technologies significantly changed its structure. The development of e-commerce has influenced its implementation in tourism where it is observed like a tool for improving the efficiency of business activities. However, the intensity of e-commerce use in tourism depends on many factors, such as institutional, technological and organizational. This paper aims at analysing the role of different e-commerce models in creating the business performance of companies. The initial assumption in this paper is that introduction of e-commerce has positive effect on business performance of tourism companies. The assumption is tested on a sample of 32 tourism companies that operate on the Serbian market, regarding the relevant statistical methods. The observed period is from 2010 to 2015.

Keywords: *e-commerce, tourism, efficiency, business performance*

Introduction

The appearance and development of information-communication technologies has caused the implementation of e-commerce in different areas of business and society. As a result of that, various models of e-commerce have continuously been developed. E-commerce has an effect on business operations of enterprises in many fields of economy. Tourism, as an innovation-intensive sector of economy, has indicated the adequate potential for implementation of e-commerce. The introduction

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of e-commerce in tourism influences the change of task planning and control, communication with customers, as well as monitoring of business performance. Thus, e-commerce in tourism is observed as key instrument for development of global marketing, attracting and retaining customers and improving business performance. Taking into account these facts, the aim of this paper is to undertake the analysis of possibilities of e-commerce implementation in tourism. This paper analyses the influence of e-commerce on tourism development in the Republic of Serbia, regarding numerous studies that deal with e-commerce influence on business performance in tourism enterprises. The paper is divided into two parts. The first is theoretical one and it analyses the development of e-commerce concept. The starting point is different definitions of this phenomenon considering all benefits of e-commerce implementation. The latest results of research on topic relationship of e-commerce and tourism are also analysed in the theoretical part of paper. The second part of the paper is a practical one. The sample of the research, time framework and research methodology are defined here. Analysing the sample of 32 companies in tourism field in period 2010-2015 by use of regression models, hypothesis concerning influence of e-commerce on business performance of companies in tourism sector is tested.

Literature overview

The development of e-commerce concept

The definition of e-commerce is not simple, because this field has rapidly changed. Besides the technological aspect, it is necessary to stress the economic one and define e-commerce as a new market that offers new types of commodities and services, for example digital products through digital processes. The sellers of physical commodities are involved in digital processes like on-line ordering, market research and payment which are all parts of this new market.

Chronologically observed, e-commerce has evolved in its development (Ćuzović & Sokolov Mladenović, 2013a). This evolution has come the way since “Sputnik” launching that indicated transition of industrial to post-industrial or informatics society. With the development of satellite and cable television the epoch of global communication was created. Scientific and technological progress in the field of micro-electronics and implementation of information-communication technologies like EAN, EPOS, EFTPOS, EDI and EDIFACT, leads to reengineering the trade and

other actors in commodities trade and affirm innovation strategy concept (Ćuzović & Sokolov Mladenović, 2013b). Although this strategy brings many types of functional innovation in business operation of traditional trade institutions, with Internet development there comes a new trade institution – e-commerce (Ćuzović & Sokolov Mladenović, 2014). It is budding scientific discipline that has developed since the nineties of the last century, while its real expansion happened with the Internet started to be used in business. Although the IT as the base of e-commerce was developed in technical science, ARPANET (*Advanced Research Project Agency Network*) was the beginning of the Internet within the United States Department of Defence where e-commerce was treated as a field with interdisciplinary character related to numerous sciences and disciplines. The interdisciplinary nature of e-commerce with other disciplines like business informatics, distribution marketing, information systems, e-business, IT in economics, e-marketing, etc., is the subject of discussion in the academic field (Turban & King, 2011).

The relevant literature in the field of e-commerce agrees with the statement that it is a term with multiple meanings. Having more meanings makes it difficult to give a unique definition of e-commerce. Therefore, the particular meaning of e-commerce is to be reviewed relying on modern theory and progressive practice. Turban, McLean and Wetherbe (2011, p. 168) define e-commerce like doing business transaction through telecommunication network, primarily the Internet.

In a narrow sense, e-commerce could be observed like transaction based on digital market. Because of that, various theorists and practitioners use the term *e-business*, like a synonym for e-commerce, which includes not only sales and purchase, but customer services, cooperation with business partners and electronic transaction within an organization as well. However, e-commerce should not be identified with e-business. They are two rather different business activities (Ćuzović et al., 2012).

The still present question in definitions of e-commerce and e-business is: Why theorists from Anglo-Saxon speaking countries, where these word originate from, did not put an equal between these two terms? As an argument, it is emphasized that it is a new (young) science, the so called digital economy, which draws information obtained by computer and other sciences. That is why technical aspect prevails in e-commerce definition (Ćuzović & Sokolov Mladenović, 2012; Ćuzović & Sokolov Mladenović, 2013c).

E-commerce refers to business activities of traders who offer customers what other produced or services which other provide. On-line trader is intermediary between producers and customers, which makes it especially interested in own website and focus on market. The advantage of e-commerce can be:

- fast access to information – better availability of products and services on a market,
- fast and simple transfer of documentation between stakeholders,
- liability of market place thanks to information,
- more possibilities for analysis of product and services and exchange of experience,
- the possibility of market research and sales according to market demand and
- developing new business activities.

In contrast to the advantages offered by e-commerce, the most common risks of e-commerce result from misuse and destruction of data and invasion of privacy of clients. Finally, e-commerce is often identified with e-business, which essentially is not true, although e-commerce is the part of e-business. E-commerce and e-business are overlapping within digital system of organization, where, for example, internal system of organization is linked with suppliers and customers (Sokolov Mladenović & Ćuzović, 2015; Ćuzović & Sokolov Mladenović, 2015). E-business implementations turn into e-commerce when value is exchanged.

There are numerous basic models of e-commerce. According to relevant literature, the following models stand out (Turban et al., 2010):

- *Business-to-Business B2B* (electronic trade between business systems). The subject of trade activity and other subjects in this model perform their activity through EDI as information-communication technology or extranet through the Internet.
- *Business-to-Consumer B2C* (electronic trade between business system and customers digitally) includes all business transaction between business subjects and customers. This model of e-commerce is focused on marketing sales of products and services. The best-known companies in the world are: Dell, Amazon.com and eBay.
- *Business-to Administration B2A* means exchange of commodities between companies and public bodies.

- *Consumer-to-Administration C2A*. This model is promoted by the European Union with aims to reduce complex administrative procedures on relations administration-citizens. Based on the EU directives, this model is a platform for development of the project of “information society”.
- *Consumer-to-Consumer C2C*. In this case, an individual sells products and services to other individuals. Specificity of this model is “P2P” (*Peer to Peer*). Electronic auctions are the most famous activities of C2C commerce. e-Bay is the well-known auction website.
- *Consumer-to-Business C2B model*. In this case, a customer expresses interest in a certain product or service and business system tends to provide the requested product or service.
- *Government-to-Consumer G2C*. In this case government (administration) provides services to citizens and other consumers by electronic way.

According to some authors, it is possible to distinguish the following models of e-commerce, such as (Kenmeth et al., 2004): a) *Business to its employers B2E* (trade inside company). It is a business system which uses intern electronic transaction in order to improve level of efficiency of an employee. Although it is classified in the model of e-commerce, it is the e-business. b) *Collaborative commerce (c-commerce)*. In this model of e-commerce, business partners collaborate electronically and the example is supply chain management (SCM). c) *Mobile commerce (m-commerce)*, when e-commerce is performed in a wireless environment and use mobile phone for the Internet access.

E-commerce and tourism

Information technologies have greatly transformed tourism (Werthner & Klein, 1999). With the development and use of the Internet in 1990s, tourism has become surrounded with intensive implementation of information technologies that open up numerous opportunities and challenges (Buhalis & Law, 2008). E-commerce developments come with the Internet application and affect the change in the way of collecting and using information by tourists (clients). Firstly, the Internet includes a large amount of information which for many people represent “external memory”, that is an integral part of everyday life (Xiang et al., 2015). Accordingly, a number of advanced search tools become the dominant approach to products in tourism. Secondly, enormous growth of social network has greatly changed the dynamics of on-line communications

(Bizirgianni & Dionysopoulou, 2013). Thirdly, development of mobile computers, especially smartphones and applications for travel, creates new opportunities for making decisions about travel and choice of tourism destinations. Starting from the previous facts, authors Xiang et al. (2015) identify the tendencies in tourism based on the Internet and e-commerce implementation: 1) the Internet use for travel planning with a positive tendency, 2) notable contrasts and similarities in the behaviour of different generations regarding the use of the Internet, 3) social networks, mobile phones and new channels of communication support new customer behaviour, 4) customers are continually observed in order to obtain an adequate tourist product.

Internet and e-commerce implementation in tourism leads to the creation of the global tourism industry which shows the following characteristics (Travel & Tourism-Economic Impact 2016, Annual Update Summary):

- Travel & Tourism's direct contribution to the world gross domestic product (GDP) and employment in 2015 was US\$2.2 trillion (2015 prices) and 108 million jobs, respectively.
- Taking its wider impacts, including both indirect and induced contributions, Travel & Tourism's total contribution to the global economy in 2015 was US\$7.2 trillion (2015 prices), which equates to 9.8% of the total GDP. In terms of employment, in 2015, the Travel & Tourism sector supported 284 million jobs, or 1 in 11 of all jobs in the world.
- 2.5 million new jobs were generated directly in the sector in 2015, taking the number of direct jobs to 108 million. In total, 7.2 million new jobs were created as a result of direct, indirect and induced activity.
- The total contribution of Travel & Tourism to employment grew by 2.6% in 2015, while the total GDP contribution grew by 3.1% – faster than wider economic growth (2.3%) for the fifth consecutive year.
- In GDP growth terms, the Travel & Tourism sector outperformed several other major economic sectors in 2015, including manufacturing and retail. In employment growth terms, the Travel & Tourism sector outperformed various other select industries in 2015, including the financial services, education and health care sectors.
- At a country level, direct Travel & Tourism GDP growth outpaced economy-wide GDP growth in 127 out of 184 countries covered by the annual Economic Impact Research in 2015. Examples of economies where Travel & Tourism most markedly outperformed the

wider economy in 2015 included Iceland, Japan, Mexico, New Zealand, Qatar, Saudi Arabia, Thailand, and Uganda.

- The sustained demand for Travel & Tourism, coupled with the sector's ability to consistently outperform the wider global economy and be resilient in the face of shocks, continues to underline its great significance and value as a key sector for economic development and job creation throughout the world.

Numerous studies point to the fact that the Internet and e-commerce changed consumer (clients) needs, who are now becoming less loyal, often go on shorter trips and have less time between the selection and consumption of tourist products (Chan et al., 2015; Cheng & Cho, 2010; Zehrer et al., 2011). Also, the Internet and e-commerce create new way for satisfying consumer needs and enable computerization all over tourism value chain, which results in numerous value-generated strategies (Gretzel, 2011):

- Value extraction – the example of this strategy, that increases business efficiency and reduces expenditures, is the use of an automation process, like self-registration of guests in hotels;
- Value capture – the example is data collecting in order to estimate and manage income, where client supports marketing aims;
- Value addition – this strategy includes linear combination of products and services in order to create product bundles. The example is relationship between services through mobile phones and websites in order to provide information during travel;
- Value creation – this strategy is focused on network effects, including the tourists share in defining the services and destination planning.

On the other hand, the implementation of these strategies leads to gradual “removing” of limits inside tourist destination. In addition, each of the participants in the value chain is experiencing some changes, such as (Gretzel, 2011):

- The tourists are referred to a large number of market participants where they alone have active role in defining the service,
- Travel agents put more emphasis on more complex services,
- Web sites increasingly offer the option of purchasing a package electronically with a focus on personalized offer for clients, and
- Globalization of the supply and demand side.

It is observed that the implementation of e-commerce in tourism has the following advantages for its participants (Molla & Heeks, 2007): 1) collection of information, thanks to the Internet portals on tourism, 2) the integration of information, thanks to the development and implementation of information technology and tourism portals, 3) presenting the information, 4) recommendations, thanks to a recommendation system that suggests products and provides information to enable easy decision making and 5) greater mobility, thanks to the development of mobile applications.

The implementation of e-commerce in tourism provides the above advantages. In addition, in numerous studies (Zhu & Kraemer, 2005; Zhu et al., 2006; Molla & Heeks, 2007), there is the open question of how e-commerce implementation in tourism influences the business performance of enterprises which use e-commerce, particularly their cost efficiency, as well as coordination activities with business partners. The most of these studies quantify e-commerce effects with using financial measures like profitability, cost reduction and the efficiency of inventory. The common facts direct to conclusion that intensive use of the Internet and e-commerce lead to improvement of efficiency of business in the fields of tourism and travel.

Research methodology

Hypothesis, data and methodology

Starting with the theoretical approach, the research question in this paper is whether it is possible to construct an econometric model which links the implementation of e-commerce in operations of tourism enterprises and results of efficient business. According to this research question, in the null and alternative hypothesis are tested in the paper. Null hypothesis H0: Implementation of e-commerce within business entities in the field of tourism in Serbia has no positive influence on dynamics of business activities. Alternative hypothesis H1: Implementation of e-commerce within business entities in the field of tourism in Serbia has positive influence on dynamics of business activities.

In order to test these hypothesis, further step in the paper is to define the sample, time of observation, research methodology and used variables. Business entities in the field of tourism are observed in the period 2010 to 2015. This five-year period is sufficiently long for a valid observation, but

also represents a period in which there was an expansion and contraction of the level of economic activity. The method that is used is multiple regressions. The research sample is 32 enterprises in the field of hotel industry, as the most representative segment of tourism activity. These 32 enterprises are selected among the top 200 companies that have the highest income. The selection criterion is uniformly value of the coefficient of coverage of long-term capital assets. More precisely, the sample comprises the companies that operate in hotel industry whose assets are financed by equity. In other words, there are companies that have adequate long term financial equilibrium. In this way, attempt is made to exclude potential negative influence on business, due to financial character.

The observed parameters in the defined time period are adjusted to research question. In this regard, the dynamics of business activities is followed-up by operating income per employee in million RSD. This value represents a dependent variable. On the other hand, the independent variable will talk about e-commerce implementation in business. This is without doubt the possibility of booking and paying over the world or its own web portal, such as booking (booking.com). Precisely, in the years when an electronic system of booking is implemented within the observed enterprises, the value of dummy variable is 1. In other years, where there was no implementation, the value was 0. All data are taken from official financial reports, companies' websites and world web service www.booking.com.

As highlighted, the multiple regression model is used for the analysis of 32 enterprises, where the number of enterprises is $i = 1 \dots 32$. These enterprises are observed in period 1 to 5 years, $t = 1 \dots 5$. By using the panel data the regression model is:

$$y_{it} = \alpha + x'_{it}\beta + c_i + u_{it} \quad (1)$$

where: y_{it} is dependent variable, α is constant, x'_{it} is row of vector which is related to independent variable, β is column of vector parameters with independent variable, c_i is the effect of specificity of the observed enterprise and u_{it} is 1. If we take into account the fact that the number of the observed period is 5 years, then $T = 5$, and the observation for each enterprise is summarized with the following matrix:

The dependent variable y_i , is shown with the following matrix:

$$y_i = \begin{bmatrix} y_{i1} \\ \cdot \\ \cdot \\ y_{i3} \\ \cdot \\ \cdot \\ y_{i5} \end{bmatrix}, y_i = [5 \times 1].$$

The independent variable X_i , matrix would be: $X_i = \begin{bmatrix} \dot{x}_{i1} \\ \cdot \\ \cdot \\ \dot{x}_{i3} \\ \cdot \\ \cdot \\ \dot{x}_{i5} \end{bmatrix}$, $X_i = [5 \times 1]$,

because it is observed 1 independent variable in regression model.

Residual matrix in analysed model would be:

$$u_i = \begin{bmatrix} u_{i1} \\ \cdot \\ \cdot \\ u_{i3} \\ \cdot \\ \cdot \\ u_{i5} \end{bmatrix}, u_i = [5 \times 1].$$

If the latest analysed company i in a string is marked with N, a ($N = 32$) and the latest observed year t , with T, a ($T = 5$), than with NT would represent the complete observation in all companies for the whole period of observation:

The dependent variable y , is presented like the matrix: $y =$

$$\begin{bmatrix} y_1 \\ \cdot \\ \cdot \\ y_i \\ \cdot \\ \cdot \\ y_{32} \end{bmatrix}, \text{reda } y = [NT \times 1].$$

The independent variable X , is presented like the matrix:
$$X = \begin{bmatrix} X_1 \\ \cdot \\ \cdot \\ X_i \\ \cdot \\ \cdot \\ X_{32} \end{bmatrix},$$

reda $X = [NT \times 1]$.

Residual u_i is presented with the matrix:
$$u = \begin{bmatrix} u_1 \\ \cdot \\ \cdot \\ u_i \\ \cdot \\ \cdot \\ u_5 \end{bmatrix}, \text{reda } u = [5 \times 1].$$

The question that arises in the model shown in equation (1) is: whether there is a correlation between residual u_{it} (where specific effect of observed company c_i is included), from one part and independent variable on the other hand. In mathematical terms, is there $E = (u_{it}|X_i, c_i) = 0$, when there is no correlation or $E = (u_{it}|X_i, c_i) \neq 0$, where correlation exists.

In theoretical terms, this is about setting a multiple regression model with a random or fixed effect (Schmidheiny, 2015). Multiple regression models with a random effect in this particular case would mean that specificity of the observed enterprises (marked with c_i) is not in correlation with independent variable and does not changes over time, independently from one enterprise to another. This is an extremely rigorous assumption which is rarely applied by economists in such a research. Multiple regression models with fixed effect means that specificity of the observed company could be in correlation with independent variable and does not changes over time, actually it undertakes the specificity of a business entity with characteristics for each enterprise individually. This assumption is more realistic and it is presented in economic research. In this paper, a multiple regression model with fixed effect is selected, in order to perform adequate statistical tests to verify its validity compared to a random effect model.

The results and discussion

The result of the selected research methods, multiple regressions with fixed effect, is presented in Table 1.

Table 1: *Multiple regression models with fixed effect*

Fixed-effects (within) regression			Number of obs		160	
R-sq: within	=0.2582		Number of groups		= 32	
between	=0.1308		Obs per group: min=		5	
overall	=0.2289		avg=		5.0	
			max=		5	
			F (1,127)		7.85	
corr (u_i, Xb)	= -0.0309		Prob > F		= 0.0059	

Operating income per employee in million RSD	Coef.	Std. Err.	t	P > t	[95% Conf. Interval	
Dummy (Implementation of e-commerce)	3.57	1.27	2.80	0.006	1.047	6.086
_cons	1.65	.91	1.81	0.050	-.151	3.459
sigma_u	8.162					
sigma_e	7.019					
rho	.574					(fraction of variation due to u_i)

F test that all u_i=0:	F (31, 127) = 6.75	Prob > F = 0.0000
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Source: *Author's calculation*

The results in Table 1 show that independent variable in model has statistical significance. In other words, with the probability of 99.6%, the hypothesis that independent variable (implementation of e-commerce in analysed enterprises) determinates dependent variable (operating income per employee in million RSD) is accepted. The statistics of F-test has an adequate level of probability and shows that all variable's coefficients are different than null, which indicates an influence upon dependent variable (in this case income per employee). The correlation between independent variable and residual is different than null, in this case -0.0309. The negative value shows that variables are adequately adapted within the constructed model. More precisely, if independent variables effectively determine the value of the dependent variable, than the value of residual (statistical error) is less.

Based on the above, it can be concluded that there is an adequate econometric model:

$$(Operating\ income\ per\ employee\ in\ million\ RDS)_{it} = 3.57 (Dummy\ (Implementation\ of\ e-commerce))_{it} + 1.65 + c_i + u_{it} \quad (2)$$

The results of model presented in equation 2 indicate that implementation of electronic payment and booking within an enterprise in one year, causes operating income per employee to increase for 3.57 million RSD with application *ceteris paribus* (if the other circumstances are not changed). The model is presented with the mentioned theoretical postulate and alternative hypothesis. The model has coefficient of determination $R = 0.258$ that means that it is applicable in 25.8% of the overall observation in 32 enterprises in the period 2010 to 2015. The relatively low coefficient of determination does not diminish the importance of proving alternative hypothesis H1 and that implementation of e-commerce in enterprises in the field of tourism in Serbia has a positive influence on dynamics of business activities.

Hausman test for model endogeneity

The constructed multiple regression model has started with the assumption that there is a correlation between residual u_{it} (in which it is contained and the specific effect observed enterprise c_i) and an independent variable. In mathematical terms, $E = (u_{it}|X_i, c_i) \neq 0$. More precisely, it is a constructed multiple regression model with fixed effect. It means that specificities of the observed enterprises have endogenous character and represent internal determination of operation income per employee which is in correlation with independent variable. In order to verify the validity of assumption and constructed econometric model, Hausman test is performed.

The null hypothesis in this test is: there is no correlation between residual u_{it} and (in which it is contained and the specific effect observed enterprise c_i) and independent variable. In other words, the model with a random effect should be used. Alternative hypothesis is that there is correlation and the model with fixed effect is adequate. For this purpose, a model with a random effect is constructed (Table 2) and results of test are presented in Table 3.

Table 2: Regression of a model with random effect

Random-effects GLS regression			Number of obs	160
Group variable:	Company		Number of groups	= 32
R-sq: within	=0.258		Obs per group: min=	5
between	=0.162		avg=	5.0
overall	=0.218		max=	5
corr (u_i, X,)	= 0 (assumed)		Wald chi2 (1)	7.82
			Prob > chi2	= 0.0052

Operating income per employee in million RSD	Coef.	Std. Err.	z	P > z	[95% Conf. Interval]	
Dummy (Implementation of e-commerce)	3.477	1.243	2.80	0.005	1.039	5.915
_cons	1.704	1.621	1.05	0.293	-1.473	4.882
sigma_u	7.659					
sigma_e	7.019					
rho	.5434	(fraction of variation due to u_i)				

Source: *Author's calculation***Table 3: The results of Hausman test**

- Coefficients -				
	(b) fixed	(B) random	(b-B) Difference	Sqrt (diag (V_b-V_B)) S.E.
Dummy (Implementation of e-commerce)	3.567049	3.477758	.0892906	.2715568

b = consistend under Ho and Ha; obrained from xtreg
 B = incosistent under Ha, efficient under Ho; obrained from xtreg
 Test: Ho: difference in coefficients not systematic

$$\text{chi2 (3)} = (b-B)' [(V_b-V_B)^{-1}] (b-B)$$

$$= 0.99$$

$$\text{Prob}>\text{chi2} = 0.098$$

$$(V_b-V_B \text{ is positive definite})$$

Source: *Author's calculation*

The results of Hausman test with probability of 91.2% reject null hypothesis, that model with random effect is proper. This clearly suggests that the alternative hypothesis is proved. Specifically, there is correlation between residual u_{it} (in which it is contained and the specific effect

observed enterprise c_i) and independent variable. Mathematically, it is $E = (u_{it}|X_i, c_i) \neq 0$. It means that the constructed multiple regression model with fixed effect is entirely acceptable.

In this way, the posed hypothesis is tested and proved: The implementation of e-commerce within enterprises in the hotel industry has positive effect on the volume of operating income per employee. The constructed multiple regression model clearly shows that the implementation of e-commerce within the selected companies in one year in the observed period has the positive effect on operation income in the same year, regarding the clause *ceteris paribus*.

Conclusion

As tourism is information-intensive activity, the implementation of e-commerce has found its role here. Introduction of e-commerce in tourism enterprises has created new opportunities for the application of innovative business practices. The impact of e-commerce on cost reduction and productivity improvement are the key reasons for its introduction. In addition, the use of e-commerce provides possibilities for increasing the value of products and services offered by tourism enterprises. With the market globalization, the usage of e-commerce is easier with expanding the business on new markets with increasing the database of consumers and their better serving. Started with numerous researches on topic relationship of e-commerce and tourism, this paper aimed at analysing e-commerce implementation in tourism with focus on improvement of business performance of enterprises that use e-commerce. The first part of the paper analysed the theoretical aspect of e-commerce with focus on different definition of this phenomena, the role of state in e-commerce development, as well as research about relationship between e-commerce and tourism. The second part of paper researched how e-commerce affected business performances of tourism enterprises, based on the selected sample. The paper tested null and alternative hypothesis. Null hypothesis (H0) is: The implementation of e-commerce within business entities in the field of tourism in Serbia has no positive influence on dynamics of business activities. Alternative hypothesis (H1) is: The implementation of e-commerce within business entities in the field of tourism in Serbia has positive influence on dynamic of business activities. Based on the sample of 32 tourism enterprises in the period 2010 to 2015 a multiple regression model with fixed effect was constructed. The constructed multiple regression model clearly shows that implementation

of e-commerce for the selected companies in the observed period, in one year effects on intensification of operation income per employee in the same year, regarding the clause *ceteris paribus*

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