Univerza v Mariboru
Ekonomsko-poslovna fakulteta

Letnik: 62 | Številka: 3 | 2016
Volume: | Number:

NG
OE

NAŠE GOSPODARSTVO
Revija za aktualna ekonomska in poslovna vprašanja

OUR ECONOMY
Journal of Contemporary Issues in Economics and Business

NAŠE GOSPODARSTVO

Revija za aktualna ekonomska in poslovna vprašanja

Letnik 62, št. 3, 2016

Izdajatelj:
Ekonomsko-poslovna fakulteta Maribor (EPF)

Glavna in odgovorna urednica:
Vesna Čančer

Pomočnica glavne in odgovorne urednice:
Romana Korez Vide

Naslov uredništva:
Maribor, Razlagova 14, Slovenija,
telefon: +386 2 22 90 112

Elektronska pošta:
nase.gospodarstvo@um.si

Spletna stran:
http://www.ng-epf.si

Revija je indeksirana v ABI/INFORM Global, EconLit in ProQuest ter vključena v EBSCO in Ulrich's Periodicals bazo.

OUR ECONOMY

Journal of Contemporary Issues in Economics and Business

Vol. 62, No. 3, 2016

Published by:
Faculty of Economics and Business, Maribor (FEB)

Editor-in-Chief:
Vesna Čančer

Co-editor:
Romana Korez Vide

Editorial and administrative office address:
Maribor, Razlagova 14, Slovenia,
phone: +386 2 22 90 112

E-mail:
our.economy@um.si

WWW homepage:
http://www.ng-epf.si

The review is indexed in ABI/INFORM Global, EconLit and ProQuest. It is included in EBSCO and Ulrich's Periodicals Directories.

Lektorji: mag. Darja Gabrovšek Homšak in ServiceScape Incorporated

Dtp: NEBIA, d. o. o.

Letno izidejo 4 (štiri) številke. Letna naročnina: za pravne osebe 46 €, za fizične osebe 29 € in za tujino 57,5 €.

ISSN 0547-3101

Revijo sofinancira Javna agencija za raziskovalno dejavnost Republike Slovenije.

Vsebina / Contents

ARTICLES

Corporate Governance of Banks in Poland and Slovenia

Polona Pašić
PhD Student at the Faculty of Economics and Business, University of Maribor, Slovenia
polona.pasic@gmail.com

Borut Bratina
Faculty of Economics and Business, University of Maribor, Slovenia
borut.bratina@um.si

Mejra Festić
Bank of Slovenia, Ljubljana, Slovenia[1]
mejra.festic@bsi.si

ORIGINAL SCIENTIFIC PAPER

RECEIVED: JUNE 2016

REVISED: AUGUST 2016

ACCEPTED: AUGUST 2016

DOI: 10.1515/ngoe-2016-0013

UDK: 336.71(438)(497.4)

JEL: G21, G34, G38

Citation: Pašić, P., Bratina, B., & Festić, M. (2016). Corporate Governance of Banks in Poland and Slovenia. *Naše gospodarstvo/Our Economy, 62*(3), 3–12. DOI: 10.1515/ngoe-2016-0013

Abstract

This paper focuses on the analysis of the characteristics of corporate governance in banks in Poland and Slovenia between 2005 and 2013. It studies the impact of corporate governance in these banks on their performance. The results of our research show that Slovenia achieved lower average scores for the variables and indicators related to the transparency of corporate governance than Poland. The density of banks with the highest corporate governance index scores was higher in Poland than in Slovenia. When examining the impact of corporate governance on bank performance as measured with net interest income, the regression analysis showed that its impact is positive in both countries and that it is statistically significant in Slovenia.

Key words: corporate governance, bank performance, Central and Eastern Europe, corporate governance index, net interest income

1 Introduction

During the financial crisis that began in 2007, it became clear that corporate governance had not functioned as expected. Adams and Mehran (2008) argued that bad corporate governance played a significant role in this crisis. The information about risk exposure was not always forwarded to bank boards or even to top executives, the risks were often managed on a short-term rather than on a long-term basis, and the remuneration and incentive systems also encouraged a short-term orientation (Kirkpatrick, 2009).

The banking sector experienced a number of corporate governance-related weaknesses, which can destabilize entire financial systems and create systemic risks in economic systems. Caprio and Levine (2002) stated that banks' corporate governance is important not only for banks, but also for the entire economy. Even more, banks' corporate governance is crucial for growth and development (Levine, 2004).

[1] The views expressed in this paper do not reflect the views of Bank of Slovenia or its authorities.

NG
OE

NAŠE GOSPODARSTVO
OUR ECONOMY

Vol. 62 No. 3 2016

pp. 3–12

Banks' business operations differ from other organizations' business operations, which is also reflected in their governance practices. Regardless of that, both banks and other types of organizations are primarily expected to be safe and reliable institutions, and good-quality governance plays a significant role in this respect.

This paper analyzes the corporate governance of banks in Poland and Slovenia for 2005 to 2013. The purpose of the paper is to identify the characteristics of corporate governance of the analyzed banks and to investigate the impact of corporate governance on the banks' performance. The paper is divided into five parts. The first part provides theoretical foundations for the topic under discussion. The second and third parts are concerned with the research methods employed in this study and the empirical analyses. In the fourth part, key findings of our research are presented. Finally, the findings are discussed and summarized, and suggestions for future research are given.

2 Theoretical Foundations and Literature Review

As corporate governance is very topical, a number of research papers and books have recently been published covering this topic. In such research, authors have mainly addressed corporate governance in non-banking organizations, whereas corporate governance of banks has received less scholarly attention. Despite this, the existing research about corporate governance in banks adequately shows the state of affairs in corporate governance in banks and how it follows the principles of corporate governance applied in the non-banking sector.

The efficient corporate governance practices in banks are significant for gaining and retaining public trust in the banking system, which is, in turn, crucial for an adequate functioning of the banking system and the economy as a whole. Apart from the responsibilities toward shareholders, banks are also responsible to their depositors and other shareholders (Basel Committee on Banking Supervision, 2010).

The scope of corporate governance in banks is significantly broader than in other business organizations on the market (Arhar, 2008). The key question that arises in relation to banks' corporate governance is related to the quality of legislation, with the main issue being that this legislation is often inadequate. Tomasic (2010) pointed out that new foundations for the establishment of new legislation structures and governance strategies have to be established as a result of the crisis and that these foundations should unquestionably be international. According to Alexander (2010), efficient supervision and legislative regulations require banks to have robust corporate governance arrangements that encourage bank managers and bank owners to understand the risks they are taking and the implications these risks have for the shareholders if any costs related to such risks have to be covered. They should also be aware of any social costs on the broader economy if the bank fails. Alexander (2010) stated that corporate governance plays a significant role in this respect mainly by (i) aligning the incentives of bank owners and managers so that managers seek wealth maximization for owners without jeopardizing the bank's franchise value through excessive risk-taking and (ii) incentivizing bank management to price financial risk in such a way that it covers its social costs.

Curtiss, Levine, and Browning (2010) maintained that the reform of regulations and government reform should play a key role in ensuring stricter standards regarding capital adequacy, transparency, and remuneration policies. In addition, control over the role of credit rating agencies and auditors is needed in order to find ways to improve their quality and efficiency.

The first guidelines for the corporate governance of banks (i.e., Enhancing Corporate Governance for Banking Organisations) were issued in 1999 by the Bank for International Settlements and were first revised in 2006 (Basel Committee on Banking Supervision, 2006). Their aim was to offer assistance to bank supervisors and serve as the basis for the promotion of good practice of corporate governance of banking institutions in individual countries. The 2006 guidelines were founded on corporate governance principles issued by the OECD in 2004.

Due to all shortcomings of corporate governance practice that became evident during the financial crisis that started in 2007, the Basel Committee on Banking Supervision decided to revise the existing corporate governance guidelines. The revision showed that the guidelines are still relevant and that it is very important that their implementation be efficient.

The impact of corporate governance on bank performance has been studied extensively. For example, Love and Rachinsky (2007) researched the general impact of corporate governance on bank performance. Based on a sample of banks from Ukraine, they found that better corporate governance is linked to higher ROA, ROE, and net interest income. They also established a significant causality between corporate governance and ROA, ROE, and a lower proportion of non-performing loans (NPL) in Russia. Utama and Musa (2011) also studied the correlation between corporate governance practices and bank performance. They found that corporate governance has a positive impact on bank performance as expressed in ROA, while bank performance does not influence corporate governance practice. Selvaggi and Upton (2008) established that the number of years

during which a company experiences corporate governance problems is negatively related to company performance; the causality between good corporate governance and successful performance is strong, whereas the opposite is not true. The results of Guo, Langston, and Hadley's (2012) study support the hypothesis that bank performance and the quality of assets are related to different corporate governance variables for different stages of the business cycle. The researchers also stated that some features of corporate governance are suitable for a certain industry due to specific characteristics of that industry, but they may not be good for other industries. Thus, the results of the research on corporate governance within one industry should not be compared with or among different industries (Guo et al., 2012).

La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) established that financial transparency and disclosures of adequate information are crucial for corporate governance. To guarantee the transparency and quality of disclosures, the use of adequate accounting standards and efficient legislation is needed too; that is, the timely disclosure of adequate and credible information enables shareholders to have control and discipline managers. Companies with higher disclosure quality suffer less during a financial crisis (Baek, Kang, & Park, 2004). The transparency of business operations and the disclosure of adequate information are even more important for banks because banks have an influence on the entire financial system.

Słomka-Gołębiowska and Urbanek (2014) stated that transparency is one of the most significant attributes of good corporate governance. Thus, transparency strengthens the confidence in the capital market. In addition, shareholders and other stakeholders have the right to full information concerning the bank.

Lloyd (2009) found that the last financial crisis can be seen as a consequence of bad corporate governance, which points to the fact that board members had not responded adequately to the occurrence of financial risks. In return, the non-functioning of corporate governance mechanisms manifested in companies' performance.

3 Methods

This paper presents a comprehensive view on corporate governance by supplementing and extending the existing methodological approaches to the study of corporate governance of banks. Our research included a number of variables that define corporate governance in banks. We deducted the characteristics and quality of corporate governance of banks by assessing their disclosure and transparency in the annual reports. We then linked these observations to the banks' performance and examined if causality exists between banks' corporate governance and their performance.

The independent variables of corporate governance were logically organized and grouped into corporate governance indicators. In our research, we addressed the following five indicators: (i) commitment to corporate governance (CG), (ii) control and audit, (iii) care for stakeholders, (iv) characteristics of supervisory board and management board, and (v) remuneration, ownership, related-party transactions, and the application of IFRS.

All statistical analyses of data were performed using EViews and Microsoft Office Excel.

3.1 Data collection

Data for our analysis were collected as follows. We first set up a matrix based on the pre-determined parameters (variables) studied in our research. Then, we collected the relevant data from the banks' annual reports based on the analysis and assessment of the disclosure of individual features of corporate governance. We accessed these annual reports mainly via the banks' websites.

Regarding the individual variables constituting corporate governance indicators, the banks could get a maximum score of 1 and a minimum score of 0 per variable, whereby 1 indicated high quality or the presence of the disclosure of information in relation to the specific corporate governance characteristic and 0 indicates low quality or non-presence. For some variables, scores of 0.5 and 0.25 were also possible. The sums of individual variables represent the scores of the indicators they constitute. The aggregate sums of the variables in these indicators comprise the corporate governance index. For the needs of the regression analysis, we rescaled the index scores so that the standardized index scores had a mean of 0 and a standard deviation of 1. The rescaling and the calculations as well as the subsequent analysis of data and the study of corporate governance and its impact on bank performance were carried out for Slovenia and Poland, separately. We measured bank performance using the banks' net interest income (NETII). We obtained data on this financial indicator from the Bankscope database. For the purposes of our research, we extracted the financial data for the banks in our sample for 2005 to 2013.

3.2 Sample

Slovenia and Poland are part of Central and Eastern Europe and have been members of the EU since 2004. The two

countries are located in geographically similar areas and are mutually comparable. However, there are also differences between them in regard to companies' business operations. The role and cooperation between the participants of corporate governance differ between these two countries because they depend on the legislation and regulatory measures as well as partly on voluntary decisions and, most importantly, market conditions (Organisation for Economic Cooperation and Development, 2009).

Our sample consisted of the 10 largest banks (per their balance-sheet assets in 2005) from Slovenia and Poland. We studied their performance from 2005 to 2013. We decided to examine this time period because of its characteristics—namely, during these years, a big financial and economic crisis occurred (starting in 2007 and intensifying in 2008). Also, the data for this time period were readily available in most cases.

Table 2. Number and Size of Credit Institutions, 2007–2013

Year	Credit institutions	Poland	Slovenia
2007	Number	645	24
	Total assets	220,621	42,208
2008	Number	649	21
	Total assets	250,825	47,345
2009	Number	643	22
	Total assets	257,382	51,328
2010	Number	646	22
	Total assets	292,745	50,244
2011	Number	640	22
	Total assets	293,134	48,592
2012	Number	642	21
	Total assets	336,034	45,352
2013	Number	640	20
	Total assets	339,153	39,455

*Source:*European Banking Authority (2015)

4 Key Findings

4.1 Characteristics of the Countries and Banks Under Analysis

Table 1 shows the gross domestic product (GDP) per market prices (in EUR per capita) for Poland, Slovenia, and the European Union. Both countries have a lower GDP per capita than the EU average (27 member states), with Slovenia having a higher GDP than Poland.

Table 2 presents the number and size of credit institutions in Poland and Slovenia from 2007 to 2013. The number of credit institutions was significantly higher in Poland than in Slovenia throughout the time period. The size of credit institutions determined by the total assets of banks (in EUR million) on the last day of the year was bigger in Poland and was increasing throughout the 2007–2013 period.

Reforms of the Polish banking system have been rather slow. They were based on a decentralized restructuring program founded on the change of the incentives for banks and the real economy and which contributed to harsh budgetary constraints in the Polish economy (Pawłowska, 2014). Between 1995 and 2000, the proportion of banks in Poland under foreign ownership increased substantially from 4.2% to 69.5%, while the proportion of state-owned banks dropped considerably from 86.2% to 23.9% (Pawłowska, 2014). Poland has a two-tier governance system with a supervisory board and a management board. There is a high level of foreign ownership of companies. It is not necessary to have a representative of employees on the supervisory board. Polish business law is similar to the one in Austria and in Germany. Also, there is usually a high concentration of ownership and few disclosures of variable remuneration. The ROSC report (The World Bank, 2005) identified numerous problems related to corporate governance in Poland: (i) insufficient regulation of corporate governance activities related to pension funds, (ii) weakness of the supervisory board, (iii) problems in the delisting/squeeze-out process, and (iv) insufficient approvals of related party transactions. In their research, Słomka-Gołębiowska and Urbanek (2014) established that the low transparency of reporting and poor disclosures make it impossible or at least difficult to assess if banks work in compliance with the corporate governance recommendations.

Table 1. Gross Domestic Product per Market Prices (in EUR per capita)

Country/Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
Poland	6,400	7,100	8,200	9,500	8,100	9,200	9,600	9,900	10,100
Slovenia	14,400	15,500	17,100	18,400	17,400	17,400	17,600	17,200	17,100
EU (27 Member States)	22,500	23,700	25,000	25,000	23,500	24,500	25,100	25,700	25,900

Source: Eurostat (2015)

Compared to Poland, Slovenia is one of the Central and Eastern European countries with the lowest proportion of banks under foreign ownership. However, international banking groups from Austria, Belgium, Italy, France, and some other countries have their stakes in most of the 10 largest Slovenian banks. As stated by the IMF (International Monetary Fund, 2012), reforming state-controlled banks would help revitalize the Slovenian banking sector.

According to the Bank of Slovenia's annual report (Banka Slovenije, 2013), the ownership structure of banks in Slovenia changed considerably in 2013, when the Republic of Slovenia recapitalized five banks and thus became their 100% owner. On December 31, 2013, there were seven subsidiary banks and three branches in Slovenia under full foreign ownership in addition to three banks under majority domestic ownership. Only one bank had more than 10% foreign equity.

Like Poland, Slovenia also has a two-tier governance system. In Slovenia, corporate governance is regulated by a number of acts that have been amended and supplemented in response to changes in legislation, market conditions, and recent cases of good practice. In the last few years, corporate governance of state-owned companies and banks has been at the forefront of attention in Slovenia.

4.2 Empirical Analysis

4.2.1 Corporate governance variables and indicators

Table 3 shows the average values of independent variables for all the banks from Poland and Slovenia included in the analysis.

The average scores of variables and the indicators of corporate governance transparency show that Slovenia (0.55) achieved lower scores in the analysis than Poland (0.66). Poland achieved higher scores than Slovenia in all studied indicators with the exception of the indicator care for stakeholders, where Poland achieved an average score of 0.57 and Slovenia's average score was 0.61. Concerning the indicator commitment to corporate governance (CG), we can establish that Polish banks publish a special chapter dedicated to corporate governance and that Polish banks most frequently publish a statement of compliance with the CG code.

The analysis of the variables included in the control and audit indicator shows that the average score of disclosures is higher in Poland (0.65) than in Slovenia (0.62). Both countries had the highest average scores for (i) external audits, where banks disclose that their auditors are one of the four

Table 3. Variables and Indicators of Corporate Governance

Indicator	Poland	Slovenia	*Total – average*
Indicator 1: Commitment to corporate governance (CG)	0.52	0.38	0.45
Own CG code (OCE)	0.00	0.00	0.00
Separate section on CG (SSN)	0.71	0.69	0.70
Statement of compliance with the CG code (SCE)	0.85	0.46	0.66
Indicator 2: Control and audit	0.65	0.62	0.64
Internal audit department (IAD)	0.91	0.99	0.95
Direct reporting of internal audit (DIR)	0.61	0.99	0.80
Audit committee (AC) (ACD)	0.82	0.57	0.70
Audit committee members (ACM)	0.44	0.41	0.43
Independent director of audit committee (IDAC)	0.54	0.20	0.37
External auditors—the Big 4 (AU4)	0.98	0.97	0.98
Additional services of external auditor (EAAS)	0.24	0.24	0.24
Indicator 3: Care for stakeholders	0.57	0.61	0.59
Representative of employees on supervisory board (ERB)	0.00	0.13	0.07
Company's support for CSR activities (SCS)	0.93	0.94	0.94
Corporate social responsibility report (CSR)	0.78	0.76	0.77
Indicator 4: Characteristics of supervisory board and management board	0.64	0.47	0.56
Independence of supervisory board members (NID)	0.63	0.51	0.57
Independence of supervisory board president (IDSB)	0.45	0.24	0.35
Membership / employment of supervisory board members (MSB)	0.72	0.61	0.67
Assessment policy / procedure for supervisory board members (ASB)	0.34	0.11	0.23
Remuneration—supervisory board (RSB)	0.92	0.73	0.83
System of management board members assessment (ABD)	0.53	0.28	0.41
Remuneration of management board (RMB)	0.92	0.82	0.87
Indicator 5: Remuneration, ownership, related-party transactions and the application of IFRS	0.75	0.58	0.67
Remuneration—supervisory board (RES)	0.95	0.73	0.84
Ownership—supervisory board (OWS)	0.79	0.07	0.43
Remuneration—management board (RED)	0.98	0.79	0.89
Ownership—management board (OWB)	0.79	0.07	0.43
Related-party transactions (RPT)	0.70	0.52	0.61
Related-party transactions—supervisory board and management board (RPM)	0.45	0.49	0.47
Application of IFRS (IFRS)	1.00	0.92	0.96
Ownership structure (OST)	0.56	1.00	0.78
Variable compensation (VAC)	0.49	0.59	0.54
Total—average	*0.66*	*0.55*	*0.61*

largest auditing firms (0.98), and (ii) internal audit, where banks disclose that they have an internal audit department (0.75). The least disclosed information was the one on the additional services (i.e., non-auditing services) provided to the banks by external auditors (0.24).

Concerning the indicator care for stakeholders, Slovenia (0.61) scored better than Poland (0.57). Among the variables defining this indicator, the banks place the most emphasis on the disclosure of information about their support for socially responsible activities (0.94). Fewer banks have a special report or a special chapter on corporate social responsibility in their annual reports (0.77). The least attention is placed on the disclosure of whether the banks have a representative of employees on the supervisory board (0.07).

Regarding the variables constituting the indicator characteristics of supervisory board and management board, Poland achieved far better scores (0.64) than Slovenia (0.47). Most frequently, the banks disclose the information about the remuneration of individual members of their management boards and supervisory boards. In both cases, Poland had better scores (0.92) than Slovenia.

The remuneration, ownership, related-party transactions, and application of IFRS indicator showed that Poland (0.75) was again better than Slovenia (0.58). The banks most frequently disclose their application of IFRS (0.96). Looking at remuneration, we can see that the banks more transparently disclose the information about remuneration (by name or at the aggregate level) of their management boards (0.89) than of their supervisory boards (0.84). Again, Polish banks had better results in both cases than Slovenian ones. In most cases, the banks also disclosed their ownership structure in their annual reports for at least five of their major shareholders or for 90% or more of their ownership (0.78). Here, Slovenia had better results than Poland.

4.2.2 Corporate governance index

Table 4 shows the distribution of corporate governance index per distribution groups with index scores 0, from 0 to 5, from 5 to 10, from 10 to 15, from 15 to 20, and from 20 to 25 (per frequency of the achieved scores). In both countries, the maximum index score that could be achieved was 29 and the minimum score was 0. Poland is a country in which the density of banks with the highest index scores is bigger than in Slovenia; more than 52% of all Polish banks included in this study belong to the 20–25 index score group. In Slovenia, the prevailing index score groups are the 10–15 and 15–20 groups. A vast majority of banks in Slovenia (83%) reached an index score between 10 and 20.

Based the results obtained, we can state that corporate governance (as defined by the disclosure of the analyzed variables) is better in Poland than in Slovenia. It is characteristic for both countries that most banks achieved corporate governance index between 15 and 25 (74 cases in Poland and 47 cases in Slovenia).

Table 4. Distribution of Corporate Governance Index

Index score	Poland	Slovenia	*Average*
0	1	0	*1*
from 0 to 5	2	1	*2*
from 5 to 10	1	5	*3*
from 10 to 15	12	37	*25*
from 15 to 20	27	38	*33*
from 20 to 25	47	9	*28*
from 25 to 29	0	0	*0*

4.2.3 Impact of corporate governance on bank performance

We used regression analysis to investigate the impact of corporate governance on bank performance in Poland and Slovenia. We defined corporate governance using the corporate governance index and treated it as the independent variable in our model. The net interest income (NETII) is the indicator of banks' performance and is treated as the dependent variable. Our research hypothesis is: Corporate governance has an impact on bank performance.

Table 5. Correlation Coefficients Between Corporate Governance Index and NETII

			NETII
Poland	CG Index	Pearson's correlation coefficient	0.047
		Sig.	0.661
Slovenia	CG Index	Pearson's correlation coefficient	0.310**
		Sig.	0.003

Note: * Correlation is significant at the 0.05 level (2-tailed);
** Correlation is significant at the 0.01 level (2-tailed).

We assumed that a positive correlation exists between the corporate governance index and bank performance and that, with an increasing value of corporate governance index, bank performance, as measured with NETII, also increases. Based on the results obtained, we established that there is a positive correlation between the corporate governance index and NETII in both Poland (r=0.047; sig. 0.661) and Slovenia (r=0.310; sig. 0.01), but it is statistically significant in Slovenia only. We also performed a regression analysis for both countries to examine the impact of corporate governance on bank performance:

$$NETII_{it} = a_1 + b_1 Index_{it}\ CG + c_1 Factor_{jit} + \varepsilon$$

Bank performance (NETII) is a dependent variable in our model. We obtained the NETII values of banks in our sample from the Bankscope database. a_1 is the constant, and it tells us the value of NETII when the value of all other variables in the regression equation is 0. b_1 is the regression coefficient, where *i* is the number of observations (i.e., 10 banks * 9 years), and *t* are the years (i.e., 2005–2013). c_1 is the differential coefficient of constant a_1, which takes into account the impact of independent variables (i.e., the factors of institutional environment) on bank performance, where *j* is an independent variable (a factor of institutional environment), *i* is the number of observations, and *t* are the years. ε_{it} is the error term. The following factors of institutional environment were used in the regression analysis: (i) the rate of GDP per capita growth for the previous period (%) for the country under analysis (GDPGR), (ii) the rule of law (RUOLAW), and (iii) government efficiency (GOVEFF).

In Tables 6a and 6b, we present the calculations of simple linear regression analyses and the impact of corporate governance index on bank performance. These two tables also show the results of regression analyses with the included factors of the institutional environment next to the corporate governance index.

Corporate governance index, as the most important, independent variable, was included in the first regression model. We found that it has a positive impact on bank performance (measured with NETII) in both Poland and Slovenia. We also found that this impact is statistically significant in Slovenia (32.743; *t*=3.064, sig. 0.003). This result is in accordance with our expectations that a higher corporate governance index and the related better disclosures of corporate governance in annual reports have a positive impact on bank performance. Based on these results, we can confirm our hypothesis that corporate governance has an impact on bank performance and that this impact is positive.

For the second regression model, we used corporate governance index and the variable GDP growth per capita (GDPGR). When measuring bank performance with NETII, we established that the regression coefficient b_2 was not statistically significant in either of the two countries.

The third regression model included the corporate governance index and the variable RUOLAW (i.e., the rule of law in a given country in a given year). This variable stands for the extent to which there is trust in and compliance with the rules and laws, the police, and the courts. A higher score means more respect of the law and successful work in this area, while a lower score means less respect for the principles of law, its bodies, and their work. Our study of the impact of

Table 6a. Corporate Governance and Bank Performance, Poland

Poland	NETII			
	(1)	(2)	(3)	(4)
CG Index	20.813	8.937	-8.684	-3.514
Significance level	0.661	0.852	0.858	0.942
t-value	0.440	0.187	-0.180	-0.073
GDPGR		-34.862		
Significance level		0.153		
t-value		-1.441		
RUOLAW			626.188	
Significance level			0.031	
t-value			2.194	
GOVEFF				786.522
Significance level				0.044
t-value				2.043
The constant	478.455	615.016	111.809	29.244
Significance level	0.000	0.000	0.519	0.896
t-value	10.939	5.900	0.648	0.131
R^2	0.002	0.026	0.055	0.048
N	89	89	89	89

Table 6b. Corporate Governance and Bank Performance, Slovenia

Slovenia	NETII			
	(1)	(2)	(3)	(4)
CG Index	32.743	41.427	41.693	32.832
Significance level	0.003	0.001	0.002	0.004
t-value	3.064	3.422	3.196	2.958
GDPGR		4.159		
Significance level		0.139		
t-value		1.492		
RUOLAW			-189.844	
Significance level			0.237	
t-value			-1.190	
GOVEFF				-4.088
Significance level				0.975
t-value				-0.032
The constant	89.928	85.030	273.635	94.120
Significance level	0.000	0.000	0.080	0.475
t-value	8.462	7.693	1.769	0.718
R^2	0.096	0.119	0.111	0.096
N	90	90	90	90

RUOLAW on bank performance (expressed through NETII) showed that this impact is positive and statistically significant for Poland (626.188; *t*=2.194, sig. 0.031). This means that trust in the agents and their respect of the rules, laws, and the authorities have a positive impact on bank performance. This variable additionally explains the 5.3% of the variability in banks' performance.

In the fourth regression model, we added the variable GOVEFF (i.e., government efficiency) to the corporate governance index. GOVEFF mainly covers the quality of public services, the degree of independence from political pressure, and the quality of policy formulation and implementation. The impact on NETII is positive and statistically significant for Poland (786.522, *t*=2.043, sig. 0.044). This variable explains an additional 4.6% of the variability in banks' performance. The scores obtained for Slovenia were not statistically significant.

5 Discussion and Conclusion

In this paper, we studied the characteristics of corporate governance in banks in Poland and Slovenia between 2005 and 2013. We also examined the impact of corporate governance of these banks on their performance. Similar to the findings of other authors, this contribution showed that there are both similarities and differences between banks and countries in regard to the characteristics of corporate governance. Corporate governance also influences bank performance in different ways.

The results of our analysis demonstrated that the total average of all variables and indicators of the quality of corporate governance transparency was lower in Slovenia (0.55) than in Poland (0.66). Poland actually reached higher average scores than Slovenia regarding all indicators except for the indicator care for stakeholders, where Slovenia's average score was 0.61 and the Polish one was 0.57. Poland has the highest density of banks with the highest corporate governance index scores. The regression analysis enabled us to investigate the impact of corporate governance on bank performance in Poland and Slovenia. We defined corporate governance using the corporate governance index, which we treated as the independent variable in our regression model. We used the banks' net interest income (NETII) as the indicator of their performance and treated it as the dependent variable. Based on the results of the regression analysis, we established that corporate governance has an impact on bank performance, with this impact being positive in both countries and statistically significant in Slovenia. The following factors of the institutional environment were also used in the regression analysis: (i) the rate of GDP growth per capita from the previous period (in%) for each country under investigation (GDPGR), (ii) the rule of law (RUOLAW), and (iii) government efficiency (GOVEFF). The impact of GDP growth per capita was not statistically significant in either of the countries. The rule of law (RUOLAW) and the impact of government efficiency (GOVEFF) had a positive and statistically significant impact in Poland.

This paper raised a number of questions that still have to be answered, offering possibilities for further research. Further studies might focus on similar analyses of substantive and qualitative aspects of corporate governance and on the search for the causes for their differences. Apart from the investigation of the impact of corporate governance and other variables included in the present research on bank performance, future research should include additional variables that may have an influence on either corporate governance or bank performance. Other bank performance measurements could also be included. Regarding research methodology, some other methodological approaches and analyses could be undertaken to study this topic. Future investigations could focus on the analysis of a similar type of banks; they should be performed on a larger sample and should consider a longer time span.

References

1. Adams, R., & Mehran, H. (2008). *Corporate performance, board structure, and their determinants in the banking industry.* Retrieved from http://www.nyfedeconomists.org/research/staff_reports/sr330.pdf. http://dx.doi.org/10.2139/ssrn.1150266
2. Alexander, K. (2010). The banking crisis: Regulation and supervision. In J. MacNeil & I. O'Brien (Eds.), *The future of financial regulation* (pp. 437–444). Portland: Hart Publishing.
3. Arhar, F. (2008). Upravljanje korporacij. *Bančni vestnik, 1–2,* 40–44.
4. Baek, J., Kang, J., & Park, K. (2004). Corporate governance and firm value: evidence from the Korean financial crisis. *Journal of Financial Economics, 71*(2), 265–313. http://dx.doi.org/10.1016/S0304-405X(03)00167-3
5. Banka Slovenije. (2013). *Letno Poročilo 2013.* Ljubljana: Banka Slovenije. Retrieved from https://www.bsi.si/iskalniki/letna_porocila.asp?MapaId=709
6. Basel Committee on Banking Supervision. (2006). *Enhancing Corporate governance for banking organisations.* Retrieved from http://www.bis.org/publ/bcbs122.pdf
7. Basel Committee on Banking Supervision. (2010). *Principles for enhancing Corporate Governance.* Retrieved from http://www.bis.org/publ/bcbs176.pdf

8. Caprio, G., & Levine, R. (2002). Corporate governance of banks: Concepts and international observations. In R. Litan, M. Pomerleano, & V. Sundararajan (Eds.), *Financial sector governance: The roles of the public and private sectors* (pp. 17–50). Washington, DC: Brookings Institution Press.
9. Curtiss, F., Levine, I., & Browning, J. (2010). The institutional investor's role in "responsible ownership." In I. MacNeil & J. O'Brien (Eds.), *The future of financial regulation* (pp. 301–313). Portland: Hart Publishing.
10. European Banking Authority. (2015). *Aggregate statistical data 2007–2013.* Retrieved from http://www.eba.europa.eu/supervisory-convergence/supervisory-disclosure/aggregate-statistical-data
11. Eurostat. (2015). *National accounts database.* Retrieved from http://ec.europa.eu/eurostat/data/database
12. Guo, R., Langston, V., & Hadley, L. (2012). Business cycle, corporate governance, and bank performance. *Research in Business and Economics Journal, 5*, 1–11.
13. International Monetary Fund. (2012). *Republic of Slovenia: Financial system stability assessment.* Retrieved from https://www.imf.org/external/pubs/ft/scr/2012/cr12325.pdf
14. Kirkpatrick, G. (2009). *The corporate governance lessons from the financial crisis.* Retrieved from http://www.oecd.org/finance/financial-markets/42229620.pdf. http://dx.doi.org/10.1787/fmt-v2009-art3-en
15. La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (1998). Law and finance. *Journal of Political Economy, 106*(6), 1113–1155. http://dx.doi.org/10.1086/250042
16. Levine, R. (2004). *Finance and growth: Theory and evidence.* Retrieved from http://www.nber.org/papers/w10766.pdf
17. Lloyd, B. (2009). Governance models lessons from the global crisis? *Accountancy Ireland, 41*(6), 43–45. Retrieved from http://www.accountancyireland.ie/
18. Love, I., & Rachinsky, A. (2007). *Corporate governance, ownership and bank performance in emerging markets: Evidence from Russia and Ukraine.* Retrieved from http://siteresources.worldbank.org/DEC/Resources/Corporate_Governnace_Ownership_and_Bank_Performance.pdf
19. Organisation for Economic Cooperation and Development. (2009). *Načela korporativnega upravljanja OECD.* Retrieved from http://www.mg.gov.si/fileadmin/mg.gov.si/pageuploads/DEOT/NACELA_OECD.pdf
20. Pawłowska, M. (2014). *On competition in the banking sector in Poland and Europe before and during the crisis.* Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2550678. http://dx.doi.org/10.2139/ssrn.2550678
21. Selvaggi, M., & Upton, J. (2008). *Governance and performance in corporate Britain: Evidence from the IVIS colour-coding system.* Retrieved from http://www.accountability-central.com/uploads/media/GovernanceAndPerformanceInCorporateBritan.pdf
22. Słomka-Gołębiowska, A., & Urbanek, P. (2014). Executive remuneration policy at banks in Poland after the financial crisis—Evolution or revolution? *Comparative Economic Research, 17*(2). Retrieved from http://www.degruyter.com/view/j/cer.2014.17.issue-2/cer-2014-0012/cer-2014-0012.xml
23. The World Bank. (2005). *Report on the observance of standards and codes (ROSC)—Poland.* Retrieved from http://www.worldbank.org/ifa/rosc_cg_pol_05.pdf
24. Tomasic, R. (2010). Beyond "light touch" regulation of British banks after the financial crisis. In V I. MacNeil & J. O'Brien (Eds.), *The future of financial regulation* (pp. 103–122). Portland: Hart Publishing.
25. Utama, C., & Musa, H. (2011). The causality between corporate governance practice and bank performance: Empirical evidence from Indonesia. *Gadjah Mada International Journal of Business, 13*(3), 227–247.

Authors

Polona Pašić holds a Ph.D. degree in economics and business sciences from the Faculty of Economics and Business, University of Maribor. She earned her bachelor's degree in economics from the Faculty of Economics, University of Ljubljana, where she graduated with distinction.

Borut Bratina, Ph.D., is an associate professor of law at the Department of Business Law at the Faculty of Economics and Business, University of Maribor. He is the head lecturer for a number of courses in business law within undergraduate and postgraduate study programs at the Faculty of Economics and Business (FEB) and other faculties of the University of Maribor. He is the head of the Institute of Business Law at FEB and a co-founder of the Institute for Economic and Corporate Governance (IECG Maribor). His scientific and professional focus is in the field of corporate law and corporate governance.

Mejra Festić, Ph.D., is a full professor of economic systems, economic policy and economic theory, and the application of econometrical analysis. She is also an associate professor of banking and finance. Since March 1, 2011, she has been a vice governor of the Bank of Slovenia; she is currently its deputy governor. Her research fields cover monetary systems, monetary economics, banking and finance, macroprudential and systemic risk, financial stability, economic policies, economic theory, macroeconomics, the application of econometrical methodologies, and the appraisal of economic efficiency of investment projects at macro and micro levels.

Korporativno upravljanje bank na Poljskem in v Sloveniji

Izvleček

V članku se osredotočamo na proučevanje značilnosti korporativnega upravljanja v bankah na Poljskem in v Sloveniji, in sicer v obdobju med letoma 2005 in 2013. Proučen je tudi vpliv korporativnega upravljanja teh bank na njihovo poslovanje. Rezultati opravljene raziskave kažejo, da je Slovenija dosegla nižje povprečne vrednosti spremenljivk in kazalnikov kakovosti transparentnosti korporativnega upravljanja kot Poljska. Gostota bank z doseženimi najvišjimi vrednostmi indeksa korporativnega upravljanja je na Poljskem prav tako večja kot v Sloveniji. Pri proučevanju vpliva korporativnega upravljanja na uspešnost poslovanja bank, ki jo merimo z neto obrestnimi prihodki, z regresijsko analizo ugotavljamo, da je ta vpliv pozitiven v obeh državah in statistično značilen v Sloveniji.

Ključne besede: korporativno upravljanje, uspešnost bank, Srednja in Vzhodna Evropa, indeks korporativnega upravljanja, neto obrestni prihodek.

Assessment of the State of Competition in the Banking Market in the Russian Federation

Anna Rabdanova
Master Student at the Faculty of Economics, East-Siberian State University of Technology and Management, Russian Federation
a.rabdanova9@gmail.com

Vera Bulatova
Faculty of Economics, East-Siberian State University of Technology and Management, Russian Federation
bulatova_vb@mail.ru

ORIGINAL SCIENTIFIC PAPER

RECEIVED: DECEMBER 2015

REVISED: JULY 2016

ACCEPTED: AUGUST 2016

DOI: 10.1515/ngoe-2016-0014

UDK: 336.71(470)

JEL: G21

Citation: Rabdanova, A., & Bulatova, V. (2016). Assessment of the State of Competition in the Banking Market in the Russian Federation. *Naše gospodarstvo/Our Economy, 62*(3), 13–19. DOI: 10.1515/ngoe-2016-0014

Abstract

Competition is one of the factors directly influencing the development of the banking market, the stability of the banking system, and the monetary system as a whole. This article describes the features of banking competition, methods of analysis of banking competition, and an analysis of the current state of competition in the banking market in the Russian Federation. The analysis of banking competition in the Russian Federation was performed using the concentration ratio for the top three companies and the Herfindahl-Hirschman Index. The research concludes with an assessment of the state of competition in the banking market and identification of the barriers to entering the financial services market.

Key words: Commercial bank, bank competition, banking market, market concentration

1 Introduction

Competition is one of the most important factors in the development of a market economy. However, in contrast to the study of the problems of competition in the traditional markets of goods and services, the problems of banking competition in the Russian economic literature are described in less detail, particularly the following insufficiently known aspects (Korobova, 2012): problems in assessing the level of the banking competition, issues of state regulation in the banking sector, and methods for studying banking competition.

Most authors define the concept of banking competition as a dynamic process of competition between banks and other credit organizations, in which they aim to secure a strong position in the market of loans and banking services (Chumachenko & Handruev, 2010). In other studies, banking competition is defined as a stimulating factor, forcing competitors to expand the range of banking services, improve the quality of banking products, and promptly adjust the price of these products; it encourages banks to shift to more efficient ways of functioning (Samsonova, 2007).

NG
OE

NAŠE GOSPODARSTVO
OUR ECONOMY

Vol. 62 No. 3 2016

pp. 13 – 19

The following characteristic features are among the features of banking competition (Korobov, 2007):

- The subjects of banking competition are not only banks, but also non-bank financial institutions and non-financial businesses.
- The banking market consists of many different sectors, the total number of which is equal to the number of banking services (credit, cash, investment, etc.).
- The main features of banking services are intangibility, difficulty to perceive, inseparability from the source, etc.; as a result, it is more difficult for banks to promote their products.
- The banking business is characterized by high risks; therefore, banking competition requires attention from the state.

In addition, Valieva (2014) identified the following specific aspects:

- Banking markets are markets of differentiated oligopoly, providing ample opportunities for cooperation and coordination of market policies of various lending institutions; therefore, there is both individual and group interbank competition.
- As a competitive area represented by a number of sectors, in some sectors banks act as sellers placing assets while in other sectors they are buyers mobilizing resources.
- Banking services may replace each other, but do not have competitive alternatives; therefore, interbranch competition is carried out mainly by the flow of capital.
- Compared to other sectors of the market, competition between banks takes place under strict regulation by the state (licensing, monitoring, supervision).

The main purpose of this article is to assess the current state of competition in the banking market in the Russian Federation. The main goals are (i) to consider methods of analysis of banking competition, (ii) to analyze the current state of competition in the banking sector, and (iii) to identify the main barriers to entering the banking market.

2 Method

There are two main directions in the indirect estimation technique of banking competition: structural and non-structural methods. Structural methods include the calculation of the concentration of various indices (Herfindahl-Hirschman, etc.). Non-structural methods include the works of Panzar and Rosse (1987) as well as the model of Bresnahan-Lau, the Lerner index, and the Boone indicator.

The Panzar–Rosse approach is based on the assumptions that banks operate in a long-run equilibrium, the elasticity of demand is greater than one, cost structure is homogeneous, and the actions of banks affect the results of activities of other market participants. For equilibrium output and the equilibrium number of banks, the profit maximization problem is solved at the bank level and at the level of industry as a whole. This means that, first, i^{th} bank maximizes profits at the point where the marginal product equals marginal cost. Second, the entire market will work with zero profit in equilibrium. For example, one can evaluate the following equation:

$$lnP_{it} = \alpha_i + \beta_1 lnW_{it}^1 + \beta_2 lnW_{it}^2 + \beta_3 lnW_{it}^3 + \gamma lnZ_{it} + \delta D_t + \varepsilon_{it} \quad (1)$$

P_{it} – the ratio of gross revenues to total assets (proxy for banks' output price);
W^1_{it} – the ratio of interest expenses to total deposits and money market funding (proxy for input price of deposits);
W^2_{it} – the ratio of personnel expenses to total assets (proxy for input price of labor);
W^3_{it} – the ratio of other operating and administrative expenses to total assets (proxy for input price of equipment/fixed capital);
Z_{it} – a matrix of controls including the ratio of equity to total assets, the ratio of net loans to total assets, and the logarithm of assets;
D_t – a matrix of year dummies;
α_i – denotes bank-level fixed effects; and
ε_{it} – the error term assumed to be normally distributed; in equation (1), it is estimated using ordinary least squares (OLS) (Anzoátegui, Martínez Pería, & Melecky, 2010).

In this case, the H-statistic is calculated as the sum of the elasticities of revenue from cost factors: $\beta_1 + \beta_2 + \beta_3$. The estimated value of H-statistics varies in the interval ($-\infty < H \leq 1$). If the H-statistic is less than 0, then it is a monopoly; if the value lies between 0 and 1, then the market is monopolistic competition. If H = 1, then it is the perfect competition (Anzoátegui et al., 2010).

The Lerner index (Lerner, 1934) is calculated based on information on the activities of a certain bank. It determines the degree of market power as a ratio of the difference between the price set by the bank and the marginal cost to the price of the bank:

$$L_i = \frac{(P_i - mc_i)}{P_i} \quad (2)$$

P_i – price of banking outputs; and
mc_i – the marginal cost of the i^{th} bank.

The index ranges from 0 to 1: the higher the value, the higher the market power of the bank. If the Lerner index is equal to 0, no firm can affect the price. Then the market has the state of perfect competition.

Marginal costs are calculated based on the trans-logarithmic function of the bank costs:

$$lnC_{it} = \alpha_0 + \alpha_1 lnQ_{it} + \frac{\alpha_2}{2}(lnQ_{it})^2 + \sum_j \beta_j lnw_{jit} + \\ + \frac{1}{2}\sum_j \sum_k \beta_{jk}\, lnw_{jit} lnw_{kit} + \\ + \sum_j \gamma_j\, lnQ_{it} lnw_{jit} + D_{it} + \varepsilon_{it} \quad (3)$$

C_{it} – total costs of the i^{th} bank in period t;
Q_{it} – bank product;
w_{jit} – price of j-factor;
D_{it} – matrix of dummy variables corresponding to the period; and
ε_{it} – random error.

Thereafter, the marginal cost mc_i of the i^{th} bank in period t will be calculated according to the formula:

$$mc_{it} = \frac{\partial C_{it}}{\partial Q_{it}} = (\alpha_1 + \alpha_2 lnQ_{it} + \sum_j \gamma_j\, lnw_{jit}) \frac{C_{it}}{Q_{it}} \quad (4)$$

The important point is to determine a bank product. In empirical studies, bank assets are considered a bank product (Anzoátegui et al., 2010). The total amount of loans issued by the bank and the total amount of deposits accepted can also be used as a bank product.

In this paper, the Herfindahl-Hirschman index has been used to assess banking competition. This method was selected for the initial study of competition in the banking sector of the Russian Federation.

For the analysis of bank competition, it is necessary to determine the volume of the banking market and to assess the level of concentration of the market. The volume of the financial market can be defined as the sum of the volume (turn) of the financial services provided by all financial institutions for a certain period:

$$V_{fr} = \sum_{i=1}^{n} V_i \quad (5)$$

V_{fr} – market volume;
V_i – the volume of the financial services of a financial organization; and
$i = 1, 2, ..., n$ – the number of financial organizations operating in the financial services market.

In order to determine the market's financial resources, the market volume can be defined as the amount of assets (fixed capital) of financial organizations operating in a certain market.

This figure is more applicable to the market with the same institutional structure of financial institutions. For example, this figure applies to the market of banking services, represented exclusively by credit institutions, and to the market of insurance services if the majority of existing insurers can be compared by the amount of assets (fixed capital).

As a rule, the following indicators are used to assess the level of market concentration:

a) Market concentration ratio (CR_n), which is calculated as a percentage of the volume of financial services provided by a certain number of the largest participants in the financial services market to the total market volume:

$$CR_n = \frac{(V_1 + V_2 + \cdots + V_n)}{V} \times 100\% \quad (6)$$

$V_1 + V_2 + ... + V_n$ – the volume of financial services of the largest participants in the financial services market.

b) Index of market concentration, or Herfindahl-Hirschman index (HHI), which is calculated by squaring the percentage of the market of each participant and summing the results:

$$HHI = D_1^2 + D_2^2 + \cdots + D_m^2 \quad (7)$$

D_i – percentage of the market of each participant; and $i = 1, 2, ..., m$.

If data of major participants in the market of financial services are available but the necessary information on all financial institutions is not, the estimation of market concentration is performed using the concentration ratio. Concentration ratios are usually determined for three (CR_3), four (CR_4), six (CR_6), eight (CR_8), and more members (depending on the total number of participants in the market). In order to estimate the level of concentration of the studied market of financial services, it is recommended to determine the concentration ratio of the three largest market participants and the HHI.

The market can be considered as highly, moderately, or lowly concentrated depending on the values of the concentration indicators. There are several interpretations of the

HHI thresholds. According to the U.S. Department of Justice and the Federal Trade Commission (1997), markets are considered to be unconcentrated if HHI < 1000, moderately concentrated if 1000 < HHI < 1800 and ΔHHI > 100, and highly concentrated if HHI > 1800 and ΔHHI > 50. However according to the EU Horizontal Merger Guidelines of 2004, markets are considered to be unconcentrated if HHI < 1000, moderately concentrated if 1000 < HHI < 2000 with ΔHHI < 250, and highly concentrated if HHI > 2000 and ΔHHI < 150 ("Guidelines on the assessment," 2004)

The HHI threshold used in the Russian Federation corresponds to the threshold of the European Union. The Order of Federal Antimonopoly Service of Russian Federation from 28.04.2010 N 220 (2015) "On approval of the analysis of the state of competition in the product market" established the procedure for determining the market concentration.

Highly concentrated markets:
70% <= CR_3 <= 100%;
2000 <= *HHI* <= 10000;

Moderately concentrated markets:
45% <= CR_3 < 70%;
1000 <= *HHI* < 2000;

Lowly concentrated markets:
CR_3 < 45%;
HHI < 1000.

If necessary, the proportion of a particular financial institution in the market can be calculated. A financial organization's share of the financial resources in the studied market of financial services can be determined as a percentage of total assets (equity capital) of financial organizations to the financial resources volume of the studied market:

$$D_{i(a)} = \frac{V_{i(a)}}{V_{fr(a)}} \quad (8)$$

3 Results

Data on the assets of Russian banks having the right to conduct banking operations in the last three years were obtained to calculate the above-mentioned parameters. Results are presented in Table 1.

Table 1 shows that the market of banking services is increasing every year, despite the fact that the number of credit institutions is decreasing every year. The largest bank in Russia, Sberbank, consistently accounts for about 30% of the total market.

Concentration ratio fluctuated and increased in 2015 to 47%, which corresponds to a moderately concentrated market. The HHI until 2011 was less than 1000, which corresponds to lowly concentrated markets. However, after 2011 the value exceeded 1000. Thus, it can be concluded that, at the moment, the market can be classified as moderately concentrated.

To consider separate markets in which commercial banks operate, Table 2 provides an analysis of the market of deposits and Table 3, the loans market.

Table 2 shows that, since 2009, the number of credit institutions has decreased. However, the volume of deposits in banks has increased every year. Sberbank's share in the total market fell from 52% in 2008 to 46% in 2015.

The concentration ratio fluctuated slightly, but its value was always higher than 50%, which corresponds to a moderately concentrated market. On the other hand, the HHI exceeded 2000 during the period, which corresponds to a highly concentrated market. This can be explained by the fact that Sberbank holds a leading position in the Russian banking sector, while the proportion of even the second and third largest banks in the total amount of the market are negligible.

According to the data in Table 3, the volume of loans issued by banks also increased every year. In contrast to the deposits market, the share of the largest bank was about 30% for the entire period. The concentration factor gradually increased, and its value almost always corresponded to a moderately concentrated market. The HHI value for the entire period also corresponded to a moderately concentrated market. Thus, it can be concluded that the banking market in the Russian Federation is moderately concentrated. At the same time, it is dominated by one large bank with state participation.

Depending on the level of concentration of the financial services market, antitrust authorities' actions are differentiated in relation to various markets and operating financial institutions. Thus, the following measures are suitable for moderately concentrated markets:

- regarding the dynamics of concentration, if the process of concentration increases it is necessary to move toward the measures provided for highly concentrated markets;
- control over the market behavior of financial institutions, occupying a dominant position in the financial services market;
- actions to reduce the barriers to enter the financial services market to create equal opportunities for all players;
- prevention and suppression of the abuse of a dominant position by a financial institution; and

Table 1. Analysis of the Russian Federation's Banking Market: Assets

Index	2008	2009	2010	2011	2012	2013	2014	2015
Number of operating credit institutions	954	1015	1000	965	939	902	821	716
Market volume, bln. Rub.	26742.94	28416.44	33040.86	40791.68	48461.79	56265.06	76349.68	80743.33
Sberbank's share, %	25.56	26.93	27.68	26.91	29.06	29.73	29.26	29.16
Concentration ratio for the top three companies (CR_3)	41.85	42.63	41.89	43.25	43.82	45.55	46.39	47.23
Herfindahl-Hirschman Index (*HHI*)	852.68	914.89	932.26	930.58	1020.51	1078.43	1089.09	1102.55

Source: Informational Agency Banki.ru, ltd. (2016c)

Table 2. Analysis of the Deposit Market in the Russian Federation

Index	2008	2009	2010	2011	2012	2013	2014	2015
Number of operating credit institutions	954	1015	1000	965	939	902	821	716
Market volume, bln. Rub.	5878.37	7465.24	9803.01	11871.29	14250.91	16957.44	18549.25	23015.66
Sberbank's share, %	52.12	49.58	47.97	46.60	45.68	46.68	45.00	46.37
Concentration ratio for the top three companies (CR_3)	59.64	57.57	56.50	55.67	54.67	56.77	55.76	57.83
Herfindahl-Hirschman Index (*HHI*)	2771.47	2522.82	2371.99	2249.24	2164.73	2271.66	2127.55	2266.63

*Source:*Informational Agency Banki.ru, ltd. (2016a)

Table 3. Analysis of the Loans Market in the Russian Federation

Index	2008	2009	2010	2011	2012	2013	2014	2015
Number of operating credit institutions	954	1015	1000	965	939	902	821	716
Market volume, bln. Rub.	16550.50	16308.65	18558.66	23935.26	28618.75	33581.71	42126.88	45298.35
Sberbank's share, %	31.30	32.29	31.49	32.75	33.36	33.37	35.30	33.97
Concentration ratio for the top three companies (CR_3)	43.80	45.54	44.28	46.59	46.49	47.24	49.86	51.15
Herfindahl-Hirschman Index (*HHI*)	1129.48	1202.43	1144.45	1235.19	1264.01	1279.29	1424.76	1388.47

*Source:*Informational Agency Banki.ru, ltd. (2016b)

- approval of mergers, accession of financial institutions, and acquisitions of blocking and controlling blocks of shares (stakes) in the authorized capital of financial institutions, provided that the market potential will not increase or exceed the average values for the moderately concentrated markets.

The following main barriers to entering the banking market can be identified:

- Significant initial capital investments with a long payback period. Thus, the minimum authorized capital for newly registered bank is 300 million rubles.
- Legal restrictions of banking activities. Restrictions, such as obtaining a license to operate, are necessary in order to complicate market entry for weak banking structures, thereby excluding the possibility that competition becomes destructive.
- Costs of access to the necessary resources and intellectual property rights, advertising costs, costs of obtaining information. The entry of new unknown banks can be difficult because customers prefer well-known banks with a long history. As a result, costs to reorient customers are quite high.
- Advantages of economic entities operating on the studied market to potential market participants, particularly the advantages of unit costs and demand for goods and advantages of long-term contracts with clients.

4 Conclusion

This article analyzed bank competition in the Russian Federation, calculating the market volume on assets, volumes

of deposit and loan markets, share of the largest party, the concentration ratio for the top three companies, and the HHI. According to the results, it can be concluded that the Russian banking services market is related to the market of underdeveloped competition. There are barriers to entering the financial services market that impede the rapid entry of new banks. In turn, the operating credit institutions are subjected to strong control by the state, which is manifested in the audit of the Central Bank for compliance with the applicable regulations. The number of banks on the market has declined, as in recent years the Central Bank has revoked licenses due to the tightening of regulations. The modern unstable economic situation, antitrust regulation activities, and the strengthening of globalization processes in the international economic system have had a significant impact on competition in the banking market.

References

1. Anzoátegui, D., Martínez Pería, M. S., & Melecky, M. (2010). *Banking sector competition in Russia.* Policy Research Working Paper WPS5449, The World Bank. http://dx.doi.org/10.1596/1813-9450-5449
2. Chumachenko, A. A., & Handruev, A. A. (2010). Competition in the banking sector: trends, issues, forecasts. *Bankovskoe delo, 11*, 6–12.
3. Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings. (2004). *Official Journal C 031*, 0005–0018.
4. Korobov, Y. I. (2007). Banking competition: the role, specifics and prospects of development. *Sovremennaya konkurenciya, 1*, 87–93.
5. Korobova, G. G. (2012). Banking culture as a factor in the development of banking competition. *Bankovskie uslugi, 2*, 12–23.
6. Lerner, A. P. (1934). The concept of monopoly and the measurement of monopoly power. *The Review of Economic Studies, 1*(3), 157–175. http://dx.doi.org/10.2307/2967480
7. Order of Federal Antimonopoly Service of Russian Federation from 28.04.2010 N 220 (2015, January 30). *On approval of the analysis of the state of competition in the product market.*
8. Panzar, J. C., & Rosse, J. N. (1987). Testing for monopoly equilibrium. *The Journal of Industrial Economics, 35*(4), 443–456. http://dx.doi.org/10.2307/2098582
9. Informational Agency Banki.ru, ltd. (2016a). *Rating of Russian banks in the deposit market.* Retrieved from http://www.banki.ru/banks/ratings/?SEARCH_NAME=&SEARCH_REGN=&search%5Btype%5D=name&sort_param=rating&sort_order=ASC&PROPERTY_ID=60&REGION_ID=0&date1=2009-01-01&date2=2008-12-01&IS_SHOW_GROUP=0&IS_SHOW_LIABILITIES=0#search_label
10. Informational Agency Banki.ru, ltd. (2016b). *Rating of Russian banks in the loans market.* Retrieved from http://www.banki.ru/banks/ratings/?SEARCH_NAME=&SEARCH_REGN=&search%5Btype%5D=name&sort_param=rating&sort_order=ASC&PROPERTY_ID=40&REGION_ID=0&date1=2009-01-01&date2=2008-12-01&IS_SHOW_GROUP=0&IS_SHOW_LIABILITIES=0#search_label
11. Informational Agency Banki.ru, ltd. (2016c). *Rating of Russian banks.* Retrieved from http://www.banki.ru/banks/ratings/?SEARCH_NAME=&SEARCH_REGN=&search%5Btype%5D=name&sort_param=rating&sort_order=ASC&PROPERTY_ID=10&REGION_ID=0&date1=2013-01-01&date2=2012-12-01&IS_SHOW_GROUP=0&IS_SHOW_LIABILITIES=0#search_label
12. Samsonova, E. K. (2007). Formation and development of competitive environment in the banking market in Russia: problems and prospects. *Finansy i kredit, 29*, 2–7.
13. U.S. Department of Justice and the Federal Trade Commission. (1997). *Horizontal Merger Guidelines*. Washington: U.S. Government Printing Office.
14. Valieva, E. N. (2014). Competition on the market of financial services: theory and practice. *Finansy i kredit, 40*(616), 2–7.

Authors

Anna Rabdanova is currently a master's degree student in the Finance and Credit Department at East-Siberian State University of Technology and Management's Faculty of Economics. She has a bachelor's degree in economics. Her research focuses primarily on bank lending, banking competition, and bank management.

Vera Bulatova, Ph.D. in economics, is an assistant professor in the Finance and Credit Department, Faculty of Economics, East-Siberian State University of Technology and Management. She teaches courses on financial and monetary and credit methods in economic management, analysis of financial risks, and investment analysis. Her field research includes regional policy, investment policy, and bankruptcy.

Presoja stanja konkurence na bančnem trgu v Ruski federaciji

Izvleček

Konkurenca je eden od dejavnikov, ki neposredno vplivajo na razvoj bančnega trga ter na stabilnost bančnega in monetarnega sistema kot celote. V prispevku so opisane značilnosti tržne konkurence, metode analize konkurence med bankami ter analiza sedanjega stanja konkurence na bančnem trgu Ruske federacije. Analizirana sta konkurenca med bankami v Ruski federaciji, pri čemer smo izhajali iz določitve razmerja v koncentraciji za tri najvišje uvrščena podjetja, in Herfindahl-Hirshmanov indeks. Zaključek raziskave vključuje presojo stanja konkurence na bančnem trgu in identificiranje ovir pri vključevanju na trg finančnih storitev.

Ključne besede: poslovna banka, konkurenca med bankami, bančni trg, tržna koncentracija

ORIGINAL SCIENTIFIC PAPER

RECEIVED: MAY 2016

REVISED: AUGUST 2016

ACCEPTED: AUGUST 2016

DOI: 10.1515/ngoe-2016-0015

UDK: 331.23(437.3)

JEL: O10, O16, O35

Citation: Kantnerová, L. (2016). Payment Cards. *Naše gospodarstvo/Our Economy, 62*(3), 20–28. DOI: 10.1515/ngoe-2016-0015

Payment Cards

Liběna Kantnerová
Faculty of Economics, University of South Bohemia, Czech Republic
kantner@ef.jcu.cz

Abstract

The aim of this paper is to analyze the use of payment cards in retail in the Czech Republic from the side of clients (buyers) and the side of sellers. Questionnaires for clients examine satisfaction with cards and the service connected with them. Sellers' satisfaction with the profit and function of cards is analyzed. The data indicated that 92% of the 352 respondents in South Bohemia had a payment card and more than 35% had more than one card. In retail, 70% of sellers had a payment terminal.

Key words: payment card, payment, sellers, payment terminal, users

1 Introduction

With the advancement of technology and the need for better service provision, plastic money in the form of debit cards or credit cards has become common nowadays. These tools of purchase management are found in the wallets of nearly everyone. As a result, companies are also seeking to leverage the **c**ards' benefits as a shopping/purchase facilitator. As with the emerging equalities of men and women and their equal and balanced role in shaping society, both genders have established quite active response patterns with respect to debit/credit card spending and use.

A large and growing number of payments in the EU are made with payment cards. Most of these cards carry the brands of international payment card schemes, like Visa and MasterCard, or domestic schemes, like Groupement des Cartes Bancaires, Consorzio Bancomat, or Electronic Cash (EU, 2015). Today's payment cards are a tool of non-cash payments in electronic banking. They are the old payment way, with quick access to electronic banking systems coming later (Polouček, 2006).

Cards are more flexible than checks and a cash payment system and give us safe access to our money anywhere, at any time. Banks and credit unions issue several types of bank cards, including ATM cards, debit cards, and credit cards for customers who qualify. These last cards often have low, fixed interest rates (Ryan, 2012). Most places that take credit cards also accept debit cards, and debit cards and credit cards have fairly similar formats and appearance (Mincher, 2007).

Used properly, credit cards can be a good tool for consumers, but without knowledge and discipline, credit cards can be the start of financial ruin. Some cards, such as Visa, MasterCard, American Express, and Discover, have almost universal merchant acceptance. Others are restricted to use at certain department stores, gas stations, etc., and are considered "revolving credit lines." The average American consumer has eight such open accounts at any given time (Mincher, 2007).

NG
OE

**NAŠE GOSPODARSTVO
OUR ECONOMY**

Vol. 62 No. 3 2016

pp. 20–28

Controlling for customer and card characteristics, we find that financial literacy is a major determinant of satisfaction. When people know more about financial matters and use their knowledge in their financial activities, they make more efficient decisions and have fewer financial problems, which in turn leads to higher satisfaction. We also find that people who tend to use their credit cards for unnecessary shopping and who have a history of credit card delinquency are less satisfied (Akin, Aysan, Ozcelik, & Yildiran, 2012). The law in the Czech Republic is in the accordance with EU law system, mostly after the updating of the law of payment system No. 284/2009 Sb. In the Czech Republic, Visa and MasterCard are the most widely recognized cards (Juřík, 2001).

The most important matter related to this payment method is safety, which has historically been a problem in the Czech Republic. The division of cards can be done from different perspectives. The basic division is by the money remaining in the bank account or by the recording data. Lots of way to use the cards exist as well, and we can divide these by territory of use, owners' use of them, and service.

The target of this paper is to analyze the use of payment cards in the retail sector of the Czech Republic. The research was conducted with both clients and sellers.

Hypothesis: Payment cards are now a common payment method among Czech citizens.

2 Current Payment Card Situation in the Czech Republic

The situation in the Czech Republic is summarized in Table 1.

Table 1 shows that the number of purchases made using payment cards is increasing each year, accounting for 258.6% in volume of payments in the last five years. However, the average amount has decreased during this time, suggesting that payment cards are now the common method of payments used daily.

Figures 1 and 2 compare the EU to the Czech Republic. Because of their size, the figures are divided into two parts.

The average payment by sellers has decreased in the Czech Republic from year to year, but the total volume has increased from year to year. Comparing 2003 to 2015, the volume has more than quadrupled. There are conditions for increases in subsequent years. By the end of 2015, about 580,000 places accepted payment cards in the Czech Republic (The Association of Payment Cards in the Czech Republic, 2016). The impact of a new payment law with the unification with EU law in 2010 concerning payment cards is clearly seen in the table.

On the opposite side is the market of this payment in European areas increasing in all indicators. The reason for this is probably the history and habit of citizens there.

Table 1. Evaluation of Payments by Cards in the Czech Republic

	Number of payments by sellers	Volume of payments (in thousands of CZK/ Czech crowns)	Sellers' average payment (CZK)
2015	580,434,955	409,210,950	705
2014	479,675,371	467,678,538	975
2013	377,020,819	321,826,633	858
2012	308,186,163	288,834,301	921
2011	270,008,563	269,077,694	997
2010	224,409,915	203,591,131	907
2009	194,231,582	200,924,496	1034
2008	169,254,912	188,964,124	1116
2007	137,899,579	155,530,892	1128
2006	116,890,828	133,746,846	1144
2005	99,756,686	114,584,198	1149
2004	84,790,403	93,885,100	1107
2003	67,652,432	77,588,299	1147

Note: 1 EUR equals about 27 CZK.

Source: The Association of Payment Cards in the Czech Republic (2016), Author's own work.

Figure 1. Number of transactions per type of payment instrument—Card payments (except with e-money cards) (millions, total for the period)

	Total card payments					With cards with a debit function				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Belgium	934.09	997.40	1,066.89	1,154.32	1,226.88	828.17	885.20	945.90	1,020.57	1,087.60
Bulgaria	12.69	12.68	20.65	28.12	32.68	9.26	8.43	12.96	18.61	23.86
Czech Republic	147.51	175.18	213.27	269.23	320.45	135.89	159.66	191.11	238.47	279.12
Denmark	935.93	952.38	1,047.60	1,145.57	1,250.87	867.70	918.91	1,008.00	1,095.87	1,198.16
Germany	2,313.06	2,459.19	2,678.07	2,941.42	3,182.20	1,878.31	2,003.32	2,196.26	2,399.67	2,579.11
Estonia	148.33	155.47	167.36	197.39	212.45	132.51	138.33	149.91	179.14	193.49
Ireland	299.65	304.50	315.29	339.20	356.50	181.20	195.10	207.79	237.60	256.20
Greece	85.34	84.47	78.99	74.97	73.99	7.94	9.24	10.85	12.83	17.67
Spain	2,098.36	2,157.01	2,286.90	2,386.27	2,415.72	921.47	952.32	997.12	1,062.30	1,096.29
France	6,542.50	6,923.25	7,391.64	7,911.01	8,474.98	-	-	-	-	-
Italy	1,395.92	1,471.46	1,502.41	1,566.87	1,699.17	873.31	902.16	914.76	981.12	1,091.52
Cyprus	30.19	31.87	35.78	38.96	41.50	14.11	14.95	17.98	19.95	22.19
Latvia	95.13	97.75	101.86	113.97	127.96	69.41	74.16	78.93	92.24	105.90
Lithuania	88.94	93.02	98.65	107.08	130.85	81.85	84.60	88.52	95.39	118.05
Luxembourg	50.20	54.37	65.01	71.36	82.67	31.00	34.04	36.16	37.83	44.17
Hungary	166.30	183.56	209.46	231.54	264.17	142.65	157.60	184.16	204.37	230.30
Malta	10.13	11.24	12.99	13.84	15.73	6.47	7.17	8.07	8.88	10.23
Netherlands	1,876.85	2,070.56	2,305.59	2,444.44	2,642.89	1,779.87	1,978.12	2,206.41	2,333.92	2,530.66
Austria	344.29	383.61	421.54	446.32	488.75	274.53	292.80	316.89	328.62	358.79
Poland	576.67	703.91	844.23	1,025.99	1,215.59	425.08	528.83	656.65	826.67	1,001.54
Portugal	1,006.31	1,069.49	1,170.47	1,237.47	1,214.16	-	-	-	-	-
Romania	75.88	87.51	105.27	130.38	158.08	57.73	70.07	87.15	107.44	130.33
Slovenia	108.64	110.89	116.84	120.81	127.44	65.67	69.61	74.93	79.67	85.37
Slovakia	87.33	114.39	129.49	152.61	170.54	77.70	102.16	116.98	139.58	156.59
Finland	992.00	899.00	1,040.00	1,091.82	1,155.62	914.00	835.00	953.00	994.96	1,053.23
Sweden	1,650.40	1,773.10	1,940.30	1,982.30	2,190.00	1,196.40	1,306.30	1,421.20	1,477.50	1,648.00
United Kingdom	7,595.00	8,185.00	8,807.00	9,901.00	10,546.00	5,446.00	6,017.00	6,604.00	7,612.00	8,155.00
Euro area total	18,087.52	19,142.69	20,617.89	22,189.07	23,581.19	7,776.04	8,281.16	9,003.10	9,836.62	10,583.12
EU total	29,667.64	31,562.25	34,173.56	37,124.25	39,817.84	16,418.21	17,745.05	19,485.69	21,605.18	23,473.38

Source: ECB (2013)

	Total card payments					With cards with a delayed debit function				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Belgium	934.09	997.40	1,066.89	1,154.32	1,226.88	-	-	-	-	-
Bulgaria	12.69	12.68	20.65	28.12	32.68	-	-	-	-	-
Czech Republic	147.51	175.18	213.27	269.23	320.45	0.14	0.16	0.25	0.24	0.25
Denmark	935.93	952.38	1,047.60	1,145.57	1,250.87	-	-	-	-	-
Germany	2,313.06	2,459.19	2,678.07	2,941.42	3,182.20	394.98	415.39	447.89	501.22	559.69
Estonia	148.33	155.47	167.36	197.39	212.45	0.00	0.00	-	-	-
Ireland	299.65	304.50	315.29	339.20	356.50	-	-	-	-	-
Greece	85.34	84.47	78.99	74.97	73.99	2.14	1.96	1.79	1.63	1.48
Spain	2,098.36	2,157.01	2,286.90	2,386.27	2,415.72	-	-	-	-	-
France	6,542.50	6,923.25	7,391.64	7,911.01	8,474.98	-	-	-	-	-
Italy	1,395.92	1,471.46	1,502.41	1,566.87	1,699.17	-	-	-	-	-
Cyprus	30.19	31.87	35.78	38.96	41.50	0.13	0.69	0.82	0.92	0.96
Latvia	95.13	97.75	101.86	113.97	127.96	2.83	3.69	4.83	7.11	10.66
Lithuania	88.94	93.02	98.65	107.08	130.85	-	-	-	-	-
Luxembourg	50.20	54.37	65.01	71.36	82.67	-	-	-	-	-
Hungary	166.30	183.56	209.46	231.54	264.17	0.52	0.45	0.50	0.50	0.46
Malta	10.13	11.24	12.99	13.84	15.73	-	-	-	-	-
Netherlands	1,876.85	2,070.56	2,305.59	2,444.44	2,642.89	-	-	-	-	-
Austria	344.29	383.61	421.54	446.32	488.75	36.67	56.84	68.49	79.49	89.80
Poland	576.67	703.91	844.23	1,025.99	1,215.59	14.49	13.67	12.36	11.89	11.81
Portugal	1,006.31	1,069.49	1,170.47	1,237.47	1,214.16	-	-	-	-	-
Romania	75.88	87.51	105.27	130.38	158.08	0.59	0.26	0.46	0.51	0.46
Slovenia	108.64	110.89	116.84	120.81	127.44	39.27	38.35	38.93	38.07	38.83
Slovakia	87.33	114.39	129.49	152.61	170.54	0.21	0.17	0.19	0.17	0.14
Finland	992.00	899.00	1,040.00	1,091.82	1,155.62	-	-	-	-	-
Sweden	1,650.40	1,773.10	1,940.30	1,982.30	2,190.00	42.90	40.30	46.20	41.90	43.00
United Kingdom	7,595.00	8,185.00	8,807.00	9,901.00	10,546.00	179.00	166.00	170.00	166.00	167.00
Euro area total	18,087.52	19,142.69	20,617.89	22,189.07	23,581.19	473.19	513.41	558.11	621.50	690.90
EU total	29,667.64	31,562.25	34,173.56	37,124.25	39,817.84	713.86	737.94	792.70	849.64	924.54

Source: ECB (2013)

Figure 2. Number of transactions per type of payment instrument—Card payments (except with e-money cards) (millions, total for the period)

	With cards with a credit function					With cards with a debit and/or delayed debit function				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Belgium	-	-	-	-	-	-	-	-	-	-
Bulgaria	3.44	4.25	7.69	9.51	8.82	-	-	-	-	-
Czech Republic	11.48	15.36	21.91	30.52	41.08	-	-	-	-	-
Denmark	68.23	33.47	39.60	49.70	52.71	-	-	-	-	-
Germany	39.77	40.48	33.92	40.53	43.40	-	-	-	-	-
Estonia	15.82	17.14	17.46	18.25	18.94	-	-	-	-	-
Ireland	118.45	109.40	107.50	101.60	100.30	-	-	-	-	-
Greece	75.26	73.27	66.35	60.52	54.84	-	-	-	-	-
Spain	-	-	-	-	-	-	-	-	-	-
France	-	-	-	-	-	-	-	-	-	-
Italy	-	-	-	-	-	-	-	-	-	-
Cyprus	15.84	16.14	16.86	17.96	18.20	0.11	0.10	0.11	0.13	0.15
Latvia	22.89	19.90	18.10	14.63	11.40	-	-	-	-	-
Lithuania	7.09	8.42	10.13	11.70	12.80	-	-	-	-	-
Luxembourg	19.20	20.33	28.85	33.53	38.50	-	-	-	-	-
Hungary	23.13	25.51	24.81	26.67	33.41	-	-	-	-	-
Malta	3.65	4.07	4.92	4.96	5.50	-	-	-	-	-
Netherlands	-	-	-	-	-	-	-	-	-	-
Austria	33.10	33.97	36.16	38.21	40.15	0.00	0.00	0.00	0.00	0.00
Poland	137.10	161.40	175.23	187.43	202.24	-	-	-	-	-
Portugal	-	-	-	-	-	866.99	907.15	963.34	1,004.18	976.82
Romania	17.54	17.18	17.67	22.43	27.29	-	-	-	-	-
Slovenia	3.70	2.93	2.99	3.07	3.23	-	-	-	-	-
Slovakia	9.42	12.06	12.32	12.86	13.81	-	-	-	-	-
Finland	-	-	-	-	-	-	-	-	-	-
Sweden	101.10	107.80	139.40	115.20	123.00	125.70	132.20	136.80	151.50	162.00
United Kingdom	1,791.00	1,819.00	1,857.00	1,926.00	2,023.00	-	-	-	-	-
Euro area total	308.98	312.65	309.87	331.48	336.88	867.10	907.25	963.45	1,004.31	976.96
EU total	2,517.23	2,542.09	2,638.85	2,725.26	2,872.63	992.80	1,039.45	1,100.25	1,155.81	1,138.96

Source: ECB (2013)

	With cards with a credit function					With cards with a credit and/or delayed debit function				
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012
Belgium	-	-	-	-	-	105.92	112.20	120.99	133.74	139.28
Bulgaria	3.44	4.25	7.69	9.51	8.82	-	-	-	-	-
Czech Republic	11.48	15.36	21.91	30.52	41.08	-	-	-	-	-
Denmark	68.23	33.47	39.60	49.70	52.71	-	-	-	-	-
Germany	39.77	40.48	33.92	40.53	43.40	-	-	-	-	-
Estonia	15.82	17.14	17.46	18.25	18.94	-	-	-	-	-
Ireland	118.45	109.40	107.50	101.60	100.30	-	-	-	-	-
Greece	75.26	73.27	66.35	60.52	54.84	-	-	-	-	-
Spain	-	-	-	-	-	1,144.35	1,169.18	1,261.48	1,302.22	1,303.27
France	-	-	-	-	-	-	-	-	-	-
Italy	-	-	-	-	-	522.61	569.30	587.66	585.76	607.65
Cyprus	15.84	16.14	16.86	17.96	18.20	-	0.00	0.00	0.00	0.00
Latvia	22.89	19.90	18.10	14.63	11.40	-	-	-	-	-
Lithuania	7.09	8.42	10.13	11.70	12.80	-	-	-	-	-
Luxembourg	19.20	20.33	28.85	33.53	38.50	-	-	-	-	-
Hungary	23.13	25.51	24.81	26.67	33.41	-	-	-	-	-
Malta	3.65	4.07	4.92	4.96	5.50	-	-	-	-	-
Netherlands	-	-	-	-	-	96.98	92.44	99.18	110.53	112.24
Austria	33.10	33.97	36.16	38.21	40.15	0.00	0.00	0.00	0.00	0.00
Poland	137.10	161.40	175.23	187.43	202.24	-	-	-	-	-
Portugal	-	-	-	-	-	139.32	162.34	207.13	233.29	237.34
Romania	17.54	17.18	17.67	22.43	27.29	0.02	-	-	-	-
Slovenia	3.70	2.93	2.99	3.07	3.23	-	-	-	-	-
Slovakia	9.42	12.06	12.32	12.86	13.81	-	-	-	-	-
Finland	-	-	-	-	-	78.00	64.00	87.00	96.86	102.38
Sweden	101.10	107.80	139.40	115.20	123.00	184.20	186.60	196.70	196.30	214.00
United Kingdom	1,791.00	1,819.00	1,857.00	1,926.00	2,023.00	179.00	183.00	176.00	197.00	201.00
Euro area total	308.98	312.65	309.87	331.48	336.88	2,087.18	2,169.47	2,363.43	2,462.40	2,502.17
EU total	2,517.23	2,542.09	2,638.85	2,725.26	2,872.63	2,450.40	2,539.07	2,736.13	2,855.70	2,917.17

Source: ECB (2013)

3 Methods

Two types of questionnaires (see enclosures) were used in different ways. These questionnaires were sent to clients using an Internet application; sellers' responses were obtained through personal contact. Both questionnaires contained anonymous questions. They required soft and hard data. The questionnaire included closed and open questions. The survey was conducted in April and May 2016.

The structure of the sample is presented in the next section. The obtained answers were analyzed using relative frequencies.

4 Results

4.1 Clients

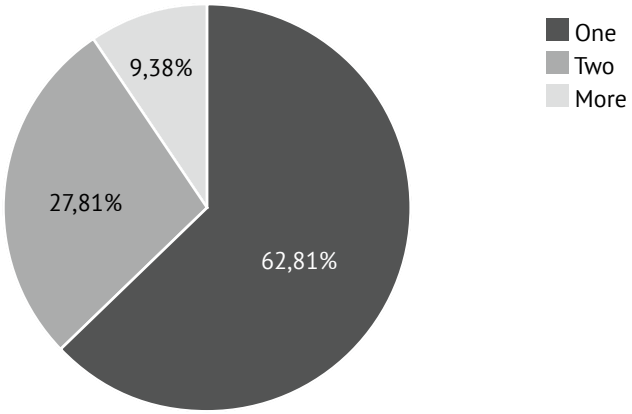
The questionnaire responses were obtained from online Czech questionnaire pages Vyplnto.cz. The advantage of this approach is low time demands and the possibility to appeal to more respondents. The disadvantage is a lower return and loss of personal touch with respondents.

The research included adult citizens of the Czech Republic. The average time to complete the questionnaire was 68 seconds. The questionnaire consisted of 11 questions to obtain information on respondents' age, sex, education, and ownership of payment cards as well as how they use them (e.g., how often and how much they pay). If they did not have any cards, they were asked why not.

Ultimately, 230 women and 122 men responded (i.e., 65.3% and 34.7%, respectively). The age was divided into four target audiences: from 15 to 26 years (65%), from 27 to 40 years (25%), from 41 to 60 years (9%), and over 60 years (1%). The education of respondents was as follows: 177 (50.2%) had a university degree, 152 (43.2%) completed some college, and the remaining 17.6% had professional training or basic education.

Concerning the ownership of payment cards there, only 29 respondents (8.2%) had none. Meanwhile, 62.8% had only 1 card, 27.8% had 2 cards, and 9.4% had more than 2 cards. Among the youngest respondents, nearly 93% owned cards, compared to 97% in the middle category 90% in the two oldest categories. Men more often owned more than 2 cards than women (52% versus 24%, respectively). Results are shown in Figure 3.

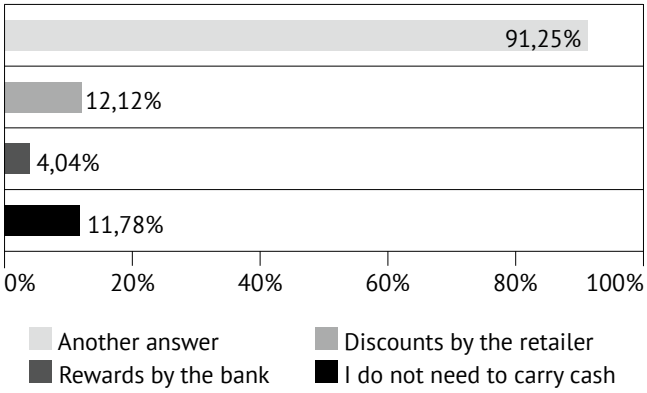
Figure 3. Ownership of payment cards



Source: Author's own work

The next answer targeted the use of cards. A majority (297) of respondents indicated using payment cards for shopping (92%). Explanations for why respondents used payment cards are shown in Figure 4.

Figure 4. Why do you pay by cards?



Source: Author's own work

Bank bonuses or rewards in the Czech Republic are mostly offered by credit cards. These do not seem to be very attractive to clients in this research. People use payment cards to withdraw money from ATMs, make quick and comfortable payments, and lower the possibility of making a mistake on a payment while clarifying the payment arrangement.

The answers to the next questions regarding frequency and volume of respondents' payment are shown the Table 2.

From the table it is clear that people in the Czech Republic use cards as a more common way of payment, but only several times a month.

Table 2. Use of Payment Cards

Frequency of payments	Number of respondents	%
Daily	33	11.1
Several times in a week	131	44.1
Once in a week	31	10.4
Several times in a month	70	23.6
Not so much	32	10.8

Source: Author's own work

The last two questions were oriented to non-owners of payment cards. They were not required to answer, but 90% of affected respondents answered. The first one was reasons for non-ownership of cards. It was an open question, and respondents usually answered in two ways: They did not see any need for a payment card or they did not have an account with any bank because they do not have money (mostly students and seniors respondents). Yet 61% said there was a possibility they would get a card in the future.

4.2 Sellers

The second part of the research involved personally administered questionnaires to owners or managers of retail shops in four towns in South Bohemia: České Budějovice (population of 95,000), Tábor (35,000), Milevsko (9,000), and Chýnov (2,500). In total, 51 shops were screened: 27 in Milevsko, 10 in České Budějovice, 11 in Tábor, and 3 in Chýnov. The questionnaire included 7 requests: 1 for the non-owner of a payment terminal the rest for the owner. The basic description of respondents (sellers) is summarized in Table 3.

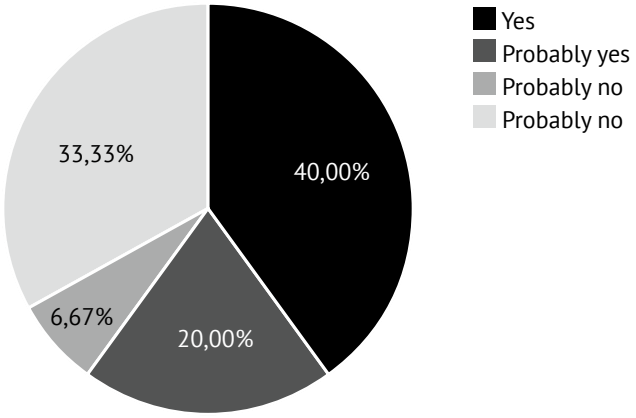
Table 3. Composition of Sellers

Core business	Number of respondents	%
Households needs	2	3.9
Drugstore	4	7.8
Electric appliances	3	5.9
Toys	4	7.8
Pets needs	4	7.8
Books	3	5.9
Jewelry	3	5.9
Flowers	2	5.9
Pharmacy	3	5.9
Shoes	3	5.9
Wear	4	7.8
Food	8	15.7
Underwear	2	3.9
Sport	3	5.9
Not specific	3	5.9

Source: Author's own work

According to the data, 70.6% of respondents offered the possibility to pay by any card. The remaining 29.4% are shops with small returns or cheaper goods. The exact division of their interest is shown in Figure 5.

Figure 5. Would you purchase a payment terminal?



Source: Author's own work

Regarding respondents using a non-cash payment system, the first question targeted the agreement. Among 36 shops, 31 have signed agreements with all providers in the Czech Republic (i.e., Visa, MasterCard, Amex, Diners Club and JBC). Visa and MasterCard providers are present in all shops (i.e., 36) while the remaining 5 shops have not signed agreements with Diners Club, Amex, or JBC.

The second questions analyzed the turnover situation, as shown in Table 4.

Table 4. Payments by Cards in Turnover

% of payments of turnover	Number of respondents	% of respondents
0–10	7	19.4
11–20	3	8.3
21–30	9	25.0
31–40	6	16.8
41–50	1	19.4
Over 50	1	2.8
I do not know	3	8.3

Source: Author's own work

The data indicated that 29 respondents were satisfied with this way of payment. Only 2 respondents complained about technical problems, which sometimes happen and disturb them. The first one complained about old terminals that do not work perfectly. She thought that having NerField Communication (NFC) technology would solve the problem. The second one complained about a problem common to shoe shops; there are lot of claims, but they cannot return money to clients. The last question analyzed NFC technology placement, which seems very attractive. This technology was offered in 16 of 36 shops.

5 Discussion

The paper examined the market of payment cards in the Czech Republic to compare it with some other countries. The history of retail payments over the past three decades shows a steady migration toward electronic and card-based payments. In the continued pursuit of revenue growth, issuers in mature markets, such as the US, Canada, and the UK, have looked to developing markets for sources of growth. The fastest-growing card markets are in Eastern Europe, India, Brazil, and China. These countries, along with Turkey, Greece, Russia, the Czech Republic, Hungary, and Poland are all enjoying double-digit transaction growth in the use of cards, starting from a very small penetration of cards in the population. These markets show great promise in the long term (Baxley & Hergenroeder, 2012). For example, the number of cards issued or used in 2016 was 11,399,055, including 2,231,866 credit cards and 9,154,399 debit cards. This total exceeds the number of inhabitants in the Czech Republic.

According to a survey of Reserve Bank of India (RBI), more cardholders reduced the number of cards in their wallets and consolidated spending with a single card in 2011. The proportion of single cardholders grew most in India in 2011 (90%), followed by the Philippines (84%) and Malaysia (80%). The use of cards is perceived differently by various consumer classes. Women might be bigger spenders than men, but they use their debit cards less frequently according to the RBI study (Kuman & Tanu, 2013). This finding does not correspond with our survey, suggesting that Asian markets change in a different way than the market in the Czech Republic.

In the US, 39.4% of families carry a credit debt with an average debt of $7,100. People are likely to underreport their debt on such surveys, so the figure could be substantially higher. One consequence of debt is personal bankruptcy filings, which numbered more than 1.5 million in 2010. College students are especially vulnerable because credit card debt adds on to student loans (Soll, Keeney, & Larrick, 2012). This finding corresponds with our survey, which was not oriented to the credit card market, but this market was included in the research.

Credit card usage has become widespread in Turkey in the past decade. The number of credit cards increased from 13.4 million in 2000 to 47 million in 2010, making Turkey the second-largest market in Europe, after the UK. As the market increased and reached risky segments of society, problems associated with credit cards ensued. Many cardholders defaulted on their debts. Overconsumption fueled by credit card advertisements, promotions, installments, and easy access to credit might have contributed to this outcome. Cardholders' dissatisfaction became an overriding concern for both the state and banks in the mid-2000s. A series of credit card regulations, including a price ceiling on interest rates, were enacted in 2006. The problems and complaints about credit cards, however, do not seem to have diminished (Akin et al., 2012). It looks like the matter of financial literacy is very important in the use of credit cards, and it is necessary to continue to research this situation in any country.

According to Wright (2012), some have further argued that retailers accept cards that raise their costs, as the alternative—rejecting payment cards—is not a viable option for retailers given that customers expect to be able to use these cards (i.e., the so-called must-take cards argument).

This survey found an increasing volume of payments made by cards from year to year in the Czech Republic. This payment method is now very common, as evident from the decreased average amount. A good aim for future surveys is to examine credit card use and problems connected with the resulting debt.

6 Conclusion

The target of this paper was to analyze the use of payment cards in the retail sector of the Czech Republic. The research was conducted with both clients and sellers.

The history of payments by cards started in the Czech Republic in the 1990s, when the market started to offer this service. In the beginning, cards were mostly used for withdrawing money from ATMs, but this changed very quickly. In 2007, the number of withdrawals was nearly the same as the number of payments by card. Such big growth stemmed from the use of NFC technology, which offered quicker, more comfortable, and safer payments without cash.

This research found that 92% of 352 respondents in South Bohemia have payment cards and more than 35% have more than one card. Non-owners are mostly students and senior citizens. Nearly 92% of credit card owners use it for retail payments. They see advantages from cards, such as no-fee payments (unlike ATM withdrawals), no need to carry a lot of money with them, and quick and safe manipulation. The disadvantages mentioned included the time required for payments and the habit of carrying cash.

Among retailers, 70% of sellers had a payment terminal. Sellers of cheaper goods mostly did not have a terminal because of the small turnover and habit of Czech people to not pay small amounts using a card. The ownership of a payment terminal does not depend on the size of shop in this research. The sellers usually accept all cards, although 15% do not accept AMEX, Diners Club, and JBC. Retailers were mostly satisfied with the service; they only complained about fees for this service.

As this research has demonstrated, payment cards are now a common payment method among Czech citizens, thereby supporting our hypothesis. What should be surveyed now is the situation with credit cards and resulting debt from them.

References

1. Akin, G. G., Aysan, A. F., Ozcelik, S., & Yildiran, L. (2013). *Credit card satisfaction and financial literacy: Evidence from an emerging market economy.* Retrieved from http://web.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=4&sid=b6ae5c3c-7561-4a18-8806-c5b76eea1abf%40sessionmgr111&hid=125
2. Baxley, D., & Hergenroeder, G. (2012). Global trends in retail payments. Retrieved from http://web.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=5&sid=0b353bcc-f5e1-4150-b00f-8e8c276104fc%40sessionmgr198&hid=112
3. ECB. (2013). *Statistical data*. Retrieved from http://sdw.ecb.europa.eu/browse.do?node=3447413
4. EU. (2015). *Survey on merchants' costs of processing cash and card payments.* Retrieved from http://ec.europa.eu/competition/sectors/financial_services/deloitte_payment_acceptance_survey_en.pdf
5. Juřík, P. (2001). *Svět platebních a identifikačních karet.* Praha: Grada Publishing
6. Kuman, V. T., & Tanu, M. (2013). *Demographic differences and shopping behavior of Indian middle income group users with debit cards: An empirical analysis*. Retrieved from http://ehis.ebscohost.com/eds/detail?vid=3&sid=41b03a7b-a2a7-49c1-8264-f74b47c4dd43%40sessionmgr111&hid=106&bdata=Jmxhbmc9Y3Mmc2l0ZT1lZHMtbGl2ZQ%3d%3d#db=bth&AN=88905859
7. Mincher, B. (2007). *The secrets of money*. Colorado, CO: BraunMedia LLC.
8. Polouček, S. a kol. (2006). *Bankovnictví*. Praha: C .H. Beck.
9. Ryan, S. J. (2012). *Personal financial literacy*. Mason, South-Western.
10. Soll, J. B., Keeney, R. L., & Larrick, R. P. (2013). *Consumer misunderstanding of credit card use, payments, and debt: Causes and solutions*. Retrieved from http://web.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=4&sid=0b353bcc-f5e1-4150-b00f-8e8c276104fc%40sessionmgr198&hid=112
11. The Association of Payments Cards in the Czech Republic. (2016). *BCA Statistical data*. Retrieved from http://statistiky.cardzone.cz/download/sbk_statistika_2016.pdf
12. Wright, J. (2012). *Why payment card fees are biased against retailers*. Retrieved from http://web.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=5&sid=0b353bcc-f5e1-4150-b00f-8e8c276104fc%40sessionmgr198&hid=112

Enclosure 1: Questionnaire for users

1.) Say please your age
2.) Say please your sex
3.) Say please your education level: university, college, professional, basic
4.) Ownership of any payment card? Yes/no
5.) If no, why?
6.) If yes, do you use it? Yes/no
7.) How often you use it?
8.) How much do you pay on it (average amount)?
9.) Why do you have it? I do not need to carry cash/Rewards from the bank/Discount from retailer/Another reason
10.) Do you have one or more cards?
11.) If you do not have any card now, do you think you might in the future?

Enclosure 2: Questionnaire for retailers

1.) Say please your core business
2.) Do you have a payment terminal? Yes/no
3.) If no, would you purchase a payment terminal? Yes/Probably yes/Probably no/No
4.) If yes, how is your agreement made?
5.) Say please the participation of payments in your turnover: 0–10%/11–20%/21–30%/31–40%/41–50%/More than 50%/ I do not know
6.) Are you satisfied with this way of payments?
7.) Do you have NFC technology?

Author

Liběna Kantnerová, Ing., Ph.D., graduated from the Czech University of Life Sciences in Prague in 1985. She worked in different economic/administrative positions in ČSOB Bank a.s., Budweiser Budvar n.p. Since 2007, she has worked as the senior assistant at the Department of Accounting and Finance EF JU, with a focus on finance, including financial markets, financial systems and financial institutions, international finance, and financial literacy. In 2011, she defended her doctoral dissertation as part of the master's program in economics and management.

Plačilne kartice

Izvleček

Cilj tega članka je analizirati uporabo plačilnih kartic med kupci in med prodajalci v prodaji na drobno na Češkem. Vprašalniki, namenjeni kupcem, so usmerjeni na zadovoljstvo s karticami in z njimi povezanimi storitvami. Pri kupcih analiziramo zadovoljstvo z dobičkom in funkcijami kartic. Raziskava kaže, da ima od 352 respondentov v Južni Češki plačilne kartice 92 odstotkov ljudi in da jih ima več kot 35 odstotkov več kartic. Ugotovljeno je bilo, da ima 70 odstotkov prodajalcev plačilni terminal.

Ključne besede: plačilna kartica, plačilo, prodajalci, plačilni terminal, uporabniki

Seven or Fewer Core Contents of Social Responsibility?

Mira Zore
PhD student at the Faculty of Economics and Business, University of Maribor, Slovenia
mira.zore@zomi.si

Majda Bastič
Retired, Faculty of Economics and Business Maribor, University of Maribor, Slovenia
majda.bastic@guest.um.si

Matjaž Mulej
Retired, Faculty of Economics and Business Maribor, University of Maribor, Slovenia
matjaz.mulej@um.si

ORIGINAL SCIENTIFIC PAPER

RECEIVED: JUNE 2016

REVISED: JULY 2016

ACCEPTED: JULY 2016

DOI: 10.1515/ngoe-2016-0016

UDK: 316.62:159.947.23(497.4)

JEL: M140

Citation: Zore, M., Bastič, M., & Mulej, M. (2016). Seven or Fewer Core Contents of Social Responsibility?. *Naše gospodarstvo/Our Economy, 62*(3), 29–38. DOI: 10.1515/ngoe-2016-0016

Abstract

Corporate social responsibility (CSR) replaces causes of the current crisis by principles of accountability, transparency, ethics, and respect for organizational stakeholders, the law, international standards, and human rights (International Organization for Standardization, 2010). Interdependence and a holistic approach link them and CSR's core contents. We examined if Slovene companies involve all seven CSR core contents of ISO 26000 (CSR to employees, customers, local community, environment, human rights, ethical behavior, and leadership). The analysis united three of them—CSR to employees, ethical behavior, and human rights—into CSR leadership to employees.

Key words: CSR, customers, employees, leadership, Slovenia, ISO 26000

1 Introduction

In ISO 26000, corporate social responsibility (CSR) signifies one's responsibility for one's impact on society (International Organization for Standardization [ISO], 2010). The European Union recommends that its member states' governments and big companies become role models of CSR (EU, 2011).. Few companies embrace CSR (EU, 2011; Hrast, 2015), although CSR supports improvement: Companies integrate their managerial considerations of social, environmental, and economic order in a voluntary, systematic and coherent way, in consultation with their stakeholders (Perrine, 2013). CSR reinforces honesty, reliability, broad-mindedness, and a long-term orientation that enhances reputation and makes sense. One can prevent many (opportunity) costs (ISO, 2010). Thus, CSR supports behavior aimed at positively affecting stakeholders and reaching beyond the organizational short-term economic and legal views. We studied whether Slovene companies cover all seven CSR core contents in ISO 26000.

NG
OE

NAŠE GOSPODARSTVO
OUR ECONOMY

Vol. 62 No. 3 2016

pp. 29–38

2 Literature Review

Interest in CSR has spread (Serenko & Bontis, 2009), but no commonly accepted definition of CSR existed (Turker, 2009) before ISO26000 (ISO, 2010). CSR's core contents/dimensions are difficult to operationalize and measure. A literature review shows poor skills of promoting the CSR initiatives (Perrine, 2013). Perhaps, this makes managers doubtful about engaging in CSR (Bartlett, 2006). In addition, many managers reduce CSR to charity instead of cost reduction and market creation based on ISO 26000 notions of interdependence, holism, and principles—namely, accountability, transparency, ethical behavior (i.e., reliability, honesty, and integrity), and respect for stakeholders' interests, rule of law, international norms, and human rights (ISO, 2010). ISO 26000 diminishes one-sided, abusive, short-term, and narrow-minded practices; it enables more systemic values, cultures, ethics, and norms of decisive persons and bodies (Mulej & Dyck, 2014).

Interpretation of CSR depends mainly on applied approaches, such as stakeholder-, performance-, and motives-oriented ones (Basu & Palazzo, 2008). Stakeholders play various roles and engage in various activities to make firms practice CSR. The motives-based approach examines the external causes for organizations' CSR-practices (Basu & Palazzo, 2008). The performance-based approach exposes activities and focuses on relationships among CSR, corporate strategy, and required performance (McWilliams, Siegel, & Wright, 2006).

Literature on CSR shows that the stakeholders' motives matter. Freeman (1984) defined stakeholders as groups or persons who can affect, or be affected by, the attainment of the organization's objectives or be directly or indirectly interested in the company (Turker, 2009). Stakeholders are internal and external. Four groups of stakeholders exist. Social stakeholders influence relationships between human entities, and non-social ones exclude human relationships; both groups are further divided into a primary group with direct impacts and a secondary group with less direct impacts (Wheeler & Sillanpää, 1997).

Carroll (1991) distinguished between economy-based responsibilities, including satisfying consumers' needs, providing jobs, paying decent wages, generating capital for investments, and addressing legal responsibilities (including compliance with laws and regulations), and responsibilities referring to the adoption of just codes for ethical behavior, the distinction of right/wrong, and discretionary aspects associated with one's contribution to the well-being of one's community.

CSR reaches beyond charity; ISO 26000 contains seven core contents (CSR to employees, natural environment, local community, customers, human rights, leadership, and ethical behavior), linked by interdependence and holistic approach (ISO, 2100). Its principles help companies prevent many opportunity costs that are not seen in accounting (e.g., strikes, replacing lost suppliers and customers, curing ill/injured personnel, and ruined nature). One can strengthen and develop CSR if matching all seven core contents and seven principles of CSR in ISO 26000; they are complementary and connected by interdependence and a holistic approach. A Google search on CSR returns millions of contributions (Zore, 2016).

CSR contents are summarized as follows based on ISO 26000 (Zore, 2016).

CSR to Employees

Employees are the company's only active asset (EU, 2011). Employees who receive strong encouraging signals from their supervisors are more likely to develop and implement creative ideas that positively affect their environment. Working for socially responsible companies increases employees' engagement, creative involvement, improved relations, and commitment (Maignan, Ferrel, & Hult, 1999). CSR increases firm attractiveness to prospective employees, too. Employees' psychological needs drive engagement in CSR (Aguilera, Rupp, Williams, & Ganapathi, 2007). Rupp, Ganapathi, Aguilera, and Williams (2006) used self-determination theory to explain the decisional contexts in organizations that foster employees' competence, relatedness, and autonomy; they may also drive CSR engagement.

CSR to Natural Environment

Companies that match CSR's environmental standards are more competitive, at least in the middle and long term. They are more able to invest into more efficient, cleaner, and environmentally friendly technologies (EU, 2001). The organizational decisions and activities impact the natural environment wherever they are located. To diminish one's influence on one's environment, one should use the requisitely holistic approach covering broader economic, social, and environmental consequences of one's activities. Environmental issues are closely linked to human rights, community involvement and development, and other issues of socially responsible behavior (ISO, 2010).

CSR to Local Community

A company's relationships with its local community matter. The community provides employees for the organization, makes the environment that either attracts or drives away

competent personnel, stipulates taxes, ensures basic support, and can enforce restrictions on the institution's or industry's activity (Theaker, 2012). Foreign companies (except monopolistic abusers) endanger local environmental regulations less than local ones do (List, Mchone, & Millimet, 2004). Socially responsible companies should employ people from their local communities (Salb, Friedman, & Friedman, 2011).

CSR to Customers

Relationships with customers are critical in the CSR-to-outcomes relationships, especially customer satisfaction (Levy, Brown, & De Jong, 2010), consumer–organization fit, and consumer trust (Sen & Bhattacharya, 2001). Socially responsible customers know the social consequences of their shopping; they choose socially responsible suppliers. Long-term reliability makes the entire organization focus on what its customers need and want, such as above-average quality and security, to bring higher profits to good examples of CSR (Golob, 2006).

CSR to Human Rights

The international community can and must ensure that investors adhere to agreements and rules concerning basic human rights. Legal norms make organizations comply with human rights standards and define potential abuses of them as well as the moral and ethical principles of the people's brotherhood (Donnelly, 2007). Citizens need enough information to be able to judge the organizations' CSR and suggest improvements (Sikka, 2011).

CSR to/of Leadership

Organizational management's quality reflects the CSR practice, particularly managers' attitudes toward social problems, their responsiveness, and their pro-activeness. Leaders and supervisors are key drivers for corporate ethics (Treviño, Brown, & Hartman, 2003). Leadership is no person or position, but a complex moral relationship between people, based on trust, obligation, commitment, emotion, and a shared division of the good (Ciulla, 2004).

CSR to Ethical Behavior

CSR includes the company's concern for its local community, its natural environment, its employees, etc. It must be as fully integrated as possible. Ethical responsibility should reach beyond law. Such organizations are more likely to have positive results in the long term: They voluntarily identify the interests and needs of the wider community and treat them well beyond the law. Managers' and owners' personal moral development and their organizational ethics support the best CSR.

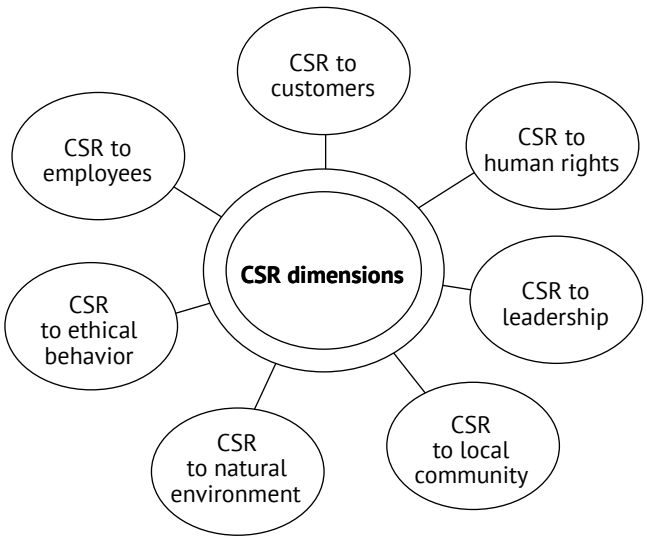
3 Data, Methodology, and Results

No study has provided, to the best of our knowledge, a unified instrument for measuring all seven core contents of CSR and for analyzing their mutual relationships. In our study, we tested two hypotheses:

H1: In practice, the concept of CSR includes all seven core contents/dimensions.

H2: Relationships among the dimensions of CSR are positive.

Figure 1. CSR dimension of ISO 26000 (ISO, 2010)



3.1 Sample selection and Data Collection Procedure

The study surveyed 4500 Slovene manufacturing companies that were coincidentally selected from a wide range of industries using PIRS (the Slovenian business register). A self-administered questionnaire was applied to collect data on CSR dimensions in June–July 2013. A requisite review of literature (see Zore, 2016) and some interviews with practitioners that generated minor modifications in the wording of questions and some added items ensured the content validity of the scale. The questionnaire was sent by e-mail, including

a cover letter to explain the study's purpose and provide access to the questionnaire.

The respondents were business professionals (managers, owners) with knowledge of and experience with CSR in their companies. Three hundred twenty-one questionnaires were usable. The response rate was 7.13%, which is normal in Slovenia when general or other managers are respondents.

Small companies (10–49 employees) made up 49% of the sample, micro companies (under 10 employees) made up a quarter of it, and the other companies had 50 or more employees.

3.2 Construct Measures

To find an appropriate scale for measuring all seven CSR dimensions, we reviewed many studies and consulted with experts. Ultimately, 43 items were generated. The respondents' statements about the selected items were measured on a 5-point Likert scale (1 = "strongly disagree"; 5 = "strongly agree").

The scale measuring CSR to environment included nine items. Five items were taken from Turker's (2009) scale; experts suggested an additional four. High values on these items mean that companies care about the future generation's life actively and encourage their employees to join activities to protect and improve environmental quality; companies also manage and control risks to prevent environmental accidents.

The scale for measuring CSR to customers included five items from Turker's (2009) scale. They measured how well companies respect customers' rights and how important they find their customers' satisfaction and attitude to unfair competition.

The scale for measuring CSR to local community had nine items. Three items were taken from Turker's (2009) scale, and two were added from the Kanji and Chopra's (2010) scale. Experts suggested four more items. The selected items measured the intensity of activities with which companies create employment and support nongovernmental organizations and projects promoting well-being in their local community.

The scale for measuring CSR to employees had nine items. Three items were taken from Turker's (2009) scale and one from Rettab, Brik, and Mellahi's (2009) scale; the others were added to measure principles from ISO 26000. The selected items measured employees' working environment, their possibilities for constructive criticism and debate about their ideas on improvements of products and processes, and the discrimination of employees.

We measured CSR of leadership using seven items. Four items were taken from Reed, Vidaver-Cohen, and Colwell (2011); experts proposed the others. This scale measured the managers' social responsibility to employees (e.g., honesty and trust among employees).

Four items measured CSR to human rights; they were taken from the Benn, Todd, and Pendleton's (2010) scale. It measured employees' free choice to participate in unions, employment, and the presence of worker discrimination.

3.3 Research Methods

We used the steps and methods proposed by Koufteros (Koufteros, 1999; Koufteros, Vonderembse, & Doll, 2001). They included instrument development, an exploratory analysis (EFA), and a confirmatory analysis (CFA).

An EFA was used to find the smallest number of interpretable factors matching a recognized theory and the model fitting the data well. Then, we used a CFA to assess construct reliability and validity of subjective measurement instruments (Anderson & Gerbing, 1988). The scale reliability was assessed by both the individual reliability of each indicator and by its composite reliability. Individual reliability coefficient R^2 should be above 0.5, and composite reliability coefficients should be above 0.7 (Hair, Andersen, Tatham, & Black, 1995). We analyzed Cronbach's alpha too; it should be above 0.7 (Nunnally, 1978).

Convergent validity was accepted when factorial loadings were above 0.4 and *t* values were significant (i.e., above 1.96). Discriminate validity was confirmed when the average variance extracted (AVE) was above the squared correlations between constructs.

The overall fit of the hypothesized model was tested with the Chi-square statistic and other fit indexes, such as ratio of Chi-square to degrees of freedom, goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), comparative fit index (CFI), root mean square residual (RMSR), and the root mean square error of approximation (RMSEA).

3.4 Results

The value of Kaiser-Meyer-Olkin measure of sampling adequacy was extremely high at 0.949. The significance of Bartlett's test of sphericity for a four-factor solution showed that the obtained data were suitable for factor

analysis. Forty-three items were loaded to four factors with an eigenvalue above one. Four factors accounted for 61.8% of the variation in the data, which is acceptable for research in social sciences (Hair et al., 1995). The factor solution with factor description, Cronbach's alphas, factor loadings, and the percentage of variance explained are provided in Table 1.

The factor loadings were ranged from 0.498 to 0.845; most of them were above 0.7. Factor F1 explained 46.3% of the variance; its 11 items measured the CSR of management, CSR to employees, and CSR to human rights. We named it CSR leadership to employees. Factor F2 explained 9.2% of the variance; its six items measured the CSR to natural environment. Thus, it was named CSR to natural environment.

Table 1. Explanatory Factor Analysis for CSR Dimensions

Factor Items	Factor loading
CSR leadership to employees (Cronbach's alpha = 0.943)	
Our company policies provide a safe and healthy working environment avoiding abuse and the harsh and inhumane treatment of employees.	0.563
Our company policies encourage employees' collaboration.	0.786
Our company policies encourage employees' commitment.	0.742
In our company, managers accept constructive criticism; they display interest in learning from employees and encourage debate on ideas.	0.760
Our company practices moral integrity; such behavior inspires employees' trust and promotes transparency throughout the organization, freely admitting mistakes, and valuing integrity over profit or material gain; one refuses manipulation or deceit to achieve personal goals.	0.812
Managers stimulate employees to practice honesty, reliability, and other ethical decisions.	0.779
Our company stimulates ethical consumption.	0.661
In our company, employees receive a reasonable salary to maintain an acceptable quality of life.	0.751
Our company avoids linguistic, religious, sex, age, and ethnic discrimination.	0.661
Our company ensures social security for all employees.	0.675
Percentage of Variance Explained	*46.3*
CSR to natural environment (Cronbach's alpha = 0.9)	
Our company implements special programs to minimize its negative impact on the natural environment.	0.806
Our company participates in activities protecting and improving the quality of the natural environment.	0.815
Our company targets sustainable growth considering future generations.	0.717
Our company invests to create a better life for future generations.	0.787
Our company encourages employees to participate in voluntary activities for the protection of the natural environment.	0.592
Our company manages and controls organizational risks to prevent environmental accidents.	0.610
Percentage of Variance Explained	*9.2*
CSR to local community (Cronbach's alpha = 0.879)	
Our company emphasizes the importance of its CSR to the society/community.	0.681
Our company contributes to campaigns and projects that promote society's well-being.	0.780
Our company supports nongovernmental organizations working on problematic topics.	0.723
Our company tries to contribute to sustainable economic development.	0.767
Our company creates employment for local community residents.	0.686
Percentage of Variance Explained	*5.7*
CSR to customers (Cronbach's alpha = 0.716)	
Our company respects customers' rights beyond the legal requirements.	0.845
Satisfaction of our customers is very important to our company.	0.716
Our company always avoids unfair competition.	0.498
Percentage of Variance Explained	*4.9*

Factor F3 explained 5.7% of the variance; its five items measured the CSR to local community. It was named CSR to local community. Factor F4 consists of three items taken from the CSR to customer scale. They included the variable "our company always avoids unfair competition," although its factor loading was under 0.5; considering the suggestion of Tabachnick and Fidell (1989), a factor with two items is unreliable. F4 explained 4.9% of the variance. F4 was named CSR to customers. All four Cronbach's alphas as measures of an internal consistency of factors were above 0.7, which is considered satisfactory for this kind of research.

We created four factors as latent variables. Following Dunn, Seaker, and Waller (1994); we assessed the convergent validity of the factors by examining the factor loadings and their statistical significance through *t*-values. All items were significantly related to their specified constructs; the items' factor loadings were very high and significant at the 0.01 level. Significant factor loadings proved the existence of the posited relationships between the observed items and a respective latent variable. The reliability of the observed items was measured by squared correlations (R^2). We dropped items that did not meet the 0.4 criterion. The analysis of modification indexes (MI) showed some highly correlated error terms (MI > 10). We dropped 11 items; 3 items measured CSR to employees, 3 CSR to natural environment, and 2 CSR to local community. Table 2 summarizes the standardized factor loadings, critical ratios, and R^2 for other items.

This study applied three types of overall model fit measures: absolute, incremental, and parsimonious. Among the absolute fit measures, we applied the χ^2, normed χ^2, GFI, AGFI, and RMR. The χ^2 (178.368 with 95 degrees of freedom) was statistically significant ($p < 0.05$). It is generally agreed that the χ^2 value should be used as a guide rather than an absolute index of fit due to its sensitivity to sample size and model complexity. The value of normed χ^2 ($\chi^2/df = 1.880$) fell in the recommended interval values between 1 and 2. The GFI had value of 0.935, which was above the threshold value of 0.9,

Table 2. Standardized Factor Loadings, Critical Ratios, and R^2

Factor Item	Stand. factor loading	C.R.	R^2
CSR leadership to employees			
Our company policies provide a safe and healthy working environment; it avoids abuse and the harsh and inhumane treatment of employees.	0.660	- [c]	0.430
Our company policies encourage employees' commitment.	0.800	12.493	0.640
In our company, managers accept constructive criticism; they display interest in learning from employees and encourage debate on ideas.	0.831	12.819	0.691
Our company practices moral integrity; it inspires employees trust and promotes transparency throughout the organization, freely admitting mistakes, and valuing integrity over profit or material gain; one refuses manipulation or deceit to achieve personal goals.	0.866	13.258	0.749
Our company stimulates ethical consumption.	0.810	12.624	0.656
In our company, employees receive a reasonable salary to maintain an acceptable quality of life.	0.711	11.306	0.505
Our company avoids linguistic, religious, sex, age, and ethnic discrimination.	0.670	10.735	0.449
CSR to natural environment			
Our company invests to create a better life for future generations.	0.743	- [c]	0.553
Our company encourages its employees to participate in voluntary activities for the protection of the natural environment.	0.784	12.970	0.615
Our company manages and controls its risks to prevent environmental accidents.	0.736	12.246	0.541
CSR to local community			
Our company emphasizes the importance of its social responsibility to society/the community.	0.818	- [c]	0.668
Our company tries to contribute to sustainable economic development.	0.869	14.932	0.756
Our company creates employment for local community residents.	0.705	11.712	0.497
CSR to customers			
Our company respects customers' rights beyond the legal requirements.	0.617	- [c]	0.380
Satisfaction of our customers is very important to our company.	0.636	8.811	0.404
Our company always avoids unfair competition.	0.640	8.852	0.409

[c] – Indicates a parameter fixed at 1.0 in the model.

while the AGFI was 0.907 (i.e., above the threshold value of 0.9). RMR had the value of 0.036 (i.e., below the threshold value of 0.05).

Among comparative fit indexes, we chose the CFI and the Tucker-Lewis index (TLI). Their values were 0.971 and 0.963, respectively, indicating support for the proposed measurement model. We assessed the parsimony model fit suing the parsimony goodness-of-fit index (PGFI) and the RMSEA. Their values were 0.653 and 0.052, respectively. Values of the analyzed indexes indicated a good model fit.

Assuming adequate model fit, the constructs' discriminant validity was assessed by comparing AVE with the squared correlation between the constructs. Discriminant validity exists if the items share more common variance with the respective construct than any variance of the given construct shares with other constructs (Fornell & Larcker, 1981, as cited in Lu, Lai, & Cheng, 2007). It means that the construct's AVE should be much higher than the squared correlations between that construct and other constructs. All values of AVE exceeded the corresponding squared correlations coefficients. These results demonstrated the evidence of discriminant validity of the constructs in the proposed model.

We then tested the construct reliability by assessing both composite reliability and AVE (see Table 3). Construct reliability means that indicators are consistent in measuring the respective construct. It is confirmed if the composite reliability's value is above 0.7 (Hair et al., 1995) and AVE is above 0.5. Almost all values of the composite reliability exceeded the threshold value of 0.7; only the value of the construct CSR to customers was 0.65. The values of AVE were above 0.5, except the value of the construct CSR to customers, which was 0.40, meaning that only 40% of the variance in the specified items was explained by this construct. This result was expected because one item measuring this construct had R^2 under 0.4.

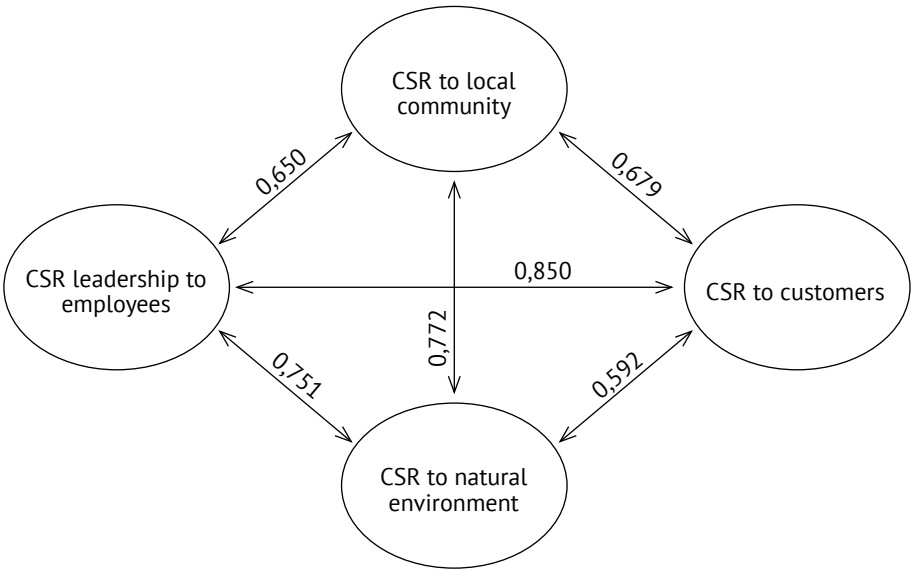
Table 3. Construct Reliability and AVE

Construct	Composite Reliability (CR)	Average Variance Extracted (AVE)
CSR leadership to employees	0.91	0.59
CSR to local community	0.84	0.64
CSR to customers	0.65	0.40
CSR to environment	0.80	0.56

To summarize, the overall results of the goodness-of-fit of the model and the assessment of the measurement model indicated that the proposed model exhibited a reasonable fit with the collected data. The results indicate that managers in Slovene companies practice four dimensions of CSR, but they also include items measuring human rights and ethical business. Hence, H1 is not confirmed.

In H2, we assumed positive relationships between CSR dimensions. We used correlation coefficients to test H2 (Figure 2).

Figure 2. Correlations' coefficients



Fit indices: χ^2 = 178.368 (p<0,05), df = 95, χ^2/df = 1.880, GFI = 0.935, AGFI = 0.907, CFI = 0.971, RMR = 0.036, RMSEA = 0.052, TLI = 0.963, PGFI = 0.653

All correlation coefficients between CSR dimensions were positive, thereby confirming H2. The highest and positive correlation coefficient belongs to the relationship between CSR leadership to employees and CSR to customers. CSR leadership to employees is in critical correlation with all other CSR dimensions. Employees felt the highest responsibility to company's customers, followed by their responsibility to environment and the community. The correlation coefficient measuring the relationship between CSR to customer and CSR to natural environment was the lowest. Hence, socially responsible companies care about four CSR dimensions from ISO 26000, not seven.

4 Conclusions and Discussion

In the research reported about here, we contribute to the theory of CSR by using a requisitely holistic approach and he inclusion of all seven core contents as major dimensions of CSR from ISO 26000 in the organizational practice. We investigated whether Slovene companies involve all seven of them. Our conclusions were based on the data obtained from managers of Slovenian companies.

The detected data structure exposed four CSR core contents/dimensions in Slovene companies: CSR leadership to employees, to customers, to local community, and to environment. The research showed that all correlation coefficients between these four CSR dimensions were positive. Slovene companies are aware of the importance of their responsibility to the well-being of the local community, natural environment, customers, and employees.

The attained results indicated that three dimensions—CSR to employees, CSR of leadership, and CSR to human rights—do not differ in companies enough to generate three diverse factors. Thus, they were united into a single factor, called CSR leadership to employees. The attained results indicated that the seven core subjects in ISO 26000 are general dimensions. Inside companies, human rights are just a part of the CSR leadership to employees; CSR of leadership covers all other CSR dimensions (i.e., to employees, customers, local community, and environment). Therefore, it is included in all other dimensions. We lack room here for empirical details.

This finding matches the extensive research on employees conducted before the passing of ISO 26000 (Aguilera et al., 2007). CSR, once it reaches beyond charity, contributes to the better well-being and business, when one organizes management, human rights, environment, labor relations practice, business honesty, customer problems, and involvement in the community and its development. CSR enables this because interdependence and the holistic approach are integrated in it as links.

Companies that wish to develop business success should invest in improving all of these CSR dimensions. A higher CSR level is achieved by exposing the holism of the approach, supported by interdependence, and applied to essential activities and relationships of people. Everyone involved in the company's operations—owners, managers, employees, and societal and business partners—must participate. The seven CSR dimensions must be practiced everywhere in every organization.

All assertions are based on our respondents as individuals having their opinions and practices and expressing their opinions on scales of agreement. Since the topic of CSR is socially popular, respondents may have exaggerated their evaluation. This fact may imply that the picture is too good and needs further research for more realism. The same new methodology might be used again.

References

1. Aguilera, R. V., Rupp, D. E., Williams, C. A., & Ganapathi, J. (2007). Putting the S back in corporate social responsibility: A multilevel theory of social change in organizations. *Academy of Management Review*, *32*(3), 836–863. http://dx.doi.org/10.5465/AMR.2007.25275678
2. Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modelling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411–423. http://dx.doi.org/10.1037/0033-2909.103.3.411
3. Bartlett, C. A. (2006). *McKinsey & Company: Managing knowledge and learning*. Boston: Harvard Business School.
4. Basu, K. & Palazzo, G. (2008). Corporate social responsibility: A process model of sense-making. *Academy of Management Review*, *33*(1), 122–136. http://dx.doi.org/10.5465/AMR.2008.27745504
5. Benn, S., Todd, L. R., & Pendleton, J. (2010). Public relations leadership in corporate social responsibility. *Journal of Business Ethics*, *96*(3), 403–423. http://dx.doi.org/10.1007/s10551-010-0474-5
6. Carroll, A. B. (1991). The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders. *Business Horizons*, *34*(4), 39–48. http://dx.doi.org/10.1016/0007-6813(91)90005-G
7. Ciulla, J. B. (1999). The importance of leadership in shaping business values. *Long Range Planning*, *32*(2), 166–172. http://dx.doi.org/10.1016/S0024-6301(98)00145-9

8. Donnelly, J. (2007). The relative universality of human rights. *Human Rights Quarterly*, *29*(2), 281–306. http://dx.doi.org/10.1353/hrq.2007.0016
9. Dunn, S. C., Seaker, R. F., & Waller, M. A. (1994). Latent variables in business logistics research: Scale development and validation. *Journal of Business Logistics*, *15*(2), 145–172.
10. EU (2001). *Green paper: Promoting a European framework for corporate social responsibility*. Brussels: European Commission.
11. EU (2011). *A renewed EU strategy 2011–14 for corporate social responsibility. Com (2011) 681 Final*. Brussels: European Commission.
12. Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Boston: Pitman.
13. Golob, U. (2006). *Posameznik in družbena odgovornost podjetja v* času *transformacije slovenske družbe*. Ljubljana: FDV.
14. Hair, J. F., Andersen, R. E., Tatham, R. C., & Black, W. C. (1995). *Multivariate data analysis, with readings*. Englewood Cliffs, NJ: Prentice Hall.
15. Hrast, A. (2015). *Načrtovanje in poročanje o družbeni odgovornosti: novi znanstveni in strokovni pogledi s primeri dobrih praks: zbornik prispevkov*. Maribor: IRDO.
16. International Organization for Standardization. (2010). *ISO 26000 project overview*. Geneva, Switzerland: Author.
17. Kanji, G. K., & Chopra, P. K. (2010). Corporate social responsibility in a global economy. *Total Quality Management*, *21*(2), 119–143. http://dx.doi.org/10.1080/14783360903549808
18. Koufteros, X. A. (1999). Testing a model of pull production: A paradigm for manufacturing research structural equation modelling. *Journal of Operations Management*, *17*(4), 467–488. http://dx.doi.org/10.1016/S0272-6963(99)00002-9
19. Koufteros, X. A., Vonderembse, M. A., & Doll, W. J. (2001). Concurrent engineering and its consequences. *Journal of Operations Management*, *19*(1), 97–115. http://dx.doi.org/10.1016/S0272-6963(00)00048-6
20. Levy, D. L., Brown, H. S., & De Jong, M. (2010). The contested politics of corporate governance: The case of the global reporting initiative. *Business & Society*, *49*(1), 88–115. http://dx.doi.org/10.1177/0007650309345420
21. List, J. A., Mchone, W. W., & Millimet, D. L. (2004). Effects of environmental regulation on foreign and domestic plant births: Is there a home field advantage? *Journal of Urban Economics*, *56*(2), 303–326. http://dx.doi.org/10.1016/j.jue.2004.03.007
22. Lu, C. S., Lai, K. H., & Cheng, T. E. (2007). Application of structural equation modelling to evaluate the intention of shippers to use internet services in liner shipping. *European Journal of Operational Research*, *180*(2), 845–867. http://dx.doi.org/10.1016/j.ejor.2006.05.001
23. Maignan, I., Ferrell, O. C., & Hult, G. T. M. (1999). Corporate citizenship: Cultural antecedents and business benefits. *Journal of The Academy of Marketing Science*, *27*(4), 455–469. http://dx.doi.org/10.1177/0092070399274005
24. McWilliams, A., Siegel, D. S., & Wright, P. M. (2006). Corporate social responsibility: Strategic implications. *Journal of Management Studies*, *43*(1), 1–18. http://dx.doi.org/10.1111/j.1467-6486.2006.00580.x
25. Mulej, M., & Dyck, R. (Eds.). (2014). *Social responsibility beyond neoliberalism and charity* (4 vols.). Shirjah, UAE: Bentham Science.
26. Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.
27. Perrine, F. (2013). The complementarity of corporate social responsibility and innovation: Evidence from Belgian firms. University of Mons. *Global Journal of Business Research*, *7*(5) 99–113.
28. Reed, L. L., Vidaver-Cohen, D., & Colwell, S. R. (2011). A new scale to measure executive servant leadership: Development, analysis, and implications for research. *Journal of Business Ethics*, *101*(3), 415–434. http://dx.doi.org/10.1007/s10551-010-0729-1
29. Rettab, B., Brik, A.B., & Mellahi K. (2009). A study of management perceptions of the impact of corporate social responsibility on organisational performance in emerging economies: The case of Dubai. *Journal of Business Ethics*, *89*(3), 371–390. http://dx.doi.org/10.1007/s10551-008-0005-9
30. Rupp, D. E., Ganapathi, J., Aguilera, R. V., & Williams, C. A. (2006). Employee reactions to corporate social responsibility: An organizational justice framework. *Journal of Organizational Behavior*, *27*(4), 537–543. http://dx.doi.org/10.1002/job.380
31. Salb, D., Friedman, H. H., & Friedman, L. W. (2011). The role of information technology in fulfilling the promise of corporate social responsibility. *Computer and Information Science, 4*(4), 54–56. http://dx.doi.org/10.5539/cis.v4n4p2
32. Sen, S., & Bhattacharya, C. B. (2001). Does doing good always lead to doing better? Consumer reactions to corporate social responsibility. *Journal of Marketing Research, 38*(2), 225–243. http://dx.doi.org/10.1509/jmkr.38.2.225.18838
33. Serenko, A., & Bontis, N. (2009). A citation-based ranking of the business ethics scholarly journals. *International Journal of Business Governance and Ethics*, *4*(4), 390–399. http://dx.doi.org/10.1504/IJBGE.2009.023790
34. Sikka, P. (2011). Accounting for human rights: The challenge of globalization and foreign investment agreements. *Critical Perspectives on Accounting, 22*(8), 811–827. http://dx.doi.org/10.1016/j.cpa.2011.03.004
35. Tabachnick, B. G., & Fidell, L. S. (1989). *Using multivariate statistics* (2nd ed.). New York: Harper and Row.
36. Theaker, A. (2012). Consumer public relations. *The Public Relations Strategic Toolkit: An Essential Guide to Successful Public Relations Practice, 8*, 313.
37. Treviño, L. K., Brown, M., & Hartman, L. P. (2003). A qualitative investigation of perceived executive ethical leadership: Perceptions from inside and outside the executive suite. *Human Relations*, *56*(1), 5–37. http://dx.doi.org/10.1177/0018726703056001448
38. Turker, D. (2009). Measuring corporate social responsibility: A scale development study. *Journal of Business Ethics*, *85*(4), 411–427. http://dx.doi.org/10.1007/s10551-008-9780-6
39. Wheeler, D., & Sillanpää, M. (1997). *The stakeholder corporation: The body shop blueprint for maximizing stakeholder value*. London: Pitman.
40. Zore, M. (2016): *Krepitev inovativnosti podjetij v Sloveniji z razvojem družbene odgovornosti*. Maribor, UM EPF.

Authors

Mira Zore is a doctoral student in the University of Maribor's Faculty of Economics and Business. In 2004 she received her M.S. from the University of Ljubljana's Faculty of Economics in management. Her thesis was entitled "Specifics of marketing strategies concerning services." For many years she has worked for many companies as a leading person in sales and supplies. Since 2000, she has been the head of sales and supplies in a private manufacturing company.

Majda Bastič was a professor of Operations Research, Operations Management and Research Methodology at the University of Maribor's Faculty of Economics and Business. Now, she works at the Faculty of Arts and Alma Mater Europaea as a subcontracted teaching professor. She received her Ph.D. from the University of Zagreb. Her research interest is focused on research in innovation management associated with sustainable development and social responsibility in companies from various industries. Her publications have appeared in many international and domestic journals as well as conference proceedings.

Matjaž Mulej is Professor Emeritus at the University of Maribor, in systems and innovation theory (also applied to social responsibility for 10+ years). He has published more than 1.800 publications in 40+ countries (see: IZUM/Cobiss/Bibliographies, 08082). He spent 15 semesters as a visiting professor abroad. He authored the *Dialectical Systems Theory* (see: François, 2004, International Encyclopedia) and *Innovative Business Paradigm and Methods*. He is a member of the European Academy of Sciences and Arts, Salzburg (2004), European Academy of Sciences and Humanities, Paris (2004), and International Academy for Systems and Cybernetic Sciences, Vienna (2010; former head). He earned his M.A. in development economics and doctorates in economics/systems theory and management/innovation management. E-mail: matjaz.mulej@um.si; homepage: epfip.uni-mb.si; www.irdo.si

Sedem ali manj osrednjih vsebin družbene odgovornosti?

Izvleček

Družbena odgovornost (DO) odpravlja vzroke sedanje krize z načeli odgovornosti/ pristojnosti, preglednosti, etičnosti, spoštovanja do deležnikov, vladavine prava, mednarodnih norm in človekovih pravic (ISO, 2010, v ISO 26000). Ta načela in osrednje vsebine DO povezujeta soodvisnost in celovit pristop. Proučevali smo, ali slovenska podjetja uresničujejo vseh sedem osrednjih vsebin DO (DO podjetij do sodelavcev, poslovnih partnerjev, lokalne skupnosti, okolja, človekovih pravic, etičnosti in vodenja). Analiza je povezala tri od njih – DO do sodelavcev, etičnega ravnanja in človekovih pravic v skupno osrednjo vsebino, imenovano DO vodenja.

Ključne besede: družbena odgovornost podjetij, sodelavci, poslovni partnerji, vodenje, ISO 26000, Slovenija

Impact of ICTs on Innovation Activities: Indication for selected European countries

Jovana Zoroja
Faculty of Economics and Business, University of Zagreb, Croatia
jzoroja@efzg.hr

ORIGINAL SCIENTIFIC PAPER

RECEIVED: FEBRUARY 2016

REVISED: JUNE 2016

ACCEPTED: JULY 2016

DOI: 10.1515/ngoe-2016-0017

UDK: 659.2:004:001.895

JEL: C3, D8, O3

Citation: Zoroja, J. (2016). Impact of ICTs on Innovation Activities: Indication for selected European countries. *Naše gospodarstvo/Our Economy, 62*(3), 39–51. DOI: 10.1515/ngoe-2016-0017

Abstract

The development and usage of information and communication technologies (ICTs) has particularly increased in the last two decades, while at the same time showing great potential to improve the efficacy of business processes, facilitate and drive innovations, and therefore increase competitiveness. Innovation activities represent an important factor for social and economic change as well as for increasing competitive advantages at both the national and firm levels. This paper focuses on the role that ICTs play in the innovation performance of selected European countries. Using data drawn from the Eurostat and Global Competitiveness Index (2007–2011) and panel regression analysis, research results indicate that ICTs have a significant impact on business innovation activities.

Key words: information and communication technology; innovation; business sophistication; competitiveness; European countries; regression analysis

1 Introduction

Information and communication technologies (ICTs) have played a key role in economic development and prosperity, especially in the last two decades (Campisi, De Nicola, Farhadi, & Mancuso, 2013; Morgan Colebourne, & Thomas, 2006). Further progress and adoption of ICTs are important factors in developing business strategies, encouraging creativity and innovation, and enhancing competitiveness (Ongori & Migiro, 2010), which leads to a higher position in the globalized and competitive market.

A number of studies have shown the positive impact of ICTs on countries' economic and social development (Anon Higon, 2011; Campisi et al., 2013). In other words, the most developed and competitive countries lead in the usage and implementation of ICTs in terms of firms that invest significant funds in the implementation of ICTs as well as residents who use ICTs extensively (van Deursen & van Dijk, 2010; Vu, 2011). Investments in ICTs are a crucial factor of economic and social growth, leading to higher innovation performance for individuals, firms, and countries. ICTs' development has a key role in personal, economic, and social development in relation to communication, business, learning, science, and government (Bocconi, Kampylis, & Punie, 2013; Randver, 2006; Rogers, Takegami, & Yin, 2001; Sharma & Gupta, 2003; Zhu & Kraemer, 2005).

Today innovation is considered one of the key factors of the knowledge-based economy, while the ability to innovate means creating and maintaining a sustainable

NG
OE

NAŠE GOSPODARSTVO
OUR ECONOMY

Vol. 62 No. 3 2016

pp. 39–51

competitive advantage (Pejić Bach, 2014; Santos, Basso, & Kimura, 2014). Adapting to fast changes and increased uncertainty of the turbulent global market while staying competitive indicates those firms ready to innovate their business processes, products, and services (Varis & Littunen, 2010). A firm's future growth and success depend upon its ability to make continuous innovations. Thus, innovation issues are a key factor for social and economic changes and future prosperity (Santos et al., 2014; Zoroja, 2011).

In our research, we attempt to determine the relationship between ICTs and innovation in a group of countries that are geographically near, but substantially different according to the level of innovativeness and utilization of the digital technology. Therefore, we investigate how ICTs influence innovative activities of selected European countries in five areas: eLearning, personal usage of the Internet, eScience and high technology transfer, eCommerce, and eGovernment. We focus on European countries because of the diversity of the level of ICT usage and innovativeness among them, as indicated by several European Commission (EC) documents (e.g., EC, 2011; EC, 2010). In order to achieve this goal, a panel regression analysis model was used to estimate the relationship between ICTs and countries' innovation activity. Data were collected from the European statistical database, Eurostat (Eurostat, 2015), and the World Economic Forum (WEF) (2007–2011) for the five-year period of 2007 to 2011. Therefore, this paper will provide important insights into the impact that ICTs have on the innovation activity of the selected European countries.

The paper is structured in six sections. The first part of the paper, the introduction, provides brief and concise insights of the paper, including the goal and structure of the paper. The second part of the paper discusses the theoretical background, including ICTs, innovation, and the impact of ICTs on innovation activities as well as the development and usage of ICTs and different approaches to innovation. In the third section, methodology and data are defined. Results are presented in the fourth part of the paper. The major implications are discussed in the sixth section of the paper. Finally, the last section concludes the paper. The conclusion includes a summary of the research, comparisons with other research, practical implications and limitations, and future research.

2 Theoretical background

2.1 ICTs as drivers of competitiveness

ICTs have a strong influence on the society and economy. ICTs present an essential tool of competitiveness and growth for both firms and countries that are ready to use them and able to exploit them (Aguilera Enriquez, Cuevas-Vargas, & Gonzalez Adame, 2015; Anon Higon, 2011). Due to their fast progress and development, ICTs are a support tool for managing business processes, building strategies, and boosting innovation and competitiveness. Therefore, firms and countries ready to use ICTs more rapidly than others have the ability to produce and deliver products and services of higher quality and lower costs, which leads to better performance and long-term profitability (Zoroja, 2015). In addition, these firms and countries are leaders on the market with growing competitive advantage.

ICTs are a key factor for socio-economic development in many countries, especially in business processes, communication, and education (Anon Higon, 2011; Vehovar & Lesjak, 2007). A positive impact of ICT usage can be found in many other areas, including the financial sector, health organizations, education and science, and public organizations (Khalil, 2011). ICTs offer numerous benefits to different social issues, such as sustainable healthcare, security and privacy, carbon-free economy, and intelligent transport (Pavel, Fruth, & Neacsu, 2015).

The implementation and usage of ICTs, especially the Internet, are growing every year. However, not everyone has the necessary knowledge and skills to use them. Therefore, it is important to educate young people on the appliance and advantages of ICT usage. In addition, educated employees with high levels of e-skills are a crucial factor for competitiveness, growth, and employment (van Deursen & van Dijk, 2010). Another positive consequence is the reduction of the digital divide between countries.

The implementation of ICTs leads to higher overall competitiveness (Puzova & Maresova, 2014). According to the European Commission (2010), ICTs drive 20% of productivity growth in the European Union countries. The usage and adoption of ICTs increase the development of employees' e-skills, improve business processes and quality of products/services, encourages employment, and strengthens relationships with customers and partners (Haseeb, 2015). However, firms and countries that are not ready to use and at the same time invest in ICTs lag behind, leading to higher discrepancies between developed and developing countries (Singh, 2012). In other words, developing firms and countries are those not able to exploit the benefits of ICTs, which leads to higher social and economic development (Vu, 2011).

2.2 Innovation

Innovation can be defined as the adoption of a new idea that enables organizations to sustain a competitive advantage (Grolleau et al., 2013). Thus, innovation refers to the

creative process resulting in new and unique products, services, or production processes (Arias-Aranda et al., 2001). In other words, innovation refers to three different forms: product/service, process, and business system (Wagner & Hansen, 2005). Innovation processes' implicit interactions include the generation, adoption, implementation, and incorporation of new and unique ideas and behaviors (Yam et al., 2011).

Innovations are a key factor to social and economic change, which imply new product–market–technology–organization combination (Lopes Santos et al., 2014; Wagner & Hansen, 2005). Innovation can be classified into two types: radical and incremental (Lopes Santos et al., 2014; Schumpeter, 1934). Characteristics of incremental innovation include using existing ICTs, having low uncertainty, improving competitiveness within the current market. The characteristics of radical innovation are exploring new ICTs, generating high uncertainty, and creating dramatic change in order to transform the market's existing situation. Another classification of innovation refers to technological and administrative factors (Damanpour, 2001). Technological innovations imply new processes, products, or services while administrative innovations imply new procedures, policies, and organizational forms. In our work, we focus on the measurement of innovativeness using the Global Competitiveness Framework as a proxy for innovativeness in European countries, with a focus on the innovation and sophistication factor subindex, 11th pillar: business sophistication, and 12th pillar: innovation. Table 1 presents the indicators that serve as the basis for the forming the innovativeness measurement. The innovation and sophistication factor subindex refers mostly to the improvement of the business using innovative strategies and products. GCI 11th pillar: business sophistication refers to the quality of a country's business networks and of firms' business processes that lead to higher innovative performance and efficiency as well as increased productivity and could be considered the administrative innovations. The 12th pillar: innovation refers mostly to the technological innovations (e.g., availability of scientists and engineers) important for countries' socio-economic progress. In addition, based on the description of the indicators used in Table 1, it can be concluded that both incremental and radical innovations are measured. For example, patents can be an indicator of both radical and incremental innovations.

Table 1. Global Competitiveness Index: Innovation and Sophistication Factors Subindex

INNOVATION AND SOPHISTICATION FACTORS			
11th pillar: Business sophistication		12th pillar: Innovation	
11.01	Local supplier quantity	12.01	Capacity for innovation
11.02	Local supplier quality	12.02	Quality of scientific research institutions
11.03	State of cluster development	12.03	Company spending on R&D
11.04	Nature of competitive advantage	12.04	University–industry collaboration in R&D
11.05	Value chain breadth	12.05	Gov't procurement of advanced tech products
11.06	Control of international distribution	12.06	Availability of scientists and engineers
11.07	Production process sophistication	12.07	Utility patents per million population
11.08	Extent of marketing		
11.09	Willingness to delegate authority		

Source: WEF (2010–2011)

In today's turbulent and globalized world, innovation activities are becoming a crucial need and no longer an option (Arias-Aranda et al., 2001). Innovations are a critical factor to a firm's competitive advantage. In addition, benefits of continuous innovations to a company lead to a better understanding of customer needs, satisfied clients, and a leading position on the market (Wagner & Hansen, 2005).

2.3 Impact of ICTs on Innovation

The development of ICTs provides higher efficiency gains as well as a higher level of innovation activity. Innovations present a new way of organizing business that can be significantly improved by ICTs usage (Haseeb, 2015). Therefore, the most developed and innovative organizations are those developing and using ICTs to facilitate and drive innovations in business processes and in products and services (Arvanitis, Loukis, & Diamantopoulou, 2013). Up-to-date progress in ICTs offers great opportunities for organizations' research and development (R&D) activities, which lead to higher innovation performance (Kleis, Chwelos, Ramirez, & Cockburn, 2012). In other words, science and technology refer to driving forces for innovation activities (Hjalager, 2010).

Literature reviews regarding the relationship between ICTs and innovation are limited. Few studies have analyzed the influence of ICTs on innovation performance of the firms or countries. Koellinger (2008) found that e-business technologies foster innovation, especially in internal processes and in offering new products on the data of European firms. In her research, Anon Higon (2011) tried to provide new empirical insights into the role of ICT usage in the innovation activities of UK SMEs. Research has shown that the impact of ICTs depends on the ICTs' application, innovation performance,

and firm characteristics. Arvanitis et al. (2013) found that hard and soft ICT capital has a strong influence on firms' processes, product, and service innovation

The best examples of the most developed and competitive countries in the world are Finland, Sweden, and Singapore, which are the top three best-performing countries according to the Network Readiness Index for the last five years (i.e., 2011–2015) (WEF, 2011–2015; Yunis, Koong, Liu, Kwan, & Tsang, 2012). The Global Information Technology Report presented the progress and influence of ICTs to social and economic development worldwide through Network Readiness Index. The three mentioned countries (Finland, Sweden, and Singapore) are also leaders in the field of innovation activities. Finland and Sweden are in the top 10 and Singapore in the top 13 countries according to GCI subindex-innovation and sophistication factor subindex in the last five years (WEF, 2011–2015). Every year their position is getting better, and it is expected to improve their rank in the future regarding innovation activities.

2.4 Developing the Framework for the Assessment of ICTs' Impact on Innovation

ICTs can be used in many different areas, such as education, business, health, private issues, science and technology, and public services (Blackman, 2004; Zott, 2000). Therefore, we selected the five main areas of ICT usage for the analysis: eLearning, Internet usage, eBusiness, eScience and technology transfer, and eGovernment. Based on the relationship of ICT usage in society and innovativeness, using the Global Competitiveness framework, the research model shown in Figure 1 was developed.

Impact of e-learning on innovations in society

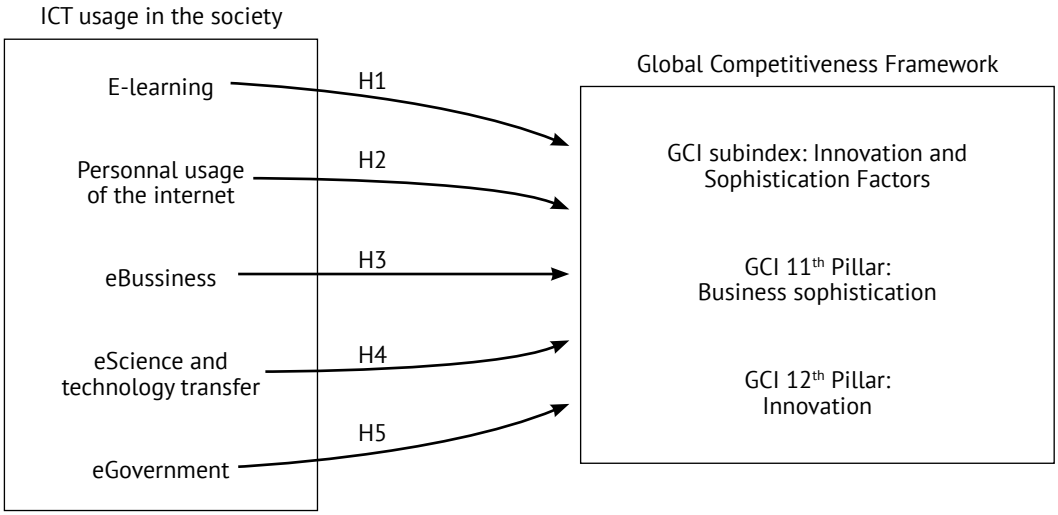
The progress of ICTs and its usage have a strong impact on the development of individuals, companies, and countries (Pejic Bach, 2014). The usage of ICTs in education has improved learning and teaching processes and has led to a virtual learning environment. It is especially important to mention e-learning and its significant advantages in academic or business education. There are several benefits of e-learning, especially for employees, such as no need to travel, time and financial reduction, interaction among employees from different countries/continents, and the faster exchange of experience and ideas (Pena Seixas, Bostock, & Eleftheriou, 2012.). This argumentation leads us to the development of the first hypothesis:

H1: The increase of eLearning usage has a positive influence on innovation activities.

Impact of personal Internet usage on innovations in society

The Internet was first used for communication, but today it is used for social interaction, education, business, and numerous other activities of individuals. Using the Internet, individuals can pay their bills, buy different products or services, organize trips, or find jobs (Hasim & Salman, 2010). Although there are still disparities among countries regarding Internet usage, the Internet is increasingly becoming available to a larger number of people (Haythornthwaite & Wellman, 2002). Therefore, it is possible to use the Internet to foster innovation activities in society, especially regarding employment opportunities, banking services, and shopping (Chatzoglou & Vraimaki, 2010).

Figure 1. Research model



This discussion leads us to the development of the second hypothesis:

H2: The increase of personal Internet usage has a positive influence on innovation activities.

Impact of eBusiness usage on innovations in society

ICTs' usage provides several benefits to firms, such as higher competitiveness and management effectiveness, lower costs, and better business performance (Jones, Beynon-Davies, & Muir, 2003). The Internet presents the main source for communication, learning, business, job exchange, and the buying or selling of products and services (Sharma & Gupta, 2003) and represents one of the basic determinants of business efficiency increases (Damanpour, 2001). Firms that foster ICT usage are known for their strong innovation activity (Berman & Hagan, 2006). eBusiness provides several benefits to firms, including quality and strategic improvements, time and cost savings, and access to new markets (Jones et al., 2003), which leads to innovations in business processes and strategies and raises the needs for the development of the third hypothesis:

H3: The increase of eBusiness usage has a positive influence on innovation activities.

Impact of eScience and technology transfer on innovations in society

eScience and technology transfer present the exchange of knowledge, ideas, and information that have a positive impact on competitiveness and business innovation (Landry, Amara, Cloutier, & Halilem, 2013). Technology transfer presents a valuable source of innovation, which ensures firms' higher levels of performance and better position on the global market (Sexton & Barrett, 2004). Therefore, countries and firms are trying to take part in eScience and technology transfer. Such argumentation leads us to the development of the fourth hypothesis:

H4: The increase of eScience and technology transfer usage has a positive influence on innovation activities.

Impact of eGovernment on innovations in society

The usage of ICTs is significantly changing the lives of people, and public administration has to follow these trends in order to increase the quality of their services to citizens. ICT usage and development in public administration institutions lead to higher transparency and efficiency of their services (Ndou, 2004). eGovernment services offer several benefits to citizens, such as increased accessibility of public services and information, strengthened democracy, higher efficiency of public activities, and better and faster communication (Carter & Belanger, 2005). Therefore, more and more countries are trying to improve their public administration services and invest more in their further development. This analysis leads to the development of the fifth research hypothesis:

H5: The increase of eGovernment usage has a positive influence on innovation activities.

3 Methodology and Data

3.1 Empirical Research

The goal of this paper is to analyze the influence of ICT usage on innovation performance of selected European countries. In order to achieve this goal, a panel regression analysis model was used. The panel regression analysis presents a statistical method using two and "n" dimensional panel data. The data are usually collected over time for the same group of units, and a regression is run over these two dimensions. Panel regression provides an evaluation of the influence of independent variables to the dependent variables over the time. Therefore, we can analyze the change in innovation performance as a result of ICT usage over a five-year period (i.e., 2007–2011).

3.2 Data Description

Data on ICT usage and innovation performance for 32 European countries were collected from 2007 to 2011. In addition to the 28 European Union countries, data were collected for Iceland, Norway, Macedonia, and Turkey. Other European countries were not used in the analysis due to missing data for selected variables and for selected years. Data were collected from the European statistical database (Eurostat, 2015) and from the Global Competitiveness Report (WEF, 2007–2011).

Independent variables

Data on ICT usage have been collected for 17 variables from Eurostat (Eurostat, 2015) and are used as independent variables. Eight of the 17 variables refer to the ICT usage of individuals aged 16 to 74 (eLearning, Internet usage, and eGovernment). The other nine variables refer to companies' ICT usage (eBusiness, eScience, and technology transfer) with at least 10 employees. Data are shown in percentages.

The area of eLearning was analyzed using four variables: (i) eLRN1: purchase of materials for e-learning (percentage of individuals 16–74), (ii) eLRN2: search for information on education and training (percentage of individuals 16–74), (iii) eLRN3: use of the Internet for education and training (percentage of individuals 16–74), and (iv) eLRN4: use of the Internet for decision-making on learning (percentage of individuals 16–74).

Variables referring to personal Internet usage are: (i) IntUSG1: use of online banking (percentage of individuals 16–74) and (ii) IntUSG2: use of the Internet for finding an employment (percentage of individuals 16–74). Variables related to the area of e-Government are: (i) eGOV1: using public administration sites to send forms (percentage of individuals 16–74) and (ii) eGOV2: communication with public departments (percentage of individuals 16–74).

The selected variables referring to the area of eBusiness are: (i) eBUS1: CRM software usage (percentage of firms with 10+ employees), (ii) eBUS2: Internet purchase (percentage of firms with 10+ employees), and (iii) eBUS3: ordering via Internet (percentage of firms with 10+ employees).

The selected variables related to the area of eScience and technology transfer are: (i) eSCNtechTR1: high-technology import within EU27 (percentage of firms with 10+ employees), (ii) eSCNtechTR2: high-technology import outside EU27 (percentage of firms with 10+ employees), (iii) eSCNtechTR3: high-technology import in the world (percentage of firms with 10+ employees), (iv) eSCNtechTR4: high-technology export within EU27 (percentage of firms with 10+ employees), (v) eSCNtechTR5: high-technology export outside EU27 (percentage of firms with 10+ employees), and (vi) eSCNtechTR6: high-technology export in the world (percentage of firms with 10+ employees).

Dependent variables

Data on innovation performance were collected from WEF (2007–2011), which measures competitiveness of 142 countries all over the world and presents the Global Competitiveness Index (GCI). The GCI is composed of three subindices (efficiency enhancers, basic requirements, and innovation and sophistication factor). In our research, a country's innovation performance is used as the dependent variable for the 32 European countries in the five-year period (2007–2011). In other words, data for the innovation and sophistication factor subindex and its two pillars, business sophistication and innovation, which are part of GCI, are used as the dependent variables.

4 Results

The goal of the paper was to evaluate the impact that ICTs have on countries' innovation activities. Using data drawn from the Eurostat and GCI (2007–2011), we conducted a panel regression analysis that showed that ICTs have a significant influence on innovation performance of the selected European countries.

Table 2. Panel Regression Analysis Results

ICT usage in the society	GCI subindex	GCI 11th and 12th pillars	
	Innovation and Sophistication Factors	Business sophistication	Innovation
Intercept	3.046***	3.626***	2.563***
eLearning			
eLRN1	0.026***	0.024***	0.030***
eLRN2	-0.008	-0.012***	-0.004
eLRN3	0.019	0.022**	0.012
eLRN4	-0.014	-0.017**	-0.009
Personal usage of the Internet			
IntUSG1	0.009***	0.008**	0.011***
IntUSG2	-0.016**	-0.020***	-0.009
eBusiness			
eBUS1	0.008	0.008	0.006
eBUS2	0.016***	0.017***	0.013***
eBUS3	-0.011**	-0.008	-0.008
eScience and technology transfer			
eSCNtechTR1	-0.001	-0.009	-0.002
eSCNtechTR2	-0.027***	-0.024***	-0.027***
eSCNtechTR3	0.040	0.043	0.041
eSCNtechTR4	0.035	0.001	0.054**
eSCNtechTR5	0.017	0.001	0.025**
eSCNtechTR6	-0.032	0.009	-0.055
eGovernment			
eGOV1	-0.005	-0.008	-0.002
eGOV2	0.007	0.009**	0.004
Model validation			
R^2	0.790	0.758	0.770
Adjusted R^2	0.765	0.729	0.742
% of statistically significant variables			
17 variables (100%)	35%	53%	35%

Note: ***statistically significant at 1%, ** statistically significant at 5%; R^2 is coefficient of determination; Adjusted R^2 is adjusted coefficient of determination

Source: Authors' survey based on data from Eurostat (2007–2011) and WEF (2007–2011)

Table 2 presents the regression coefficients and goodness of fit for all regression models. Three dependent variables are shown in the header: GCI subindex–innovation and sophistication factor subindex, GCI 11th pillar: business sophistication, and GCI 12th pillar: innovation. Seventeen independent variables of ICT usage by individuals and enterprises are divided into five areas (eLearning, Internet usage, eBusiness, eScience and technology transfer, and eGovernment) and are shown in the first column.

Most of the independent variables influenced the GCI 11th pillar: business sophistication (53%). All variables regarding eLearning and Internet usage by individuals influenced the GCI 11th pillar: business sophistication while, from the other three ICT areas, at least one variable influenced GCI 11th pillar. Approximately one-third of the 17 independent variables (35%) affected the two other dependent variables GCI subindex–innovation and sophistication factor subindex and GCI 12th pillar: innovation. Coefficients of determination range from 0.758 to 0.790. The adjusted value of coefficients of determination (adjusted R^2) is a bit lower and ranges from 0.729 to 0.765. It can be concluded that both measures indicate adequate goodness of fit for all of the regression models. Further discussion of the results presented in Table 2 will be presented in the rest of the paper.

5 Discussion

Tables 3 through 7 present the relationships among individual independent variables referring to the five areas of ICT usage (eLearning, Internet usage, eBusiness, eScience and technology transfer, and eGovernment) and dependent variables (GCI subindex–innovation and sophistication factor subindex, GCI 11th pillar: business sophistication, and GCI 12th pillar: innovation). In order to present the level of statistical significance, we used thresholds of 1% and 5%, with the significance in parentheses, which represents the positive or negative sign of the regression coefficient.

H1: The increase of eLearning usage has a positive influence on innovation activities.

Table 3 presents the relationship between individual independent variable eLearning (eLRN) and dependent variables GCI subindex–innovation and sophistication factor subindex, GCI 11th pillar: business sophistication and GCI 12th pillar: innovation. The independent variable eLearning is presented through four areas: eLRN1: purchase of materials for e-learning, eLRN2: search for information on education and training, eLRN3: use of the Internet for education and training, and eLRN4: use of the Internet for decision-making on learning.

Table 3. Level of Statistical Significance of Independent Variable eLearning (eLRN)

ICTs variables	GCI subindex	GCI 11th and 12th pillars	
	Innovation and Sophistication Factors	Business sophistication	Innovation
eLRN1	1% (+)	1% (+)	1% (+)
eLRN2		1% (-)	
eLRN3		5% (+)	
eLRN4		5% (-)	

Source: Authors' survey based on data from Eurostat (2007–2011) and WEF (2007–2011)

A positive relationship exists between all innovation indices (GCI subindex–innovation and sophistication factor subindex, GCI 11th pillar: business sophistication, and GCI 12th pillar: innovation) and the eLearning indicator, which refers to buying materials via the Internet (eLRN1: purchase of materials for e-learning). A positive relationship also exists between the GCI 11th pillar: business sophistication and eLearning indicator, which refers to the use of the Internet for education (eLRN3: use of the Internet for education and training). A negative relationship between GCI 11th pillar: business sophistication and two eLearning indicators measured the passive usage of eLearning tools (eLRN2: search for information on education and training and eLRN4: use of the Internet for decision-making on learning). Passive usage of eLearning regarding the search for information and decision making could explain the negative relationship between the GCI 11th pillar: business sophistication and the two eLearning indicators. Based on the results, it could be concluded that the use of eLearning has a positive influence on a country's innovation activities. In other words, the first hypothesis (H1) of this paper has been confirmed.

In today's information society, people use ICTs every day for education and training while ICTs enable and support the collaboration between students and professors (Cross, 2004; Wan, Wang, & Haggerty, 2008). However, the development and usage of eLearning in developing countries are still lagging compared to the eLearning market in developed countries. Therefore, there is great potential for using eLearning in developing countries. The active usage of eLearning, by buying materials for e-learning and using the Internet for education and training, encourages an innovation approach in learning and teaching processes, which leads to higher competitiveness of educational systems. E-learning improves and innovates education because it provides the rapid exchange of knowledge and information, offers lifelong learning, and facilitates learning among students from different countries (Bocconi et al., 2013). Therefore, the most popular and most successful universities, as well

as the most successful companies, are those using ICTs to offer new and unique learning processes to their students or employees (Bell, 2007; Zhang & Nunamaker, 2003).

H2: The increase of Internet usage has a positive influence on innovation activities.

Table 4 presents the relationship between the individual independent variable of Internet usage by individuals (IntUSG) and the dependent variables GCI subindex–innovation and sophistication factor subindex, GCI 11th pillar: business sophistication, and GCI 12th pillar: innovation. The independent variable Internet usage is presented through two areas: IntUSG1: use of online banking and IntUSG2: use of the Internet for finding an employment.

Table 4. Level of Statistical Significance of Independent Variable Internet Usage (IntUSG)

ICTS variables	GCI subindex	GCI 11th and 12th pillars	
	Innovation and Sophistication Factors	Business sophistication	Innovation
IntUSG1	1% (+)	5% (+)	1% (+)
IntUSG2	5% (-)	1% (-)	

Source: Authors' survey based on data from Eurostat (2007–2011) and WEF (2007–2011)

A positive relationship exists between all innovation indices (GCI subindex–innovation and sophistication factor subindex, GCI 11th pillar: business sophistication, and GCI 12th pillar: innovation) and Internet usage, which refers to online banking (IntUSG1: use of online banking). A negative relationship exists between GCI subindex–innovation and sophistication factors and GCI 11th pillar: business sophistication and Internet usage regarding finding employment via the Internet (IntUSG2: use of the Internet for finding employment). Based on the results, it could be concluded that Internet usage by individuals has a positive influence on a country's innovation activities. In other words, the second hypothesis (H2) of this paper has been confirmed. Our research confirms the similar results of other authors.

In today's information society, the Internet serves as the main source for the communication of individuals and organizations (Sharma & Gupta, 2003). The main reasons are as follows: The Internet is cost-effective and faster than other communication media, improves learning, and encourages information and knowledge exchanges, and there are no time or space constraints (Akman & Mishra, 2010; Ramayah, 2010). However, Internet usage is not the same in developed and developing countries (Wallsten, 2005). Less developed countries do not encourage the development and usage of ICTs, which results in lower competitiveness and innovation activities. Therefore, looking for a job via the Internet is not common in developing countries. In addition, the lower quality of ICT infrastructures and higher prices for Internet access lead to the lower usage of Internet banking. Developed countries are trying to increase their competitiveness through new processes, products, and applications, which is the reason for ICT usage in the finance industry to offer new and unique services via the Internet for clients (Cho & Park, 2012). The usage of ICT applications in financial business enhance innovation and increase the quality of financial services for clients.

H3: The increase of eBusiness usage has a positive influence on innovation activities

Table 5 presents the relationships between the individual independent variable eBusiness (eBUS) and the dependent variables GCI subindex–innovation and sophistication factor subindex, GCI 11th pillar: business sophistication, and GCI 12th pillar: innovation. The independent variable eBusiness is presented through three areas: eBUS1: CRM software usage, eBUS2: Selling goods or services over the Internet, and eBUS3: ordering via the Internet.

Table 5. Level of Statistical Significance of Independent Variable eBusiness (eBUS)

ICTs variables	GCI subindex	GCI 11th and 12th pillars	
	Innovation and Sophistication Factors	Business sophistication	Innovation
eBUS1			
eBUS2	1% (+)	1% (+)	1% (+)
eBUS3	5% (-)		

Source: Authors' survey based on data from Eurostat (2007–2011) and WEF (2007–2011)

A positive relationship exists between all innovation indices (GCI subindex–innovation and sophistication factor subindex, GCI 11th pillar: business sophistication, and GCI 12th pillar: innovation) and the eBusiness indicator, which measures the active use of the Internet by enterprises (eBUS2: selling goods or services over the Internet). A negative relationship exists between GCI subindex–innovation and sophistication factor subindex and the eBusiness indicator related to placing orders over the Internet (eBUS3: ordering via the Internet). One of the reasons could be confidence

when ordering via the Internet. This negative impact could also be a stimulation for ICT experts to introduce innovative and secure applications for ordering via the Internet. Based on these results, it can be concluded that eBusiness has a positive influence on a country's innovation activities. In other words, the third hypothesis (H3) of this paper has been confirmed.

According to Poon (2008), using new and unique software applications contributes to an innovative way of doing business, which increases companies' competitive advantage. Selling goods or services over the Internet and using customer relationship management innovate business processes and improve organizations' financial situations. Further improvement and the usage of the latest technology in eBusiness lead to a higher level of innovation activity in firms. eBusiness has several benefits, especially in sales, supply management, and interim processes of the organizations and leads to higher productivity and new and unique products and services (Zhu & Kraemer, 2005).

H4: The increase of eScience and technology transfer usage has a positive influence on innovation activities.

Table 6 presents the relationship between the individual independent variable eScience and technology transfer (eSCNtechTR) and the dependent variables GCI subindex–innovation and sophistication factor subindex, GCI 11th pillar: business sophistication, and GCI 12th pillar: innovation.

Table 6. Level of Statistical Significance of Independent Variable eScience and Technology Transfer (eSCNtechTR)

ICTs variables	GCI subindex	GCI 11th and 12th pillars	
	Innovation and Sophistication Factors	Business sophistication	Innovation
eSCNtechTR1			
eSCNtechTR2	1% (-)	1% (-)	1% (-)
eSCNtechTR3			
eSCNtechTR4			5% (+)
eSCNtechTR5			5% (+)
eSCNtechTR6			

Source: Authors' survey based on data from Eurostat (2007–2011) and WEF (2007–2011)

The independent variable eScience and technology transfer is presented through six areas: eSCNtechTR1: high-technology import within EU27, eSCNtechTR2: high-technology import outside EU27, eSCNtechTR3: high-technology import in the world, eSCNtechTR4: high-technology export within EU27, eSCNtechTR5: high-technology export outside EU27, and eSCNtechTR6: high-technology export in the world.

A positive relationship exists between GCI 12th pillar: innovation and two eScience and technology transfer indicators (eSCNtechTR4: high-technology export within EU27 and eSCNtechTR5: high-technology export outside EU27). A negative relationship exists between all innovation indices (GCI subindex–innovation and sophistication factor subindex, GCI 11th pillar: business sophistication, and GCI 12th pillar: innovation) and the eScience and technology transfer indicator eSCNtechTR2: high-technology import outside EU27. Based on the results, it can be concluded that eScience and technology transfer have a positive influence on a country's innovation activities. In other words, the fourth hypothesis (H4) of this paper has been confirmed.

Our research confirms the similar results of other authors. eScience and technology transfer refer to the exchange of knowledge, ideas, and information among scientific and research institutions and enterprises (Liu & Jiang, 2001). In other words, technology transfer presents an exchange of skills, knowledge, and methods from the place they are developed to other places where they will be used (Beheshtinia et al., 2014). The development and usage of high technologies has a positive impact on competitiveness and business innovation (Rogers et al., 2001). Technology transfer is mostly used in trade between developing countries and developed ones. Thus, developed countries can benefit a lot from the import of high technology, such as by lowering risk and financial costs of research projects in science and technology (Li & Wei, 2012).

H5: The increase of eGovernment usage has a positive influence on innovation activities.

Table 7 presents the relationships between the individual independent variable eGovernment (eGOV) and the dependent variables GCI subindex–innovation and sophistication factor subindex, GCI 11th pillar: business sophistication, and GCI 12th pillar: innovation. The independent variable eGovernment is presented through two areas: eGOV1: using public administration sites to send forms and eGOV2: communication with public departments.

A positive relationship exists between the GCI 11th pillar: business sophistication with the indicator measuring the active use of eGovernment by individuals (eGOV2: communication with public administration units). Based on the results, it could be concluded that eGovernment has a positive influence on a country's innovation activities. In other words, the fifth hypothesis (H5) of this paper has been confirmed.

Table 7. Level of Statistical Significance of Independent Variable eGovernment (eGOV)

ICTs variables	GCI subindex	GCI 11th and 12th pillars	
	Innovation and Sophistication Factors	Business sophistication	Innovation
eGOV1			
eGOV 2		5% (+)	

Source: Authors' survey based on data from Eurostat (2007–2011) and WEF (2007–2011)

According to Irani, Love, and Jones (2008), eGovernment services are important for implementing innovative changes and new services in public institutions that lead to a higher quality of business processes and satisfied clients. Developed countries have made a significant effort in the development and usage of eGovernment services. One positive example is the transparent system of electronic voting, which was first used in Estonia (Randver, 2006). However, developing countries still lag behind because of the lower level of ICT development and their quality (Ndou, 2004). Therefore, the active usage of eGovernment, especially in the field of communication and access to the information, facilitates administrative activities within public and state institutions and improves the quality of their work.

6 Conclusion

Summary of research

ICTs are becoming increasingly important in various aspects of everyday life because of their accelerated development and implementation. In this paper, the main goal was to evaluate the impact of ICTs on innovation business activities in selected European countries. After the panel regression analysis was conducted, research results confirmed the impact of ICTs as a supporting factor for innovation activities. Research revealed a positive relationship between all innovation indices (GCI subindex–innovation and sophistication factor subindex, GCI 11th pillar: business sophistication, and GCI 12th pillar: innovation) and three independent variables (eLRN1: purchase of materials for e-learning; IntUSG1: use of online banking, and eBUS2: Internet purchase) regarding three different ICT areas (eLearning, eBusiness, and eGovernment). A positive relationship exists between GCI 11th pillar: business sophistication and two independent variables (eLRN3: use of the Internet for education and training and eGOV2: communication with public departments). In the area of eScience and technology transfer, a positive relationship exists between GCI 12th pillar: business sophistication and two independent variables (eSCNtechTR4: high-technology export within EU27 and eSCNtechTR5: high-technology export outside EU27). It can be concluded that the impact of ICTs on innovation activities is the strongest in the areas of eLearning, Internet usage, and eBusiness as the most variables from these areas impacted GCI subindex–innovation and sophistication factor subindex, GCI 11th pillar: business sophistication, and GCI 12th pillar: innovation.

Research contributions

The presented research has both practical and theoretical contributions. Practical contributions stem from the fact that the results provide a framework for better understanding the issues associated with ICTs and their influence on innovation performance, which is relevant to both firms and policymakers at the national level. Better understanding of the role that ICTs play in innovation activity will help decision makers create more relevant and transparent policies and strategies, which could stimulate ICT usage and application. Actually, identifying different ICT areas and their impact on innovation activity may enable policymakers to define strategies and initiatives that will improve and boost innovation performance in a particular segment of socio-economic development.

Theoretical contributions of the research stem from the fact that the impact of ICT usage in society was estimated using the Global Competitiveness Framework as a proxy for the innovativeness in European countries, with a focus on the innovation and sophistication factor subindex, 11th pillar: business sophistication, and 12th pillar: innovation. Other researchers focused on narrower definitions of innovativeness, such as Yunis et al. (2012). However, our results are in line with their results in terms of the positive impact of ICT usage on innovativeness.

Limitations and future research

Limitations of the work come from four sources. First, the five-year time span could be considered too short for defining the impact of ICT usage on innovativeness. Second, the data used come from the two different sources (Eurostat and Global Competitiveness Index). Third, it is possible that the impact of ICT on innovation is not immediate and a time lag should have been taken into account. Fourth, in relation to the impact of ICTs to innovativeness, the nonlinear impact and possibility of feedback are missing from this analysis, especially taking into account that the ICTs are themselves also one of the most important innovations of contemporary societies.

Future research could be extended in four directions. First, a broader group of countries could be taken into account for the analysis in order to assess the impact of ICT usage on least developed countries from Africa, Asia, and Latin America to determine if countries with the lowest level or infrastructural development are still able to overcome the digital divide and use ICTs to move ahead. Second, the time span for the future analysis should be extended to define the longer impact of ICTs on innovativeness, because the growth of ICT usage since the 1990s has been exponential. Also, the time lag of ICT impact on innovativeness should be taken into account. Third, a different aggregate measurement of the innovativeness could be used in future research, such as the Summary Innovation Index (EC, 2011). Finally, future research should focus on methods that could capture nonlinear impact and the possibility of feedback as well, as previously mentioned.

References

1. Aguilera Enriquez, L., Cuevas-Vargas, H., & Gonzalez Adame, M. (2015). The impact of information and communication technologies on the competitiveness: Evidence of manufacturing SMEs in Aguascalientes, Mexico. *International Review of Management and Business Research, 4*(3), 758–770.
2. Akman, I., & Mishra, A. (2010). Gender, age and income differences in internet usage among employees in organizations. *Computers in Human Behavior, 26*(3), 482–490. http://dx.doi.org/10.1016/j.chb.2009.12.007
3. Anon Higon, D. (2011). The impact of ICT on innovation activities: Evidence for UK SMEs. *International Small Business Journal, 30*(6), 684–699. http://dx.doi.org/10.1177/0266242610374484
4. Arvanitis, S., Loukis, E., & Diamantopoulou, V. (2013). The effect of soft ICT capital on innovation performance of Greek firms. *Journal of Enterprise Information Management, 26*(6), 679–701. http://dx.doi.org/10.1108/JEIM-07-2013-0048
5. Bell, J. (2007). E-learning: Your flexible development friend? *Development and Learning in Organizations, 21*(6), 7–9. http://dx.doi.org/10.1108/14777280710828558
6. Berman, S. J., & Hagan, J. (2006). How technology-driven business strategy can spur innovation and growth. *Strategy & Leadership, 34*(2), 28–34. http://dx.doi.org/10.1108/10878570610700848
7. Blackman, C. (2004). Stumbling along or grave new world? Towards Europe's information society. *Foresight*, *6*(5), 261–270. http://dx.doi.org/10.1108/14636680410562963
8. Bocconi, S., Kampylis, P., & Punie, Y. (2013). Framing ICT-enabled innovation for learning: the case of one-to-one learning initiatives in Europe. *European Journal of Education, Research, Development and Policy, 48*(1), 113–130. http://dx.doi.org/10.1111/ejed.12021
9. Campisi, D., De Nicola, A., Farhadi, M., & Mancuso, P. (2013). Discovering the impact of ICT, FDI and human capital on GDP: A cross-sectional analysis. *International Journal of Engineering Business Management, 5*, 1–10. http://dx.doi.org/10.5772/56922
10. Carter, L., & Belanger, F. (2005). The utilization of eGovernment services: Citizen trust, innovation and acceptance factors. *Information Systems Journal, 15*, 5–25. http://dx.doi.org/10.1111/j.1365-2575.2005.00183.x
11. Chatzoglou, P. D., & Vraimaki, E. (2010). Investigating internet usage as innovation adoption: a quantitative study. *Journal of Information, Communication and Ethics in Society, 8*(4), 338–363. http://dx.doi.org/10.1108/14779961011093345
12. Cho, D. H., & Park, J. H. (2012). Examining the performance of internet-based business models: Evidence from the internet banks. *International Journal of u- and e- Service, Science and Technology, 5*(1), 51–61.
13. Cross, J. (2004). An informal history of eLearning. *On the Horizon, 12*(3), 103–110. http://dx.doi.org/10.1108/10748120410555340
14. Damanpour, F. (2001). eBusiness, eCommerce evolution: Perspective and strategy. *Managerial Finance, 27*, 16–33. http://dx.doi.org/10.1108/03074350110767268
15. Eurostat. (2015). *European Commission database*. Retrieved from http://ec.europa.eu/eurostat
16. European Commission. (2010, November). Europe's digital competitiveness report. Retrieved from file:///C:/Users/jzoroja/Downloads/Volume1Mainreport.pdf
17. European Commission. (2011). *European Innovation Scoreboard (EIS) 2010.* Retrieved from http://www.proinno-europe.eu/metrics
18. Haseeb, H. M. (2015). The role of ICT management to achieve organizational innovation. *The International Journal of Organizational Innovation, 7*(4), 48–57.
19. Hasim, M. S., & Salman, A. (2010). Factors affecting sustainability of internet usage among youth. *The Electronic Library, 28*(2), 300–313. http://dx.doi.org/10.1108/02640471011033657
20. Haythornthwaite, C., & Wellman, B. (2002). The internet in everyday life: an introduction. In B. Wellman & C. Haythornthwaite (Eds.), *The internet in everyday life* (pp. 3–44). Malden, MA: Blackwell. http://dx.doi.org/10.1002/9780470774298.ch
21. Hjalager, A. M. (2010). A review of innovation research in tourism. *Tourism Management, 31*, 1–12. http://dx.doi.org/10.1016/j.tourman.2009.08.012
22. Irani, Z., Love, P. E., & Jones, S. (2008). Learning lessons from evaluating eGovernment: Reflective case experiences that support transformational government. *The Journal of Strategic Information Systems, 17*(2), 155–164. http://dx.doi.org/10.1016/j.jsis.2007.12.005
23. Jones, P., Beynon-Davies, P., & Muir, E. (2003). E-business barriers to growth within the SME sector. *Journal of Systems and Information Technology, 7*(1/2), 1–25. http://dx.doi.org/10.1108/13287260380000771
24. Khalil, O. E. M. (2011). E-Government readiness: Does national culture matter? *Government Information Quarterly, 28*(3), 388–399. http://dx.doi.org/10.1016/j.giq.2010.06.011

25. Kleis, L., Chwelos, P., Ramirez, R. V., & Cockburn, I. (2012). Information technology and intangible output: The impact of IT investment on innovation productivity. *Information Systems Research, 23*(1), 42–59. http://dx.doi.org/10.1287/isre.1100.0338
26. Koellinger, P. (2008). The relationship between technology, innovation, and firm performance—Empirical evidence from E-Business in Europe. *Research Policy 37*, 1317–1328. http://dx.doi.org/10.1016/j.respol.2008.04.024
27. Landry, R., Amara, N., Cloutier, J. S., & Halilem, N. (2013). Technology transfer organizations: Services and business models. *Technovation, 33*, 431–449. http://dx.doi.org/10.1016/j.technovation.2013.09.008
28. Li, W., & Wei, Y. (2012). Technology transfer, adaptation and assimilation and indigenous invention patent output: Evidence from Chinese high-tech industries. *Procedia engineering*, *29*, 1392–1398. http://dx.doi.org/10.1016/j.proeng.2012.01.146
29. Liu, H., & Jiang, Y. (2001). Technology transfer from higher education institutions to industry in China: Nature and implications. *Technovation*, *21*(3), 175–188. http://dx.doi.org/10.1016/S0166-4972(00)00045-6
30. Morgan, A., Colebourne, D., & Thomas, B. (2006). The development of ICT advisors for SME businesses: An innovative approach. *Technovation, 26*(8), 980–987. http://dx.doi.org/10.1016/j.technovation.2005.09.001
31. Ndou, V. (2004). E-Government for developing countries: Opportunities and challenges. *The Electronic Journal on Information Systems in Developing Countries, 18*(1), 1–24.
32. Ongori, H., & Migiro, S. O. (2010). Information and communication technology adoption: A literature review. *Journal of Chinese Entrepreneurship, 2*(1), 93–104. http://dx.doi.org/10.1108/17561391011019041
33. Pavel, A. P., Fruth, A., & Neacsu, M. N. (2015). ICT and E-Learning—Catalysts for innovation and quality in higher education. *Procedia Economics and Finance*, *23*, 704–711. http://dx.doi.org/10.1016/S2212-5671(15)00409-8
34. Pejić Bach, M. (2014). Exploring information and communications technology adoption in enterprises and its impact on innovation performance of European countries. *Ekonomický časopis*, *62*(4), 335–362.
35. Pena Seixas, S. I. F. B., Bostock, J., & Eleftheriou, M. (2012). Promoting sustainable aquaculture. *Management of Environmental Quality: An International Journal, 23*(4), 434–450. http://dx.doi.org/10.1108/14777831211232245
36. Poon, S. (2008). Future of small business E-Commerce. In A. Becker (Ed.), *Electronic commerce concepts, methodologies, tools and applications, IV,* 1466 – 1473, Information Science Reference. http://dx.doi.org/10.4018/978-1-59904-943-4.ch166
37. Puzova, K., & Maresova, P. (2014).Czech Republic's competitiveness in ICT market. *Procedia–Social and Behavioral Sciences, 109*, 880–885. http://dx.doi.org/10.1016/j.sbspro.2013.12.558
38. Ramayah, T. (2010). Personal web usage and work inefficiency. *Business Strategy Series, 11*(5), 295–301. http://dx.doi.org/10.1108/17515631011080704
39. Randver, R. (Ed.). (2006). *Information technology in public administration of Estonia. Yearbook 2005.* Tallinn: Ministry of Economic Affairs and Communications. Retrieved from http://www.inst-informatica.pt/servicos/informacao-e-documentacao/biblioteca-digital/areas-aplicacionais/administracao-publica-electronica/2006/INFORMATIONTECHNOLOGYINPUBLICADMINISTRATIONOFESTONIA-YEARBOOK2005.pdf
40. Rogers, E. M., Takegami, S., & Yin, J. (2001). Lessons learned about technology transfer. *Technovation, 21*(4), 253–261. http://dx.doi.org/10.1016/S0166-4972(00)00039-0
41. Santos, D. F. L., Basso, L. C., & Kimura, H. (2014). The influence of innovation on firm performance in Brazil. *Journal of Business Research, 67*(4), 527–535. http://dx.doi.org/10.1016/j.jbusres.2013.11.009
42. Sexton, M., & Barrett, P. (2004). The role of technology transfer in innovation within small construction firms. *Engineering, Construction and Architectural Management, 11*(5), 342–348. http://dx.doi.org/10.1108/09699980410558539
43. Sharma, S. K., & Gupta, J. T. N. (2003). Improving workers' productivity and reducing internet abuse. *The Journal of Computer Information Systems, 44*(2), 74–78.
44. Singh, P. K. (2012). Management of business process can help an organization achieve competitive advantage. *International Management Review, 8*(2), 19–26.
45. Varis, M., & Littunen, H. (2010). Types of innovation, sources of information and performance in entrepreneurial SMEs. *European Journal of Innovation Management, 13*(2), 128–154. http://dx.doi.org/10.1108/14601061011040221
46. Vehovar, V., & Lesjak, D. (2007). Characteristics and impacts of ICT investments: Perceptions among managers. *Industrial Management and Data Systems, 107*(4), 537–550. http://dx.doi.org/10.1108/02635570710740689
47. Vu, K. M. (2011). ICT as a source of economic growth in the information age: Empirical evidence from the 1996–2005 period. *Telecommunications Policy*, *35*(4), 357–372. http://dx.doi.org/10.1016/j.telpol.2011.02.008
48. Wallsten, S. (2005). Regulation and internet use in developing countries. *Economic Development and Cultural Change, 53*(2), 501–523. http://dx.doi.org/10.1086/425376
49. Wan, Z., Wang, Y., & Haggerty, N. (2008). Why people benefit from e-learning differently: The effects of psychological processes on e-learning outcomes. *Information and Management, 45*(8), 513–521. http://dx.doi.org/10.1016/j.im.2008.08.003
50. World Economic Forum. (2007–2015). *The global competitiveness report*. Retrieved from http://www.weforum.org/
51. World Economic Forum. (2011–2015). *The global information technology report*. Retrieved from http://www.weforum.org/
52. Yunis, M. M., Koong, K. S., Liu, L. C., Kwan, R., & Tsang, P. (2012). ICT maturity as a driver to global competitiveness: A national level analysis. *International Journal of Accounting and Information Management, 20*, 255–281. http://dx.doi.org/10.1108/18347641211245137
53. Zhang, D., & Nunamaker, J. (2003). Powering E-Learning in the new millennium: An overview of E-Learning and enabling technology. *Information Systems Frontier, 5*(2), 207–218. http://dx.doi.org/10.1023/A:1022609809036

54. Zhu, K., & Kraemer, K. L. (2005). Post-adoption variations in usage and value of E-Business by organizations: Cross-country evidence from the retail industry. *Information Systems Research, 16*(1), 61–84. http://dx.doi.org/10.1287/isre.1050.0045
55. Zoroja, J. (2011). Internet, e-Commerce and e-Government: Measuring the gap between European developed and post-communist countries. *Interdisciplinary Description of Complex Systems, 9*(2), 119–133.
56. Zoroja, J. (2015). Fostering competitiveness in European countries with ICT: GCI agenda. *International Journal of Engineering Business Management, 7*, 1–8. http://dx.doi.org/10.5772/60122

Author

Jovana Zoroja, Ph.D., is an assistant professor at the Faculty of Economics and Business, University of Zagreb, Department of Informatics, where she received her Ph.D. with the dissertation thesis "Influence of the Information and Communication Technologies on the Competitiveness of the European Union Countries." She was educated at the LSE–Summer School in London in the field of business development and ICTS innovation (2008). Her main research interests are information and communication technology, e-learning, simulation games and simulation modelling. She has published several scientific papers in international and national journals and participated in many scientific conferences. She is actively engaged in a number of scientific projects.

Vpliv IKT na inovacijske dejavnosti: Indikacija za izbrane evropske države

Izvleček

Razvoj in uporaba informacijskih in komunikacijskih tehnologij (IKT) sta se povečala predvsem v zadnjih dveh desetletjih. V istem obdobju se kaže tudi velik potencial za izboljšanje poslovnih procesov, za pospeševanje in spodbujanje inovacij, torej za povečanje konkurenčnosti. Inovacijske dejavnosti so pomemben dejavnik družbenih in ekonomskih sprememb ter povečanja konkurenčnih prednosti na nacionalni in podjetniški ravni. V tem članku se osredotočamo na vlogo, ki jo imajo IKT v inovacijski uspešnosti izbranih evropskih držav. Pri raziskavi so bili uporabljeni podatki iz Eurostata in Global competitiveness Indexa (2007–2011) ter panelna regresijska analiza, rezultati pa kažejo, da imajo IKT pomemben vpliv na poslovne inovacijske dejavnosti.

Ključne besede: informacijska in komunikacijska tehnologija, inovacija, poslovna razvitost, konkurenčnost, evropske države, regresijska analiza

ORIGINAL SCIENTIFIC PAPER

RECEIVED: APRIL 2016

REVISED: JULY 2016

ACCEPTED: JULY 2016

DOI: 10.1515/ngoe-2016-0018

UDK: 640.4:001.895(439)

JEL: L83

Citation: Gyurácz-Németh, P., Horn, N., & Friedrich, N. (2016). Analyzing Hotel Innovation Behavior in the Balaton Region of Hungary to Identify Best Practices. *Naše gospodarstvo/Our Economy, 62*(3), 52–60. DOI: 10.1515/ngoe-2016-0018

Analyzing Hotel Innovation Behavior in the Balaton Region of Hungary to Identify Best Practices

Petra Gyurácz-Németh
Faculty of Business and Economics, University of Pannonia, Hungary
nemeth@turizmus.uni-pannon.hu

Nikolett Horn
Master Student at the Faculty of Business and Economics, University of Pannonia, Hungary
hornniki@gmail.com

Nóra Friedrich
Master Student at the Faculty of Business and Economics, University of Pannonia, Hungary
fnori89@gmail.com

Abstract

The goal of the research is to investigate the hotel innovation behavior in one of the most important tourism regions of Hungary. The Lake Balaton Region is a very popular area of the country with quite a short season (from the middle of June to August 20). The region is the second most visited area based on the number of guests and guest nights in Hungary. The topic of innovation plays a growing role in the Hungarian hotel sector as well, because competition is very high and keeping guests and employees can be a great challenge. The study involved both qualitative and quantitative research. The qualitative research aimed to identify the best practices of the Hotel Európa Fit****superior which introduced an "innovation by inspiring" strategy and applies several types of innovation in a highly recommended way. The respondents of the questionnaire included 28 hotel general managers (52% of the 54-person sample). The results showed a strong relationship between the type of the hotel and the number of innovations as well as the type of the hotel and the frequency of innovation.

Key words: innovation behavior, hotel type, best practice, Hungary

1 Introduction

The economic and corporate importance of innovation and continuous improvement has become obvious for all specialists. Tourism is one of the fastest-growing industries today and is significantly contributing to a lot of countries' GDP data and employment indicators (Gyurácz-Németh, Raffay, & Kovács, 2010). Due to the great competition among hotels, it is becoming more important to create new and special products for consumers to satisfy their expected needs and differentiate themselves from their competitors. The solution for staying competitive and sustainable, therefore, appears to be innovation.

NG
OE

**NAŠE GOSPODARSTVO
OUR ECONOMY**

Vol. 62 No. 3 2016

pp. 52–60

The main aim of the paper is to investigate some characteristics of innovation in the hotel industry in the Balaton Region of Hungary and present best practices that could be exemplary for other hotels. This paper focuses on the type of the hotel; it determines if leisure or conference/business hotels are more innovative (introduce more innovations more frequently) and presents the strength of the relationship between these factors. The results will show how many innovations were implemented in the last five years in the hotel industry in the Lake Balaton region, including how often and what kinds of hotels are more innovative. Then the best practices are used to present an existing and working model that can provide a case study from which other hotels can learn.

The paper asks the following research question: Is there a relationship between the type of the hotel and the innovation behavior of the hotel (as measured by the number of innovations and the frequency of the innovation process)?

2 Literature Review

From the beginning, people have always tried to use newer and newer methods. The term *innovation* was first used in Italy during the Renaissance in Europe; it became known once again by the Austrian economist Joseph Alois Schumpeter at the beginning of the 20th century (Quadbeck-Seeger, 2003). Schumpeter (1934) said that innovation was a new way of doing things or a better/unique combination of production factors (Ottenbacher, 2008). As Schumpeter wrote, innovation creates new opportunities for added value; it involves not only the typical product/process innovation of manufacturing, but also the market, organizational, and resource input innovations (Martínez-Ros & Orfila-Sintes, 2009).

OECD defined innovation as "the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations" (OECD, 2005, p. 46). One of the most notable changes in the OECD's definition is that technology was not included, but the product and process innovation remained. This does not mean that technology is no longer important; it opens the definition to lower intensity R&D companies and the service sector (Katona, 2006).

Initially, only production innovation had a big role in theory and practice. Service innovation was not considered an important issue until the beginning of this century (Djellal, Gallouj, & Miles, 2013). Service innovation is very important for a company because it can provide several advantages. Innovation can contribute to the competitiveness of the firm through lower costs and higher quality (Orfila-Sintes & Mattsson, 2009). The advantages of hospitality innovation can be found in Table 2. Innovation can be classified in different categories according to the innovation process, the innovative product or service, the topic it concerns and the source.

Table 1. Different Innovation Classifications

Author	Innovation classification
Dewar &Dutton (1986) and Ettlie, Bridges, & O'Keefe (1984)	Radical, incremental
Lovelock & Wirtz (2007)	Major innovations, new business, a new service serves the market, service line extension, service development, style changes
Tseng, Kuo, & Chou (2008)	Technological, organizational, human capital innovation
Gyurácz-Németh et al. (2010)	Sources of innovation: management, not management

Source: Authors' own compilation

From the classification criteria in Table 1, Tseng, Kuo, and Chou's (2008) groups have been further analyzed and applied in this case study.

Hospitality Innovation

This study analyses innovation in the hotel sector, so it is essential to determine the importance of innovation in the hotel industry. Innovation is not so popular in this industry because of the conservative and capital intensive nature, which promises returns for more than 25 years (Gyurácz-Németh et al., 2010).

Allegro and de Graaf (2008) found that the hotel industry's most innovative ideas come from those who have an outsider's perspective looking at the operation and who are not impeded by the existing paradigms. In hospitality innovation studies, the role of employees (Chen, 2011; Nagy, 2014; Nieves & Segarra-Ciprés, 2015) and customer orientation (Grissemann, Plank, & Brunner-Sperdin, 2013) cannot be neglected. The advantages and disadvantages are summarized in Table 2.

Table 2. *Advantages and Disadvantages of Hospitality Innovation*

Advantages	Disadvantages
Competitiveness (Ottenbacher et al., 2005)	Failure rate: 25%–45% (Cooper, 2008), 58% (Griffin, 1997)
Business reputation (Ottenbacher, 2008)	Expensive (Ottenbacher, 2008)
Loyalty (Ottenbacher, 2008)	
Growing sales (Nicolau et al., 2013)	
Higher stock exchange returns (Nicolau et al., 2013)	

Source: Authors' own compilation

The most important advantage of innovation is competitiveness, which is derived from the continuous improvement of the services of the hotel (Ottenbacher & Gnoth, 2005). The intangible factors include business reputation and guest loyalty. Innovation has a correlation with the sales activity and stock exchange return of the hotels as well (Nicolau & Santa-María, 2013). The most dangerous disadvantage of innovation is that most of the innovations do not reach the original goals, making improvements very risky (Griffin, 1997). Even if the innovation is successful, it can still be very expensive (Ottenbacher, 2008).

Innovation behavior is defined differently by the researchers. Orfila-Sintes and Mattsson (2009) measured the innovation behavior of the hotel industry in the Balearic Islands using four types of innovation as determinants: management, external communication, service scope, and back-office. The authors determined innovation behavior differently—namely, using the number of innovations introduced in the last five years (as it is logical to assume that those hotels introducing more innovations are more innovative than those with only a few innovations) and the frequency of the innovation process (those hotels supposed to be more innovative introduce innovations more often than those that rarely implement innovations). With these factors, the innovation outcome and the process can be measured as well, which are usually separated in the literature (Witell, Snyder, Gustafsson, Fombelle, & Kristensson, 2016).

One of the most important characteristics of hotels is the type of the hotel. The type will determine the target groups mainly business and leisure guests. The type is one of the first decisions made by the hotel's owner. In the authors' opinion, the different target groups and the different ways of thinking can result in differences in innovation behavior.

3 Methodology

Qualitative and quantitative research methods have been used in this current survey. It was necessary to find which hotels' innovation process can be an example for the other, which could be identified by a deeper qualitative research. Thus, almost 40% of the questionnaires were administered by the authors personally. These opportunities made it possible to get to know the hotels and the thinking of the general managers. The questionnaire was administered as a structured interview but completed by follow-up questions concentrating more on the reasons behind the innovations and the way of thinking. The best practice selection was based on the following criteria:

- Number of innovations in the last five years
- Types of innovation (according to the classification of Tseng et al., 2008)
- Spending on innovation (percentage of the annual revenue)
- Frequency of innovation
- Innovative thinking of the general manager

After the best practice hotel was selected, an in-depth interview was also carried out on site with the hotel's general manager.

A questionnaire was used to collect data for the analysis. The research presented in this paper is part of a bigger examination of the Hungarian hotel market. The survey contained 20 innovation questions (for example, types of innovation, frequency of innovations) and 16 general questions about the characteristics of the hotel (for example, hotel type, number of rooms, star rating). The participants had to list the innovation they introduced in the last five years and those they are planning for the next three years. These were open questions, but some questions used a Likert scale (for example, expectations of the hotel general managers) or had only one choice possible (for example, hotel type). A pilot test was conducted before the questionnaire was administered to test its reliability and validity and look for errors. Twenty-two general managers nationwide were asked to check the comprehensibility and professional content of the questionnaire. They suggested that the word *innovation* be defined in the questionnaire and, instead of innovation, use its Hungarian version to make it more understandable. After the pilot test, the link to the questionnaire was sent to the hotels in the sample.

Twenty-eight hotels completed the questionnaire, which is 52% of the population (54). Only three-, four- and five-star hotels were asked. The general managers were asked to be participants in the research because innovation is a company-wide process in which more hotel departments need to

take part. Since general managers have to coordinate departments, they have to decide on strategic issues concerning the whole hotel. This paper explores two important themes from the quantitative research. In the first issue, the relationship between the type of the hotel and the number of innovations is investigated. The other question asks whether any connection exists between the type of the hotel and the frequency of innovation.

To analyze the results, cross-tabulation analyses were used as the variables are on a nominal scale. This method shows the relationship between the variables and determines its strength as well.

4 Results

The results of the quantitative research will be presented to answer the research question: Does a relationship exist between the type of the hotel and the innovation behavior of the hotel? Innovation behavior was separated into two parts: number of innovations and the frequency of innovation. The results are shown in this order.

Participating hotels were asked to describe what type of hotel they are. The answers were given according to the Hungarian regulations (239/2009 law about the operation and types of accommodation). Hotel types were grouped into two categories: conference/business hotels and leisure hotels.

4.1 Relationship between Hotel Type and Number of Innovations

The hotels were asked to mention any innovations introduced in the hotel in the past five years. Then the number of innovations was counted. The aim was to find a relationship between the hotel type and the number of innovations to determine if business or leisure hotels were more innovative.

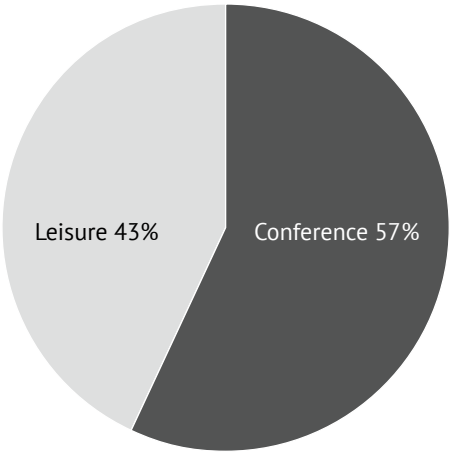
Table 3 shows the output of the cross-tabulation analysis of hotel type and number of innovations. The results suggest a strong correlation between the factors as the significance level is under 0.05 and the value is above 0.7.

Table 3. Cross-tabulation Analysis for the Relationship Between Hotel Type and Number of Innovations

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Cramer's V	.717	.045

Source: Authors' own compilation

Figure 1. Hotel type and the number of innovations



Source: Authors' own compilation

In the examined period of time (five years), participating hotels introduced 105 innovations. Of these, 60 were implemented by conference/business hotels and 45 were carried out in leisure hotels. Figure 1 shows that conference hotels are more active in introducing innovations than leisure hotels.

4.2 Relationship between Hotel Type and Frequency of Innovation

One of the most important issues concerning innovation is the frequency of the activity. It shows the company's commitment to continuous improvement and the managers' understanding of the word *innovation*. Table 4, which shows the results of the analyses, indicate a significant but weak relationship between the hotel type and the frequency of innovation.

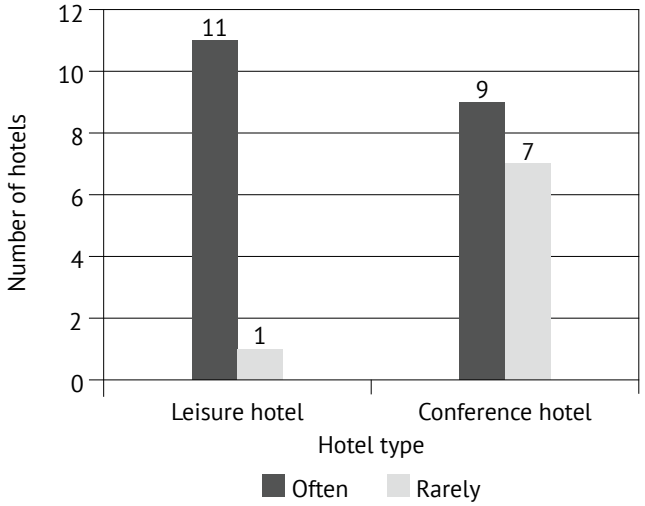
Table 4. Cross-tabulation Analysis for Relationship Between Type of Hotel and Frequency of Innovation

Symmetric Measures			
		Value	Approx. Sig.
Nominal by Nominal	Cramer's V	.388	.04

Source: Authors' own compilation

According to the general results, hotels think that innovation should be introduced annually, and they try to do that; only half of the answers indicated continuous improvement. The frequency data were narrowed down and grouped into two categories: often (i.e., continuously, every half year, annually) and rarely (i.e. every three, every five, every

Figure 2. Hotel type and the frequency of innovations



Source: Authors' own compilation

20 years or less often). In this category, leisure hotels came first because most of them often implement innovations. Although there is no big difference between hotel types in case of the innovation happening often, there is in the case of rare innovations.

4.3 Best Practice: The case of the Hotel Európa Fit****superior

After analyzing all the quantitative research results, it became possible to identify the best practices from the hotels of the Balaton Region of Hungary. The chosen hotel is the Hotel Európa Fit****superior in the town of Hévíz (northwest side of the lake). The choice was supported by the fact that the exact questionnaire (for quantitative research) was personally administered and a longer interview was conducted with the general manager of the hotel on March 25, 2014. The aim of this interview was to get more detailed information about the organizational aspects of innovation in the best practice. This interview made it possible to get more information about the hotel operation and the way of thinking behind the number of innovations and the frequency of the innovation process.

About the Hotel

One of the most famous thermal baths in Europe can be found in Hévíz, on the edge of Lake Balaton. This medicinal lake—unique throughout the world—is found amongst exquisite green surroundings. The Hotel Európa Fit****superior is a four-star spa and wellness hotel located in the heart of a peaceful oasis. Its staff and the variety of wellness and beauty services give the guests the feeling of being really cared for. The hotel offers 234 rooms for different needs, each with a balcony/terrace and equipped with modern and necessary equipment. The whole hotel is air-conditioned.

According to the hotel's website (http://www.europafit.hu/en/hotel/introduction), the following services are provided by the hotel:

- Medical wellness cures in a new environment, modern and pampering treatments, alternative medicine and dental services
- Massages: refreshing, sport and traditional Far Eastern massages
- Treatments: electrotherapy, pelotherapy, hydrotherapy, oxygen therapy, magnet therapy, inhalation, special packs, remedial gymnastic, medical examination, counselling, general medical check-up, dietary consultation, California bath, Hévíz mud-bath, Humino treatment, and cryosauna
- Pools: more than 700 m² of water surface, wellness pool, medicinal pool, experience bath, indoor and outdoor swimming pools, Acapulco pool for families, whirlpool, and Kneipp pool
- Saunas: Finnish saunas, infrasauna, steam bath, herbarium and a frigidarium
- Vitalium beauty: relaxing atmosphere, face and body treatments, massages, thalassotherapy, mesotherapy, cosmetics, hairstyling, manicure, pedicure, cosmetician's consultation, and solarium

Innovation

Although several hotel general managers misinterpreted innovation (e.g., identifying it as maintenance or hygienic renovations), Hotel Europa Fit concentrates on service development in the definition. The general manager uses vision in the service development tasks, which are discussed in the annual meetings from a strategic and financial perspective.

The organizational structure of the hotel was created according to the need to innovate the operational issues (e.g., ensuring the room's average daily rate [ADR]), while other kinds of performance indicators have only secondary importance. Every development in the hotel starts with a kick-off meeting at the beginning of the year. They realized that there should be a deadline for every task, as this will make sure that effort is made and a new or altered service is created. So after the kick-off meeting, there is a discussion every month to check the progress of the innovations and other relevant issues. The most important thing is to separate the meetings and tasks considering operational/everyday issues and strategic/long-term issues containing innovation, because if a hotel only concentrates on everyday operations, innovation

can only be a secondary issue; consequently, it is always postponed and never realized.

For example, at one meeting, the most essential topic of the meeting was to deal with TripAdvisor comments. This discussion happened in a very different environment—in the Oxygen Adrenalin Park—where team-building exercises helped the process. The event was successful, and a new strategy was developed to ensure guest satisfaction. They will encourage their guests to write as many comments on the site as possible to share the real image of the hotel and make sure that new guests will see the real picture instead of the negative comments more likely to be on TripAdvisor. These team-building programs have been organized in the hotel since 2009.

This year, the hotel initiated an energy optimization program to reduce the energy costs of the hotel and make operations more efficient. This is one of the reasons why it is essential for hotel staff to have the chance to come forward and visit the general manager to suggest new, innovative ideas.

Service Development Teams

The hotel uses service development teams, which are perceived to be the most essential according to the general manager. The teams contain employees from every department. The aim is to involve the opinion leaders willing to share their thoughts with the group. Currently 10 people are on the team; they are not necessarily department leaders, but are creative and willing to challenge the service quality of the hotel with new ideas. The middle managers of the different departments also need to understand that their employees can have very good ideas, and sometimes they will be project managers. This team has meetings at least once every three months without the general manager to make sure that they do not keep their ideas to themselves and even dare to criticize and create new things.

Innovation by Inspiration

Hotel Európa Fit****superior has a very good philosophy called "innovation by inspiration," where the two concepts are connected. Setting aside any notion of the autocratic management style, the general manager was able to motivate managers to share their opinions and suggestions. The colleagues have to prove the relevance and value of their ideas and describe the processes of implementation. There is always a discussion among the managers to find the strengths and weaknesses of the recommended solutions. The final decision is made by the general manager as he is the one responsible for all actions in the hotel. The general manager believes that only that strategy can work where everybody can share their opinion and he is only the "first among equals." However the owners cannot be forgotten. They need to support the new ideas because they risk their financial resources to accomplish the dreams of the managers and the staff.

The general manager also mentioned that the revolutionary thoughts and innovations come not only from inside the company, but also from other sources (e.g., journals, magazines, and other secondary sources). These suggestions can be applied in practice. For example, the general manager read a paper about Marriott hotels that sparked the idea to rethink the hotel's minibar service, which saved a lot of costs. However, he also asserted that it is not always a good idea to copy the innovation of other hotels because the circumstances, target groups, and even financial opportunities can be quite different.

Innovation Success and Failure

It is very hard to measure the success of innovation as it can be quite subjective. The aim of the innovation behavior in the case of Hotel Európa Fit is to make the hotel more competitive and reach the proper operational performance expected in the annual plans. This thinking will lead to guest satisfaction as well, which is an essential indicator in the case of a hotel. Although customer satisfaction is a crucial input, employee satisfaction cannot be forgotten. An exhausted, overwhelmed, underpaid staff cannot satisfy the guests and improve or maintain the image of the hotel. This will not lead to competitiveness or a better image.

5 Discussion

A contradiction emerged in the most innovative hotel type result because there are more innovations introduced in conference hotels, but in leisure hotels innovations are happening more often (i.e., at least annually). These results helped but did not entirely determine which hotel can be named best practice; they were still open. As mentioned earlier, the personal surveys contributed highly to the decision-making process.

The best practice case study contains the most important information about the innovation behavior of the hotel. As a summary, it has to be noted that the general manager of the Hotel Európa Fit is very competent in the topics of hotel and innovation management. The most mentioned innovations were organizational (service development teams, brainstorming meetings) and human resource innovations (training), although he emphasized the role of technological

innovations as well. In the authors' opinion, the organizational innovations are the basis of all developments in the hotel

According to the general manager, there is no good example in Hungary from which they could learn and Hungarian hotels are not open for new innovations. Although a contradiction exists because their competitor Hotel Carbona**** (according to the authors) introduced a new service (cryptotherapy) at the same time as Hotel Európa Fit****superior did, other hotels can be innovative as well.

Innovation can come from different sources, which are known to the general manager, including cooperation among others. That is why he set up a meeting with other hotel general managers in Hévíz every month. During these discussions, participants discuss the development opportunities and problems as well. The extension of this cooperation is suggested.

One of the most important messages is the involvement and empowerment of employees to take part in the innovation processes of the hotel. To encourage the staff, the general manager needs to be understanding, open, and inspiring. Two-way communication is necessary with the guests, managers, and the employees.

6 Conclusion

The need for innovation from hotels' and guests' side is very high in today's competitive environment. The ability to innovate can be the key to companies' survival. New innovations have the opportunity to satisfy guests, owners, and employees and produce the right performance indicators. The current research aimed to map the innovation behavior in the Lake Balaton Region in Hungary according to one of the most important hotel characteristics, hotel type, and find the best practice hotel concerning innovation behavior and attitude.

This research put the hotel type into the center of the investigation and was able to find the relationship between the hotel types and innovation behavior. It also determined innovation behavior in an easily measurable and determined way using two important indicators: number of innovations and the frequency of the innovation process. The results of the analysis showed a positive and strong relationship between the hotel type and number of innovations, and there is a weak relationship between the type of the hotel and frequency of innovation. Although it is important to add that conference hotels were better at the number of innovations, leisure hotels innovate more frequently.

After the initial analysis, the best practice hotel was identified. The most important type of innovation used in the hotel is organizational innovation, which is the basis of all others applied in the example hotel. The key to success lies with the philosophy of the general manager, called "innovation by inspiration." The other significant innovative practice is to get innovation ideas from different sources.

The authors believe that innovation has to be a strategic decision instead of an operative one and can come from different levels of the organization or outside of the hotel. The most important thing for general managers is to always be open, try to find opportunities all the time, and not be satisfied with the current situation of the hotel, as mentioned by the best practice hotel's general manager.

Although there was much relevant information gathered during the interview, some limitations have to be mentioned. The research only concentrated on the Balaton Region, not the whole country. There was no foreign comparison, and only the three-, four-, and five-star hotels were analyzed.

Further research should consider other parts of the country and try to involve more hotels in order to ensure a representative sample. A foreign best practice example should be researched and compared to the Hungarian best innovative hotel.

References

1. Allegro, S., & de Graaf, R. (2008). Innovation and strategy implementation: the key challenge in today's competitive atmosphere. In M. Olsen & J. Zhao (Eds.), *Handbook of hospitality strategic management* (pp. 407–424). Oxford: Butterworth Henemann. http://dx.doi.org/10.1016/b978-0-08-045079-7.00018-1
2. Chen, W-J. (2011). Innovation in hotel services: Culture and personality. *International Journal of Hospitality Management, 30*(1), 64–72. http://dx.doi.org/10.1016/j.ijhm.2010.07.006
3. Cooper, R. G. (2008). Perspective: The stage-gate idea-to-launch process—Update, what's new and nexgen systems. *Journal of Product Innovation Management, 25*(3), 213–232. http://dx.doi.org/10.1111/j.1540-5885.2008.00296.x
4. Dewar, R. D., & Dutton, J. E. (1986). The adoption of radical and incremental innovations: an empirical analysis. *Management Science, 32*(11), 1422–1433. http://dx.doi.org/10.1287/mnsc.32.11.1422
5. Djellal, F., Gallouj, F., & Miles, I. (2013). Two decades of research on innovation in services: Which place for public services?. *Structural Change and Economic Dynamics, 27*, 98–117. http://dx.doi.org/10.1016/j.strueco.2013.06.005

6. Ettlie, J. E., Bridges, W. P., & O'Keefe, R. D. (1984). Organization strategy and structural differences for radical vs. incremental innovation. *Management Science, 30*(6), 682–695. http://dx.doi.org/10.1287/mnsc.30.6.682
7. Griffin, A. (1997). PDMA research on new product development practice: updating trends and benchmarking best practices. *Journal of Product Innovation Management, 14*(6), 429–458. http://dx.doi.org/10.1111/1540-5885.1460429
8. Grissemann, U., Plank, A., & Brunner-Sperdin, A. (2013). Enhancing business performance of hotels: The role of innovation and customer orientation. *International Journal of Hospitality Management, 33*, 347–356. http://dx.doi.org/10.1016/j.ijhm.2012.10.005
9. Gyurácz-Németh, P., Raffay, Á., & Kovács, Z. (2010). Az innováció forrásai a turizmusban- fókuszban a szállodaipar és a közlekedés" (The sources of innovation in tourism, hotel and transport sector is in the focus), Innováció, Csath, M., Versenyképesség, KKV-K I., Nemzetközi Konferencia Monográfia, Kodolányi János Főiskola, Budapest
10. Katona, J. (2006). Oslo kézikönyv harmadik kiadásának kiértékelése (Evaluating the 3rd edition of the Oslo manual) Retrieved from: http://www.innovacio.hu/download/az_innovacio_ertelmezese_2006_09_27.pdf
11. Lovelock, C., & Wirtz, J. (2007). *Services marketing, people, technology, strategy* (6th ed.). Upper Saddle River, New Jersey: Pearson Education International, USA
12. Martínez-Ros, E., & Orfila-Sintes, F. (2009). Innovation activity in the hotel industry. *Technovation, 29*(9), 632–641. http://dx.doi.org/10.1016/j.technovation.2009.02.004
13. Nagy, A. (2014). The orientation towards innovation of spa hotel management: the case of Romanian spa industry. *Procedia—Social and Behavioral Sciences, 124*, 425–431. http://dx.doi.org/10.1016/j.sbspro.2014.02.504
14. Nicolau, J. L., & Santa-María, M. J. (2013). The effect of innovation on hotel market value. *International Journal of Hospitality Management, 32*, 71–79. http://dx.doi.org/10.1016/j.ijhm.2012.04.005
15. Nieves, J., & Segarra-Cipés, M. (2015). Management innovation in the hotel industry. *Tourism Management, 46*, 51–58. http://dx.doi.org/10.1016/j.tourman.2014.06.002
16. OECD. (2005). *Oslo manual* (3rd ed.). Retrieved from www.innovacio.hu/download./az_innovacio_ertelmezese_2006_09_27.pdf
17. Orfila-Sintes, F., & Mattsson, J. (2009). Innovation behavior in the hotel industry. *Omega, 37*(2), 380–394. http://dx.doi.org/10.1016/j.omega.2007.04.002
18. Ottenbacher, M. (2008). Innovation management. In P. Jones (Ed.), *Handbook of hospitality operations and IT* (pp. 340–366). Oxford: Elsevier Ltd. http://dx.doi.org/10.1016/B978-0-7506-8753-9.50018-4
19. Ottenbacher, M., & Gnoth, J. (2005). How to develop successful hospitality innovation. *Cornell Hotel and Restaurant Administration Quarterly, 46*(2), 205–222. http://dx.doi.org/10.1177/0010880404271097
20. Quadbeck-Seeger, H. J. (2003). *Csak a változás* állandó. *Idézetek* és *gondolatok az innovatív vezetők számára (Only the change is stable. Quotes and thoughts for innovative managers)*. Budapest: KJK-Kerszöv Jogi és Üzleti Kiadó Kft.
21. Schumpeter, J. A. (1934). *The theory of economic development*. Cambridge, MA: Harvard University Press.
22. Tseng C., Kuo H., & Chou S. (2008). Configuration of innovation and performance in the service industry: evidence from the Taiwanese hotel Industry. *The Service Industries Journal, 28*(7), 1015–1028. http://dx.doi.org/10.1080/02642060701882080
23. Witell, L., Snyder, H., Gustafsson, A., Fombelle, P., & Kristensson, P. (2016). Defining service innovation: A review and synthesis. *Journal of Business Research, 69*(8), 2863–2872. http://dx.doi.org/10.1016/j.jbusres.2015.12.055
24. Hotel Európa Fit****superior website: http://www.europafit.hu/en/hotel/introduction 01/07/2015)
25. Interview with László Könnyid, General manager of the Hotel Európa Fit****superior (25th March 2014)

Authors

Petra Gyurácz-Németh, Ph.D., is a senior lecturer at the Department of Tourism, Faculty of Business and Economics, University of Pannonia, Veszprém, Hungary. Her main research field is hotel quality and innovation concentrating on the standardization and customization of hotel processes. She teaches subjects related to hotel operations and management as well as service quality. Petra gained practical experience when she was working in an international chain hotel in many departments, as a tour operator as an incoming agent, and in a touriform office. She can be contacted at nemeth@turizmus.uni-pannon.hu.

Nikolett Horn is a former student at the University of Pannonia, Veszprém, Hungary. She started her undergraduate studies in tourism and hospitality in 2008 and immediately continued with a master's degree in tourism management. Her research topic is hotel project management and innovation. She took part in student scientific competitions, placing first twice and second once. In the national student scientific competition, she placed third and got a special award in the previous event. She has been working for the hotel chain Danubius Hotels Group as a sales representative. She can be contacted at hornniki@gmail.com.

Nóra Friedrich is a former BA and MA student at the University of Pannonia, Veszprém, Hungary. Her research topic is hotel innovation: types, behavior, and success. She has assisted on some projects at the Department of Tourism and made several

presentations for students on different topics. She took part in student scientific competitions, placing first twice and second once. In the national student scientific competition, she placed third, second, and third again with different pieces of research. She can be contacted at fnori89@gmail.com.

Analiziranje inovativnega vedenja hotelov ob Blatnem jezeru na Madžarskem z namenom, prepoznati najboljšo prakso

Izvleček

Cilj te raziskave je proučiti inovativno vedenje hotelov v eni najpomembnejših turističnih regij na Madžarskem. Območje ob Blatnem jezeru je zelo priljubljeno, sezona pa je precej kratka (od sredine junija do 20. avgusta). Glede na število gostov in nočitev je ta regija drugo najbolj obiskano območje na Madžarskem. Tema inovativnosti ima v madžarskem hotelskem sektorju vedno večji pomen, ker je konkurenca zelo huda, zadržati goste in zaposlene pa je lahko velik izziv. Študija vključuje kvalitativno in kvantitativno raziskavo. Cilj kvalitativne raziskave je bil proučiti Hotel Európa Fit****superior kot primer najboljše prakse. Hotel je uvedel t. i. strategijo »inovacije z navdihom« (angl. »innovation by inspiring«) in več vrst inovacij uporabil na zelo priporočljiv način. Na vprašalnik se je odzvalo 52 odstotkov respondentov (28 vodilnih menedžerjev hotelov) iz vzorca (54). Rezultati kažejo, da obstaja močna povezava med tipom hotela in številom inovacij ter med tipom hotela in pogostostjo inovacij.

Ključne besede: inovativno vedenje, tip hotela, najboljša praksa, Madžarska

NAVODILA AVTORJEM

Revija **Naše gospodarstvo / Our Economy** objavlja znanstvene članke iz vseh področij ekonomije in poslovnih ved. Avtorje vabimo, da v uredništvo revije pošljejo originalne prispevke, ki še niso bili objavljeni oziroma poslani v objavo drugi reviji. Avtorji podeljujejo lastniku revije ekskluzivno pravico za komercialno uporabo članka, ki stopi v veljavo na osnovi sprejetja članka v objavo. Avtorji v celoti odgovarjajo za vsebino prispevka. Objavljamo samo članke, ki dobijo pozitivno oceno naših recenzentov.

Prispevki naj bodo napisani v angleškem jeziku. Na posebni strani navedite ime avtorja, njegov polni habilitacijski in znanstveni naziv ter ustanovo, kjer je zaposlen. Prva stran naj vsebuje naslov, izvleček (maksimalno 650 znakov) in ključne besede, vse troje v slovenskem in angleškem jeziku. Dodajte tudi trimestno kodo JEL klasifikacije, ki jo najdete na https://www.aeaweb.org/econlit/jelCodes.php?view=jel.

Za besedilo članka uporabljajte praviloma pisave Times, Times New Roman CE, SL Dutch in podobne v velikosti od 10 do 12 pik (points). V tabelah in slikah obvezno uporabljajte pisavo brez serifov (Helvetico, Arial, Arial CE, SL Swiss ali podobno). Za poudarke v besedilu uporabljajte poševni tisk, ne krepkega ali podčrtanega tiska.

Morebitne tabele in slike naj bodo oštevilčene ter naslovljene nad, opombe in viri pa pod tabelo oziroma sliko. V tabelah uporabljajte enojne okvirje, debeline pol pike (1/2 point). Sprotne opombe naj bodo oštevilčene in navedene pod tekstom pripadajoče strani. Oštevilčite tudi morebitne enačbe.

Vire v tekstu in v seznamu virov je potrebno urediti skladno z APA standardom – navodila na http://www.apastyle.org/learn/tutorials/basics-tutorial.aspx.

Nekaj osnovnih napotkov:

Navedbe virov v tekstu

Primer 1a: Another graphic way of determining the stationarity of time series is correlogram of autocorrelation function (Gujarati, 1995).

Primer 1b: Another graphic way of determining the stationarity of time series is correlogram of autocorrelation function (Gujarati, 1995, p. 36).

Primer 2a: Engle and Granger (1987) present critical values also for other cointegration tests.

Primer 2b: Engle and Granger (1987, p. 89) present critical values also for other cointegration tests.

Navedbe virov v seznamu virov

Primer 1 – Knjiga: Gujarati, D. N. (1995). *Basic Econometrics*. New York: McGraw-Hill.

Primer 2 – Članek v reviji: Engle, R. F., & Granger, C. W. J. (1987). Co-integration and Error Correction: Representation, Estimation and Testing. *Econometrica*, 55(2), 251-276.

Primer 3 – Poglavje v knjigi, prispevek v zborniku: MacKinnon, J. (1991). Critical Values for Cointegration Tests. In R. F. Engle & C.W. J. Granger, (Eds.), *Long-Run Economic Relationships: Readings in Cointegration* (pp. 191-215). Oxford: University Press.

Primer 4 – Elektronski vir: Esteves, J., Pastor, J. A., & Casanovas, J. (2002). Using the Partial Least Square (PLS): *Method to Establish Critical Success Factors Interdependence in ERP Implementation Projects*. Retrieved from http://erp.ittoolbox.com/doc.asp?i=2321

Prispevek naj ne bo daljši od avtorske pole (30.000 znakov). Stran naj bo velikosti A4, s tricentimetrskimi robovi in oštevilčenimi stranmi. Izpis naj bo enokolonski z 1,5 razmika med vrsticami. Elektronsko verzijo prispevka pošljite v MS Word obliki na e-naslov our.economy@um.si ali nase.gospodarstvo@um.si.

S prispevkom pošljite za avtorja in vse soavtorje še celotni naslov, elektronski naslov in telefonsko številko, preko katere je dosegljiv uredništvu. Dodajte tudi kratek CV (obsega od 500 do 550 znakov, upoštevajoč presledke).

Revija avtorjem ne zaračunava stroškov objave.

INSTRUCTIONS FOR AUTHORS

The journal **Naše gospodarstvo / Our Economy** publishes original scientific articles covering all areas of economics and business. Authors are invited to send original unpublished articles which have not been submitted for publication elsewhere. Authors are completely responsible for the contents of their articles. Only articles receiving a favorable review are published. The authors grant the Journal Owner the exclusive license for commercial use of the article throughout the world, in any form, in any language, for the full term of copyright, effective upon acceptance for publication.

Please write your text in English (American or British usage is accepted, but not a mixture of these). The cover page should include the author's name, academic title or profession, and affiliation. The first page must contain the title, an abstract of no more than 650 characters, and key words, all in English. Add also three-character codes of JEL classification (https://www.aeaweb.org/econlit/jelCodes.php?view=jel).

Manuscripts should be prepared on a word processor in a font such as Times, Times New Roman CE, or SL Dutch in size 10 to 12 points. Tables and figures are to be presented in fonts without serifs (Helvetica, Arial, Arial CE, SL Swiss or similar). Emphasized parts of the text should be in italics, not bold or underlined.

Figures and tables should be numbered with a title above and notes and sources below. Figures should be in ½ point single-line frames. Footnotes should be numbered consecutively and placed at the bottom of the relevant page. Equations should also be numbered.

References in the text and in the list of references should be arranged according to APA style – see http://www.apastyle.org/learn/tutorials/basics-tutorial.aspx.

Some elementary directions:

References in the text

Example 1a: Another graphic way of determining the stationarity of time series is correlogram of autocorrelation function (Gujarati, 1995).

Example 1b: Another graphic way of determining the stationarity of time series is correlogram of autocorrelation function (Gujarati, 1995, p. 36).

Example 2a: Engle and Granger (1987) present critical values also for other cointegration tests.

Example 2b: Engle and Granger (1987, p. 89) present critical values also for other cointegration tests.

References in the list of references

Example 1 – Book: Gujarati, D. N. (1995). *Basic Econometrics*. New York: McGraw-Hill.

Example 2 – Journal article: Engle, R. F., & Granger, C. W. J. (1987). Co-integration and Error Correction: Representation, Estimation and Testing. *Econometrica*, 55(2), 251-276.

Example 3 – Book chapter or article from conference proceedings: MacKinnon, J. (1991). Critical Values for Cointegration Tests. In R. F. Engle & C.W. J. Granger, (Eds.), *Long-Run Economic Relationships: Readings in Cointegration* (pp. 191-215). Oxford: University Press.

Example 4 – Web source: Esteves, J., Pastor, J. A., & Casanovas, J. (2002). Using the Partial Least Square (PLS): *Method to Establish Critical Success Factors Interdependence in ERP Implementation Projects*. Retrieved from http://erp.ittoolbox.com/doc.asp?i=2321

The size of the article should not exceed 30,000 characters and should be prepared on A4 paper with 3 cm margins and numbered pages. The text should be in single column layout, with 1.5 line spacing. Send the electronic version of article in MS Word to the following address: our.economy@um.si or nase.gospodarstvo@um.si.
For the author and co-authors please add their postal address, e-mail address, telephone number as well as their CV (which range from 500 to 550 characters including spaces) in one paragraph.

The journal does not have article processing charges (APCs) nor article submission charges.

NG
OE

LETNIK
VOLUME 62