South East European Journal of Economics and Business

1221 - 1223 - 1299

Volume 8 (2) 2013



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The South East European Journal of Economics and Business, ISSN 2233-1999, is published semiannually by the School of Economics and Business, University of Sarajevo, Trg Oslobodjenja - Alija Izetbegovic 1, 71000 Sarajevo, Bosnia and Herzegovina.

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Abstracting and Indexing: This Journal is regularly indexed and abstracted by databases:

Cabell's Directory CEJSH (The Central European Journal of Social Sciences and Humanities) Celdes CNKI Scholar (China National Knowledge Infrastucture) CNPIEC DOAJ **EBSCO - Business Source EBSCO Discovery Service ECONIS** EconLit **Elsevier - SCOPUS** Google Scholar International Abstracts in Operations Research J-Gate Naviga (Softweco) Primo Central (ExLibris) ProQuest - International Bibliography of the Social Sciences (IBSS) Research Papers in Economics (RePEc) SCImago (SJR) Summon (Serials Solutions/ProQuest) TDOne (TDNet) WorldCat (OCLC)

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From the Editor

The South East European Journal of Economics and Business has recently faced a rather large increase in submissions. Thanks to our referees' efforts and selections we are in a position to introduce a new issue of this international journal specifically focusing on the South East European (SEE) region (Volume 8, Issue 2). The new issue introduces five new papers, of which four come from the business sector and are generally focused on leadership, corporate environment and business climate. Moreover, all of these papers treat samples that include countries from the SEE region and new data coming from tailored surveys. The fifth paper investigates the effect of political instability on savings, having a more economic background and rather general implications.

The first paper is by Rašković, M., and is entitled "Measuring Culture Effect Size Differences in Slovenian and Portuguese Leadership Practices: Cross-cultural Leadership Universality or Contingency?" This paper explores the relationship between national culture and the use of particular leadership practices identified between Slovenia and Portugal, which are the two countries in focus. This comparison is based on survey data from 211 MBA students from these two "East-West" European countries. The paper reports evidence supporting the universalist perspective over the contingency perspective, which can be attributed to the cultural similarity of the two countries. The author identifies power distance as the key cultural dimension in the research, arguing that this finding has important implications for leadership practices in general.

The second paper is by Markovič-Hribernik, T. and Jarc, B., and is entitled "The Importance and Prevalence of Modern Forms of Staff Training in the Corporate Environments of Transition Countries: the Case of Slovenia". The modern form of learning addressed in the context of this article is e-learning, which has increasing importance in academic as well as corporate environments. This paper investigates the modern concept of learning by relying on a targeted questionnaire implemented in a sample of small-medium-large companies in Slovenia. The survey focuses on current as well as possible future trends of corporate e-learning methodology. The authors report on extensive descriptive statistics as well as in-depth qualitative interpretation of their findings. The main message of this article is that there is an increasing rate of acceptance of the e-learning education model within the local corporate environment in Slovenia. Interestingly, although the companies identify the e-learning concept as a cost-efficient and flexible method, the findings suggest that traditional methods still seem to be perceived as the means of delivering higher quality staff training.

The third paper is written by Pejić Bach, M., Juković, S., Dumičić, K. and Šarlija, N. and is entitled "Business Climate Segmentation in Baking Using Self-organizing Maps". The research focuses on data gathered from Croatian companies through a questionnaire survey and a stratified sample of 850 firms. The aim of the paper is to explain business customer segmentation in the Croatian banking industry using self-organizing maps. The authors report that self-organizing maps extend the pool of possible criteria for segmentation of the business client market, including other relevant criteria. The research shows that important segmentation characteristics are based on the performance of the corporate sector itself and the given bank's characteristics. One of the important implications of this research is that different strategies should be tailored not just according to what customers want but also according to their characteristics.

The fourth paper, written by Žabkar, V. and Arslanagić-Kalajdžić, M., is entitled "The Impact of Corporate Reputation and Information Sharing on Value Creation for Organizational Customers". Their research aims to investigate the impact of corporate reputation and information sharing on value creation, and is based on survey data from companies from different industries in Bosnia and Herzegovina. The empirical test of the presented model focuses on the banking industry. Using structural equation modelling, the authors identify that corporate reputation positively and significantly influences customer perceived value. An additional finding is that the effect of information sharing on customers' perceived value is not direct but mediated by corporate reputation. The paper ends with useful policy implications.

Finally, the fifth paper, by Abu, N., Abd Karim, M. Z. and Azman Aziz, M. I., is entitled "Low Savings Rates in the Economic Community of West African States (ECOWAS): The Role of the Political Instability-Income Interaction". The paper is based on panel data of the ECOWAS countries and aims to investigate potential determinants that might explain the scant success in savings mobilization this region has seen over the period 1996-2012. The obtained findings suggest that higher political stability is associated with higher savings. The income effect, on the other hand, moderates the adverse effect of political stability on savings. In short, the identified negative impact of political instability on savings is higher in low income ECOWAS countries, but smaller in high income countries. The paper implies that the promotion of political stability combined with an increase in income will raise savings in the ECOWAS region. Although the paper is not focused on the South East European region, which is the primary focus of this Journal, the obtained findings and massages seem to be very relevant for this region as well.

We hope that you will gain new interesting insights, motivations, knowledge and references from this issue and will be further motivated to conduct and submit your own research to the SEE Journal. As always, we would also like to extend our gratitude to the journal's referees, who helped us to select and improve the papers we accepted and who supported our continued publishing of high-quality research.

> On behalf of the Editorial Board Efendić Adnan

University of Sarajevo School of Economics and Business



MEASURING CULTURE EFFECT SIZE DIFFERENCES IN SLOVENIAN AND PORTUGUESE LEADERSHIP PRACTICES: CROSS-CULTURAL LEADERSHIP UNIVERSALITY OR CONTIGENCY?

Matevž Rašković *

Abstract

This paper measures the cultural effect size across five types of leadership practices by using the Leadership Practice Inventory (LPI) instrument and drawing on the GLOBE research project framework. It tests cultural universality vs. contingency in five LPI leadership practices in an East-West EU comparison, both with an ex-socialist past. It employs four different effect size statistics. The paper contributes to the narrowing of the empirical gap in researching leadership practices in a small, East-West European country context. Only two of the five leadership practices show statistically significant effect sizes. Furthermore, the leadership practice Encouraging the heart is the only one to display a relatively moderate effect size. Thus, the evidence seems to support the universalist perspective over the contingency perspective.

Key words: leadership practices, LPI instrument, GLOBE project, culture effect size, Slovenia, Portugal

Acknowledgement: I would like to acknowledge the contribution of Špela Kržišnik, who collected the data as part of her master's thesis at the Faculty of Economics, University of Ljubljana.

JEL classification: M00, M120, Z100

1. INTRODUCTION

The emergence of cross-cultural leadership builds on the Implicit Leadership Theory (ILT) (Lord and Maher 1990), and the evolution of the so-called Culturally-Endorsed Implicit Leadership Theory (CLT) (Bullough and Sully de Luque, 2014; House et al. 2004). Furthermore, issues of cross-cultural leadership, and the questions of universality vs. cultural contingency of leadership practices, are often associated with the so-called contextualist perspective in the leadership literature (Dickson et al., 2012; Javidan et al., 2010; Avolio 2007). Despite the fact that cross-cultural leadership research has gained momentum since the 1990s, House, Wright and Aditya (1997) have pointed to a plethora of theoretical, methodological, and empirical questions still to be addressed. Similarly, Avolio (2007) also pointed to research on specific leadership practices, where questions regarding universality vs. the cultural contingency of leadership practices still need more research, particularly in small, East-West cultural comparisons (e.g. Steyrer, Hartz and Schiffinger 2006). The importance of cross-cultural universality vs. contingency of leadership has been more recently revisited within a special issue of the Journal of World Business focusing on the link between national culture, leadership and organizational behavior, and which has re-established the question of the relationship between culture and leadership as a central future research direction (Steers, Sanchez-Runde and Nardon, 2012; Dickson et al., 2012). This call has also gained new momentum in the face of the aftermath of the 2008 global and economic crisis, which has caused leadership scholars to reexamine traditional leadership theory (Mabey and Morrell, 2011). This research explores the relationship between national culture, and the use of particular leadership practices. It is based on the GLOBE methodology framework, which has recently celebrated its twentieth research anniversary as the premier research platform for cross-cultural leadership research (Dorfman et al., 2012), and the self-reported

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Assistant professor of international business University of Ljubljana, Faculty of Economics E-mail: matevz.raskovic@ef.uni-lj.si version of the Leadership Practice Inventory (LPI) developed by Kouzes and Posner (1993). The main purpose of this paper is to outline the applicability of power analysis and to employ four different types of effect size measures in order to measure culture effect size differences across five leadership practices in Slovenia and Portugal within the GLOBE methodology.

An important empirical contribution of the research lies in its East-West, small country cultural comparison, where particular attention is paid in the research to why comparing Slovenian and Portugal is valid. In this regard, it must be noted that the bulk of traditional leadership theories, and the various types of leadership practice typologies developed, have been based on large, highly individualistic western national cultures (Steers, Sanchez-Runde and Nardon, 2012; Kabasakal et al., 2012; Hofstede 1993, House 1995, Mellahi 2000). Thus, the bulk of contemporary traditional leadership theories offer few, if any, possibilities for assessing cross-cultural validity across the globe. This is a concern, particularly because the concept of leadership seems to be culturally embedded through the social construction of not only value, but also expectations (Dorfman et al., 2012).

In this regard, Grachev and Bobina (2006) emphasize the specific value of small and Eastern cultural contexts with a socialist history. Conducting cross-cultural leadership practice research in these contexts is valuable, because such cultures are usually characterized by high degrees of power distance, and low degrees of individualism (Ergeneli, Gohar and Temirbekova 2007). According to evidence from international management projects provided by Low and Shi (2001) these two dimensions, and in particular power distance, have been most strongly associated with managing employees and engaging their motivation.

2. POWER ANALYSIS AND ITS APPLICABILITY IN MANAGEMENT RESEARCH

Cohen (1988, pp. 9-10) defines effect size as "the degree to which the phenomenon is present in the population or the degree to which the null hypothesis is false". Due to the underlying complexity of most psychological and social phenomena Van de Vijver (2003) points out that statistics should in these contexts look beyond testing merely for statistical differences. Cankar and Bajec (2003) believe the use of significance testing to be actually more harmful than beneficial to scientific research, since it is not complemented by an evaluation of sizes (Thomson 1999), and is influenced by sample size (Breaugh 2003).

Despite the substantive value of measuring effect size Cohen (1992, p. 155) noted that even with psychological research most "researchers continue to ignore power analysis" leading to a "low level of consciousness about effect size". While more recently this trend has started to improve, it has been employed in a too "simplistic manner" (Breaugh 2003, p. 79).

Given a careful overview of the literature and various effect size measures, as well as based on the recommendations by Breaugh (2003) four different effect size measures are employed in the research as summarized in Table 1.

Measure	Туре	Formula	Reference values
Partial eta squared (η_{p}^{2})	Explained variance	${\eta_p}^2 = rac{SS_{effect}}{SS_{effect} + SS_{error}}$	Young (1993): effect size as a percentage
Cohen's d	Std. mean difference	$d = (M_1 - M_2) / \sigma_{pooled}$ $\sigma_{pooled} = \sqrt{\frac{1}{2}(\sigma_1 + \sigma_2)}$	Cohen (1988): small: 0.2, medium: 0.5 and large: 0.8
Omega squared (ω²)	Explained variance	$\omega^{2} = \frac{(SS_{treatment} - (k-1)*MS_{error})}{(SS_{total} + MS_{error})}$	Cohen (1988): small: 0.01, medium: 0.06 and large: 0.14
Common language effect size (CL)	Effect size converted into probability(based on mean difference)	Z score translated to a probability distribution: $Z_{CL} = \frac{M_1 - M_2}{\sqrt{Var_1 + Var_2}}$	See McGraw and Wong (1992)

Table 1: Effect size measures and their methodological background

Note: $SS_{effect} = sum of squares for effect of interest; <math>SS_{error} = sum of squares for error term; \sigma = standard deviation; \sigma^2 = variance; <math>SS_{treatment} = sum of squares between groups; SS_{total} = total sum of squares; MS_{error} = mean square of the error term$

3. THE LPI INSTRUMENT

Addressing particular leadership practices associated with the six outlined leadership types the GLOBE research project measures five key neo-charismatic leadership practices outlined by Kouzes and Posner's (1987) LPI instrument, shown in Table 2.

The LPI instrument has time and again shown its "psychometric soundness" (Huber et al. 2000, p. 251), and produced consistent validity and reliability statistics (Kouzes and Posner 2001). It has further importantly proven its leadership practices to be unrelated to either various respondents' demographic or organizational characteristics.

Particularly important to cross-cultural leadership research, the LPI instrument has been employed in a series of cross-cultural comparisons. Backed by over 20 years of research and application, this paper employs the LPI instrument both because it is "one of the most well-developed and used instruments for examining leadership behavior" (Chen and Baron 2007, 8), and in particular its proven usefulness in cross-cultural leadership comparisons (Tang, Yin and Nelson 2010.).

4. COMPARING SLOVENIA AND PORTUGAL

The comparison of Slovenia and Portugal is based on the fact that both countries are small European countries, with important geo-strategic positions (Udovič and Svetličič 2012). Both are important trading hubs in the region. Both are also very much export-oriented, with most of their exports linked to the EU market and other neighboring non-EU countries. They also share a recent history of socialist rule, ending in Slovenia in 1991 and in 1974 in Portugal. Portugal became member of the EU in 1986, Slovenia in 2004. They are quite similar with regard to average EU-28 GDP per capita and have been similarly hard hit in the aftermath of the 2008 global economic and financial crisis. These characteristics provide a match on several important country socio-economic indicators, as pointed out by Häder and Gabler (2003). Furthermore, Slovenia's cultural similarity to other Western Balkan countries may mean that the results of such comparisons can be used as a "yard stick" for the wider region of the Western Balkans (Udovič 2011; Zupančič and Udovič 2011).

Table 2: Leadership practices within Kouzes and Posner's LPI instrument

Leadership practice	Short description
Challenging the process (CP)	Searching for opportunities to change status quo. Looking for innovative ways of organizational improvement. Experimentation and risk taking, accepting possible disappointment as learning.
Inspiring a shared vision (ISV)	A passionate belief for making a difference. Envisioning the future, creating a unique image of what an organization can become. Enlisting employees in leader's vision through magnetism and persuasion.
Enabling others to act	Fostering collaboration and team spirit. Active involvement of others.
(EOA)	Creating a atmosphere of trust and dignity.
Modeling the way	Creating standards of excellence and setting examples to follow.
(MW)	Creating a context of small wins to achieve large objectives.
Encouraging the heart	Recognizing individual contributions. Celebrating accomplishments.
(EH)	Making people feel like heroes.

Source: Kouzes and Posner, 2001, p. 4.

Table 3: Comparison of the Slovenian and Portuguese culture based on GLOBE typology

		SLOVENIA		PORT	UGAL
		Practice	Value	Practice	Value
	Performance orientation	26	90	23	89
	Future orientation	32	58	38	59
	Egalitarianism	92	83	73	98
GLOBE	Assertiveness	41	67	18	32
project	Institutional collectivism	45	30	34	81
	In-group collectivism	67	49	70	63
	Power distance	75	33	81	21
	Human orientation	30	48	36	51
	Uncertainty avoidance	36	75	41	52

Source: House et al. (2004). Note: Hofstede scale between 0 and 120; GLOBE scores on a scale between 0 and 100.

In addition, the national cultures of Slovenia and Portugal share some similarities, mainly in terms of high power distance, low degrees of individualism and masculinity, and high uncertainty avoidance. Table 3 displays a comparison of the Slovenian and Portuguese cultures within the GLOBE (2004) cultural typologies.

According to empirical evidence from managing international projects, power distance "seems to have the greatest influence" while uncertaincy avoidance "seems to have little or no influence" on international managerial contexts (Low and Shi 2001, p. 284). These findings can be extended to testing cross-cultural differences in leadership practices and the estimation of culture effect sizes across different cultural contexts. Given the high degree of similarity of Slovenia and Portugal in terms of their power distance, uncertainty avoidance and individualism within the GLOBE cultural comparison (as well as Hofstede's typology), one would thus expect no significant score differences in leadership practices between the two countries.

Furthermore, the empirical evidence presented by Zagoršek, Jaklič and Stough (2004) has in general shown only very limited support for the cultural contingency of leadership practices, even in very different cultural settings. This may in turn indicate a higher degree of cultural universality of transformational leadership practices (Ergeneli, Gohar and Temirbekova 2007). Thus, one would expect nonsignificant culture effect sizes between the two countries.

5. SAMPLING AND MEASUREMENT

5.1 Sample

The sample included 211 working (part-time) MBA students from Slovenia and Portugal. The data was collected in 2007 through a standardized self-reported version of the LPI instrument (Kouzes and Posner 1987), administered in a local language. Thus, the data represents a pre-crisis leadership practices comparison between Slovenia and Portugal. Values tend to be fairly stable over the short run and change only across generations. On the other hand, "normal" practices and behavior may become significantly distorted in a time of crisis (Mabey and Morrell, 2011); thus the pre-crisis data actually offers a more realistic insight into the leadership practices of the two countries. While the samples may not be large in terms of size, they are based on the very small MBA populations in both countries.

The sample data was collected based on a matched sample approach (Van de Vijver and Leung 1997), where respondents were matched according to level of education, as well as displaying similar age and gender structures. The use of matched sampling, with corresponding control variables (age, gender, work experience, etc.) has been outlined as valid in cross-cultural research by Cavusgil and Das (1997), and Schwartz and Sagie (2000). Furthermore, all respondents were offered a report on the obtained results in order to increase respondent involvement, which in turn increases survey participation (Kolar 2008).

While Bello et al. (2009) point to the 'scrutinized validity' of student samples in cross-cultural comparisons most of these critiques are directed towards undergraduate student samples. According to Bello et al. (2009, p. 363) MBA student samples may be "justifiable, because they typically have some working experiences". They continue by saying that "typically part-time [working MBA] students, should not pose a significant threat to external validity". Additionally, the cross-country comparison in Central and Eastern Europe (CEE) by Čater, Lang and Szabo (2013) within the so called GLOBE Students project - a direct extension from the original GLOBE project - has also shown students to be good proxies of future leaders in terms of their values and leadership expectations. A similar conclusion was also made by Mihelič and Lipičnik (2010) in a comparison of manager vs. student values in Slovenia. In their research, values have been established not only as a good predictor of peoples' behavior (Ferić 2007), but as good predictors of economic outcomes (Potočan, Mulej and Čančer 2008). Table 4 provides a more detailed summary of the key sample characteristics. Most of the respondents (74%) work in a middle-sized or large privately owned company.

In terms of work experience, 37.2% had work experience in finance and accounting, 24.6% in sales and marketing, and 13.6% in IT. As we can see from Table 3, over a quarter of Slovene respondents and a third of Portuguese respondents already occupied some sort of managerial-level position, either bottom or middle-level positions.

	Slovenia	Portugal
Number of respondents	115	96
Share of female / male respondents	F: 50.4%; M:49.6%	F: 49%; M: 51%
Average respondent age	28.9 years	31.9 years
Share of respondents up to 30 years old	73.9%	48.9%
Average work experience	4.46 years	10.03 years
Share of respondents in bottom or middle management	27.7%	37%

Table 4: Sample characteristics (n=211)

5.2 The LPI instruments reliability

In 1993 the LPI instrument was cross-validated in an extensive sample of over 36,000 managers across various company management development programs, similar to MBAs (Kouzes and Posner 1993). The testing proved the "sound psychometric properties" of the instrument (Zagoršek 2004, p. 134), good construct and concurrent validity and internal reliability (Kouzes and Posner 1993.).

Within the Slovenian and Portuguese sample the overall reliability of the LPI survey instrument was 0.86, as measured by the Cronbach alpha. While all five practices satisfied the 0.60 Cronbach alpha criteria, as proposed by Hair et al. (1998), the value was borderline for the practice *Enabling others to act*. Because of this, the reliability of the LPI instrument was also alternatively tested as a *measurement model* within a structural equation model (Bollen 1989), using the statistical software package *Mplus*. It produced the following goodness-of-fit statistics: $\chi^2/df=3.13$, p=0.000, *RMSEA=0.054*, *CFI=0.94*, *TLI=0.91*.

6. RESULTS

6.1 Impact of demographic variables on leadership behaviors and practices

One of the key advantages of the LPI instrument is that leadership practice scores obtained with it have consistently

been shown to be unrelated to demographic characteristics, such as age, gender, years of work experience, and even educational level (Kouzes and Posner 2001).

Table 5 reports the results of a one-way ANOVA testing for differences across all five leadership practices composite scores due to gender, age, and years of work experience. Despite differences in the average number of years of work experience in the Slovene and Portuguese samples, no statistical differences in the scores across all five leadership practices have been detected within one-way ANOVA. The same holds also for gender and age of respondents.

Next, Table 6 displays the average composite scores and their standard deviations for all five leadership practices individually, as well as jointly for the whole LPI instrument. It is also complemented by the level of statistically significant differences within ANOVA.

As we can observe from the corresponding scores, two out of five leadership practices are statistically significant between Slovenia and Portugal. Thus, based on the sample data, the Portuguese respondents on average displayed statistically significantly higher scores for the leadership practice *Modeling the way*, while the Slovene respondents on average displayed statistically significantly higher scores for the leadership practice *Encouraging the heart*. In both samples the highest average cumulative scores pertained to the leadership practice *Enabling others to act*, and the lowest for *Inspiring a shared vision*.

	MW		ISV CF		СР		A	EH		
	F	р	F	р	F	р	F	р	F	р
Gender	1.6	0.211	0.05	0.831	0.4	0.529	0.3	0.575	0.2	0.649
Age	1.5	0.195	1.57	0.170	0.3	0.934	0.7	0.647	0.4	0.834
Years of work experience	1.5	0.199	1.75	0.124	0.4	0.884	0.4	0.856	1.64	0.151

Table 5: Testing for differences in leadership practices based on demographics

Note: F= F-test value; p= level of statistical significance; CP=Challenging the process; ISV=Inspiring a shared vision; EOA=Enabling others to act; MW=Modeling the way; EH=Encouraging the heart.

Table 6: A comparison of leadership practice scores for Slovenia and Portugal

	Slovenia		Port	ugal	Evoluo	
	Mean	SD	Mean	SD	F value	р
Modeling the way (MW)	42.4	6.6	44.8	6.7	7.1	0.008*
Inspiring a shared vision (ISV)	39.1	7.3	40.8	9.3	2.2	0.140
Challenging the process (CP)	44.4	6.5	44.1	7.2	0.8	0.775
Enabling others to act (EOA)	48.1	5.2	47.6	5.9	0.4	0.531
Encouraging the heart (EH)	47.9	6.2	44.9	6.3	12.2	0.001*
Total LPI	44.4	5.0	44.4	6.0	Not applicable	

Note: SD=standard deviation; *statistically significant.

	η_p^2		ω_p^2	Idi	C	L	Overall effect size	
	Value	р	Value	d	Value	%	Overall effect size	
Modeling the way (MW)	0.033	0.008*	0.028	0.367	0.579	57.9%	Negligible	
Inspiring a shared vision (ISV)	0.010	0.140	0.006	0.202	0.540	54.0%	Negligible	
Challenging the process (CP)	0.000	0.775	- 0.004	-0.041	0.500	50.0%	Negligible	
Enabling others to act (EOA)	0.002	0.531	- 0.002	-0.087	0.500	50.0%	Negligible	
Encouraging the heart (EH)	0.055	0.001*	0.051**	0.484**	0.618	61.8%	Small to moderate	

Table 7: Effect size statistics for a Slovenian-Portuguese leadership practice comparison

Note: |d| refers to an absolute Cohen's d statistic value. *Statistically significant at p < 0.05. **Moderate effect size according to Cohen (1988).

6.2 Culture effect sizes

Based on the measures of effect size described above and the argument for their use Table 7 displays a summary of the effect size results across all four effect size statistics used. While the partial eta squared (η_p^2) measure of effect size shows two significant effect sizes for leadership practices *Modeling the way* (3.3% effect size) and *Encouraging the heart* (5.5% effect size), both omega squared (ω^2) and Cohen's *d* statistics show the leadership practice *Encouraging the heart* to be the only one with a moderate effect size. This is complemented by the fact that picking any of the respondents from the Slovenian sample will result in a 61.8% probability of displaying a higher score of the *Encouraging the heart* leadership practice compared to the Portuguese sample.

Having said this, I conclude that the leadership practice dimension of *Encouraging the heart* to be the only one out of the five LPI leadership practice dimensions to display relatively moderate effect size differences between the Slovenian and Portuguese respondents. This finding may have important theoretical implications – of course pending broader cross-validation – which may signal a need to return to the earlier universalist perspective on leadership, since most of the current research on cross-cultural leadership has advocated a pure contingency perspective or a domination of contingency over universality (Moan and Hetland, 2012).

7. LIMITATIONS OF THE RESEARCH

MBA students are still proxies for real managers and leadership behavior. They are themselves subject to strong self-selection criteria and display certain common personal characteristics, and are subject to fairly universal western education on effective leadership behavior and practices (Blunt and Jones 1997). We see this fact, and the fact that our data was collected in 2007, as the biggest limitations of the research. Nevertheless we have already acknowledged that the pre-crisis data may provide more realistic insight into leadership practices.

The second set of limitations may be applied to the LPI instrument itself. As with all complex social and psychological phenomena, it is impacted by a complexity of causal and interrelated variables and antecedents, which in turn call for multi-level measurement and analytical approaches (Yammarino et al. 2005). The LPI instrument or any other typology based instrument may not capture the complexity of such behavior. The LPI instrument has in turn also been criticized for being groundbreaking two decades ago, but not anymore. According to Scherbaum et al. (2006) classical psychometric techniques should be complemented by more recent psychometric advances, such as, for example, item response theory and models. While these issues may be valid, the LPI instrument in its current form is today still one of the two most extensively used and empirically validated measurement instruments in the study of leadership.

The analyses have aimed to address the issue of culture effect size across different leadership practices, given the concerns raised about classical significance testing (Breaugh 2003). While I have employed several different effect size measures to provide more robust solutions, Yammarino et al. (2005) and Javidan et al. (2010) still point to a lack of multi-level analyses in research of leadership phenomena, which is also valid here.

Lastly, it also needs to be acknowledged that while Slovenia and Portugal were chosen as two small states in a West-East European comparison, they do have completely different languages (bearing in mind that language is a cultural vehicle (Hofstede, 1986)) have different historical embeddedness (particularly Portugal's strong political power in the middle ages) and different neighboring influences (Slovenia has four EU neighbors; Portugal has only one).

8. DISCUSSION OF LEADERSHIP PRACTICE SCORES

First, while not disregarding the concerns raised over both Hofstede's methodology (Schwartz 1999, McSweeney, 2002) and the methodology of the GLOBE project (Hofstede 2006), I believe that, based on the work of Low and Shi (2001) the large degree of universality between the two countries can be explained by the level of similarity between Slovenia and Portugal in terms of power distance. This in turn indicates that the cross-cultural validity of leadership theories may hold across East-West contexts with comparable cultural backgrounds.

	Neuroticism	Extraversion	Openness	Agreeableness	Conscientiousness
Slovenia	54.7	41.4	44.2	46.9	55.6
Portugal	47.5	56.7	55.1	53.0	48.2

Table 8: A comparison of the Slovenian and Portuguese national character dimensions

Source: National Character Survey, Terraciano et al. 2005.

Second, I believe the degree of cultural contingency with regard to the leadership practice dimension of *Encouraging the heart* can be explained by looking at both the individualism and masculinity contexts in the two countries, as well as at the differences in their national characters. With regard to the former, Low and Shi (2001) have shown both individualism and masculinity dimensions to be linked to employee motivation in international projects. With regard to the latter, the evidence from the National Character Survey (Terracciano et al. 2005) helps us better understand the 'psychological profiles' of their national characters, from which a greater need for mobilizing emotions in leadership for Slovenia also emerges. Having said this, Table 8 provides a brief comparison of Slovenia and Portugal within the five psychological dimensions of their national characters.

I believe that in a highly egalitarian cultural setting, Slovenians need to practice institutional and in-group collectivistic behavior much more than they actually value it, resulting in high levels of importance for trust (Kovač and Jesenko 2010). This is not the case in Portugal, where institutional behavior is actually considerably more valued than practiced, and where the practice and valuation of in-group collectivistic behavior is more closely aligned. While both countries score very low on masculine values, the level of practiced and valued assertive behavior is considerably higher in Slovenia than in Portugal. I believe this indicates a much stronger existence of "self" in Slovenia vis-à-vis Portugal. This self has however a stronger propensity towards neuroticism associated with higher levels of anxiety, hostility and depression (Terraciano et al. 2005). It is constrained by higher degrees of introversion and much more limited openness compared to the Portuguese national character. It is split between a high propensity towards conscientiousness and doing the "right thing", while at the same time being less agreeable, trusting and compliant per se compared to the Portuguese.

In such a setting the Slovene worker does not tend to stand out, is hidden by the collective, always does the "right thing", and does not like change (Mühlbacher, Nettekoven and Kovač 2011). In turn, he or she looks for emotional validation and recognition as an individual, and displays a strong tendency towards transformational leadership (Zagoršek, Dimovski and Škerlavaj 2009), leading to a significantly higher importance for Encouraging the heart. Such leadership behavior not only fuels conscientiousness and motivates the worker, but also compensates his ambivalence between assertive behavior and standing out from the collective, at the same time alleviating neurotic elements of his or her national character. Furthermore, the results for the importance of the leadership practice Encouraging the heart for Slovenia, vis-à-vis Portugal, seem also to be consistent with the results obtained by Ergeneli, Gohar and Temirbekova (2007), which show higher power distance and higher level of *collectivism* to be closely related to this leadership practice. Furthermore, according to Šverko (2009), higher levels of collectivism are also associated with a higher importance for *emotions* in human behavior; which can be closely related to the importance of the leadership practice Encouraging the heart.

This research has aimed to show the applicability of power analysis and various effect size statistics in cross-cultural management research, as well as to provide a brief discussion of the obtained results. In terms of the results, they indicate that a large degree of leadership universality can be attributed to the cultural similarity of the compared countries, where power distance seems to be a key cultural dimension with regard to the universality of leadership practices. This has important implications for leadership practice, where special attention should be paid to this cultural dimension. The results of the employed research also support towards a cross-cultural validation of the LPI instrument in an East-West Slovenian-Portuguese comparison.

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THE IMPORTANCE AND PREVALENCE OF MODERN FORMS OF STAFF TRAINING IN THE CORPORATE ENVIRONMENTS OF TRANSITION COUNTRIES: THE CASE OF SLOVENIA

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Abstract

Compared with traditional forms of education and training, e-learning is gaining increasing importance not only within the academic setting of formal education, but also in the corporate environment. Concerning the latter, it is evident that with increasing pressure on cost efficiency and competitiveness, in addition to the current harsh financial and economic conditions, companies are being challenged and this tends to change their behaviour patterns. In this article, the results of a survey are presented. The survey focused on the current status and possible future trends of corporate e-learning methods in Slovenia, which is among the so-called transition countries. This survey brings more than one aspect of this issue to light. The findings show increasing rates of acceptance of the e-learning education model by the local corporate environment. Nevertheless, significant gaps are evident when compared with the most advanced European and worldwide economies in terms of the widespread use of comprehensive e-learning models and the latest e-learning technologies, such as LMS systems. Furthermore, the survey reveals that e-learning is perceived by companies as cost efficient and flexible, but on the other hand it is not yet perceived to contribute to a higher quality level of staff training when compared with traditional methods.

Keywords: staff training, e-learning, corporate environment, transition countries

JEL: 033, P20, M53

1. INTRODUCTION

Good training is crucial in the successful development of any society, business or institution. However, challenged by the current crisis, companies are inclined to rationalize and optimize their budget, which often includes changes to the crucial area of employee training. In addition to financial issues, employees have a lack of time due to busy schedules, as well as an increasing amount and complexity of work. Highly dynamic business and macro-economic environments require flexibility in all of these aspects. Consequently, companies face the challenge of optimizing employee training. E-learning is gaining in market share, with increasing relevance as a training method.

In the US particularly, but also in major European economies, e-learning appears to be widely promoted, advanced and gaining in popularity in corporate environments. Much less is known about how widespread the use of e-learning is in transition countries and their business environments. For this purpose, the present survey was conducted and focused on companies and other organizations in Slovenia. The aim of this research was to establish the current situation and possible trends to expect in future years. Companies were included in the survey regardless of their size or activity. The survey was distributed to 423 corporate and institutional addresses in Slovenia, of which 70 responded and participated. The survey was carried out in November 2012.

The following section is focused on the concept of elearning itself and the scope for the use of this term. Recent

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Bostjan Jarc e-learning consultant B2 d.o.o. Maribor E-mail: bostjan.jarc@b2.eu; bostjan.jarc@gmail.com relevant studies are listed and reviewed in section 3. Section 4 reveals the methodological framework used for this study, while in section 5 data concerning the characteristics of the included companies is presented. Section 6 is dedicated to the research results and comments. The final conclusions are presented in section 7.

2. THE CONCEPT OF E-LEARNING

In both literature and everyday practice, the term "elearning" is not always used in the same way (see for example Bachman (2000); Elearning - What is E-learning (2012); Defining e-learning (2012)). Terms like distance learning, e-learning, Web Based Training (WBT) and Computer Based Training (CBT) are often used synonymously. The European e-Learning Action Plan (Commission of the European Communities 2001) defines e-learning as a form of education that uses the latest multimedia technologies and internet to upgrade the quality of education, allowing access to new sources and services, as well as knowledge exchange and collaboration (see also Gardner and Bryn 2006, p. 14). The Utah Training Network sourced Ed Technology Glossary of Terms (2012) defines e-learning as simply "education by means of electronics." This latter concept encompasses a wide range of applications and processes, such as Web Based Training (WBT), Computer Based Training (CBT), Virtual Classrooms and Digital Collaboration. It also includes web-based data transfer (LAN/WAN), audio and video media (CD, DVD), transmission by satellite, interactive TV, etc.

With so many definitions and concepts of e-learning in both professional literature and everyday practice, we have opted for the widest possible definition of e-learning to be used for this research. In the list below are some of the concepts described in literature that are relevant for the objectives of our research:

- learning via websites. This is self-directed searching for knowledge and learning through ordinary web pages and represents the lowest level of e-learning;
- learning using CD or DVD media and similar; this model is not usually supported by tests of understanding nor does it enable communication among participants;
- Blended Learning, combining traditional methods and different forms of e-learning; it combines the benefits of both traditional methods and e-learning. According to past surveys, such as the CrossKnowledge Survey (2012), this is the most common form of e-learning, with as many as 76% of European companies using this form;
- A Webinar combines what the name suggests: the World Wide Web with a seminar. Internet technologies are usually accessed for this form of e-learning and they can also enable assessment of the candidate's level of understanding (Howstuffworks 2012);
- Video conference; although this appears closely matched to the concept of a webinar in terms of the technologies used, these two forms of e-learning are

largely unrelated in terms of their process. A video conference allows communication among a smaller number of "equals", while a webinar is available for a larger number of participants, and features primarily one-way communication from the lecturer towards the audience;

- E-courses include learning material that is distributed to users electronically. For the purposes of issuing and distribution, an e-learning management system is required, usually referred to as a LMS (Learning Management System);
- Guided e-course or e-learning, where a mentor guides the learning process; this model makes use of different e-learning formats and is supported, counselled, motivated, supervised and guided by a mentor;
- E-mail: As an educational tool, this format experienced great expansion at the time the Internet emerged; its prevalence on the global market is now negligible;
- E-books: This tool is intended for the transfer of information and independent training. Nevertheless, it does not qualify as a very advanced e-learning product;
- Mobile learning is carried out using mobile devices (Unesco 2012);
- E-testing: although it cannot be qualified as an educational model directly, it may be considered a viable supportive or complementary service to traditional training methods and/or e-learning;
- Comprehensive e-learning supported by an LMS system: systems that also enable the production and development of e-learning content (usually in the form of an e-course), are called LCMS, which stands for Learning Content Management System. The comprehensive e-learning concept, use of an L(C)MS and the integration of e-learning with other business processes is the most advanced form of e-learning for corporate environments. This applies not only to the technology it incorporates but also the way in which the e-learning is organized and processed. These features enable this model to become an integral part of any corporate training system. By itself, an LMS represents only the basis of the comprehensive corporate e-learning system. It is complemented with e-learning content (e.g. e-course) and supporting (organizing, mentoring, etc.) services.
- Social e-learning is a relatively new concept but has already achieved significant progress, especially in the US corporate training market. Social e-learning is both designed and distributed by using web tools, most often blogs, bookmarks and social networks. Special tools (Yammer, Mzinga, etc.) dedicated to corporate social e-learning are currently in the process of development (Hart 2009).

3. REVIEW OF RECENT RELEVANT STUDIES, KEY CONCLUSIONS

In recent years, several studies on these topics have been undertaken within major markets where e-learning has already gained its place as an established form of corporate training. Among the most recent work, research done by Adkins (2011) is worth mentioning. This global study looks at e-learning products and services for self-paced e-learning, their current situation and future trends on the global e-learning market. Although the aspects of the focus of this research are not directly relevant to our aims, a number of key conclusions reveal some interesting facts about global trends. The study reports that the total global e-learning market reached US\$32.1 billion in 2010, but will increase to \$49.9 billion by 2015. The highest growth rates should be achieved by markets in Asia (28.4% yearly), which are set to pass the Western European market by 2015. The next highest growth rate is in Eastern Europe, which should reach growth rates of above 20% per year. The study also found that e-learning is thriving in academic environments, with market shares here higher than in the respective corporate environments of all countries except the US.

More closely related to our aims is the research of Overton and Dixon (2011), which looks at the use of training technologies by European companies. The study was carried out for one of the world's largest e-learning conferences, Berlin Educa. The findings revealed that the most frequently used technologies by European companies are web questionnaires (81%), e-learning courses, virtual meetings and training portals. More than 60% of participants used a LMS and more than 50% were using it integrated with their internal human resource systems. The study also reported that Cloud based e-learning and mobile training are both expected to have the brightest futures. The authors find that generalist and IT-oriented content is predominantly what companies demand for staff training. More specific content is related to company business analysis, customer relations management, social responsibility, and sales and marketing. As expected, use of content related to communication skills, teamwork and collaboration is lagging behind. When asked about the main benefits of e-learning methods, European companies report: more efficient implementation of the latest IT systems; a wider range of available educational content; easy access to relevant content; considerably reduced rates of absenteeism; greater flexibility in education; shorter response time to changes in the business environment; and, last but not least, cost efficiency. Half of companies also state that e-learning has done much to improve their customer satisfaction and productivity. The survey also exposed some of the main obstacles for implementation of e-learning models: employees in organizations appear to lack the knowledge and skills to design their own training process, while their training managers lack the knowledge and skills needed for the implementation of these methods in their companies; executives generally appear to be reluctant to introduce new methods; the costs of arranging an e-learning system, etc.

In this section, a lot of attention has been given to the

survey by Overton and Dixon (2011), as our assessment of the situation in Slovenia will later be compared primarily with these findings. However, it should be noted that the comparison is difficult in some respects. In particular, when considering the most advanced e-learning technologies, such as Learning Management Systems, usage rates depend very much on average company size. The average Slovene company is far smaller than those of Western Europe and this has an influence when assessing how widespread the use of these methods might be.

It is also worth mentioning a recent survey by Cox eLearning Consultants, LLC (2011), who analyzed companies and organizations from 55 countries worldwide, regardless of their size or activity. The purpose of this study was to examine staff training solutions and methods utilized by businesses and other organizations, and what trends were expected for the near future. The survey was limited to social learning, video training, mobile learning and web conferencing e-learning techniques. Findings show that organizations are increasingly using web-based CPC conferencing systems, as well as learning methods supported by video (CPC video based training). However, the biggest shifts are expected in mobile learning and social media supported training.

With regard to our research aims, the findings of the study by CrossKnowledge (2012) - 1st European e-learning Barometer - should also be considered. The work was conducted in 2011 with 511 companies from 6 European economies: the UK, France, Spain, Italy, Belgium and the Netherlands. The following is a summary of the key findings:

- In the UK, Spain and Benelux nearly 40% of companies train more than 50% of their employees via e-learning (in France only 17%). E-learning is most used within the services sector (43% of service-based companies train more than 50% of their employees via e-learning). British companies, despite having used e-learning for less time than other countries, are quickly developing their application of e-learning (in 2011, 51% of companies delivered at least one training via e-learning to over 50% of their employees compared to 39% in 2010). Regarding size, large companies have been using e-learning the longest (68% of the European sample of companies that use e-learning have a headcount of over 10,000).
- The factors that motivated large companies to develop an interest in e-learning ahead of the rest include the challenge of training large numbers of employees, the need to align competencies in real time over increasingly competitive global markets and economies of scale.
- The vast majority of companies surveyed spend less than 10% of their total training budget on e-learning. The main goal of e-learning is training cost optimization – delivering a consistent quality of training to large numbers of employees accounts for 37% of use.
- 75% of companies use e-learning to deliver training on core professional skills, e.g.IT and desktop training, as well as Health and Safety or Compliance

training. In large companies there is a clear rise in themes such as management, leadership, communication and personal development. The study also underlines the link between the length of time that a company has been using e-learning and the sophistication of the modules and delivery methods that it makes available.

- For 76% of companies, the most popular delivery method for e-learning is Blended learning (47% of those already using this approach are planning to intensify usage).
- Regarding the near future, many companies answered that they are seeking to maintain or cut back their overall training budget and to reduce cost per learner in order to be able to train a greater number of employees without increasing spending on training.

The history of e-learning in Slovenia is considerably shorter than in the major US and European economies, so the record of past research is rather modest. To date, studies have focused mainly on formal education and school related e-learning methods, rather than corporate environments. As an example, Vehovar (2007) analyzed the e-learning systems of the new EU-members, including Slovenia. Although the research covers e-learning in relation to both formal and non-formal education, most of its findings are related to the academic industry (schools) rather than the corporate environment.

One of the few surveys to focus on the corporate environment was that of the Eizobrazevanje.net portal, conducted in the first months of 2011. The sample consisted of 73 participating companies. However, this survey was limited to companies in a few selected industries that had a workforce of at least 100 people. The survey did not provide information on the impact of the use of e-learning methods on business development.

Use of e-learning in the Slovene corporate environment was investigated by Arh, Kovačič and Jerman-Blažič (2006). The authors write that the recent rise of e-learning in Slovenia is the result of a growing choice of various e-learning services and systems, their use elsewhere in Europe, and the availability of financial resources from the EU and its Structural Funds. The authors state there is increasing use of independent e-learning models using e-content as well as combined e-learning models supported by a mentor. The findings also revealed that e-learning is still mostly reserved for larger companies, despite the evidence of benefits for small and medium businesses. Like the study by Vehovar (2007), this study shows that, in general, the role of the mentor is considered crucial for the e-learning process. According to Vehovar, the educational approach in Slovenia is closely associated with social, cultural, economic and historical factors.

Historically, for over 500 years, the Habsburgs ruled the Slovenian territory. This influence can still be seen in the current approach to education. In the past, teachers had a largely authoritarian role, lecturing their disciples who remained passive as learners. Communication and collaboration were essentially absent from the process. Traces of this idea, with the teacher in an authoritarian role, remain present when speaking of modern e-learning methods. Therefore, for successful implementation, a combined model of education featuring both traditional and modern e-learning processes will be necessary (Vehovar 2007, p. 25).

4. METHODOLOGICAL FRAMEWORK

A questionnaire was produced for the purpose of this study, supported by the FluidSurveys.com online survey tool. Its modelling was based on other questionnaires already used for similar research (e.g. Overton and Dixon 2011; Eizobraževanje.net 2011). The questionnaire consists of 19 questions, divided into four segments (see the Appendix for details):

- 1. *General information on the company* company characteristics, industry, number of employees, number of branches and locations, etc.
- 2. Company staff training system training resources, tools, responsible persons, frequency, etc.
- 3. *E-learning* e-learning resources, tools, existing elearning techniques, benefits, comparison to traditional training methods, obstacles to implementation, impact on business development, etc.
- 4. Future trends planning of e-learning development

The questionnaire was mailed to 423 employees of small, medium and large enterprises and organizations in Slovenia. The survey was conducted in November 2012. Included in the database were mainly: human resource managers and personnel; IS/IT managers and experts; training managers; managing directors; and other company executives. This web survey aimed to obtain answers from the relevant persons responsible, i.e. those who were embedded in the educational processes of their respective companies and organizations. As previously discussed, there was a potential risk from different interpretations of e-learning by the respondents. For this reason, we decided to use the broadest possible definition of the e-learning concept, which not only includes use of the most advanced forms of e-learning (such as LMS), but also its more basic forms, including the use of e-mail for training purposes.

A branching scenario was applied to the questioning procedures of this survey, as demonstrated by question 8: *"How long have you been using the e-learning methods in your organization?"* A decision loop was included here to steer additional questions according to the respondent's answer. If this was *"We do not use e-learning at all"*, no further details were asked and participants were directed toward questions on future plans.

5. SAMPLE DATABASE AND FUNDAMENTALS

Segmentation of companies by size and activity



Data source: Web Survey

Figure 1: Companies by their principal activity (Standard Sectorial Classification, 2008)

The database features organizations of all sizes and industries. As seen in Figure 1, 70 companies and other organizations participated. The majority were from the manufacturing industry (13%), followed by financial and insurance services, education and other sectors (11% each). Companies from 16 different industries participated. Therefore, the sample can be considered adequate and sufficiently diverse to represent the entire corporate environment of Slovenia. Both private and public sectors were included.

As shown in Figure 2, most of the participating

companies (24%) employed between 101 and 250 people at the time of the survey. Companies with less than 50 employees accounted for 10% of the sample. From our point of view, the latter could prove to be the least suited to integrate the most advanced forms of e-learning.

Nineteen percent of participating companies (corresponding to 13 subjects out of 70) employed over 1,000 staff. In comparison to the overall number of companies of this size, these 13 participants present a highly weighted sample; following 2010 statistics, there were 26 business companies of this size in Slovenia (Delo. si 2010). As the current financial crisis has proved to be fatal for many large companies, especially from the civil engineering sector, this number might now be even lower. When we include public administration organizations and institutions with over 1,000 employees to this statistic, the weighting of this sample can still be considered great.

As expected, the analysis shows that most companies featuring external branches and business premises (e.g. retail subsidiaries, branch offices, production sites, etc.) belong to the category of 1,000 or more employees (Figure 3). Thirty one percent featured 50 or more locations. Only 8% of companies this size (corresponding to 1 in our sample) have no off-site business premises.

The applicability of the most advanced e-learning technologies (such as LMS) is largely dependent on company size and the geographical dispersion of its premises.



Data source: Web Survey Figure 2: Companies by size



Data source: Web Survey

Figure 3: Number of locations by company size

3:4%

Therefore, these large companies may be considered most suited to the use of advanced e-learning models.

Characteristics of respondents

As shown in Figure 4, most responses came from human resource managers (42%), followed by "other positions" (30%) and heads of departments (23%). Considerably fewer responses were from IS/IT managers, managing directors or board members, representing 5% combined.

The category "other positions" includes the following profiles: staff training member; assistant director; responsible for organization training; advisor; joint services staff members; training manager; project manager; and staff responsible for the remuneration system.



The multiple choice question: *"Who is responsible for planning employee training in your company?"* allowed multiple replies. The outcomes shown in Figure 5 reveal that this planning is mostly performed by the department head (39%) or human resources staff (28%). Surprisingly, IS/IT



In terms of funding, 64% of participating companies



Data source: Web Survey

Figure 5: Planning of employee training



Respondents by function

reserve an annual budget of €500 or less per employee (Figure 6). Only in 15% of cases did the budget exceed €1,000 per employee (corresponding to 11 respondents). Among these, the financial and insurance industries were most prominent, followed by the IS/IT sector and, remarkably, trade, maintenance and servicing of motor vehicles. It may be concluded that the intense development and frequent appearance of new products and services encourages these industries to invest proportionally more in training. 12% of respondents provided no answer or were not familiar with the matter.

Use of e-learning

The survey revealed that 44% of respondents make use of e-learning (Figure 7).

The e-learning training models are mostly used by companies with over 1,000 employees (as many as 77% of the respondent companies in this category of size).

It may be concluded that e-learning is considered to be comparable to traditional training models by these larger companies. However, surprisingly, only 11% of companies with 500-1,000 employees use e-learning methods.



Data source: Web Survey

Figure 6: Yearly training budget per employee



Data source: Web Survey **Figure 7:** Use of e-learning by company size In contrast, the number of small businesses (50 people or less) using e-learning methods is remarkably high. These companies appear to be encouraged by its flexibility and relative low costs.

75% of companies who are currently using e-learning methods (Figure 8) have been doing so for up to 5 years (less than a year in 19% of cases). It is evident that this rate is growing. Many companies view e-learning as an increasingly viable alternative to traditional training methods. The relatively large proportion of companies that have only recently started using e-learning (one year or less) revealed that this has probably been encouraged by the current

financial crisis and shortages in training budgets. Thus, elearning is also gaining popularity due to its greater cost efficiency.

75% of the 32 companies using e-learning invest less than 20% of their training budgets toward this method (Figure 9). Although lower, these figures are quite comparable with the European corporate average. From existing surveys, e-learning budgets account for an average share of less than 10% of the entire training budget (CrossKnowledge 2012). With these percentages being rather low at the moment, their growth may be predicted in the years to come.



Note: From this point, only those respondents who declared they were using e-learning methods are included.

Data source: Web Survey

Figure 8: How long have e-learning methods been in use?



Note: From this point, only those respondents who declared they were using e-learning methods are included.

Data source: Web Survey

Figure 9: Companies by allocated share of total training budget toward e-learning



Note: From this point, only those respondents who declared they were using e-learning methods are included. **Data source:** Web Survey

Figure 10: Prevalence of e-learning methods in companies

Of the different e-learning methods available, Slovene companies mostly (75%) use e-courses (Figure 10). This can be considered a positive sign because this form is considered to be one of the more advanced options. Self-directed learning through websites accounts for up to 69%, while, blended learning covers 34%. Concerning the latter, a remarkable fact is that the European average is much higher; no less than 75% of companies use blended learning methods (CrossKnowledge 2012).

In Slovenia, 25% of respondents use LMS. This might be due to the companies' long-term interest in promoting an e-learning concept. Again, this rate is far beneath the European average, where 60% of companies use LMS (Overton and Dixon 2011, p. 5). In our view, the main reason for such a discrepancy lies in average company size and dispersion of business units, with the average European company much larger in size when compared to Slovenian companies. As stated earlier, company size is definitely one of the key factors for investing in LMS.

Surprisingly, not a single respondent uses social or mobile e-learning methods. This outcome grows more

interesting when compared to other European countries (Overton and Dixon 2011, p. 5), where up to 45% of companies already use mobile e-learning technologies, with this share expected to increase further, up to 80%, within the next two years.

From this survey, only 8 of the responding companies make use of an internal e-learning system (LMS). Half of these companies employ over 1,000 people (Figure 11).

Most of the companies that already use LMS feature a large number of branches or locations (more than 50). Hence company size and the dispersion of its premises appear to be influential factors when deciding whether or not to implement LMS.

Twenty-seven percent of the responding companies that already use e-learning methods declared that they have not only implemented the system but they also promote its use (Figure 12). Ten percent of these companies also integrate their comprehensive e-learning functions with several other business processes. E-learning is constantly and actively used by their staff.



Note: From this point, only those respondents who declared they were using e-learning methods are included. Their structure is as follows: Total = 8 (of which 3 are from the category of over 1,000 staff members and more than 50 locations; 1 with over 1,000 staff and 1-10 locations; and 1 in each of the categories 0-50, 51-100, 251-500 and 501-1,000 of employees. **Data source:** Web Survey

Figure 11: Companies using LMS by their size and number of locations or branches



Note: From this point, only those respondents who declared they were using e-learning methods are included.

Data source: Web Survey

Figure 12: Companies by stage of e-learning

			Rating			
What is the impact of e-learning on your business?	1	2	3	4	5	
Employees' skills upgraded	1	3	7	11	3	
	(4%)	12%)	(28%)	(44%)	(12%)	
Improved customer satisfaction	3	3	9	7	2	
	(12%)	(12%)	(38%)	(29%)	(8%)	
Improved efficiency in compliance of operations	2	2	7	7	6	
	(8%)	(8%)	(29%)	(29%)	(25%)	
Decreased number of accidents, misuses and risks	6	4	7	5	2	
(safety at work area)	(25%)	(17%)	(29%)	(21%)	(8%)	
Decreased number of accidents, misuses and risks (infor-	3	2	8	8	2	
mation security area)	(13%)	(9%)	(35%)	(35%)	(9%)	
Easier access to information on new products and services	3	3	3	7	7	
	(13%)	(13%)	(13%)	(30%)	(30%)	
Training costs reduced	0	3	3	7	11	
	(0%)	(12%)	(12%)	(29%)	(46%)	
No measuring / data not available	4	5	6	2	8	
	(16%)	(20%)	(24%)	(8%)	(32%)	
No impact	8	8	4	1	1	
	(36%)	(36%)	(18%)	(5%)	(5%)	

Rating (1 - do not agree, 2 - partly agree, 3- mostly agree, 4 - agree, 5 - very much agree)

Data source: Web Survey

Table 1: Impact of e-learning on business

However, many companies that use e-learning methods use it sporadically (in 37% of cases), or are in the course of development within the project (10%), or have just started using it (27%). These three groups of users represent 74% of all companies who already use e-learning. Experiences from the US and other major markets indicate that the Slovene e-learning market is in a growth stage and that its potential is still high. However, when predicting future trends, market specifics must be taken into account, such as the structure

When asked about the impact of e-learning on their businesses and outcomes (Table 1), almost half of the respondents (46%) agree that e-learning is keeping their corporate training costs down (rating = 5 out of 5), while none of the respondents stated the opposite.

Many companies (79% of all rating 3 or more) described improved IS/IT-security, i.e. decrease in accidents, misuse and risks effected by e-learning. Companies also attributed their improved efficiency to the better compliance of operations (83% of those who rated 3 or more) and upgraded skills of employees, with both being positive effects of e-learning.

As an additional comment, it should be stated that an over-proportionate number of the companies do not systematically measure such kinds of effects, and were unable to obtain the necessary data, or had none available. Following the experiences of the developed markets, such as the US, where such metrics are integrated in all business processes, this result is quite surprising and could lead toward further questions over how far the users' own approximate estimations of the e-learning effects have been provided in place of measured values.

When asked to compare e-learning to traditional training methods and to name the most evident benefits, companies responded: reduced cost of training (78%); improved user flexibility (78%); improved access to training content (72%); and less absenteeism (69%),

On the other hand, e-learning is not perceived as leading to higher quality levels when compared to traditional methods. Studies of other European companies show the opposite: in 61% of cases they claim e-learning has indeed improved the quality of their training processes (Overton and Dixon 2011, p. 10). Recalling the research findings by Vehovar (2007, p. 25) might help to explain this point, given the predominant role of the teacher in education systems in Slovenia. However, e-learning is mostly performed as self-paced learning, with a more or less passive role on the part of the teacher and by using an asynchronous concept of communication. To achieve success, participants are required to act autonomously.

Therefore, the increasing popularity of e-learning appears to be based primarily on two characteristics, location independence and cost efficiency. It should also be stated, that only 2% of the respondents confirmed that e-learning had no benefit at all.

Of the major obstacles in implementation of e-learning and related technologies (Figure 14) stated by the companies, issues related to human resources were considered to



Data source: Web Survey

Figure 13: Main benefits of e-learning compared to traditional methods



Data source: Web Survey

Figure 14: Main obstacles to implementation of e-learning technologies

be the most important. Forty- one percent of cases stated an insufficient number of staff were available to work on e-learning. This claim was confirmed also by the outcome of the "Sources of e-learning content" section. Most companies seem to use products that are already available or outsourced these services and to a much lesser extent, had their own in-house production of content.

Remarkably, many respondents indicated that the implementation of e-learning technologies was "simply not considered to match the company's strategic goals" (33%) or claimed that there was a lack of skills necessary to use these new technologies (31%). Surprisingly, the latter statements



Data source: Web Survey

Figure 15: E-learning content by current use versus planned use



Data source: Web Survey

Figure 16: Training methods today versus the next 2 years by hours of training a growing share to blended learning and e-learning methods.

do not match at all with the outcomes of recent studies on ICT-literacy in Slovenia. On the other hand, they are supported by experience elsewhere in Europe. An even higher percentage of companies analyzed by Overton and Dixon (2011, p. 13) found these factors to be obstacles; as many as 60% described a lack of skills from the employee to manage his/her own training process.

In Slovenia, only 2% of the respondents cited any kind of bad experience. This could mean that all companies have mostly good, if not excellent, experiences with e-learning.

In response to the area of application, most (24%) companies use e-learning methods for IS/IT-related content (Figure 15). Content related to compliance in operation represents the second most important area of application, including health and safety at work, information security and "other legislative content."

Companies tend to rely increasingly on e-learning methods and it may be expected that this trend will increase further in the future. This can be expected for all fields of corporate training, except management, sales and acquiring formal education. The greatest growth can be expected for content related to compliance training. Thirty three percent of companies intend to use e-learning for staff health and safety training in the next 2 years (today: 10%). Information security, "other legislative content" and foreign languages follow. Stable or slightly downward trends are expected for the areas of communication, management and sales. The reason might be that electronic knowledge transfer is rather more difficult in these areas.

It is interesting that only 10% of companies have decided not to use e-learning during the next 2 years and 40% have no plans as yet. Nevertheless, more companies are expected to use e-learning methods at the end of the next 2 year period than the current one.

Comparing the hours of training invested in e-learning today and in 2 years (Figure 16) confirms a growing trend in e-learning compared with traditional methods. Therefore, companies expect that time invested in traditional training will drop to 78% on the basis of

Therefore, it can be assumed that traditional learning methods will gradually give way to various e-learning methods, either pure e-learning or blended learning.

7. CONCLUSIONS

E-learning has become a generally accepted form of training in Europe and worldwide for both formal education and corporate training. Traditional learning methods are giving way to e-learning. Growth rates are of particular interest in emerging markets.

Trends in Slovenia are comparable to those of the major markets. This means that e-learning is gaining status as a viable alternative in Slovene companies who appreciate benefits such as cost efficiency and flexibility. However, elearning is not yet perceived to give better quality training. Such a perception is rather remarkable, with companies elsewhere in Europe observing improved quality of training through e-learning methods. The results also showed that Slovene companies use different e-learning methods, but not all that are currently available. Particularly surprising was the almost complete absence of e-learning through mobile technologies, which are achieving high growth rates elsewhere in the world. Acceleration in this area can be expected in Slovenia within a few years.

In some parameters, Slovenia seems to compare reasonably well to the European average. This can be said when speaking of the widespread use of the e-learning concept, its content and to some extent the trends of traditional methods giving way to e-methods. Lagging behind the international trends is the use of comprehensive e-learning methods and Learning Management Systems (LMS). Small to average company size, dispersion of business sites and a lack of adequate experts seem to be the most plausible explanations for this.

Arguments reinforcing use, such as recent trends and especially cost efficiency during the current financial crisis, provide strong signals that point to the great potential for e-learning in the corporate environment of Slovenia.

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Appendix 1:

List of questions for Web survey

(Note: options not shown, as seen from the responses):

- 1. What is the main activity of your company?
- 2. How many employees work in your company?
- 3. What is your function in the company?
- 4. How many locations or branches does your company have (local, international business units, subsidiaries)?
- 5. What is the budget allocation per year per employee invested in training (including fees, travel costs, daily allowances)?
- 6. Who is responsible for planning employee training in your company? (multiple answers are possible)
- 7. How often are the employees of your company trained?
- 8. For how long have you been using e-learning methods in your company?
- 9. What percentage of your entire training budget is allocated for e-learning?
- 10. What forms of e-learning do you use in your company (multiple answers are possible)?
- 11. What content is supported by e-learning methods for employee training in your company? (multiple answers possible)?
- 12. What proportion of time is used for the different forms of e-learning in your company (in terms of hours invested)?
- 13. Who performs e-learning in your company? (multiple answers are possible)
- 14. What impact does (did) e-learning have on your business? Please rate each of the statements from 1 to 5 (1 I don't agree at all; 5 very much agree)
- 15. Which stage of use of e-learning methods is your company in?
- 16. What are the main benefits of e-learning compared to traditional methods for your company? Please select the best matched answers.
- 17. What are (were) the main obstacles for implementing e-learning technologies in your company? Please select the best matched answers.
- 18. Which content do you plan to integrate in your e-learning process in the next 2 years? (multiple answers are possible)
- 19. In terms of training hours, what proportion of time for each of the training forms (methods) do you plan for your company?



BUSINESS CLIENT SEGMENTATION IN BANKING USING SELF-ORGANIZING MAPS

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Abstract

Segmentation in banking for the business client market is traditionally based on size measured in terms of income and the number of employees, and on statistical clustering methods (e.g. hierarchical clustering, k-means). The goal of the paper is to demonstrate that self-organizing maps (SOM) effectively extend the pool of possible criteria for segmentation of the business client market with more relevant criteria, including behavioral, demographic, personal, operational, situational, and cross-selling products. In order to attain the goal of the paper, the dataset on business clients of several banks in Croatia, which, besides size, incorporates a number of different criteria, is analyzed using the SOM-Ward clustering algorithm of Viscovery SOMine software. The SOM-Ward algorithm extracted three segments that differ with respect to the attributes of foreign trade operations (import/export), annual income, origin of capital, important bank selection criteria, views on the loan selection and the industry. The analyzed segments can be used by banks for deciding on the direction of further marketing activities.

Keywords: self-organizing maps, segmentation, banking, neural networks, data mining

JEL classification: M31, G21

INTRODUCTION

Client segmentation is the process of dividing markets into homogenous groups of consumers. The idea is to create customized marketing strategies for selected segments in order to satisfy clients' needs better. Banks can offer customized products to those market segments in order to increase their profitability (Anderson, Cox and Fulcher, 1976; Laroche, Rosenblatt and Manning, 1986; Garland, 2005). In applying marketing strategy in financial institutions, the provider of financial services makes a distinction among various market segments. Services, the marketing mix and the communication mix are tailored to one or more selected segments (Denton and Chan, 1991). Market segmentation can be done according to various criteria when it is applied to an individual client market, e.g. geographic, demographic, psychographic and behavioural (Kotler et al., 2001). However, the criterion most commonly used by financial institutions in the business client market is size measured in terms of income and the number of employees (Piercy, 1992; Meadows and Dibb, 1998).

Various methods have been used for market segmentation, such as different clustering methods, fuzzy methods, regression methods, neural networks, self-organizing maps, and others (e.g. Wedel and Kamakura, 2003; Chan, Kwong and Hu, 2012; Hanafizadeh and Mirzazadeh, 2011). Classical

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Full professor Faculty of Economics in Osijek, University of Osijek E-mail: <u>natasa@efos.hr</u> cluster analysis methods (e.g. k-means, hierarchical cluster analysis) give a remarkable level of precision (Mingoti and Lima, 2006). However, the problem is that they lack the possibility to automatically determine the number of resulting clusters, and the number of clusters depends on prior understanding of the dataset. Consequently, analyzing complex databases would not be easy. Therefore, the need for automatic characterizing is obvious. The self-organizing maps (SOM) method is considered to be a successful supplemental method for classical clustering methods. Kuo, Ho and Hu (2002) compared three clustering methods for segmentation in the 3C (computer, communication, consumer electronic) market: the conventional two-stage method, the SOM and the two-stage method as a combination of SOM and k-means. They showed that, compared to the conventional two-stage method, the two-stage method combining SOM and k-means gives better results on the basis of theoretical and practical evaluations. Hung and Tsai (2008) developed a hierarchical SOM model for market segmentation of multimedia demand in Taiwan. They showed that the hierarchical SOM model provided better interpretation of the results than the traditional statistical clustering analysis and the growing hierarchical self-organizing map. Schmitt and Deboeck (1998) conducted a study using the results of a consumer survey in Beijing and Shanghai that illustrated the efficacy of self-organizing maps. Mangiameli, Chen, and West (1996) compared the performance of the SOM and the hierarchical clustering method using 252 datasets with various levels of imperfection, and showed that the SOM method outperformed the hierarchical clustering method.

The aim of this paper is to create and explain business client segmentation in the Croatian banking industry using the SOM method. The motivation for this research is threefold. First, to our knowledge, there are no papers describing business client segmentation in the banking industry in Croatia. Second, banks in Croatia use traditional segmentation of the corporate sector, which can sometimes blur the actual situation. Therefore, data mining, such as cluster analysis, can find segments that have previously been disregarded. Since the dataset for this research is complex and has never been analyzed before, we decided to implement the SOM method. Third, the criterion for banking segmentation is traditionally size measured in terms of income and the number of employees (Piercy, 1992; Meadows and Dibb, 1998), and in this research we have used many other criteria, such as decision makers' characteristics, an operating criterion, and a supply management criterion. In this research we had a complex database consisting of many variables, which is the reason why the SOM method is chosen for the analysis.

The paper's composition is the following. First, an overview of previous research is given. The second part of the paper describes the methodology of the paper, encompassing research methods and the data used in the research. The third part of the paper presents the cluster analysis resulting in the business customer segmentation. The discussion and the concluding part of the paper present the profile of each cluster and summarize the results of the analysis.

LITERATURE REVIEW

Segmentation in banking is one of the most important business decisions, since the practice of designing special groups or baskets of products for special groups of clients is at the root of the modern approach to banking. The two main groups of clients in banking are individual clients (Ekinci, Uray and Ulengin, 2014) and business clients (Turnbull and Gibbs, 1987). Most of the research in segmentation in banking is oriented towards the retail market. Mäenpää (2006) provides the framework for developing market segments for consumers based on their perceptions of the Internet banking service, with the goal of detecting possible improvements to the banking application. Machauer and Morgner (2001) present segmentation of individual banking clients using a mixture of customer attitudes and perceptions of bank service benefits. On the other hand, our research is oriented towards the business client segmentation in banking.

The traditional approach to business segmentation in banking for the business client market is mainly based on the criterion of size, measured in terms of income and the number of employees (Piercy, 1992; Meadows and Dibb, 1998). Additionally, other financial criteria include a company's loan exposure and the ownership of a company (Sponer, 2012). In addition, Edris (1997) used multiple discriminant analysis and revealed that in Kuwait the ownership of a corporation (Kuwaiti, non-Kuwaiti and joint business corporations) was related to the selection of a bank. The business intelligence approach regards data as a company's assets (Watson and Wixom, 2007). Hence, our research is based on the proposition that business client data that encompass business client behavior, such as decision maker characteristics, business client characteristics, an operating criterion, a supply management criterion and a situational criterion should also be used as a basis for business decision-making, in this case segmentation. The rationale for selecting the abovementioned criteria will be presented. In all business situations, including commercial and consumer markets, it will ultimately be individuals who make decisions, but a company's policy limits them in decisionmaking, which stresses the importance of *decision maker* preferences (Shocker et al., 1991). Business client characteristics refer to the company size (Piercy, 1992; Meadows and Dibb, 1998), industry (Athanassopoulos, 2000), location (Venkatesh, 2011), and the international orientation of the company (Agarwal, Malhotra and Bolton, 2010). The operating criterion facilitates segmentation based on the specific behaviour of the client, which is reflected in specific transactions conducted by the client (e.g. credit card usage) or planned transactions (e.g. planned credit card usage), or attitude towards the most important operating service (Patsiotis, Hughes and Webber, 2012). Supply chain management determines the procurement organization of the client and its rules when deciding whether to take a familiar, a national or the cheapest vendor, etc. The supply chain management criterion describes a client's affinity towards price and service quality (Chen and Bell, 2012). Finally, situational criterion elements do not have a permanent character and push companies to understand a client more deeply (Kim

and Grunig, 2011). In our research, they include the major bank where most of the services are used, and the level of satisfaction with the current major bank.

The cluster analysis is the basic method of knowledge discovery in databases that can be used for market segmentation (Mäenpää, 2006). Traditional clustering methods are hierarchical methods and k-means. The aim of these methods is the detection of global data structures. In this method the target attribute is not predefined, so there is no difference among the attributes' importance. Clustering methods fall into a group of "unattended" methods. Self-organizing maps (SOM) are the two-layered artificial neural networks which were initially designed to conduct the tasks of clustering, data visualization and abstraction (Han and Kamber, 2006, pp. 434). SOM has been used for market segmentation in tourism (Kun et al., 2002) as well as in various other fields of market segmentation, such as telecommunication (Kiang, et al., 2006), on-line game markets (Lee et al., 2004), on-line shopping (Vellido et al., 1999), tourism (Bloom, 2004), computer, communication and consumer electronic markets (Kuo, Ho and Hu, 2002), and multimedia products (Hung and Tsai, 2008). Our research explores the possible usage of SOM methods for business client segmentation in banking.

To summarize, further research is needed in the field of business client segmentation in banking. In order to expand knowledge on business client segmentation in banking, new research is needed that would, in addition to size measured in terms of turnover and the number of employees, use a more extensive set of criteria, including decision maker characteristics, business client characteristics, an operating criterion, a supply management criterion and a situational criterion. In addition, by using the SOM method in our research, we test the applicability of this novel approach to the field of business client segmentation in banking.

METHODOLOGY

Self-organizing maps (SOM)

Self-organizing maps (SOM) are based on the concept of neural networks. The neural network is a model of a biological neural network of the human nervous system, a set of parallel interconnected neurons that are organized in layers (Jagric and Jagric, 2011). The main feature of artificial neural networks as well as SOM is the property of learning from the data that are entered in the network input layer. Thus a complex interaction of the analyzed data can be modelled without having to know the nature of the phenomena the data describes. In other words, it is not necessary to create an algorithm that will analyze the data, but through training the neural network learns how to analyze data on its own. Besides the learning capacity of the SOM method, two other important features of this method have to be mentioned (Bigus, 1996). The first is the dimensionality reduction of the data and the second is the placement of similar data to neighbouring nodes on the resulting map. The dimensionality reduction facilitates easier understanding of the attribute interrelationship between the input data,

while grouping similar data together enables data clustering. Thus, it is possible to apply this method in the field of market segmentation. In fact, any connection between neurons of the input-output layer has its corresponding weight. In practice, neural networks, among other things, are used in the financial services industry (Kumar and Ravi, 2007).

In humans, various sensory stimuli are neurologically mapped in the brain so that the spatial relationship between stimuli of certain parts of the brain corresponds to the spatial relationship between neurons organized in a two-dimensional map (Kohonen, 1995). Consequently, the location of points on the map reflects the relative similarity of points in a multidimensional space, i.e. the more two datasets are similar to each other, the closer they will be on the resulting two-dimensional map. Accordingly, the SOM's primary function is to display multidimensional data from the inputs of the network in the two-dimensional map, while retaining the relationships among data (Kiang, 2001).

The Ward Clustering Method is a part of the Viscovery SOMine data mining software tool, which encompasses the SOM-Ward algorithm that is used for the data analysis in this paper. The Classical Ward method belongs to hierarchical agglomeration algorithms which have the following characteristics: they start with the clustering process where every cluster represents one cluster, and in each of the clustering steps the two clusters that have a minimal distance are joined. The minimal distance is called the Distance Niveau.

The SOM-Ward algorithm is a so-called *hybrid algorithm* which was developed on the grounds of the *soft computing* paradigm, which is primarily based on the usage of various intelligent methods and algorithms, as opposed to the *hard computing* paradigm. In SOMine, the distance matrix is initialized with respect to the number of data records which are represented by nodes on the output map. The nodes with many corresponding data records have a higher impact in comparison with the nodes with fewer connections.

Sample description

In order to conduct segmentation using the SOM-Ward algorithm, a questionnaire survey approach was utilized to collect data from Croatian firms. Questionnaires were distributed among Croatian micro (<10 employees), small (11-49 employees), medium (50-249 employees) and large (250+ employees) firms. Business clients that participated in the research were selected randomly from the Croatian Company Directory, available at the website of the Croatian Chamber of Commerce. The stratified sample approach was used in order to capture more large and medium sized firms, which are important for banks because, in comparison to small and micro firms, they conduct larger financial transactions. Data for this research were collected through a questionnaire answered by 850 Croatian firms.

Table 1 visibly specifies that, according to the sample size, the structure of firms that participated in the survey differs to a large extent from the structure of firms in Croatia as a whole. Our sample contained 38.83% of micro firms, while in Croatia micro firms comprise 92% of the total population.

Firm size	Sam	ple	Croa	Chi-square	
	Number of firms	Structure in %	Number of firms	Structure in %	(p-value)
Micro firms (<10 employees)	304	35.8%	152251	92.0%	63.656
Small firms (10- 49 employees)	263	30.9%	10757	6.5%	(0.000**)
Medium firms (50-249 employees)	182	21.4%	1986	1.2%	
Large firms (250+ employees)	101	11.9%	496	0.3%	
Total	850	100.0%	165490	100.0%	

Table 1: Comparison of firms that participated in the survey and population characteristics

** statistically significant at 1%

Source: Authors' calculation

Table 2: Segmentation criteria used in the research

Segmentation criterion	Variables describing the criterion (type of variable)
Decision maker preferences	(1) the importance of selecting a bank providing services for clients (Likert 1-5)(2) client rating of the best bank in Croatia (Likert 1-5)
Business client characteristics	 (1) total number of employees (numeric) (2) increase / decrease in revenues compared to the previous year (numeric) (3) total income in the previous year (numeric) (4) plans related to the number of employees (nominal) (5) main business activity (nominal) (6) legal form of the company (nominal) (7) percentage of import and export in annual sales (numeric) (8) ownership form of the company and the capital origin (nominal) (9) the financial position of the company (nominal) (10) method of wage payment (nominal) (11) headquarters of the company and the year of establishment (nominal)
Operating criterion	 (1) the most important reasons which affect the selection of a bank for a loan request (Likert 1-5) (2) credit cards used by a client (binomial 0-1) (3) credit cards which a company is planning to use (binomial 0-1)
Supply management approach criterion	 (1) the three most important characteristics of a bank (e.g. security and stability, commissions and fees, keeping up with promises) (Likert 1-5) (2) the three most important characteristics of bank services (e.g. a wide spectrum of services, quality and price ratio and promptness in solving requests) (Likert 1-5)
Situational criterion	(1) the major bank where most of the services are used (binomial 0-1)(2) level of satisfaction with the current major bank (Likert 1-5)

Source: Authors

On the other hand, our sample contained 20.58% medium-sized firms, and the total Croatian population of firms contains only 1.20% medium-sized firms. Larger firms are also overrepresented in our sample. The chi-square test proved that these differences are statistically significant at 1% (χ^2 =63.656, p-value=0.000). Hence, the overpresence of large, medium and small firms, and underpresence of micro firms in our sample should be taken into account when considering the implications of the results of the research. However, such an approach was chosen taking into account that micro firms, although great in number, generate a smaller number and amount of financial transactions. On the other hand, medium and large firms, although small in number, generate a larger number and amount of financial transactions.

Research instrument

The literature review presented in the paper contains the rationale for selecting the segmentation criteria used for this research: decision maker characteristics, business client characteristics, an operating criterion, a supply management criterion and a situational criterion. The questionnaire

for this research is developed based on the criteria described in the literature review section (Table 2). There were three types of questions: (1) Likert scales from 1 to 5, (2) questions with predefined answers (nominal variables), and (3) numeric variables.

Statistical analysis

The SOM-Ward algorithm implemented in Viscovery SOMine software was used in order to segment business customers. The SOM-Ward algorithm extracted three clusters, presented on a resulting map with only the main criteria used for a short description.

In analyzing and interpreting clusters, we first described each cluster according to all segmentation criteria. Second, we compared clusters descriptively. Finally, we applied the F-test for testing differences in mean values between clusters and chi-square for testing the association between clusters and different criteria.

RESULTS OF BUSINESS CUSTOMER SEGMENTATION

Figure 1 visually represents the identified clusters of business clients in banking, as well as presents the structure of the total sample according to clusters. Cluster 1 contains 50%, Cluster 2 contains 36% and Cluster 3 only 14% of the total sample.

In analyzing and interpreting clusters it is very useful to compare clusters according to the segmentation criteria. This analysis serves as a basis for creating marketing





Source: Authors' calculation

strategies for each cluster. In Table 3 clusters are compared according to decision maker preferences. The percentages in the table present percentages of the companies which belong to a specific cluster and which have chosen certain criteria. For example 53.1% of companies in Cluster 1 think that selecting a bank is of very high importance. It can be noticed that in all of the three clusters the importance of selection on the basis of services provided by a bank is very high, although in the third cluster that percentage is the highest and in the second the lowest. As for the ranking of the best banks, bank A is most common in the second

Table 3: Clusters according to the importance of selecting a bank providing services to clients, and to the clients' rating of the best bank in Croatia (% of firms in the cluster)

	Cluster 1	Cluster 2	Cluster 3	Total	Chi-square (p-value)					
The importance of selecting a bank providing services for clients										
Very high importance	51.3%	45.1%	53.4%	49.4%	23.610					
High importance	31.7%	34.0%	28.8%	32.1%	(0.009**)					
Medium importance	7%	6%	7%	6.6%						
Low importance	0%	4%	2%	1.5%						
Not important	0%	2%	0%	.7%						
No answer	9.9%	9.5%	9.3%	9.7%						
	Clients' ra	ting of the best ba	nk in Croatia							
Bank A	23.2%	32.7%	25.4%	26.9%	116.301					
Bank B	16.8%	19.6%	24.6%	18.9%	(0.000**)					
Bank C	19.9%	12.7%	10.2%	15.9%						
Bank D	5.7%	4.9%	6.8%	5.5%						
Other banks	15.30%	11.40%	15.20%	14.00%						
There is no best bank	5.40%	3.30%	5.10%	4.60%						
No answer	13.70%	15.40%	12.70%	14.20%						

** statistically significant at 1%; * statistically significant at 5% **Source:** Authors' calculation
cluster, banks B and C are also highly represented in all clusters. Chi-squares show significant associations between clusters and the importance of selecting a bank providing services for customers (χ^2 =23.610, p=0.009) as well as associations with customer ratings of the best bank (χ^2 =116.301, p<0.000). This means that companies in clusters differ according to decision makers' characteristics.

In Table 4 clusters are compared according to the average number of employees, and the average % of import and export in annual sales. The F-test revealed that there is no statistically significant difference in clusters' average numbers of employees (F=1.711, p-value=0.181). As for import and export, Cluster 1 includes companies with the highest average import and export, and Cluster 2 with the lowest. In addition, the clusters have an average % of import in annual sales and an average % of export in annual sales that are statistically significant at the 1% probability level.

Table 5 presents the business customer characteristics of the clusters. The percentages in the table present percentages of the companies which belong to a specific cluster. It can be noticed that clusters differ significantly according to the industry, total revenue, change of revenue compared to previous year, origin of capital and ownership, but not according to plans for employment (χ^2 =11.591, p=0.072). Furthermore, in each cluster most business customers are from trade. Domestic capital is well represented in all clusters, and the most in the third cluster, while most foreign capital can be found in the first cluster. SMEs are the most represented in Cluster 2.

Table 4: Clusters according to the average numbers of employees, and average % of import and export in annual sales

	Cluster 1	Cluster 2	Cluster 3	Total	F-testC (p-value)
Average number of employees	281.1	135.2	145.2	209.5	1.711 (0.181)
Average % of import in annual sales	29.6%	10.9%	22.1%	21.8	36.107 (0.000**)
Average % of export in annual sales	16.1%	6.9%	9.9%	11.9	15.255 (0.000**)

** statistically significant at 1%

Source: Authors' calculation

Table 5: Clusters according to the structure of firms based on business client characteristics (% of firms in the cluster)

	Cluster 1	Cluster 2	Cluster 3	Total	Chi-square (p-value)
		Industry			
Trade	39.0%	33.7%	35.6%	36.6%	79.641
Production or mining	24.8%	12.7%	11.0%	18.5%	(0.000**)
Construction	5.4%	8.2%	12.7%	7.4%	
Tourism: hotels & restaurants	1.9%	6.5%	2.5%	3.7%	
Financial and other services	2.1%	6.5%	1.7%	3.7%	
Transport and communications	2.6%	2.6%	3.4%	2.7%	
Community services	1.9%	1.3%	3.4%	1.9%	
Agriculture or fishing	0.9%	2.3%	3.4%	1.8%	
Other	21.4%	26.2%	26.3%	23.7%	
	Total reve	enue in previous	year		
Up to 0.5 million EUR	11.1%	54.9%	22.0%	28.5%	215.449
From 0.5 to 1 million EUR	6.6%	7.5%	11.0%	7.6%	(0.000**)
From 1 to 1.5 million EUR	4.7%	3.6%	3.4%	4.1%	
From 1.5 to 2 million EUR	7.1%	3.9%	6.8%	5.9%	
From 2 to 5 million EUR	19.9%	8.5%	17.8%	15.5%	
From 5 to 8 million EUR	10.6%	3.9%	15.3%	8.9%	
From 8 to 10 million EUR	5.4%	2.0%	3.4%	3.9%	
From 10 to 50 million EUR	14.4%	2.3%	11.0%	9.6%	
50 and more million EUR	5.9%	0.7%		3.2%	
Don't know	5.2%	2.9%	2.5%	4.0%	
Refuse to answer	9.0%	9.8%	6.8%	9.0%	

Table 5: con't

	Change of revenue	e compared to p	revious year		
Increase of revenue compared to previous year	69.7%	54.2%	72.0%	64.5%	24.263 (0.000**)
Revenue on the same level	18.7%	31.0%	19.5%	23.3%	
Decrease	10.4%	13.1%	8.5%	11.1%	
No answer	1.2%	1.6%		1.2%	
	Plans for emp	loyment in the n	iext year		
Retain all the employees	41.6%	48.7%	44.9%	44.6%	11.591
Employ new workers	48.9%	39.5%	39.8%	44.3%	(0.072)
No answer	5.9%	8.2%	7.6%	7.0%	
Lay off employees	3.5%	3.6%	7.6%	4.1%	
	Origi	in of the capital			
Domestic	80.9%	94.1%	97.5%	88.0%	57.361
Foreign	10.2%	.3%	1.7%	5.4%	(0.000**)
Mixed (domestic & foreign)	9.0%	4.6%	.8%	6.3%	
No answer		1.0%		.4%	
	Belong	ging to the group	c		
Independent company	61.2%	55.6%	70.3%	60.4%	103.383
SME	9.9%	35.3%	13.6%	19.6%	(0.000**)
Owned by another company	14.4%	6.5%	9.3%	10.9%	
Company owns other companies	13.7%	2.3%	5.9%	8.5%]
No answer	0.8%	0.3%	0.9%	0.6%	

** statistically significant at 1%; * statistically significant at 5% Source: Authors' calculation

In Table 6 clusters are compared according to operating criteria. The interest rate is the most important criterion in the first and the second cluster while the speed and simplicity of procedures are the most important criteria in the third cluster. Chi-square results show a significant association between clusters and criteria for a loan request (χ^2 =231.032, p<0.000), which means that companies in clusters differ according to important criteria for a loan request.

Table 6: Clusters according to operating criteria (% of firms in the cluster)

	Cluster 1	Cluster 2	Cluster 3	Total	Chi-square (p-value)
Important criteria w	hich affect the s	election of a ba	nk for a loan ree	quest	
Interest rate	65.5%	51.3%	3.4%	51.7%	231.032
Speed of loan approval	13.0%	12.1%	28.0%	14.8%	(0.000**)
Knowing people at the bank	0.2%			0.1%	
Repayment	3.1%	4.9%	3.4%	3.8%	
Fees	0.5%		1.7%	0.5%	
Simplicity of procedures	9.9%	10.1%	24.6%	12.0%	
Size of the bank	1.7%	0.7%	10.2%	2.5%	
Documentation required to obtain a loan	2.4%	4.9%	7.6%	4.0%	
Staff		1.3%	0.8%	0.6%	
Bank not requiring unrealistic guarantees	1.2%	11.8%	6.8%	5.8%	
Something else			3.4%	0.5%	
Don't know/No answer	2.6%	2.9%	10.2%	3.8%	

** statistically significant at 1%; * statistically significant at 5% Source: Authors' calculation

	Cluster 1	Cluster 2	Cluster 3	Total	Chi-square (p-value)
The	most important	t characteristic c	of a bank	,	
Security and stability	72.3%	81.7%	60.2%	74.0%	102.624
Low interest rates	4.7%	2.0%	0.8%	3.2%	(0.000**)
Low commissions and fees	6.9%	2.3%	4.2%	4.8%	
Approves the loan	0.7%	0.3%	1.7%	0.7%	
Familiar person	0.7%	0.7%	2.5%	0.9%	
Support for business abroad	6.6%	2.9%	0.8%	4.5%	
Specialization for the company's industry	3.8%	2.6%	16.9%	5.2%	
Familiar bank	0.9%	2.9%	8.5%	2.7%	
Other	3.3%	4.6%	4.2%	3.9%	
Major	bank (where mo	ost of the service	es are used)		
Bank A	24.8%	33.3%	28.8%	28.5%	78.146
Bank B	11.8%	14.7%	13.6%	13.1%	(0.058)
Bank C	9.9%	6.2%	5.1%	7.9%	
Bank D	9.5%	9.2%	12.7%	9.8%	
Other banks	44.0%	36.6%	39.8%	40.7%	
No answer	22.2%	18.7%	20.1%	19.3%	
Level	of satisfaction w	ith the current n	najor bank		
Highly satisfied	30.3%	26.8%	28.0%	28.7%	12.877
Mostly satisfied	44.4%	47.4%	47.5%	45.9%	(0.231)
Undecided	18.4%	20.9%	16.1%	19.0%	
Mostly not satisfied	2.6%	3.6%	3.4%	3.1%	

1.7%

2.6%

1.3%

Table 7: Clusters according to the supply management approach criteria (% of firms in the cluster)

** statistically significant at 1%; * statistically significant at 5% Source: Authors' calculation

In Table 7 clusters are compared according to the supply management approach criteria. Chi-squares show significant association between clusters and important characteristic of a bank (χ^2 =102.626, p<0.000) but not in the case of the most important characteristics of the bank (χ^2 =78.146, p=0.058) nor in the case of frequency of usage of services (χ^2 =12.877, p=0.231). It can be concluded that the level of satisfaction and frequency of usage are the same in all clusters.

DISCUSSION

Not satisfied at all

No answer

Each cluster can be described by combining all the variables included in the analysis. In order to clearly indicate the difference among clusters, appropriate labels were given to the clusters.

Cluster 1 – Largest-growing

Companies in Cluster 1 have the largest average export and import ratio in the annual turnover (import 29.6%, export 16.1%) and they are also the largest in terms of the annual income in the last year (10-50 million EUR). Therefore, this cluster was labelled as Largest-growing. This cluster has the highest proportion of state-owned companies, but it also consists of foreign companies (with higher turnovers). Companies in this cluster plan new employment more often than companies in other clusters, which could indicate that they have a clear growth strategy. When selecting a bank for a loan, important factors include interest rates, guickness of loan approval and a simplified method of funds withdrawal. In addition, they also demand greater security and affordable interest rates. In banking services, they want high transaction accuracy, and promptness in solving problems or requests. These companies want to ensure undisturbed functioning of business processes, especially with international partners. Therefore, banks should offer specialized services.

1.3%

2.0%

3.4%

1.7%

Cluster 2 – Smallest-stagnating

Companies in Cluster 2 have the lowest turnovers that are stagnating. They have a minimum average trade ratio with foreign countries (import 11%, export 6.9%) and the minimal annual revenue in the last year (under 0.5 million EUR). Therefore, this cluster was labelled as Smallest-stagnating. A great proportion of these companies are privately owned and established by domestic capital. They expect employment stagnation, but do not plan any layoffs. When selecting a bank for a loan, the most important factors for them are interest rates, quickness of loan approval and simple loan approval procedures. They demand that banks maintain a high degree of security, affordable interest rates, and warranties on investments. Also, they expect banking services to provide a wide spectrum of products and services, transaction accuracy and quickness in solving problems or requests. The data in this cluster have shown that most of those companies are privately owned and are mainly established by domestic investors. Thus, this cluster has the lowest number of foreign investors. The minimal annual turnover in this cluster indicates that these companies are mostly smallsized enterprises or crafts. This is also supported by the fact that they have an underdeveloped employment strategy and their plans on the increase of the number of employees are stagnating. It is important to notice that they want a wide spectrum of banking services, which makes them distinctive from the other two clusters, while the main concern for large companies (Cluster 1) is transaction accuracy.

Cluster 3 – Medium-growing

Companies in Cluster 3 are mostly medium sized in terms of annual turnover. Their turnovers show the highest growth rate of all three clusters. Therefore, this cluster was labelled as Medium-growing. They have the largest import to annual turnover ratio (22.1%), but they also have a small export to annual turnover ratio (9.9%). They have a yearly income between 0.5 and 10 million EUR, are mostly privately owned and are established with domestic capital. They do not plan to lay off many employees but plan to maintain the current number of employees, and a certain number of companies also plan new employments. When selecting a bank for loans, the most important factors are quick loan approval, simple procedures or warranty instruments and reasonable warranties in exchange for the loan. An ideal bank should be secure and stable, have a dedicated person for problem solving and the ability to quickly answer requests, and should guarantee the stability of savings. Desirable banking services include transaction accuracy, quick request response and problem solving (similar to Cluster 1). The main segment characteristics are domestic capital and an effort to maintain the current number of employees. When applying for loans, they prefer the quickness of loan approval and a simple procedure rather than lower interest rates. They also demand transaction accuracy, like the companies in Cluster 1.

CONCLUSION

The aim of the paper was to create and explain business customer segmentation in the Croatian banking industry using self-organizing maps. It has been shown that an easier understanding of the attribute interrelationship between the input data as a basis for decision-making can be improved by using dimensionality reduction and visualization of the multi-dimensional data on a two-dimensional map. The combination of self-organizing maps with the classical cluster analysis in the Ward technique of clustering done using Viscovery SOMLine proved to be a useful tool for cluster analysis. To our knowledge, there is no research paper that investigates segmentation of the corporate sector in the banking industry in a transition country. Thus, by examining Croatia this paper provides required finidings and cognitions. In addition, banks often use the traditional segmentation of the corporate sector, and with this research we showed the advantages of using the SOM-Ward method. The combination of different segmentation criteria with the SOM-Ward method resulted in extracting three clusters which give a detailed explanation of the corporate sector in Croatia.

Our research showed that important segmentation characteristics are based on the characteristics of the corporate sector itself (industry sector, import, export, total revenue, origin of the capital, ownership of the companies) and the given bank's characteristics (the importance of selecting a bank, rating of a bank, criteria for selection, the most important characteristics of a bank). Based on the description of each cluster, banks could create a business strategy customized to each cluster. This means that different strategies should be tailored not just according to what customers want, such as criteria for selection and the important characteristics of a bank, but also according to their characteristics, such as revenue and the industry sector they belong to. It is important to emphasize that the following segmentation criteria are shown to not be significant: the number of employees in companies, plans for employment, the level of satisfaction with the bank and the current bank selection. Market segmentation by SOM could also provide marketing experts with the ability of making a variety of different activities tailored to each segment, which enables banks to increase their profitability.

However, when using the results of our research several limitations should be taken into account, which consequently opens possibilities for future research. First, we selected our criteria based on a broad selection of criteria. However, we did not include other criteria that could be also important for the decision on the selection of a bank by business clients, such as the amount of banking provisions and the ease of use of the Internet banking sector (Assunção, 2013). Since the banking industry is experiencing the constant threat of intruders' attacks on Internet banking software (Nasri and Charfeddine, 2012), the issue of Internet security should also be taken into account. Second, in our research we purposefully included a higher percentage of large firms in our sample because of their importance for the Croatian economy. Therefore, further research in the field of market segmentation could be conducted for large, small and medium firms separately.

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THE IMPACT OF CORPORATE REPUTATION AND INFORMATION SHARING ON VALUE CREATION FOR ORGANIZATIONAL CUSTOMERS

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Abstract

The importance of corporate communication to build, protect and maintain corporate reputation has been advocated in numerous publications in recent years. The main goal of this paper is to provide an understanding of the impact of corporate reputation and information sharing on value creation. Both reputation and information sharing represent signals that customers observe in the process of value creation, which is seen as the end focus for corporate marketing. The paper draws on signaling theory and corporate marketing literature from the European and American schools of thought.

The empirical test of the hypothesized model focuses on the banking industry. Organizational customers from a South East European country shared their views about banks they currently cooperate with. The research instrument contained multi-item scales adapted from the existing literature. An analysis using structural equation modeling confirmed that corporate reputation positively and significantly influences customer perceived value. The effect of information sharing on customer perceived value is not direct but mediated by corporate reputation. This finding contributes to the existing discussion on the role of corporate reputation and communication as antecedents in the process of value creation.

Keywords: corporate communication, information sharing, corporate reputation, customer perceived value

JEL Classification: M30

INTRODUCTION

Many researchers have focused on different aspects and portions of creating value proposition for corporate stakeholders in the last couple of decades. Knowledge and tools for creating and improving stakeholders' perceived value have turned out to be highly desired in firms. Based on signaling theory (Spence 1973; Kirmani and Rao 2000), stakeholders are sensible to both strategic and uncontrolled signals sent by companies. Signals are regarded as "things... that would carry information persistently in equilibrium from sellers to buyers, or more generally from those with more to those with less information" (Spence 2002, p. 434). Signaling theory implicitly explains the situation in which a customer is faced with an investment decision under uncertainty, and therefore interprets differently the signals a company transmits, depending on his/her expectations and the market situation.

Several market models, each holding specific assumptions and dilemmas, are created in microeconomics using signaling theory (e.g. Vermaelen 1981; Banerjee and Gaston 2004). However, little is known about the role of market signaling for marketing discipline, particularly from the

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Senior Teaching Assistant Marketing Department, School of Economics and Business Sarajevo E-mail: maja.arslanagic@efsa.unsa.ba perspective of provider-customer relationships. One example is a theory on signaling an unobservable product quality (Wernerfelt 1988; Kirmani and Rao 2000), where reputation is acknowledged as important, together with other market-ing-relevant signals.

This research regards decisions of organizational customers to choose a specific service company and to build and maintain a relationship with this company as a real investment decision that encompasses all risk elements. Therefore, the proposal is that sharing information through communication channels signals from supplier to customer. This proposal broadens the already acknowledged function of information sharing: an element of relational governance between the parties (Noordewier, George and Nevin 1990) to the new, signaling one. Information sharing is well researched and defined in the supply chain literature (e.g. Lee, So and Tang 2000), and it is seen as "...an important factor in a supply chain participant's expectation of maintaining relationship continuity..." (Tai and Ho 2000, p. 1387). Here information sharing is defined as "the extent to which the supplier openly shares information about the future that may be useful to the customer relationship" (Cannon and Homburg 2001, p. 32), as its role in the frame of signaling theory and its significance for the development of corporate communications is debated.

Conceptually, a wide framework of corporate marketing is analyzed (Balmer and Greyser 2006), where information sharing is regarded as one part of corporate communication. Corporate reputation and corporate communications are distinct elements of the corporate marketing mix (six C's), which should result in creating recognition and acceptance of the value proposition offered by a company. According to the stakeholder perspective (Freeman 1984; Donaldson and Preston 1995; Gummerson 2008; Frow and Payne 2011), companies need to balance between persons/ groups that have an interest in or influence corporate activities and persons/groups that are interesting to or influenced by companies. Within the present research, the focus is on a specific stakeholder group – organizational customers.

The aim of the paper is to examine the influence of two corporate marketing constructs, corporate reputation and information sharing on customer perceived value (CPV) in an organizational customer setting. Value perception is a concept that has greater importance and effects on organizational customers than on individual customers (Eggert and Ulaga 2002). Therefore, it is substantial to understand the way perceived value is related to other marketing constructs, especially to those contributing to its formation. We focus on service companies for which, due to the intangibility of services, customers face problems of service quality assessment before the purchase (Hansen, Samuelsen and Silseth 2008) and evaluation of service during the encounter and service delivery, e.g. due to a lack of knowledge. Our objective is to test to what degree corporate reputation and information sharing help customers in their assessment.

This research contributes to the existing literature on several grounds: (1) it interprets corporate marketing efforts (corporate reputation and information sharing) in terms of signaling theory, (2) it contributes to the discussion on relationships between customer perceived value and its antecedents and establishes the sequence of effects between these constructs, and (3) it offers empirical support for relationships analyzed.

We proceed with our paper as follows: based on a critical literature review we develop the conceptual framework for the research, present the research design for the empirical section of the paper and present our empirical findings. We conclude with a discussion and conclusions, together with implications and the limitations of our research.

LITERATURE REVIEW

Information Sharing and Corporate Reputation in the Framework of Corporate Marketing

The corporate marketing framework was first introduced by Balmer (1998), wherein several important constructs were placed under the same umbrella. They are presented through the corporate marketing mix, also known as the six C's (Balmer and Greyser 2006): character (corporate identity), culture (organizational identity), covenant (corporate branding), communication (corporate communications), conceptualizations (corporate reputation and corporate image), and constituencies (marketing and stakeholder management). Therefore, corporate marketing gathers multiple exchange relationships with multiple stakeholder groups and networks, both internally (e.g. with and between owners, managers and employees) and externally within various constituencies (Powell 2011). However, Balmer's proposals remain at the conceptual level. There is no empirical analysis that combines the elements of a corporate marketing framework and evaluates their role (neither internally, nor externally). These elements are of critical importance for this framework to "become alive" in practice. Our research makes one step in that direction.

Corporate reputation and corporate communication belong to two distinct elements of the corporate marketing mix. Corporate communication includes information sharing explained through the communication effect of management and employees (Balmer 2006; Balmer and Greyser 2006; Balmer 2009; Balmer 2011). The theoretical background for both concepts is outlined in the following paragraphs.

Corporate communication has several definitions and a very wide domain and scope. For Van Riel (1995, 26), corporate communication represents "an instrument of management by means of which all consciously used forms of internal and external communication are harmonized as effectively and efficiently as possible so as to create a favorable basis for relationships with groups upon which the company is dependent". In spite of such an explicit definition, the term communication is used with different prefixes: marketing communication, organizational communication or management communication (Christensen and Cornelissen 2010). It has been posed by different authors that corporate communication is a common term for all communication efforts (e.g. Shelby, 1993; Argenti, Howel and Beck 2005; Christensen and Cornelissen 2010). This is how Balmer (2009) explains one of his Cs and says that "corporate communications relates to the totality of controlled messages from the organization directed towards customers, employees and stakeholders."

As a specific form of communication, information sharing in organizational relationships is important to customers, particularly from the long-term, relational perspective (Noordewieret al. 1990). However, intensive discussion of information sharing still remains in the supply chain literature. Information sharing can be operational or strategic, and appears through internal or external flows of information and with various types of content. Research also shows that it should be aligned with business objectives and market orientation so that all parties can make profitable use of information sharing (Tiedemann, Van Birgele and Semeijn 2009; Tai and Ho 2010; Kolekofski and Heminger 2003). Therefore, information sharing is significant both to organizational suppliers and to organizational customers, and adds value to both the product/service and relationships. Several studies investigate this phenomenon in terms of inter-firm communication, commitment, relationships, customer satisfaction and customer loyalty intention (Krause 1999; Cannon and Perreault 1999; Tai 2011). The importance of information sharing is also analyzed through the evaluation of the need for investment in the ongoing organizational relationship (Jonsson and Lindbergh 2010). Tai (2011) analyzes different perspectives on the value of information sharing for organizational relationships. He concludes that companies benefit in terms of increased competitive advantage and performance, as well as in terms of alignment of decision making processes between the company and the organizational customer. On the other hand, information sharing can also provide significant cost savings for companies (Lee, So and Tang, 2000). Therefore, information sharing has an important role for both sides of the organizational relationship.

To the authors' knowledge, apart from one study (Hansen, Samuelsen and Silseth, 2008), there are no published or available empirical findings on the influence of information sharing on customer perceived value. Other research has also neglected the possible signaling power of information sharing per se. Information sharing was usually analyzed theoretically from the resource based view (as a competitive advantage) or from the relational perspective. Although we do not question the use of these established theories, we notice that the signaling potential of information sharing in services has been neglected. As service quality usually may not be observed prior to the purchase, and as clients are faced with information asymmetry, providers' openness in information sharing may help clients evaluate service quality and other service benefits, and hence contribute to the creation of value perception.

Information sharing was given additional importance and a new angle with the emergence of service-dominant logic (Vargo and Lusch 2004; 2007). Information flow is regarded as the primary flow and service is perceived as a provision of information to customers. Lusch, Vargo and Malter (2006) underline the focus on the symmetric exchanges within service-dominant logic. With this in mind, they state that information sharing should be symmetric and imply that "one does not mislead customers ... by not sharing relevant information that could enable them to make better and more informed choices..." (Lusch, Vargo and Malter 2006, 272). They also recognize two kinds of capabilities that companies should build: collaborative (working with others) and absorptive (absorbing new information from others). This is recognized in further discussions about the importance of information and knowledge sharing (Frow and Payne 2011). When it comes to services, customers are in constant need of information. They analyze information before the purchase, collect information during the service encounter and still follow all of the important events concerning the companies they relate to. Therefore, several issues should be clear for companies: the purposes of information sharing and its primary purpose; the type of information that should be shared with customers; when they should share information; and how the information should be delivered. Otherwise, the importance of information sharing is acknowledged by companies, although not actually implemented. Due to these characteristics, information sharing might not have the ability to bind to firms' performance as strong as other signals (Ippolito, 1990). However, as signaling costs may be regarded as relatively low for providers, they may quickly learn the benefits of information sharing. In this sense, questions related to information sharing are connected to customers' perceptions of value, which emerge through the relationship and service delivery process.

The second key concept in our research is corporate reputation. In the economic and business senses, the concept of corporate reputation was first introduced by Bourdieu (1986) in his seminal piece "The form of capital", where reputation was aligned with social capital as an "aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" (Bourdieu 1985). Among the many attempts to define corporate reputation, the definition offered by Fombrun and Van Riel (1997, 10) is the most frequently used: "Corporate reputation is a collective representation of a firm's past actions and results that describes the firm's ability to deliver valued outcomes to multiple stakeholders". Recently, Walker (2010, 370) added features to previous definitions and defined "overall corporate reputation as a relatively stable, issue specific, aggregate perceptual representation of a company's past actions and future prospects compared against some standard". This represents an important contribution to defining the overall characteristics of corporate reputation that came out of Walker's (2010) extensive review of new developments in the corporate reputation field. The new features of the definition could be regarded as the continuation of Fombrun's and Van Riel's definition in terms of time span, perceptions, relativity of reputation and the issues treated. However, it is obvious that the definition of overall reputation is not convenient for operationalization of any kind. Hardly any research could encompass all of the elements necessary to measure overall reputation. Current

research usually takes one standpoint (e.g. perception of experts and managers when it comes to official formative rankings). We have made an attempt to do so by computing the reputation quotient (Fombrun, Gardberg, and Server 2000) as a multi-stakeholder measure. This research treats corporate reputation as it is perceived by organizational customers.

The importance of reputation is increased in services, especially in the pre-purchase phase, but also in maintaining relationships once they are already built (Zeithaml 1988; Stahl, Matzler and Hinterhuber 2003). Research shows that offers from a company that already has a good corporate reputation in the market are preferred over offers from an unknown company (Bengtsson and Servais 2005). This means that corporate reputation helps customers in evaluating alternatives before their purchase. Reputation is hence a well established signal with a strong bonding effect (Kirmani and Rao, 2000). When it comes to the purchase and post-purchase experience, it is advised that corporate reputation should be built by using current customers/ clients as spokespersons and therefore utilizing the effect of word-of-mouth. Relationships between current and potential customers, other stakeholders and corporate reputation are hence evident through network principles or by using so-called customer reference relationships (Helm and Salminen 2010). According to Fombrun (1996), services are goods based on trust and purchased based on reputation. Therefore, service companies should make creating, maintaining and defending their reputation one of their main strategic determinants.

When it comes to the previous research on reputation, much of it focused on the importance of customers and other stakeholders. Wiedmann and Buxel (2005) showed that the influence of the general public on corporate reputation has increased. One of the possible reasons for this could be in the increased speed of information flow in today's society. A wide range of different constructs was used in research on reputation, from the company's performance and strategic benefits to its effects on customer loyalty, satisfaction, word-of-mouth and search for alternatives (Fornell et al. 1996; Deephouse 2000; Helm 2007; Shamma and Hassan 2009; Walker 2010; and more). All of these efforts underline the importance of the corporate reputation construct within the corporate marketing framework. However, little research focuses on the relationship of corporate reputation with customer perception of value, which is the focus of this research.

Customer Perceived Value in Organizational Relationships

The customer value construct is regarded as one of the priorities in marketing research and practice. Although its importance has been recognized (Holbrook 1994; Eggert and Ulaga 2002), discussions of its definition, the usage of unior multi- dimensional formulation and its representation are still open. There is surprisingly little agreement between researchers in the area of value research when it comes both to theoretical outline (lack of common theory) and practical implications (contradictory findings). According to La, Patterson and Styles (2005), limited attention is given to perceived value in the context of professional business-tobusiness services. Their research proves the mediating effect of customer perceived value (CPV) on the relationship between perceived performance and customer satisfaction.

In research on customer value, significant efforts were put in defining value drivers. Lapierre (2000) attempts to identify value drivers in customer perceived value formulated as the "difference between the benefits and the sacrifices perceived by customers in terms of their expectations, i.e. needs and wants". Through qualitative research, he identifies ten different value drivers and classifies them as product-, service- and relationship-related. He shows that customers in different segments assess most of the value drivers in a similar way. This research also found that flexibility and responsiveness (service-related drivers) are important as perceived value drivers.

Roig et al. (2006) analyzed customer perceived value in banking services. Together with a number of authors (e.g. Lin, Sher and Shih 2005) they support a multidimensional perception of value through its functional (practical or cognitive) and additional dimensions (emotional and social). However, when it comes to customer value for organizational customers, a uni-dimensional approach is more often advocated. Eggert and Ulaga (2002, 110) define value as "the trade-off between the multiple benefits and sacrifices of a supplier's offering, as perceived by key decision-makers in the customer's organization, and taking into consideration the available alternative suppliers' offerings in a special use situation". They also proved that despite there being a strong interaction between customer value and customer satisfaction, perceived value is not a substitute for satisfaction and that they should be conceptualized and measured as two distinct constructs.

As organizational customers purchase primarily based on rational, not emotional reasons, this research regards customer perceived value as a ratio of benefits and sacrifices perceived by customers (Zeithaml 1988; Hansen, Samuelsen and Silseth 2008) or as a uni-dimensional construct.

CONCEPTUAL FRAMEWORK

Corporate reputation and information sharing are seen as intangible drivers/ antecedents of customer perceived value. The model that is analyzed in this research study is shown in Figure 1.

The corporate reputation of service companies is directly related to benefits (an increase in corporate reputation is associated with an increase of perceived benefits) and at the same time inversely related to customer sacrifices (an increase in corporate reputation is connected to a decrease in perceived costs and sacrifices). Corporate reputation decreases purchase risk (Helm and Salminen 2010; Sheehan and Stabel 2010) and when the relationship between company and customer is already established, it increases trust and identification (Keh and Xie 2009), as well as attitudinal and behavioral outcomes (e.g. Bartikowski and Walsh, 2011), thus it is positively related to increased perceived benefits and perceived value. This also means that if its reputation is good, a company does not need to spend additional resources in overlooking the relationship (Hansen, Samuelsen and Silseth 2008) which lowers sacrifices and therefore increases perceived value. Therefore:

H1: Corporate reputation has a positive and significant influence on customer perceived value.

The paths of information sharing and customer perceived value are conceptualized in a manner similar to that for corporate reputation. If a company is open towards its clients and offers all important information in order to create a better relationship, it is establishing more trust in their relationship (Tai and Ho 2010; Zaheer, McEvily and Perrone 1998) and therefore helping to increase perceived benefits. Frequent and relevant information sharing also decreases the costs for the client to collect such information on its own (Lee, So and Tang 2009). Therefore:

H2: Information sharing has a positive and significant influence on customer perceived value.

Information sharing is the communication effect that nurtures the partners' relationship. Corporate communication creates corporate reputation (Gray and Balmer 1998), and as information sharing is part of the corporate communication set, it should therefore influence perceived corporate reputation as well. In line with previous relationships we propose the following hypothesis:

H3: The effect of information sharing on customer perceived value is mediated by corporate reputation.

Figure 1: Impact of corporate reputation and information sharing on customer perceived value



METHODOLOGY Measurement Development and Data Collection

Based on the literature review and conceptual framework, an empirical test of the hypothesized model was done. Organizational customers from a South East European country shared their views about banks they selected to build a relationship with and currently cooperate with. Variables for the model were operationalized on the basis of existing operationalizations with modifications and developments in the context of business services. The research instrument contained multi-item scales and was adapted from the existing literature (Selnes 1993; Noordewier et al. 1990; Hansen, Samuelsen and Silseth 2008). The corporate reputation and information sharing scale consisted of 3 items each, while the customer perceived value scale consisted of 6 items. Additional descriptive questions were posed to the respondents. The questionnaire was refined through two stages of pre-testing with two academic and three practice experts. For control variables, the number of employees (EMP), legal status (STAT), domestic/foreign business activity (ACT), size (SZ), number of customers (NOC), and number of products/ services (NOP) were used.

Data were gathered through online and e-mail surveys, and a convenience sampling method was used. The sample framework included firms listed on the Register of Business Entities of the Foreign Trade Chamber of Bosnia and Herzegovina. A total of 646 were successfully reached and 104 questionnaires were returned with a response rate of 13%. Data were gathered from the managers responsible for finance and/or accounting in 104 companies from different industry sectors. At the beginning of the survey, we stated that the key informant from the company should be the person who has day-to-day relationships with the selected bank they evaluate. These were finance/accounting managers in all of the cases. The context of bank services was chosen because it provides a good representation of organizational customers of the specialized professional service industry and includes a wide continuum of relationships from short to long term providing the desired variability of relationships (Tellefsen and Thomas 2005). The respondents were instructed to answer questions about the specific bank, bearing in mind the entire relationship they had had with that provider.

Information about the characteristics of the sample is presented in Table 1. Companies engaged in services represent 34% of the sample, while production companies represent only 19% of the sample. Most of the companies (64%) have less than 50 employees; company size was assessed by number of employees and also by self-reported size of the revenue, hence large companies in terms of revenue represent 28% of the sample. The companies are mostly engaged in foreign trading (58%), and 50% of the exporters are present at more than four foreign markets. In industry structure, most of companies are in wholesale and retail trading (21%); followed by the construction sector (14%) and IT sector (8%). The rest of the sample is fragmented along a wide spectrum of industries such as the food industry, chemical industry, media, transport, real-estate, or agriculture.

Table 1: Sample Characteristics

	Sample Cl	haracteristics	
Type of Buseiness Activity		Legal status	
Production	19.23%	limited liability	85.58%
Trade	27.88%	joint stock company	14.42%
Services	33.65%		
Combination	19.23%		
Number of Employees		Ownership	
Less than 50	64.42%	Domestic	73.08%
50 to 100	12.50%	Foreign	15.38%
101 to 500	18.27%	Domestic and Foreign	11.54%
More than 500	4.81%		
Size/Revenues		Number of Customers	
Small (less than 2 mio EUR)	37.50%	Less than 1,000	73.08%
Medium (2 mio-20 mio EUR)	34.62%	1,001 to 10,000	19.23%
Large (more than 20 mio EUR)	27.88%	10,001 to 100,000	1.92%
-		More than 100,000	5.77%
Domestic/Foreign Trading		Number of Products/Services	
Domestic and Foreign	57.69%	Less than 10	26.92%
Domestic	43.27%	10 to 50	24.04%
		51 to 100	10.58%
Number of Foreign Markets		More than 100	38.46%
Up to 2	25.00%		
2 to 4	25.00%		
More than 4	50.00%		

In order to ensure the generalizability of results on the country level, we used company size as a proxy. We scanned the structure of bank clients using available public reports for the year when the research was conducted. The top three banks hold 45% of the market share in the country (CBBH, 2011; Deloitte, n.d.), and the cumulative size of their business segments is approx. 7,500 clients for the corporate segment and 20,000 clients for the SME segment (Raiffeisen bank, 2011; UniCredit bank, 2011; Hypo-Alpe-Adria bank, 2011). The ratio between large enterprises and SMEs is 27:72, which is in line with the structure of companies in the sample.

Data Analysis

We first performed a confirmatory factor analysis (CFA) to test the measurement model. We used the covariance matrix as an input to LISREL 8.8. The goodness-of-fit indices for the CFA for the model was within an acceptable range: measures of absolute fit ($\chi 2 = 82.93$, df =60, p =0.08; $\chi 2/df=1.3$), the root mean square of error of approximation (RMSEA) = 0.03, and the standardized root mean square residual (SRMR) = 0.05 and GFI = 0.91 indicated a good fit, as well as incremental fit measures (NFI = 0.93, NNFI = 0.99, GFI = .91) and parsimonious fit measures (CFI = 0.99), which are acceptable values of fit indices according to Bollen (1989).

We then tested the item and construct reliability (Table 2). All items were reliable and all values for composite reliability were above the critical limit (0.60). According to a complementary measure for construct reliability, average variance extracted (AVE), all constructs demonstrated good reliability. We also tested the model for convergent and discriminant validity. Convergent validity was assessed by examining the t-test values of indicator loadings in the measurement model (Anderson and Gerbing 1988). All the t-values of the loadings of measurement variables on respective latent variables were statistically significant. Thus, convergent validity was supported. Discriminant validity was assessed with a chi-square test for pairs of latent variables constraining the correlation coefficient between the two latent variables to 1 (Anderson and Gerbing 1988). All unconstrained models had a significantly lower value of chisquare than the constrained models (Bagozzi and Phillips 1982), hence we can conclude that the latent variables were not perfectly correlated and that discriminant validity exists.

Table 2: Item and construct reliability

Item	C.R.	AVE	λ	t-value
Customer perceived value				
It is more valuable to us to do business with <i>the bank</i> than with other banks.			0.803	-
We consider it very advantageous to be a customer of <i>the bank</i> .	0.74	0.49	0.675	5.642
As a customer of <i>the bank</i> we get more value for money.			0.599	5.097
Corporate reputation				
The bank has a good reputation among your colleagues and friends.			0.820	-
The bank has a good reputation compared to their competitors.	0.88	0.71	0.911	9.470
The bank has a good reputation in the market in general.			0.786	8.097
Information sharing				
We are often informed by <i>the bank</i> about issues that might relate to our relationship.			0.780	-
<i>The bank</i> informs us rapidly on issues that might influence our future relationship.	0.90	0.74	0.915	9.956
<i>The bank</i> informs us rapidly on issues that might influence our day-to-day performance.			0.883	9.828
Model fit Chi-Square = 82.926 (P = 0.0266), d.f. =60, RMSEA = 0.03, CFI = 0.9	99, Stand	lardized F	RMR = 0.05	

Note: C.R.= composite reliability, AVE= average variance extracted, λ =indicator loadings.

Data were also tested for common method bias (Podsakoff and Organ 1986). We tested the presence of common method bias using Harman's single factor test. We ran a confirmatory factor analysis loading all items on one factor and compared the model fit. In both cases, the resulting one-factor measurement model had much worse fit indices than the proposed measurement model. Common method bias is therefore not present.

Structural equation modeling was used next, following the two-step approach (Anderson and Gerbing 1988), and using LISREL 8.8 (see Table 3). The fit statistics for the model indicate that the overall model has a statistically significant value for the chi-square test ($\chi 2 = 92.51$, df =66, p = 0.02), and the proportion between the chi-square value and degrees of freedom were within an acceptable range ($\chi 2$ /df =1.4). RMSEA (0.03) shows a good and standardized RMR (0.05), which is an acceptable fit. Among other absolute measures of fit, GFI (0.90), NFI (0.92), NNFI (0.98) and parsimonious measure of fit (CFI = 0.99) showed a good fit. Therefore, the overall fit of the model is good.

Table 3 shows the standardized path coefficients for the structural model. The parameter estimates for the relationship between corporate reputation and customer perceived value (H1) is statistically significant and consistent with the proposed direction in the hypotheses. The second hypothesis (H2) on the effect of information sharing on customer perceived value is not confirmed. To test for mediation (H3), we followed the procedure outlined in Holmbeck (1997). The fit of the direct effect (information sharing - perceived value) is adequate. Since the overall model (information sharing-corporate reputation-customer perceived value) provides an adequate fit, path coefficients (information sharing-corporate reputation and corporate reputationcustomer perceived value) are examined. The fit of the model (information sharing-corporate reputation-customer perceived value) is examined under two conditions: when

HYPOTHESIZED PATHS	Standardized Path Coefficients
H1: Corporate reputation - > Customer perceived value	0.616 ***
H2: Information sharing - > Customer perceived value	0.154
H3: Information sharing - > Corporate reputation	0.518 ***
Control variables:	
Number of employees	0.208
Legal status	-0.159 **
Domestic/foreign business activity	0.074
Size	-0.107
Number of customers	0.026
Number of products/services	-0.024

Table 3: Standardized path coefficients

Note: ** p <0.01, *** p < .001.

the path (information sharing-customer perceived value) is constrained to zero and when it is not constrained. The second model does not provide a significant improvement in fit over the first model (the difference in chi-square tests is 1.56 (1 d.f.), hence not significant). Therefore, the previously significant path (information sharing-CPV) is reduced to insignificance when the mediator of corporate reputation is taken into account. An additional Sobel test (Sobel, 1982) yielded significant results (test statistic is 3.56, std. error = 0.068, p=0.0003). In sum, the analysis revealed that reputation mediates the effect of information sharing on CPV. In terms of predictive power, exogenous variables of reputation and information sharing together with control variables (number of employees, legal status, domestic/foreign business activity, size, number of customers, and number of products/services) explain 51% of the variance in customer perceived value. The dependent variable of customer perceived value is therefore well explained by the independent and control variables.

DISCUSSION AND CONCLUSIONS

Reputation and information sharing are seen as signals that customers observe in the process of value creation, which is the end focus for corporate marketing. In this research we take the standpoint of signaling theory and empirically investigate the influence of providers' information sharing and corporate reputation on customer perceived value. Our proposed conceptual framework hence contributes to the theoretical knowledge for both signaling and customer perceived value research. Both observed signals are tied to corporate communications. This research points out that customer perceived value in the context of business service relationships is to a large degree a consequence of communication efforts.

Previous research suggests that corporate reputation and information sharing are important corporate marketing concepts that help increase value for a company's stakeholders, in our case for organizational customers (Eggert and Ulaga 2002; Hansen, Samuelsen and Silseth 2008; Powel 2011). This analysis enabled us to propose a model where both of the observed corporate marketing mix elements are hypothesized to have a positive influence on customer perceived value (CPV). Additionally, an indirect effect of information sharing on CPV, through corporate reputation as a mediator, is evident from our empirical research. In this way we help in better understanding cause and effect relationships between value antecedents and CPV.

According to empirical testing and in line with our hypothesis, corporate reputation has a positive and significant influence on customer perceived value. This finding could be interpreted to suggest that corporate reputation evolves as an important intangible antecedent of customer perceived value. The influence of corporate reputation comes as no surprise and is in line with previous research. A bank's corporate reputation therefore influences organizational customer perception about the value of the bank's service. Furthermore, as customer perceived value is linked

to satisfaction and loyalty, corporate reputation can have an indirect influence also on customer satisfaction and loyalty (Eggert and Ulaga 2002; Chi, Yeh and Jang, 2008). The influence of corporate reputation on CPV could also be analyzed separately in the pre-purchase and purchase phases in the service delivery process. Before purchase, customers often do not have enough competences to estimate quality and the advantages of a specific bank's service and often rely on reputation, especially if they are using the service for the first time. Therefore, corporate reputation could serve customers as an instrument for decreasing perceived risk and for decreasing the "fear" of unwanted consequences. During the purchase, or in the case where long-term business relationships and networks already exist, good corporate reputation implies that there is a mutual trust and that established relationships will be maintained. In both cases, we see that corporate reputation leads to an increase of customer perceived value (through decreasing perceived costs/ sacrifices and increasing perceived benefits). We argue that established corporate reputation represents a competitive advantage for the company and a significant barrier to entry for new competitors.

Contrary to our expectations, the direct relationship between information sharing and CPV is not significant. Although we expected that information sharing as a form of direct communication is crucial for customer value creation, we could not find any significant direct effect in this regard. We argue that this finding is even more relevant for future research than the findings related to the first hypothesis. It is in line with the assumption that the bonding effect of information sharing is a weaker signal relative to corporate reputation. The lack of significant results for the second hypothesis leads us to additional questions: What is the purpose of information sharing as a special form of corporate communication? In what ways is information shared? What is the content of the information that is provided?

From the results obtained we cannot claim that information sharing directly influences the perceived increase of benefits and decrease of costs from a service. However, when we check for indirect influence, a relationship between customer perceived value and information sharing is indeed mediated by corporate reputation. We may even say that corporate reputation assumes a significant part of information sharing's signaling power. This result also brings a new understanding of the order of customer perceived value antecedents. Information sharing and corporate reputation are not in the same line of order. This contrasts with the findings of Hansen et al. (2008), who propose the same line of order in their study. At the same time, all antecedents except for corporate reputation are reported as either insignificant or with low loadings.

We controlled our model for different firmographic characteristics: number of employees, legal status, domestic/foreign business activity, size, number of customers, and number of products/services. None of the variables except for legal status turned out to be significant in our model. This shows that the proposed model relationships are consistent across different groups in the sample, except for the legal status related groups. Our sample was comprised of limited liability and joint stock companies. Joint stock companies perceive the signals from banks differently than limited liability companies. We conclude that the influence of corporate reputation on customer perceived value and the indirect effect of information sharing on customer perceived value are lower for joint stock companies than for limited liability companies, which is interesting due to the fact that banks tend to devote much more attention to joint stock companies (constituting the so-called "corporate" section in banks) than to limited liability companies. We may conclude that joint stock companies to a higher degree take corporate reputation and information sharing signals for granted and hence the effect of these signals is not as strong as it is in the case of limited liability companies.

The practical implications of this paper for service companies are multiple: when creating a strategy and throughout its implementation based on elements of the corporate marketing framework, it is necessary to take into account customer perceived value. Customers, both individual and organizational, assess what they receive and compare it with what they invest. Service companies should evaluate whether this assessment is in line with what is aimed at from the company's side. This is especially important because CPV is also used as a basis for the decision whether to stay with the company or to search for alternatives (Hansen, Samuelsen and Silseth 2008). Based on our empirical findings we can argue that the influence of corporate reputation on CPV is unquestionable and that service companies should put maximum effort into building, managing, maintaining and improving their reputation. On the other hand, information sharing is not significant for CPV directly, which poses several additional questions outlined in the discussion. Certainly, finding answers to these questions requires more research and additional qualitative insights.

Although we were able to explain a significant amount of variance in CPV and controlled for the size of companies in terms of number of employees, their legal status, domestic/foreign business activity, number of customers, and the number of products/services they offer, the study is still limited to two of the six Cs of corporate marketing. The present research also has limitations in terms of the size of the sample. Hence, new surveys should be conducted with a broader scope and could possibly include comparisons between countries and among different service provider industries aside from banks, as in the present case.

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LOW SAVINGS RATES IN THE ECONOMIC COMMUNITY OF WEST AFRICAN STATES (ECOWAS): THE ROLE OF THE POLITICAL INSTABILITY-INCOME INTERACTION

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Abstract

This paper employs PCSE, OLS and TSLS with random effects to investigate the impact of the political instabilityincome interaction on savings in ECOWAS countries during the period 1996-2012. The empirical evidence illustrates that higher political stability is associated with higher savings and income levels moderate the adverse effect of political instability on savings, indicating that the impact of political instability on savings is higher in low income ECOWAS countries, but lesser at higher levels of income. The paper recommends the promotion of political stability via increases in incomes to raise savings in the ECOWAS region.

Keywords: savings, political instability.

JEL classification: 01, 011

INTRODUCTION

The role of savings in economic development has been discussed extensively in the literature (for instance, see Lucas 1988; Romer 1986; Solow 1956). Despite the importance of high savings rates, World Development Indicators (WDI) reveal that savings rates declined and/or fluctuated across developing regions of the world, including East Asia and the Pacific, the Middle East and North Africa, Latin America and the Caribbean, Europe and Central Asia, and Sub-Saharan Africa (SSA) between 1970 and 2010. In addition, the ECOWAS region recorded little success in savings mobilization compared to other developing regions during the same period. Although inadequate savings undermines a country's economic development (Adewuyi, Bankole, and Arawomo 2010) increased access to international capital can cushion the adverse effects of lower savings in an economy. Unfortunately, many SSA countries (including ECOWAS) are facing declines in international capital inflow as a results of factors that include lending constraints (Elbadawi and Mwega 2000), while the recent global financial crisis has further reduced the countries' access to external resources.

Besides low savings, the ECOWAS region has witnessed political instability since the 1960s, when a number of countries attained independence, and up through the late 1980s due to frequent military interferences in politics (Edi 2006). The region has also seen changes in government (elected or military) more than any other region on the African continent due mainly to military coups. In the year 1985, for instance, 11 ECOWAS countries had military governments (Edi 2006). Other than military coups, ethnic and religious crises including civil wars appear to be common characteristics of ECOWAS countries. In particular, there were civil wars in Liberia (1989-96 and 1999-2003), Sierra Leone (1991-2002),

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School of Economics, Finance and Banking, Universiti Utara Malaysia Email: mukhriz@uum.edu.my Guinea Bissau (1998) and Cote D'Ivoire (2002-2007 and 2010-2011) (Zounmenou and Loua 2011). Also, between 2009 and 2012, the military staged coups in Guinea Bissau, Mali and Niger, while Nigeria continues to contend with ethno-religious crises. The political crises facing these countries are due to lack of economic opportunities, youth unrest, organized crime, piracy, endemic corruption, higher spending on the military than basic services, disrespect for the rule of law and democratic principles by the ruling elite, human rights abuse, military interference in politics, and lack of institutional reforms (Akenroye 2012).

Though the literature has not adequately addressed the role of political instability in savings mobilization (Da Silva 1998), political instability may be an important determinant of savings, particularly in ECOWAS countries. During periods of political instability, government and policy makers usually make sub-optimal and short-term macroeconomic policies, including switching policies, and in the process create volatility which has negative consequences on the economy (Aisen and Veiga 2013; Alesina et al. 1996). These conseguences include low production and income, and declining welfare (Alesina and Perotti 1996), as well as poor investment and growth (Barro 1991; Campos and Nugent 2003) all of which tend to lower savings. Da Silva (1998) opined that instability increases a state's discretionary power to the extent that the state violates the individual's property rights or fails to enforce their rights, including non-guaranteeing of contracts such as savings and investment. Political instability also increases the perceived uncertainties/risks associated with savings and investment because it may prevent people from enjoying the returns/incomes from their savings/investment, and therefore lead to lower future savings.

Edwards (1996) argued that a higher probability of changes in the government/party in power (political instability) reduces the incentives to save. The author maintained that, since savings only translates after a lag into investment, production and consumption, projects initiated by the government in power today may be completed and its benefits realized at a later date when the opposition party may have assumed power. If this happens, the credit of such projects usually goes to the opposition, even though it was initiated by the party previously in power. In addition, Edwards (1996) pointed out that political polarization (differences in political parties' preferences) influences a government's decisions to save. If the preferences of the party in power are similar to those of the opposition, there is a high tendency that the party in power will save (even if there is a high probability of changes to the party in power) and vice versa. Therefore, it is common to see lower savings in politically unstable countries.

Given that income level varies across countries, the impact of political instability on savings may depend on income level. Mauro (1995) asserted that low income (poor) countries tend to be politically unstable, thus suggesting that high income moderates (lowers) the impact of political instability in an economy. It also indicates that at high income levels countries may likely have a politically stable environment which in turn enhances overall economic performance, including promoting savings mobilization. Therefore, it is expected that for low income ECOWAS countries, higher income would lead to an improvement in political stability and higher savings.

The objective of this paper therefore is to examine the impact of political instability-income interaction on savings in the ECOWAS. We believe that focusing on the ECOWAS region will reduce the problem of heterogeneity found in many cross-country studies (Gyimah-Brempong 2002). The remainder of the paper is structured as follows. Section two highlights savings and political instability patterns in ECOWAS countries, while section three reviews the empirical literature on savings. Section four contains a theoretical framework and model, and section five presents results and discussion. Section six concludes the paper.

SAVINGS AND POLITICAL INSTABILITY IN ECOWAS COUNTRIES

As mentioned in the introductory section, the ECOWAS region has recorded little success in the mobilization of savings required to boost investment and growth. For instance, ECOWAS savings rates were lower than those of Latin American and the Caribbean, SSA and the world averages between 1970 and 2010. Similarly, two regions - East Asia and the Pacific and Europe and Central Asia, had higher savings rates compared to ECOWAS in 1980-2010 and 1990-2010, respectively (Figure 1).

In addition, at the individual level, many ECOWAS countries did not fare better as their savings rates were lower than both regional and world savings rates between 1970 and 2010. Also, ECOWAS countries' savings rates occasionally fluctuated and declined during the same period (Figure 2). Elbadawi and Mwega (2000) attributed the low savings rates in SSA countries (including ECOWAS) to low income per capita, a high young-age dependency ratio, and high dependence on aid.

Coupled with inadequate savings rates, is the political instability (military coups, political violence, civil wars, and ethno-religious crises) that has ravaged the region since the 1960s and has continued unabated. The rising political crisis and uncertainty in many developing countries have attracted the interest of notable organizations, institutions and groups, who later devised the mechanisms to measure the extent of perceived political uncertainties or risks in each country. One such organization is the Political Risk Service Group, which publishes the International Country Risk Guide (ICRG). The ICRG political risk rating (PRR) ranges between 0% and 100%. A PRR of 0.0%-49.9% implies a very high risk; 50.0%-59.9% a high risk; 60.0%-69.9% a moderate risk; 70.0%-79.9% a low risk; and 80.0% or more indicates a very low risk. Figure 3 shows the PRR for ECOWAS countries from 1999 to 2011. Gambia and Ghana appeared to be the least politically risky among ECOWAS countries, as their PRR was 60% and above during 1999-2011, but Gambia's recent rating suggests that it is heading towards becoming a high risk country. Also, Burkina Faso was rated above many countries in the region, with an average PRR of 60% during the same period. In the same vein, Sierra Leone had a better





Source: Authors computation base on the WDI data





Source: Authors computation base on the WDI data

political environment compared to most of its neighbors, as its rating stood at an average of 60%-65% during 2004-2010.

In the case of Cote D'Ivoire and Guinea, their PRR indicates that political instability is on the rise. For example, Guinea's PRR fell from almost 50% in 1999-2005 to less than 50% in 2006-2011, while Cote D'Ivoire's PRR declined continuously from 1999 to 2011. The PRR of Guinea Bissau stood at 51%-57%, but recent ratings point to a worsening political situation in the country. Liberia's low PRR reflects the instability faced by the country in the past, but the rating has shown a gradual improvement starting from 2006. Unfortunately, Africa's most populous and richest country (Nigeria) had a very low PRR (less than 50%) from 1999 to 2011, signaling a highly politically unstable environment. Other countries such as Niger and Senegal fared better than Nigeria as they both had a PRR of 50%-60%. Though Mali's PRR was 60% during 1999-2006, it has continued to decline since 2007.

In summary, available evidence suggests that low income ECOWAS countries are politically unstable and have failed to mobilize the higher savings needed to raise





Source: Authors computation base on the ICRG data. Benin and Cape Verde are excluded

investment and growth. It is not surprising, therefore, that the region is highly underdeveloped, with unfavorable economic conditions such as low income, high poverty, and unemployment, to mention just a few.

REVIEW OF THE EMPIRICAL LITERATURE ON SAVINGS

Many scholars have attempted to investigate the determinants of savings across countries. For instance, Kelly and Mavrotas (2003) investigated the determinants of savings in 17 African countries with a primary focus on financial development. The authors employed a panel co-integration method and discovered that financial sector development has a positive effect on savings in the countries considered in their study. Also, Agenor and Aizenman (2004) employed the instrumental variable technique to examine the determinants of savings in SSA countries during the period 1980-1996. The results show that the terms of trade and income per capita have a positive effect on savings, while government savings, financial development and foreign savings have a negative effect on savings.

Hondroyiannis (2006) assessed the main determinants of savings in 13 European countries from 1961 to 1998 by employing the panel co-integration technique. The author confirmed a positive effect of old-age dependency, government budget, growth of real disposable income, real interest rate and inflation rate on savings. In addition, the author discovered that liquidity constraints and financial development have a negative impact on savings. Gutiérrez (2007) studied the determinants of savings in 9 Latin American countries from 1990 to 2003, using pooled OLS, fixed effects and random effects estimation techniques. The results illustrate that inflation rate, GDP growth, government balance, and financial depth have a positive impact on savings, while foreign savings has a negative effect on savings. Adewuyi, Bankole, and Arawomo (2010) examined the determinants of savings in ECOWAS countries during the period 1980-2006, using pooled OLS, fixed effects and random effects methods of analysis. The authors confirmed the negative impact of gross domestic income per capita, deposit rate, financial development, inflation, budget deficit and terms of trade on savings, while they showed that life expectancy has a positive effect on savings.

There are not many studies conducted to investigate the

impact of political instability on savings. But the few studies that have examined the relationship between the variables revealed that political instability has a negative impact on savings. For instance, Venieries and Gupta (1986) did a crossnational study to examine the impact of income distribution and socio-political instability on savings. The authors concluded that socio-political instability has a negative impact on savings. Similarly, Edwards (1996) established that political instability has a negative influence on savings in the sample of countries considered in his study. Also, Fielding (2003) evaluated the effect of several indicators of political instability on macroeconomic performance in Israel. The author found a significant and negative effect of political instability on the saving behavior of Israelis. However, Radelet, Sachs, and Lee (1997) did not find any significant relationship between political factors and saving rates in a sample of 72 countries.

It is glaring that researchers have not paid adequate attention to the savings and political instability relationship, particularly in the ECOWAS, one of the world's most politically unstable regions and least successful in savings mobilization. In fact, Edwards (1996) considered only 4 ECOWAS countries, namely - Ghana, Nigeria, Sierra Leone and Togo, while Venieries and Gupta (1986) included 5 countries -Cote D'Ivoire, Niger, Nigeria, Senegal, and Sierra Leone in their analysis, thus ignoring other countries that are considered to be highly politically unstable in the region. Also, to our knowledge, researchers have yet to examine whether the impact of political instability on savings depends on income level in ECOWAS countries. Thus, this paper extends the literature by investigating the impact of political instability on savings, including examining whether the impact of political instability on savings depends on income level in the ECOWAS region.

THEORETICAL FRAMEWORK AND MODEL

The savings model used in this paper was formulated on the basis of the ideas of Friedman's (1957) Permanent Income Hypothesis (PIH) and Modigliani and Brumberg's (1954) Life Cycle Hypothesis (LCH). In explaining the LCH, Ando and Modigliani (1963) emphasized that individuals accumulate wealth during their working years and make provisions for old age when they will no longer be able to earn income. Specifically, during young age, individuals earn low income relative to their consumption, and borrow to finance their consumption needs. In the second phase of their lifetime, individuals earn income higher than their consumption, pay back their debt and save/invest the remainder. The final phase is when individuals attain retirement (non-working) age and their incomes fall to zero. Thus, they will fall back on past savings or returns from their investment in order to maintain their consumption. Dirschmid and Glatzer (2004) asserted that the LCH assigns an important role to income and income growth, and the age structure of the population in explaining savings rates. On the other hand, the PIH states that permanent wealth is more important than current disposable income in explaining individuals' consumption.

Another important assumption of the PIH is that permanent changes in income exert more influence on consumption than temporary changes in income. An important determinant of permanent income is individuals' assets categorized into both human (such as education) and non-human assets (for example, bonds, property, etc.).

Both the LCH and PIH appear to be identical in many aspects because they assume that forward-looking consumers plan for their future consumption by making an attempt to smooth-out consumption as much as they can due to variations in their income streams (Jappelli 2005; Pistaferri 2009; Rao and Sharma 2007). The obvious difference between the theories is that the LCH assumes that individuals do not live forever, while the PIH assumes that individuals live forever (Pistaferri 2009). And since individuals do not live forever in real life, both theories can be considered as one.

Given the issues raised above, an ideal savings model would consists of variables such as income (PCY) and income growth (GPCY), and age structure of the population (AGE). Moreover, since it is assumed that consumers can borrow and save/invest part of their income, it implies that real interest rate (RIR) is also important when making consumption/savings decisions and should be included in the savings model. Thus, the savings (GSR) model is specified as:

Following previous studies, the savings equation above is slightly modified to incorporate other important variables. Given that agriculture (AGR) is the major occupation in ECOWAS countries, the variable is also included in the model. Furthermore, since income is more uncertain in developing countries than developed countries (Athukorala and Sen 2004), inflation (INF) is included in the model to capture the level of uncertainty in the ECOWAS. Moreover, given that low income (poor) countries tend to be politically unstable (Mauro 1995) and have lower savings rates, it is possible that income level moderates the impact of political instability on savings, so that in high income countries the effect of political instability on savings will be lower but higher in low income countries such as ECOWAS. Thus, political instability (POL) and a political instability-income interaction (POL*PCY) are included in the savings model. The general savings model is:

$$GSR = \beta_0 + \beta_1 PCY + \beta_2 GPCY + \beta_3 POL + \beta_4 RIR + \beta_5 INF + \beta_6 AGE + \beta_7 AGR + \beta_8 POL * PCY + U \dots \dots 2$$

The savings model above will be estimated using the panel model specified as follows:

Where *it* is the time period *t* in country *i*, and U is the error term. The variables are defined or measured as follows:

GSR is the gross savings rates and dependent variable. It refers to gross (national) savings as a percentage of GDP. The data were collected from the WDI. However, data on Nigeria were obtained from the Central Bank of Nigeria (CBN) due to its unavailability in the WDI. Although the LCH focuses on individual savings, it has been extended to study aggregate savings (see Bloom, Canning, and Graham 2003; Bloom et al. 2007; Cook 2005). For instance, Bloom, Canning and Graham (2003) argued that it is difficult to aggregate over individual savings, and therefore used aggregate savings rates in their analysis. In line with this, Cook (2005) claimed that data on aggregate savings rates are widely available and are also likely to be more consistent. Thus, we employed aggregate savings rates.

PCY refers to income (GDP) per capita. The data were collected from the WDI. The subsistence-consumption theories argue that savings rates tend to be higher in high income countries and lower in low income countries (Metin-Ozcan, Gunay, and Ertac 2003). Thus, we expect a negative relationship between income per capita and savings rates in ECOWAS countries.

GPCY is the income (GDP) growth rate. The data were collected from the WDI. The PIH predicts a negative relationship between income growth and savings because forward looking consumers anticipate future increases in their permanent income, and therefore dissave against future earnings. But the LCH asserts that increases in income growth have a positive effect on savings, since income growth increases the savings of the working population relative to the non-working population (Metin-Ozcan, Gunay, and Ertac 2003). Overall, we expect the relationship between income growth and savings rates to be either positive or negative.

INF refers to inflation rate. The data were collected from the WDI. Athukorala and Sen (2004) suggested that the impact of inflation raises uncertainty about future incomes, leading to higher savings for precautionary purposes, particularly for households in developing countries whose income prospects are much more uncertain than their counterparts in developed countries. Also, if individuals seek to maintain a target level of wealth or liquid assets relative to income, savings will rise with inflation. Similarly, Metin-Ozcan, Gunay, and Ertac (2003) suggested that macroeconomic uncertainty (captured by inflation rate) is expected to have a positive effect on savings, as people try to hedge against risk by increasing their savings. This view is supported by Skinner (1988) and Zeldes (1989). In the same manner, Hondroyiannis (2006) suggested that in societies where income prospects are less uncertain, inflation may results in lower savings. Thus, we expect a positive relationship between inflation and savings rates.

RIR is the real interest rate. It is the nominal deposit rate adjusted for inflation rate. The data were obtained from the WDI. The LCH asserts that a rising interest rate raises the opportunity cost of current consumption, making the individual consumer reduce current consumption and increase savings (substitution effect). But if a consumer is a net lender, increases in the interest rate lead to higher income and consumption, and results in lower savings (income effect). If the substitution effect outweighs the income effect, the relationship between interest rate and savings would be positive (Athukorala and Sen 2004; Nwachukwu and Egwaikhide, 2007). Therefore, we expect the relationship between savings rates and real interest rate to be either positive or negative.

AGE refers to age dependency rate. This variable is defined as the ratio of the population below 15 years plus the population over 65 years to the working population (aged 15-64 years). The data were obtained from the WDI. In explaining the LCH, Ando and Modigliani (1963) argued that individuals accumulate wealth during their productive/ working years and save (or make provisions) for retirement, since income is expected to fall during retirement. Thus, if the working population rises relative to non-working (dependent) population, savings will rise and vice versa. Thus, we expect either a positive or negative relationship between age dependency and savings rates.

AGR refers to agriculture. It is measured as agriculture value as a percentage of GDP. The data were obtained from WDI. Given that a larger percentage of ECOWAS population engage in agricultural activity, it is obvious that many face uncertainty in their future income. Interestingly, researchers have pointed out that price fluctuations occasioned by the recent global financial crisis, increased uncertainty and risk and affected the economic status of commodity producers, consumers and traders (Pop, Rovinaru, and Rovinaru 2013). Skinner (1988) suggested that greater uncertainty about future incomes compels consumers to set aside some resources for precautionary purposes. Chowdhury (2001) and Khan and Hye (2010) discovered that agricultural sector share in GDP has a positive impact on savings. Thus, we expect a positive relationship between agriculture share in GDP and savings rates.

POL refers to political instability. The variable has been measured by the number of people killed in domestic mass violence as a fraction of the total population, number of successful coups, number of attempted but unsuccessful coups, or number of politically motivated assassinations (Alesina and Perotti 1996). However, due to the unavailability of such rich data for ECOWAS countries, the variable is proxied by the ICRG political risk rating or index. The ICRG index has many components, including political leadership, military presence in politics, external conflicts, organized religion in politics, racial and national tension, law and order, political terrorism, civil war, and political party development. Two other indicators were employed to serve as consistency and robustness checks for the results obtained using the ICRG index. They include the Global Insight Business Conditions and Risk Indicators (WMO) index, and the Cingranelli-Richards Human Rights Database and Political Terror Scale (HMO) index (obtained from Worldwide Governance Indicators). The ICRG index ranges between 0% and 100%, while the HMO and WMO indices range between 0 and 1. Higher values indicate higher political stability (lesser political instability) and vice versa. Political instability disrupts production activity, destroys physical capital and displaces human capital, leading to high unemployment and lower savings (Le 2004). On the other hand, political instability may promote precautionary savings to address great risks ahead, so that higher instability would be associated with higher savings. The few studies conducted to assess the impact of political instability on savings indicate that political instability has a negative effect on savings (see Edwards 1996; Fielding 2003; Venieries and Gupta 1986). Thus, we expect a positive relationship between higher political stability (higher political risk rating) and savings rates.

POL*PCY refers to the political instability-income interaction and indicates that the impact of political instability on savings depends on income levels. Though political instability tends to have adverse impact on savings, we expect income levels to moderate its impact on savings. Thus, the impact of political instability on savings should be lesser in higher income countries, but higher in low income countries such as ECOWAS. A potential problem that may arise using this variable is multicollinearity because the interaction term is calculated from POL and PCY, which are also present in the model. Therefore, multicollinearity is eliminated by regressing POL*PCY on POL and PCY, and the residuals series is used in our estimation.

It is important to mention that, of the 15 countries that make up the ECOWAS, only 13 were considered in this study. The remaining two (Benin and Cape Verde) were left out due to the unavailability of data on political instability indices for the countries. Moreover, we are missing data on other variables (in particular savings rates) for some years in certain countries, such as Liberia and Guinea Bissau. Thus, we are left with an unbalanced dataset of 121 observations. The period covered is 1996-2012.

PRESENTATION OF RESULTS AND DISCUSSION

In the estimation of panel models that involve time-series and cross-sectional data (TSCS), one usually encounters problems of contemporaneous correlations and heteroscedasticity (Beck and Katz 1995). Therefore, any inferences drawn based on the standard errors obtained using the ordinary least squares (OLS) estimator will be misleading. A better alternative is the Generalized Least Squares (GLS) method (Parks 1967). Employing the GLS to estimate models of TSCS requires one to have knowledge of the error process (auto-correlation and heteroscedasticity parameters), but this is usually not possible (Beck and Katz 1995). A superior method of estimation is the Feasible GLS (FGLS). Unfortunately, the FGLS tends to understate the exact variability of the estimates of the standard errors of the coefficients (Beck and katz 1995).

The problems highlighted above can be avoided by using the Panel Corrected Standard Errors (PCSE) method (Beck and Katz 1995). The PCSE generates robust covariances and accounts for deviations from the errors, leading to the ability to draw meaningful inferences. Also, it has been suggested that the PCSE performs better than the FGLS (Jonsson 2005) and it has been employed in recent studies (see, Bjørnstad and Nymoen 2008; Hanke and Hauser 2008; Juttner, Chung, and Leung 2006; Silaghi and Ghatak 2011). Thus, we employed the PCSE to estimate the savings models for ECOWAS countries. In addition, we conducted redundant fixed effects and Hausman tests to select the most appropriate of the competing models, which included pooled OLS, fixed effects (FE), and random effects (RE). The redundant fixed effects test tests the hypothesis of no time-specific effects in the estimates. If the test reveals the presence of effects, it is highly probable that the OLS estimator will not be a good predictor of the cross section units over the time period. Similarly, the Hausman statistic is used to test the hypothesis that the RE estimates are consistent and preferable to FE estimates.

Endogeneity

Studies have indicated that income GDP per capita/income growth is endogenous to savings (Baldé 2011; Loayza, Schmidt-Hebbel, and Servén 1999; Sinha and Sinha 1998), suggesting that while increases in income per capita/income growth results in higher savings, rising savings also leads to higher income per capita/income growth. The causality between savings and income/growth would lead to correlation between the control variables and disturbance term, and therefore violates the assumptions of the linear regression model (Baldé 2011). Besides, it is difficult to determine the impact of the individual variable on savings, and estimating such a relationship leads to a potential endogeneity bias.

One way to solve this problem is to employ the Two Stage Least Squares (TSLS)-instrumental variables method to estimate the relationship between savings and its potential determinants. The technique involves finding variables that are highly correlated with the endogenous variable, but uncorrelated with the disturbance term. While it is somewhat difficult to select the appropriate instruments to control for endogeneity, employing the lagged values of explanatory variables which are also endogenous can be very helpful (Baldé 2011). For instance, Baldé (2011) employed the TSLS-instrumental variables method, which takes into account FE to estimate the relationship between savings/ investment and aid and remittances in SSA. The author used income per capita lagged by two periods as an instrument for income per capita. Thus, we follow Baldé's approach in our estimation by using the TSLS. The Hausman test was also employed to determine whether FE or RE is to be used along with the TSLS estimator. Lastly, White's method was used to correct for heteroscedasticity, and TSLS estimates were employed to serve as a consistency and robustness check for PCSE estimates.

Presentation of Results

Prior to estimation of the savings model, we conducted a correlation test on political instability indicators. The correlation matrix reported in Table 1 suggests a strong correlation between ICRG and WMO (r=0.76), ICRG and HMO (r=0.64), and HMO and WMO (r=0.53). These findings suggest that the indicators are measuring the same thing.

Table 1: Correlation matrix for	political instability indicators
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	ICRG	WMO	HMO
ICRG	1.00	-	-
WMO	0.76	1.00	-
HMO	0.64	0.53	1.00

Note: ICRG is International Country Risk Guide, HMO is Cingranelli-Richards Human Rights Database and Political Terror Scale, and WMO is Global Insight Business Conditions and Risk.

The results of estimations and tests conducted using the ICRG index are presented in Table 2. The result of the redundant fixed effects test indicates the presence of effects in the estimates. The result of the Hausman test demonstrates that the RE estimates are preferable to FE estimates. The results

of the RE estimation reveal that higher political stability (captured by a higher political risk rating) and the political instability-income interaction have a significant positive effect on savings. Other important determinants of savings include the inflation rate and agricultural share in GDP, with positive and negative effects, respectively.

In an attempt to check the consistency and robustness of the results obtained using the ICRG index, we re-estimated the savings models using the WMO and HMO indices. Although not presented here, the results are consistent.

We went further to estimate our relationship using the OLS and TSLS estimators taking into account RE, as the results of the Hausman test indicated that models with RE would be preferable. Using the ICRG index, the results presented in Table 3 indicate that higher political stability has a significant positive effect on savings, and the impact of political instability on savings is higher at low income levels

Variables	Pooled OLS	FE	RE
Constant	-1.6926	84.181***	13.4614
	(15.246)	(27.3159)	(18.4148)
POL	0.1460**	0.1579*	0.1314**
	(0.0642)	(0.0899)	(0.0773)
РСҮ	0.0043**	0.0026	0.0039
	(0.0021)	(0.0026)	(0.0025)
POL*PCY	-0.0001**	-0.0009**	-0.0008**
	(0.0001)	(0.0001)	(0.0001)
GPCY	0.1438	0.1211	0.1170
	(0.1159)	(0.1208)	(0.1093)
AGE	0.1359	-1.975**	-0.2055
	(0.2982)	(0.5685)	(0.3806)
INF	0.325***	0.2190	0.3085*
	(0.0950)	(0.2467)	(0.1612)
RIR	0.2140*	0.2042	0.2320
	(0.1230)	(0.2550)	(0.1726)
AGR	-0.218**	0.1471	-0.166**
	(0.0673)	(0.1105)	(0.0776)
R ²	0.45	0.59	0.34
Redundant FE Test	-	3.46	-
		(0.0001)	
Hausman Test (X ²)	-	0.00	-
		(1.0000)	
F-Stat.	11.54	8.19	7.33
	(0.0000)	(0.0000)	(0.0000)
Obs.	121	121	121

Note: *, **, *** indicates significant at 10%, 5%, and 1%, respectively. Columns 3 & 4 are estimates generated using the robust coefficient covariance method, i.e. PCSE (Cross-section SUR). Standard errors are in parenthesis. A positive sign of POL indicates higher political stability (lesser political instability).

but lesser at high income levels. Other than our variables of interest, income per capita, inflation rate, and real interest rate all have a significant positive impact on savings, but the effect of agriculture on savings is negative. We also used the WMO and HMO indices to check for the consistency of the results obtained using the ICRG index. The results (though not presented here) are consistent.

Overall, the results of PCSE, OLS, and TSLS with RE illustrate that higher political stability is associated with higher savings, and higher income tends to reduce the impact of political instability on savings. Moreover, the OLS and TSLS estimates are identical for our variables of interest, indicating that the OLS estimates are consistent and unbiased. Therefore, endogeneity is not a problem in the estimated relationships, and there is no simultaneity between savings and income per capita/income growth.

Table 3: Estimation results using the ICRG index (Dependent variable: GSR)

Variables	OLS/RE	TSLS/RE
Constant	13.4614	-4.0378
	(16.1078)	(20.6255)
POL	0.1314**	0.2378**
	(0.0605)	(0.1141)
PCY	0.0039	0.0093*
	(0.0030)	(0.0049)
POL*PCY	-0.0008***	-0.0007***
	(7.68E-05)	(9.33E-05)
GPCY	0.1170	-0.7784
	(0.0931)	(0.8461)
AGE	-0.2055	-0.0484
	(0.3534)	(0.3985)
INF	0.3085*	0.3044*
	(0.1741)	(0.1817)
RIR	0.2320	0.4597*
	(0.1515)	(0.2452)
AGR	-0.1663**	-0.0225
	(0.0761)	(0.1180)
R ²	0.34	0.03
F-Stat.	7.33	8.73
	(0.0000)	(0.0000)
Obs.	121	121

Note: *, ***, **** indicates significant at 10%, 5%, and 1%, respectively. White's method correction was used to solve the problem of heteroscedasticity. Standard errors are in parenthesis. A positive sign of POL indicates higher political stability (lesser political instability).

Discussion

The results reported above reveal that higher political leads to higher savings in ECOWAS countries. The finding confirms the outcome of previous studies (see, Edwards 1996; Fielding 2003; Venieries and Gupta 1986). Thus, declining political unrest/violence, higher stability in government, lesser ethno-religious conflict, etc., reduce uncertainties and risks associated with savings, and therefore promote savings mobilization. Similarly, higher political stability promotes the enforcement of property rights and the guarantee of contracts. This increases the assurance that individuals will enjoy the returns/incomes on their savings/investment, leading to future higher savings. A politically stable atmosphere enhances production through higher savings and investment, to mention just a few. The increased output growth leads to higher employment and income, and savings.

The political instability-income interaction is significant and the variable has the expected sign (especially in the estimation that considered the ICRG index). This suggests that income level moderates the adverse effect of political instability on savings, so that at higher income levels the impact of political instability on savings is less. Since it has been suggested that low income (lack of economic opportunities) is a major reason for political instability in ECOWAS countries (Akenroye 2012), higher incomes (and improvement in economic conditions) will reduce discontent and dissatisfaction among the citizens, including socio-political unrest and frequent changes in government. In fact, an improvement in incomes (economic conditions) has been found to promote political stability, including sustaining democracy (Adelman and Morris 1968; Feng 1997; Helliwell 1994). Thus, higher income will reduce political instability in ECOWAS countries and promote savings mobilization.

Income per capita has a significant and positive effect on savings. This finding lends support to those reported in previous studies in developing countries (see Collins 1991; Elbadawi and Mwega 2000). Thus, rising income raises households' ability to finance their consumption and saving of the remainder. Cross–country studies have indicated that high income countries save a higher percentage of their income (Metin-Ozcan, Gunay, and Ertac 2003).

Inflation rate has a significant positive effect on savings. This outcome confirms those of previous studies (see Burnside, Schmidt-Hebbel, and Servén 1999; Callen and Thimann 1997; Hondroyiannis 2006; Hüfner and Koske 2010; Loayza, Schmidt-Hebbel, and Serven 1999). Thus, higher inflation (a measure of macroeconomic uncertainty) raises uncertainty regarding future earnings, and therefore forces individuals to increase their savings on precautionary grounds. Athukorala and Sen (2004) pointed out that households' income is more uncertain in developing countries than their developed counterparts, making savings rise with the inflation rate. In-as-much as many households in ECOWAS countries are employed in the agricultural sector and face uncertainty with respect to their future incomes, they are compelled to save for precautionary purposes.

Real interest rate has a significant and positive effect on savings. The finding lends support to previous ones (see Athukorala and Tsai 2003; Callen and Thimann 1997; Burnside, Schmidt-Hebbel, and Servén 1999; Hondroyiannis 2006; Hüfner and Koske 2010). Thus, increases in real interest rate induce households to raise their savings in a bid to earn higher returns in the future. Lowering inflation rate increases real interest rates (Edwards 1996).

Agriculture has a significant and negative effect on savings. This reflects a situation where the agricultural sector is highly underdeveloped and practised at subsistence level, implying low incomes for most households employed in the sector in ECOWAS countries. Thus, given low income levels and subsistence agricultural production, additional output will be consumed rather than sold to generate additional income, leading to lower savings. In fact, poor households will often resort to drawing on past savings (if they have them at all) rather than raising savings.

CONCLUSION AND RECOMMENDATIONS

The ECOWAS region has not been able to mobilize the adequate savings required for achieving higher rates of investment and growth. The region has also witnessed higher political instability and remains one of the world's poorest and most unstable regions. This study employs PCSE, OLS and TSLS with random effects to investigate the effect of the political instability-income interaction on savings in ECOWAS countries. The PCSE, OLS and TSLS estimates are identical for our variables of interest (political instability and political instability-income interaction). The empirical evidence indicates that a politically stable environment is required for the mobilization of higher savings in ECOWAS countries. Moreover, the results illustrate that the impact of political instability on savings is higher in ECOWAS countries due to their low income levels. Other important determinants of savings include income per capita, inflation rate, real interest rate and agricultural share in GDP. Based on the findings, policies to raise incomes are required to promote political stability in order to raise savings in the region.

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