

INTERDISCIPLINARY DESCRIPTION OF COMPLEX SYSTEMS

Scientific Journal

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EDITORIAL

INNOVATION FOR ORGANIZATIONAL PERFORMANCE: APPROACHES AND APPLICATIONS

This thematic issue of INDECS presents articles oriented towards understanding different issues associated with information technology, technological advancements, sustainability and managerial aspects in relation to innovative business practices and different organization related outcomes.

Some of the latest research on approaches and applications in this field were presented at an international conference, the 4th Enterprise Research Innovation Conference (ENTRENOVA) that was held in Dubrovnik, Croatia during 7-9 September 2017. ENTRENOVA is a multi-disciplinary scientific conference dedicated to understanding and evaluating economic, management, organizational, marketing and other issues associated with enterprise driven innovation, informational technology and research and development. At ENTRENOVA 2017, more than 150 authors, from 30 countries, participated with 80 abstracts and 70 papers.

Beside the participants of ETERNOVA 2017, the call for this thematic issue of INDECS was open for all other interested authors, researchers and practitioner from the field of economics, organization and management science, information systems and technology as well as from the field of innovation.

Eight submissions for thematic issue of INDECS were accepted, some of them being extended journal version of short articles from proceedings. Articles in this issue were accepted after review by guest editors and a blind review process by two independent reviewers. A short description and contribution of each article is provided in the next lines.

In the article *Understanding the success factors in adopting business process management*, Bosilj Vukšić, Brkić abnd Tomičić-Pupek analyze business process management software (BPMS) as one of the general means of ensuring business process management (BPM) success. They examine the contextual and technical perspectives of BPMS adoption and related critical success factors by applying a multiple-case study approach and interviews in companies that fully or partly adopted BPMS. Semi-structured interviews were used to gather quantitative data for those topics that can be evaluated numerically, and qualitative contextual (organizational and environmental) critical success factors relevant for BPMS adoption success. Based on their research, they propose BPMS selection guidelines with regard to the organizational, environmental and technological CSFs of BPMS adoption, to support decision makers in selecting the right BPMS.

Isada and Isada in their article *A network analysis of innovation in the internet of things* clarify empirically the influence of the network structure among companies on innovation in the Internet of Things (IoT) field. The relationship between the network structure and the result of innovation was analysed through social network analysis. Joint application patents related to IoT companies were extracted from the intellectual property database. Results of their research show that the difference in the network structure of a company was related to the result of research and profitability. In particular, a company with a platform type of business model is considered as highly profitable in the IoT business field. Drawing on an intellectual property database and employing social network analysis, this research quantifies the structure of innovation networks in terms of the results and operational efficiency of R&D.

Article *Sustainable development, technological and industrial impacts on engineering education* by Elsaadany and Helmi emphasises how in the transition towards a sustainable society, teaching sustainability is a necessity to ensure sustainable design and preserve the ecosystem. Consequently, educating engineering students on sustainable development is widely applied in many faculties and universities around the world. Throughout this article, authors examine the teaching methods for the sustainability subject and build on the experience of others and the wide spectrum of methods in order to provide guidelines for curriculum design. They propose this design is based on innovations in technologies to cover sustainability along with environmental and social implications and provide a criterion for evaluating the impact of executing the proposed sustainable development curriculum.

In the article *Destination marketing organisations' use of humour and co-creation: An exploratory study from Croatia*, Slivar, Periša and Horvat address the principles of co-creation, along with the appeal of humor in tourism, that are still under researched topics as well as rarely used in practice. They emphasize this is especially in the case of Destination Marketing Organisations (DMOs) in Croatia, publicly founded entities who do not create tourism products, however are responsible for the valorization of unmanaged tourism attractions. Authors present an exploratory study that was carried out with the purpose to raise awareness of the benefits of applying those two concepts in marketing activities of DMOs. They assess the current practices of DMOs and their tendencies towards using humor and co-creation in their marketing agendas. A case study project, aimed at tourism attractions in the destination, to inspire DMOs is also presented.

Analysis of the leadership style in relation to the characteristics of Croatian enterprises by Miloloža explores the presence of authoritarian, democratic, and laissez-faire leadership styles in Croatian enterprises. Level of usage of different leadership styles was measured using Leadership Styles Questionnaire on a sample of enterprises. Results indicate that democratic style is the most often occurring style in all groups of enterprises, although autocratic and laissez-faire are also often present in some groups of enterprises.

Grubor and Jakša in their article *Internet marketing as a business necessity* explore the field of Internet marketing, as a new area of marketing theory and practice that has emerged and is constantly improving. The aim of the article is to examine fundamentals of Internet-based marketing, and to analyze challenges and opportunities that need to be addressed by modern companies in their Internet marketing strategies. In addition, possible limitations and risks that emerged in electronic marketplace are emphasized. Data used are from a secondary research, implying detailed analysis of researches and studies in the given field.

In the article *Exploring the link between corporate stakeholder orientation and quality of corporate social responsibility reporting* Markota Vukić, Omazić and Aleksić emphasize the importance of corporate social responsibility (CSR) reporting, as well as corporate stakeholder orientation as a significant indicator of quality of CSR reporting. In this article the authors explore the link between stakeholder orientation and quality of CSR reporting and empirically analyse it on a sample of 69 companies from 10 European countries. Quality and stakeholder orientation were assessed from CSR reports retrieved from the GRI Database and from companies' official websites. Stakeholder orientation index included analysis of orientation towards shareholders, suppliers, employees, local community and customers. Research results indicate a positive link between the level of corporate stakeholder orientation and quality of CSR reporting. In addition, the article provides overview of characteristics and quality of current CSR reporting among analysed companies.

Article *Soundness and sustainability research in the regional and settlement development programs (2014-2020)* by Mähr, Birkner and Rodek Berkes presents the results of projects the "Establishment of a green town", which is one of the Regional and Municipality Development Operational Programs (TOP) programs. The objective is to present the soundness of the utilization, sustainability and need for measurement plan for the small European town, along with the primary and secondary data. The cohesion of the project compared to the strategic documents of the municipality is also investigated. The research results can be of help for the project planners and municipality stakeholders of the European Union.

Zagreb, 26th June, 2018

Editor

Mirjana Pejić Bach

UNDERSTANDING THE SUCCESS FACTORS IN ADOPTING BUSINESS PROCESS MANAGEMENT SOFTWARE: CASE STUDIES

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ABSTRACT

A number of studies on the successes and failures of business process management (BPM) have been conducted with the aim of identifying BPM adoption success factors. The complex and comprehensive nature of BPM has resulted in the lack of a generally accepted framework for successful BPM adoption. One general means of ensuring BPM success is through the adoption of business process management software (BPMS). The fact that there is currently no consensus as to a generally accepted definition of BPM software makes it difficult to define the criteria for its selection. There are several reasons for this: (i) the size and complexity of the field, (ii) determining business needs is not always straightforward, and (iii) the BPM software market is complex and its features and capabilities vary greatly across vendors. In this article, we examine the contextual and technical perspectives of BPMS adoption and related critical success factors (CSF). The goal of this study was to propose BPMS selection guidelines with regard to the organizational, environmental and technological CSFs of BPMS adoption, to support decision makers in selecting the right BPMS. To accomplish this, we applied a multiple-case study approach and carried out a set of interviews in companies that have fully or partly adopted BPMS. Semi-structured interviews were used to gather quantitative data for those topics that can be evaluated numerically, and qualitative contextual (organizational and environmental) CSFs relevant for BPMS adoption success.

KEY WORDS

business process management, business process management software, critical success factors, case study, Croatia

CLASSIFICATION

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INTRODUCTION

Since the 1990s, the concept of business process management (BPM) has been widely recognized within the academic community. It is commonly implemented in large organizations for business process documentation, design, automatization and performance improvement [1]. Although the goals of BPM initiatives vary from organizational change and restructuring to the introduction of innovative business process management software (BPMS), their adoption is very often one of its inevitable perspectives.

According to Harmon [2] “no one is exactly sure what BPM software means or how BPM software products will evolve”. Its origins can be found in workflow management software, document management software, business intelligence software, business rules engines and enterprise application integration tools [3]. Nowadays, the most important functionalities of these tools are integrated together into generic software, called BPM software [4], which supports the definition, modelling, analysis, execution and tracking of business processes. New emphasis has been placed on the integration of BPM initiatives and Service Oriented Architecture (SOA) projects, as a deep understanding of the organization’s business processes is considered one of the critical success factors (CSF) for the implementation of sophisticated SOA infrastructure [2]. Several categories are still distinguished on the BPM software market, such as: BPM software, suites, systems and tools [5]-[7]. However, for the purposes of this article, the generic term – “business process management software” (BPMS) is used.

To clarify, the difference between two similar terms “adoption” and “implementation” is discussed briefly. According to Bosilj Vukšić, Milanović Glavan and Suša [8] “BPM implementation is the introduction of BPM concepts while BPM adoption is the acceptance of those concepts in the organization”. Others argue that BPM adoption covers all aspects of managing processes in a company [9], [10]. It encompasses the entire BPM lifecycle: from process identification and modelling phase, to business process monitoring, measurement and optimization [7]. For the purpose of this study, BPM/BPMS adoption is understood as the use and application of BPM concepts/BPM software in any of the BPM lifecycle phases.

While the advantages of BPM adoption in organizations are clear, high risks of implementation failure have been pointed out by both BPM experts and practitioners [10]. Consequently, there are many studies focusing on the success factors for BPM initiatives [11], [12]. While most have focused on systematization and analysis of CSFs of the entire BPM, the main research goal of this article was to analyse both the contextual and technical perspective of BPMS adoption and the related CSFs. To achieve this goal, a set of interviews was conducted. The research model was developed on the basis of (1) a literature overview, and (2) feedback from BPM business practitioners, i.e. members or leaders of BPM teams from participating organizations, thus giving additional value to this study. A multiple case-study approach was applied to answer the research questions, as follows:

RQ1. What is the relevance of both contextual (organizational and environmental) and technical CSFs for BPMS selection and for adoption success?

RQ2. How have organizations adopted BPMSs; which are the most important benefits and advantages; which issues and obstacles were identified?

The applicative goal of this study is to propose BPMS selection guidelines concerning the organizational, environmental and technological CSFs of BPMS adoption.

The structure of the article is as follows. After the introduction, the theoretical background relevant to this study is presented and a short review of studies on the different perspectives of BPM adoption and its success factors is provided. Next, the development of the research

model is discussed and the empirical research design and data collection described. The case study findings are presented, analysed and discussed. Finally, the implications for research and practice are systemized and conclusions are given.

THEORETICAL BACKGROUND

OVERVIEW OF CONTEXTUAL AND TECHNOLOGICAL BPMS ADOPTION SUCCESS FACTORS

During the past decade, many studies have been conducted on BPM successes and failures with the aim of identifying BPM adoption success factors. However, due to the complexity and the holistic nature of BPM, there is still not a generally accepted framework for successful BPM adoption [13]. Some authors, such as vom Brocke, Zelt and Schmiedel [14], argue that BPM should be contextual, and they derived four groups of factors crucial for BPM: (1) the initiative's goals and objectives, (2) process characteristics, (3) specifics about the organization and (4) the influence of the broader business environment. Buh, Kovačić and Štemberger [10] presented a list of 13 CSFs of BPM adoption, which also listed information technology. Trkman [12] suggested that "BPM adoption CSFs are closely interrelated thus should be considered simultaneously as a set of inter-related pointers". Both Trkman [12] and vom Brocke, Zelt and Schmiedel [14] observed that CSFs are case-specific and change over time due to external influences. Furthermore, [10], [15] analysed CSFs through the stages of BPM adoption to show that these are specific for each stage of the adoption process.

BPM initiatives inevitably comprise BPMS adoption, whether BPMS is used as a tool for business process innovation and optimization, or as a platform for business application development. Nowadays BPMSs cover a wide range of features, from business process modelling and analysis, to process enactment, monitoring and controlling. Further, BPMS capabilities for integration within a given IT infrastructure and their interoperability with other systems are considered crucial for their successful adoption [16]. Though BPMS characteristics are very important for the initiative's success, it is clear that various factors causing the success or failure of BPMS adoption need to be considered. In addition to the technical dimensions, Bernroider and Bernroider [17] and Rijers [16] distinguished the importance of management, human and process issues in BPMS adoption. The list of BPMS adoption CSFs presented by Ravesteyn and Jensen [18] contains both IT and management related factors. Their study proposed a BPMS implementation method based on critical success factors of BPM implementation and situational factors that are organization specific. Therefore, in this study, CSFs are explored from both the contextual and technological dimension and discussed as an inter-connected set.

BPM Initiative Goals, Objectives and Scope

The literature review indicates that BPM researchers have identified various types of relationships between CSFs and the BPM initiative goals and objectives. Malinova, Hribar and Mendling [13] claimed that BPM goals and objectives can be categorized into two groups. The first is related to business (e.g. process standardization, process performance optimization, cost reduction), while the second relates to the technical requirements (e.g. BPMS implementation, process automatization). A different perspective is given by Rosemann [19], who differentiated exploitation and exploration BPM goals. According to vom Brocke, Zelt and Schmiedel [14], exploitation relates to incremental changes, quality management techniques and compliance in order to achieve operational excellence, while exploration BPM goals are focused on process innovation using creative management approaches and new technologies. According to de Morais et al.[20], BPM goals and scope can be explored through the phases of the BPM lifecycle models.

Process Characteristics Affecting BPM Initiatives

Process characteristics play an important role in BPM initiatives. While BPM is traditionally focused on well-structured, highly repetitive business processes, attempts to manage and optimize unstructured, knowledge intensive and very complex business processes are highly challenging [21]. Other frequently mentioned process characteristics for which the specific BPM approach must be adapted are creative processes, processes with a high value contribution (e.g. core processes, customer-oriented processes, end-to-end processes), processes with high variability, and interdependent processes [14]. The diversity of organizational processes requires a customized approach toward change: greater agility, flexibility and autonomy of process participants, new BPM methods and adopted information technology.

Organizational Characteristics and BPM Initiatives

The list of organizational success factors related to BPM very often includes: strategic alignment, top management support, process oriented structure (e.g. process owners, process managers, centres of excellence), organizational culture and other social aspects (e.g. communication and inter-departmental cooperation), employee skills, knowledge and education and project management [12]. The main findings of the research conducted by Ravesteyn and Batenburg [23] shows that alignment of the BPM project to the strategic business goals, strong top-management support and organizational culture play key roles in the success of BPM initiatives. According to de Bruin and Doebeli [24], the efforts to improve “BPM soft factors”, such as organizational culture and personal involvement, can lead organizations to successful change.

Though the majority of organizational factors is BPM specific, generic factors such as the size of organization, ownership, revenue or business sector, can also affect BPM success [18]. Some authors stress that BPM adoption goes through five stages [10], [15], from “BPM awareness and understanding” and “desire to adopt BPM” to the phases of “BPM project” and “BPM program”, and finally finishing with the phase “productisation of BPM”. Thus, it is important for an organization to be aware of the organizational pre-requisites that should be met to launch a BPM initiative. Once a BPM initiative is successfully finished, the organizational characteristics are changed and the organization can move to the next BPM adoption stage.

BPM and the External Environment

Many authors agree that the external environment is influential [27]. According to vom Brocke, Schmiedel and Zelt [14], the most important environmental factors are competitiveness and uncertainty. The agility and flexibility of business processes can help to meet the requirements of a highly competitive market. On the other hand, traditional BPM approaches may be quite ineffective for organizations in time-sensitive and innovative industries. In the case of market uncertainty, additional capabilities such as business activity management, real-time analytics and process mining should be in the focus of BPM.

Role of BPMS Characteristics

BPMS characteristics have a very important role for the initiative’s success and have thus been examined by numerous authors. According to Bosilj Vukšić, Brkić and Baranović [28], the most important factors relating to the technical perspectives of BPMS adoption are: (1) BPMS capability; (2) BPMS compatibility; (3) BPMS complexity; (4) BPMS vendor’s reputation and maturity; (5) BPMS availability to support demo version; (6) BPMS implementation costs and benefits; and (7) measurement of implementation results.

The results were compiled from: (1) a theoretical background as a result of the retrieval of peer-reviewed articles in journal and conference publications in Scopus and Web of Science (WoS) databases; and (2) feedback from business practice which was compiled in the study by Boots [29]. These results are further described, analysed and used as a basis for developing the research model of this study.

RESEARCH METHODOLOGY

DEVELOPMENT OF THE RESEARCH MODEL

The research model was developed on the basis of the previous literature review. Two categories of contextual CSFs (organizational and environmental) are systemized in Table 1. The CSFs are briefly described and the sources cited.

Table 2 presents five categories of technological CSFs for BPMS adoption according to the findings of Bosilj Vukšić, Brkić and Baranović [28] and to the results of the literature review conducted for the purpose of this study. Each technological CSF category is defined, the related sourced cited and the detailed description of the CSF substance given.

The literature analysis findings presented in Tables 1 and 2 answer the first research question **RQ1** about the contextual and technological BPMS adoption factors from the perspective of academics and researchers. These findings were then used to create the study structure and content.

The domain of data (property) that will be used to describe and subsequently measure individual CSFs depends on the nature and definition of CSF itself. Roughly speaking, the domain of these data can belong to one of two groups: (i) the qualitative, textual, descriptive domain, or (ii) the quantitative, numeric domain. The measuring instrument of this study used texts as the qualitative domain, and integers ranging from 1 to 5 as the quantitative domain. The instrument for detecting the identified CSFs should consider the domains associated with an individual CSF. The domain identified as appropriate for a particular CSF is listed in the column “Domain of the measured property” in Tables 1 and 2.

STUDY DESIGN

Since multi-case studies of contextual and technical CSFs of BPMS adoptions are quite scarce, our research approach was to conduct interviews in three organizations. The advantage of the case study research method is in its ability to provide a deeper understanding of the field. For example, Van Belle and Reed [45] claimed that “in a case of the interdependence between variables and the non-measurability/intrinsic complexity of some of the variables qualitative case study approach should be chosen since it provides richer and more subtle explanations than statistics”. Opdenakker [46] noted that the interview is a core data collection technique in qualitative research, while Eisenhardt [47] specified case study data collection methods as “a combination of interviews, questionnaires and observations”.

Though the results of single-case studies on BPM adoption are well-accepted [10], for the purpose of this article an exploratory qualitative, multiple-case study approach was applied. According to Yin [48], a multiple case study analysis is considered the most suitable in examining real-life situations when “why” and “how” questions are asked. The novelty of this study is the use of both a semi-structured and in-depth interview approach, thus giving interviewees the opportunity to evaluate BPMS characteristics, and also to comment on the contextual BPMS adoption issues, to reveal their perceptions and to describe their experiences in the field.

Table 1. Organizational and environmental dimension of BPMS adoption.

| Contextual dimension | CSFs of BPMS adoption | Domain of the measured property | Source |
|----------------------|--|----------------------------------|--|
| Organization (ORG) | (ORG-1) <i>Goals and objectives of the initiative</i> : exploitation vs. exploration BPM goals; goals related to business and/or to technical requirements; goals related to the phases of BPM lifecycle models or to the stages of BPM adoption. | text | de Morais et al., 2014 [20]; Buh, Kovačić and Indihar Štemberger, 2015 [10]; Rosemann, 2010 [15]; vom Brocke, Zelt and Schmiedel, 2016 [14]; Rosemann, 2014 [19]; Malinova, Hribar and Mendling, 2014 [13] |
| | (ORG-2) <i>Scope of BPM initiative</i> : BPM lifecycle phases are defined by different authors in a similar way, such as (1) process identification; (2) process discovery; (3) process analysis; (4) process redesign; (5) process implementation; and (6) process monitoring and controlling. | text | Dumas et al., 2013 [7] |
| | (ORG-3) <i>Internal processes characteristics</i> (especially those in the focus of the BPM initiative): well-structured, highly repetitive business processes vs. unstructured, knowledge intensive and complex processes; processes with high variability, interdependent processes, creative processes, processes with a high value contribution. | text | Marjanovic and Freeze, 2012 [21]; vom Brocke, Zelt and Schmiedel, 2016 [14] |
| | (ORG-4) <i>BPM oriented organizational factors</i> : strategic alignment, top management support, process-oriented structure, process performance measurement, people, organizational culture and other social aspects. | text | Trkman, 2010 [12]; Bai and Sarkis, 2013 [22]; Malinova, Hribar and Mendling, 2014 [13]; Ravesteyn and Batenburg, 2010 [23]; de Bruin and Doebeli, 2009 [24]; Glavan, 2011 [30] |
| | (ORG-5) <i>Generic organizational factors</i> : size of organization, ownership, revenue or business sector. | integer $\in \{1, \dots, 5\}$ | Ravesteyn and Jansen, 2009 [18] |
| | (ORG-6) <i>BPM adoption stage</i> : (1) awareness and understanding of BPM; (2) desire to adopt BPM; (3) BPM project; BPM program; (5) productisation of BPM. | integer $\in \{1, \dots, 5\}$ | Rosemann, 2010 [15]; Buh, Kovačić and Indihar Štemberger, 2015 [10] |
| Environment (ENV) | (ENV-1) <i>External factors</i> : competitiveness and uncertainty of the business environment. | text | vom Brocke, Schmiedel and Zelt, 2016 [14]; Peronja, 2015 0; Skrinjar and Trkman, 2013 [26]; Bitkowska, 2015 [27] |

Table 2. Technological dimension of BPMS adoption.

| Category of the technological dimension | CSFs related to the category | Domain of the measured property | Source |
|--|--|----------------------------------|---|
| <i>BPMS capability</i> (CAP): “comprises elements and functionalities, or BPMS architecture” [32]-[35]. | CAP-1: Process modelling, analysis and design; CAP-2: Business rules; CAP-3: Reporting, analytics, monitoring; CAP-4: Social BPM; CAP-5: Process strategy subsystem; CAP-6: Low-code development; CAP-7: Enactable models and process engine; CAP-8: Mobile & tablet functionalities; CAP-9: Web platform, cloud capabilities; CAP-10: Security and reliability | integer $\in \{1, \dots, 5\}$ | Bernroider and Bernroider, 2008 [17]; Cingil, Ozturan and Erdem, 2012 [38]; Delgado et al., 2015 [39]; Mejri and Ghanouchi, 2015 [40]; Poelmans, Reijers and Recker, 2013 [4]; Ravasan, Rouhani and Hamidi, 2014 [41]; Štemberger, Bosilj-Vukšić and Jaklič, 2009 [42]; Meidan et al., 2017 [43] |
| <i>BPMS compatibility</i> (COMPA): “is defined as the alignment of IT innovation with the standards, requirements, needs and beliefs” [36]. | COMPA-1: Existence of compatibility; COMPA-2: Simplicity of integration | integer $\in \{1, \dots, 5\}$ | Bernroider and Bernroider, 2008 [17]; Cingil, Ozturan and Erdem, 2012 [38]; Poelmans, Reijers and Recker, 2013 [4]; Ravasan, Rouhani and Hamidi, 2014 [41]; Štemberger, Bosilj-Vukšić and Jaklič, 2009 [42]; |
| <i>BPMS complexity</i> (COMPL): “comprises the overall impression of simplicity of implementation including the level of skills required and learning curve” [34]-[36]. | COMPL-1: BPMS implementation complexity; COMPL-2: Simplicity of BPMS use; COMPL-3: BPMS user interface complexity | integer $\in \{1, \dots, 5\}$ | Bernroider and Bernroider, 2008 [17]; Blumberg et al., 2013 [44]; Cingil, Ozturan and Erdem, 2012 [38]; Poelmans, Reijers and Recker, 2013 [4]; Štemberger, Bosilj-Vukšić and Jaklič, 2009 [42] |
| <i>BPMS vendor's reputation and maturity</i> (REP): “a focus has to be put on vendor's knowledge, experience, service, maintenance and presence on a local market” [29]. | REP-1: Vendor maturity; REP-2: Presence on the local market; REP-3: BPMS documentation; REP-4: BPMS installation and maintenance | integer $\in \{1, \dots, 5\}$ | Meidan et al., 2017 [43]; Delgado et al., 2015 [39]; Mejri and Ghanouchi, 2015 [40]; Poelmans, Reijers and Recker, 2013 [4]; Ravasan, Rouhani and Hamidi, 2014 [41]; Štemberger, Bosilj-Vukšić and Jaklič, 2009 [42]; Bernroider and Bernroider, 2008 [17] |
| <i>BPMS implementation costs and benefits</i> (COST): “IT innovation enables costs cutting and increase of profit” [37]. | COST-1: BPMS implementation costs in relation to budget | integer $\in \{1, \dots, 5\}$ | Delgado et al., 2015 [39]; Ravasan, Rouhani and Hamidi, 2014 [41]; Štemberger, Bosilj-Vukšić and Jaklič, 2009 [42] |

DEVELOPMENT OF THE RESEARCH INSTRUMENT AND DATA COLLECTION

To answer the main research question, a set of face-to-face interviews was conducted. The interviews took place in May and June 2017. The interview consisted of two parts. Qualitative data were collected through the in-depth interview, in which interviewees answered questions in free-form. The semi-structured part of the interview was used to collect quantitative data, in which interviewees were asked to evaluate statements on the Likert scale. For each statement, interviewees were asked to give an importance score on a scale from 1 to 5, with the meaning: 1 = “not important at all”; 2 = “of little importance”; 3 = of average importance”; 4 = “very important”; 5 = “absolutely essential”. The option “X = I don’t know” was also available.

The interview was structured into 4 sections:

- Part 1** Generic contextual questions on the CSFs presented in Table 1 (ORG-5 and ORG-6);
- Part 2** Questions related to organizational and environmental dimension of the BPMS adoption initiative based on CSFs presented in Table 1 (ORG-1; ORG-2; ORG-3; ORG-4 and ENV-1);
- Part 3** Evaluation of statements about BPMS characteristics/features (technology dimension of BPMS adoption), based on CSFs presented in Table 2;
- Part 4** Questions about BPMS adoption success (the most important results, benefits, obstacles and issues of BPMS adoption), according to the major issues that BPM users identified at the strategic, tactical and operational level in BPM initiatives [49].

Participating organizations were identified through communications with the leading BPM experts in Croatia. The criteria for the selection were that (1) the organization has successfully adopted BPMS and (2) that its BPM practitioners and experts were willing to participate in this study. BPMS adoption is considered successful if the initiative’s results satisfactorily met the pre-determined goals [50].

This study examined three BPMS adoption initiatives (two in Croatian organizations and one in an organization from Bosnia and Herzegovina). The interviews were conducted in Croatian. For each initiative, both the BPM practitioner and BPM expert were interviewed. Data were collected from six interviews, but only the results of the interviews with BPM practitioners of the organizations are reported here in order to identify the BPMS adoption issues as perceived by the business users. BPM practitioners are the employees involved in BPMS adoption. Each interview lasted from 90-120 minutes and was conducted in three phases: (1) data collection; (2) data analysis – in order to summarize the main findings and to assess any inconsistencies in the interviewees’ estimates of statements or misunderstanding of questions; (3) the interviewees’ confirmation of the results. In the case of ambiguity, interviewees were asked first to clarify their answers or to recheck the estimates and then to confirm the results. Due to the interviewees’ experience in BPM initiatives, no questions were answered with “X = I don’t know”. The collected data were coded using Word and Excel spreadsheets.

Following data entry, the results were analysed according to the success factors identified in Tables 1 and 2 for each initiative.

CASE STUDIES: ANALYSIS AND DISCUSSION

GENERIC CONTEXTUAL DATA ABOUT ORGANIZATIONS AND BPM INITIATIVES

Data on the organizations’ generic characteristics (related to CSFs from Table 1, ORG-5) and about BPM adoption stage (related to CSFs from Table 1, ORG-6) were collected within Part 1

of the interviews. Interviewees were capable of answering all questions, since they were educated on BPM, they possessed the practical knowledge and skills required to conduct BPM projects, and were actively involved in BPM initiatives in their organizations either as team members or team leaders. Analysis of these data provided the “big picture” about the organizations and their approach to BPM adoption.

The first organization (hereinafter: *Organization A*), is based in Croatia and comes from the public sector. It has less than 50 employees and is involved with coastal liner services. Organization A grants concessions to Croatian coastal liners and manages activities related to the beneficial rights of coastal liner tickets, thus enabling the residents of Croatian islands to travel at discounted prices. The first BPM project was started in 2014. It lasted for one year and was not followed by any other projects. The initiative was launched as a “one-time project”, and thus it can be assumed that Organization A is in the third stage of BPM adoption. Bizagi BPM Suite was used to develop a new business application to support the selected process. Additionally, several software tools and platforms were used, such as: Visual Paradigm for UML, SQL Server 2012, .NET Framework 4.4, ASP.NET MVC and WCF.

The second organization (hereinafter: *Organization B*) comes from the telecommunications industry and provides telecommunication services: fixed, mobile and Internet connecting services. It is a large company from Bosnia and Herzegovina with more than 1000 employees and with revenues exceeding EUR 50 million in 2016. Organization B has ongoing cooperation with many domestic and foreign companies and provides Bosnia and Herzegovina citizens and business entities with high-quality telecom services. The strategic approach towards “BPM as a program which comprises a series of projects” was introduced in 2016, thus having the characteristics of the fourth stage of BPM adoption. The first initiative started in 2016 and was completed within ten months. Oracle Business Process Management Suite 12c was used for BPMS development. This initiative resulted in the successfully implemented BPMS that supports three business processes.

The third organization (hereinafter: *Organization C*) is an important Croatian international airport with some 370 employees and with almost 3 million passengers in 2017. Due to its geographic position, it has a seasonal character, thus offering flights to various European cities during the summer months. The organisation’s approach to BPM is “strategic and continuous”, putting it in the final, fifth stage of BPM adoption. The first BPM initiative began in 2002 and was followed by many others, covering all phases of the BPM lifecycle. Software AG (previously ARIS) was implemented and is used as the basic software platform for BPMS development.

ORGANIZATIONAL AND ENVIRONMENTAL CONTEXTUAL FACTORS OF BPMS ADOPTION: FROM THE PERSPECTIVE OF BPM PRACTITIONERS

Table 3 presents the most important findings about the qualitative data collected in Part 2 of the interviews. These findings give the answers to the first research question (**RQ1**) about the organizational and environmental factors that are relevant for BPMS adoption according to BPM practitioners. The answers were systemized as defined in Table 1.

The analysis of the organizations’ generic data shows that these organizations differ in relation to ownership, size, industry and process characteristics. Their BPM initiatives have varying scope, objectives and goals and fall into different BPMS adaptation stages. Organization A can be considered to be in the third stage of BPM adoption, Organization B is in the fourth, while Organization C is in the fifth stage according to Rosemann [15] and Buh, Kovačić and Indihar Štemberger [10]. Despite these differences, the introduction of BPM was triggered by similar business drivers: (1) the success of these organizations depends on the

Table 3. Organizational and environmental factors of BPMS initiative adoption.

| Factor | Organization A | Organization B | Organization C |
|---------------|--|---|--|
| ORG-1 | The goals are: (1) to model, analyse and improve the process of granting transport tickets with beneficial rights for passengers and vehicles in liner shipping and coastal maritime traffic; (2) to develop and implement a software platform and web services to support this process; and (3) to enable data transfer and information exchange with external Information Systems (shorter ISs). | The goals are: (1) to model and analyse 15 end-to-end business processes; (2) to develop and implement BPMS for three processes, i.e. procurement, contracting and filing lawsuits; and (3) to implement business applications to support the selected processes. | The BPM program comprises several projects with specific goals that span: (1) modelling and analysis of processes related to aircraft, passenger and luggage arrival/departure; (2) development and implementation of process performance management system; (3) introduction of dashboarding/reporting system; and (4) simulation/optimization of the selected processes. |
| ORG-2 | BPM initiative scope comprises phases 1-5 of the BPM lifecycle. | All BPM lifecycle phases (1-6) are comprised within the scope of initiative. | All BPM lifecycle phases (1-6) are comprised within the scope of initiative. |
| ORG-3 | Internal processes are well-defined and documented, internal working procedures exist, the majority of employees work in administrative, highly-repetitive processes, though some processes are unstructured and knowledge intensive. | Functional siloes and process gaps are evident; business processes are not standardized; it is difficult to monitor, control and measure end-to-end business processes; process-oriented KPIs are not defined; many processes have high variability and are interdependent. | Internal processes are standardized and documented; working procedures and norms are defined; internal process quality must be at the highest level; total quality management and risk management are applied. |
| ORG-4 | Presence of traditional hierarchical organizational structure and hierarchy culture; process positions or roles are not established; organization is not process-oriented, though employees are motivated for change. | Divisional organizational structure is established; employees are partly educated about BPM prior to the launch of the initiative; BPM is defined by top-management as a strategic goal of the organization. | BPM initiatives are completely aligned with the strategic goals of the organization; process performance monitoring, measurement and management is extremely important due to the seasonal character of business; employees are familiar with BPM; existence of process owners and process managers. |
| ENV-1 | The perception of service quality provided to Croatian citizens is crucial for success; EU and government policy and regulations have a very strong impact; processes depend on several acts and regulations. | Highly competitive market has a strong impact on the organization; EU and government regulations in the field of telecommunications influence the business. | Competition and uncertainty influence the business; flexible and agile reaction to environmental changes are crucial; communication and interaction with the external bodies/institutions is constant and intensive due to the nature of the business; several business processes are outsourced, thus relations with business partners are very important. |

quality of services provided to users (customers, business partners or citizens), thus the organizations are customer-oriented and aim to meet customer requirements; and (2) external environment factors strongly influence these organizations (the most important environmental factors for organizations B and C are competitiveness and uncertainty, while government policy and regulations have a strong impact on Organization A).

RELEVANCE OF TECHNOLOGICAL FACTORS: BPM PRACTITIONER EVALUATION AFTER BPMS ADOPTION

In Part 3 of the interview, interviewees evaluated the relevance of BPMS characteristics and features prior to implementation (i.e. during the process of BPMS selection) and following completion of the initiative. The ratings of technological factors after BPMS adoption are presented here, as the experience and knowledge of BPM practitioners who were actively involved in BPMS adoption could serve as a guideline for BPMS selection in the future. Since the interviewees from Organizations A and B assessed only a few of the BPMS characteristics “prior to implementation” and “after adoption” differently, these issues are briefly discussed. Figure 1 presents the average grades of five categories within the technological dimension after BPMS adoption.

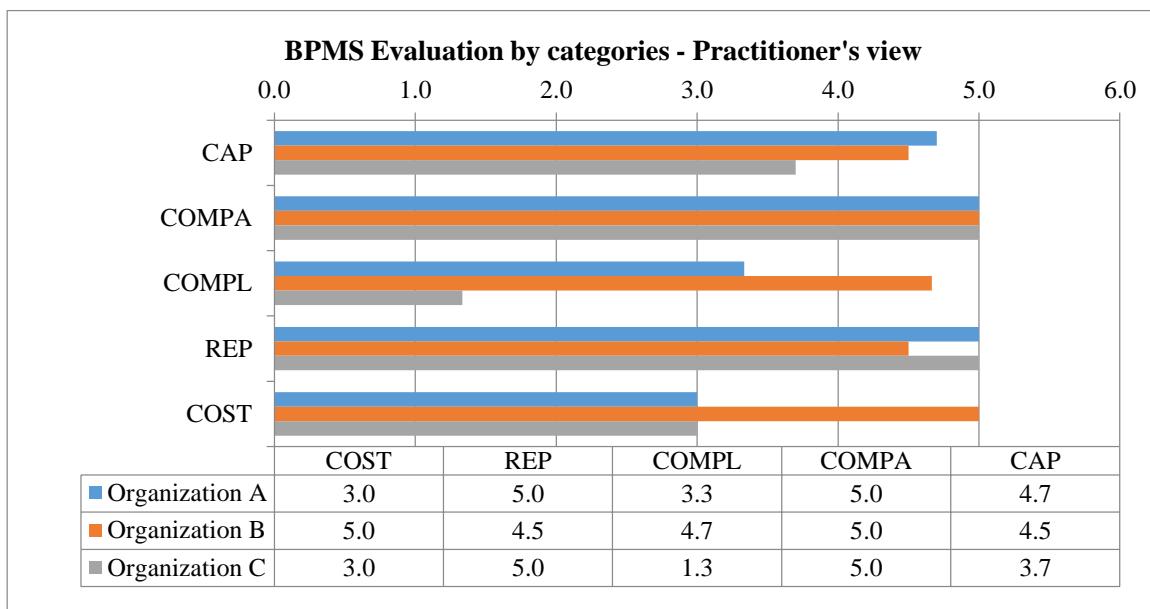


Figure 1. Technological dimension categories of BPMS adoption – average ratings (as evaluated by BPM practitioners after BPMS adoption).

Figure 2 depicts the results of evaluation of BPMS technological characteristics after adoption. The results were analysed and discussed, giving the answers to the first research question (**RQ1**) from the BPM practitioners' point of view.

BPMS Compatibility and Vendor's Reputation and Maturity

The average grades presented in Figure 1 show that according to BPM practitioners, BPMS compatibility (COMPA) and BPMS vendor's reputation and maturity (REP) are uniform and scored the highest among categories of this dimension after BPMS adoption.

All interviewees evaluated both BPMS compatibility factors as “absolutely essential”; i.e. the existence of BPMS compatibility with the existing IT infrastructure (COMPA-1) and the simplicity of the existing ISs and BPMS integration (COMPA-2) were given the highest could occur due to inadequate consultant maturity.

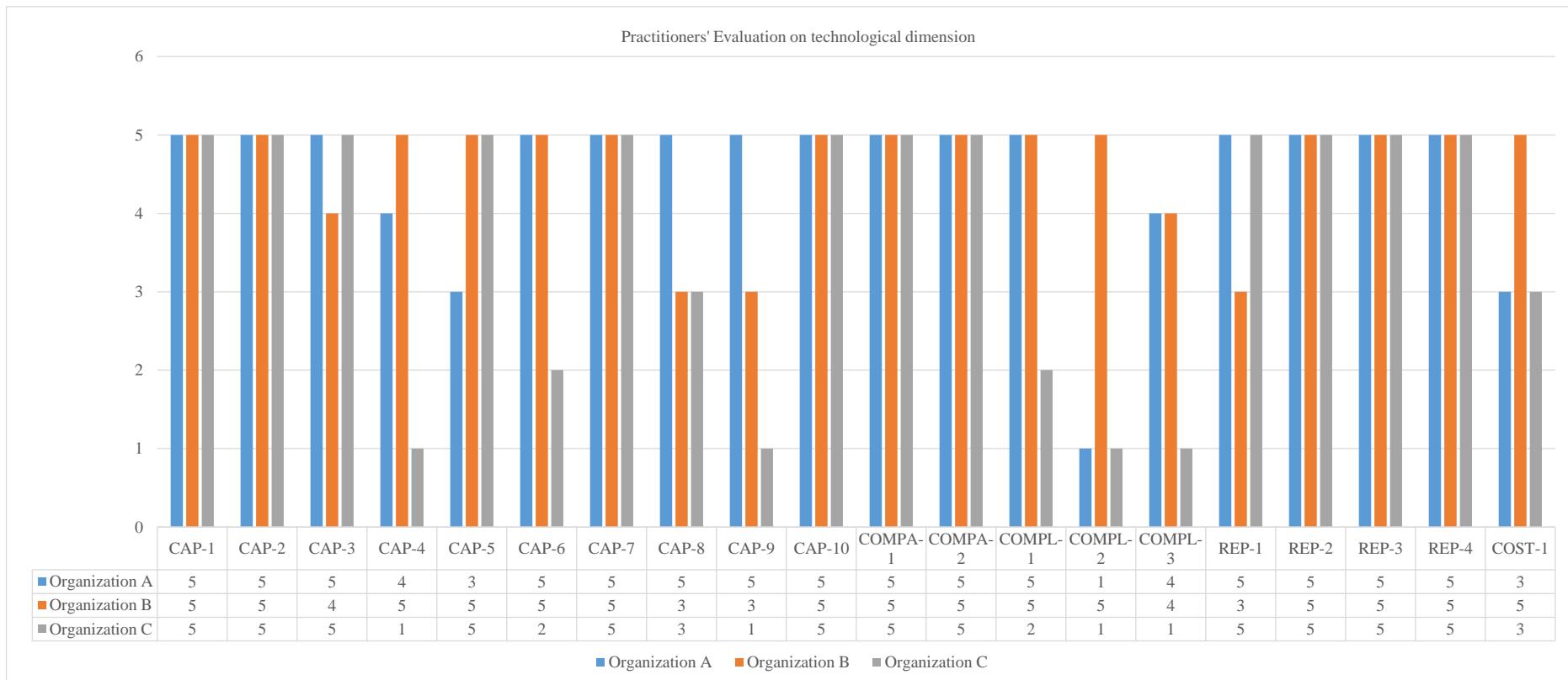


Figure 2. BPM practitioners' evaluation of technological dimension factors (as evaluated by BPM practitioners after BPMS adoption).

grade (5). Similar results were obtained for the category of BPMS vendor's reputation and maturity (REP). BPMS vendor's knowledge, experience and presence on the local market (REP-2), BPMS documentation (REP-3), service, and maintenance (REP-4) were scored as having the highest relevance (i.e. "absolutely essential") for all interviewees. While vendor maturity (REP-1) is "absolutely essential" for organizations A and C, this was not the case for Organization B. According to the interviewee from Organization B, this factor is "of average importance". This is likely explained by the fact that this was the first BPMS implementation in Organization B. Thus, the BPM practitioner did not perceive the issues and problems that could occur due to inadequate consultant maturity.

BPMS Capability

The average scores for the BPMS capability category (as presented in Figure 1) were very similar for Organization A (4,7) and Organization B (4,5), while the average grade given by Organization C was somewhat lower (3,7).

The best graded factors within this category (Figure 2) were: process modelling, analysis and design functionality (CAP-1); business rules support (CAP-2); existence of enactable models and process engine functionality (CAP-7); and BPMS security and reliability (CAP-10). During BPMS selection, the interviewees assessed these factors as "absolutely essential" for the success of their initiatives.

For Organization C, both the availability of advanced reports and analytics (big data, real-time intelligence, predictive analytics, dashboards) based on data collected during the simulation and process runtime (CAP-3) and the process strategy subsystem development (CAP-5) were scored to have the highest relevance for the project goals. The interviewee from Organization A estimated that the reporting and analytics feature (CAP-3) was "absolutely essential" while it is "very important" according to the interviewee from Organization B. While this grade fits well to the BPM initiative goals of Organization B, this is not the case for Organization A. The main goal of the BPM project in Organization A was to develop a software platform and web services to support process execution. Consequently, the relevance of this feature was of "average importance" during BPMS selection. The BPM practitioner changed their attitude about the potential usefulness of this feature after BPMS adoption.

The relevance of the process strategy subsystem (CAP 5) was of "average importance" for Organization A due to the nature of the BPM initiative ("BPM project as a one-time initiative"). On the other hand, this feature was "absolutely essential" for Organization B due to its strategic approach toward BPM as a mechanism to drive business.

Since the most important goal of BPM in Organization C was process optimization, BPMS was only "a tool" to achieve it. Thus the functionality of low-code development (CAP-6) was of "little importance" for the interviewee from Organization C. On the other hand, low-code development was "absolutely essential" for Organizations A and B, as business applications and BPMS development were the main focus of their initiatives.

The nature of internal processes (rigid business rules, standardized and inflexible procedures, processes mainly executed on a ramp or runaway, seasonal and external staff participation) resulted in the assessment of support to human collaboration and social media integration (CAP-4) and Web platform, cloud capabilities (CAP-9) as "absolutely irrelevant" for Organization C. The organizational factors and external environment of Organization A (public services provided to Croatian citizens, a requirement for strong IT integration and data transfer with ISs of business partners and other organizations from the government sector) affect the high ratings of social BPM support (4) and Web platform/cloud capabilities (5). Due to the highly competitive market and customer orientation, social BPM features were

evaluated as “absolutely essential” for Organization B, while Web platform and cloud capabilities were of “average importance”.

Since the BPM initiative in Organization A aims to provide a simple and efficient communication platform for all process participants (i.e. business users, government institutions and citizens), mobile and tablet functionalities (CAP-8) were considered “absolutely essential”. Prior to BPMS implementation, this factor was evaluated as “very important”, indicating a change in attitude about its relevance after adoption. For organizations B and C, this feature was of “average importance”.

BPMS Complexity

The average ratings given to the BPMS complexity category after BPMS adoption were the lowest in comparison to other categories of the technological dimension (Fig. 1). Additionally, the scores given within this category were quite heterogeneous, as presented in Figure 2.

The lowest scores were given by Organization C due to its long-time experience in BPM (a continuous set of projects over the past 15 years) and a high level of knowledge about BPM and IT. BPMS implementation complexity (COMPL-1) was scored as being of “little importance”, while the simplicity of BPMS use (COMPL-2) and the ease of user interface usage (COMPL-3) were of “no importance at all” for Organization C.

The relevance of BPMS implementation complexity (COMPL-1) was “absolutely essential” for Organizations A and B while the ease of user interface usage (COMPL-3) was of “high importance” for both organizations after BPMS adoption. The relatively high relevance of these factors for Organizations A and B is aligned with their status as “novices in BPM”, i.e. both organizations are in the lower BPMS adoption stages in comparison to Organization C.

The complexity of BPMS use (COMPL-2) was of “high importance” for Organization B, hence this score is well aligned with the above conclusions. Quite unexpectedly, the same factor (COMPL-2) was “of no importance” for Organization A. This situation can be explained as follows: (1) users have adequate knowledge of IT and BPMS usage; and (2) the selected BPMS are relatively simple to use.

Finally, it must be pointed out that according to the opinions of the BPM practitioners, these factors (COMPL-1, COMPL-2 and COMPL-3) were of “average importance” during the process of BPMS selection in Organization B. However, its relevance increased after adoption due to the issues and obstacles faced by the organization while implementing BPMS.

BPMS Costs

While BPMS implementation costs (COST-1) were of “average importance” for Organizations A and C, this factor was essential for Organization B. The reason can be found in the fact that Organization B initiated a comprehensive, time consuming and financially demanding BPM program. The scope of the BPM project launched by Organization A was much narrower, while Organization C conducted a continuous series of relatively small projects over a long period, thus requiring a relatively lower budget share for each project.

DISCUSSION ABOUT BPMS ADOPTION RESULTS AND SUCCESS FACTORS

Part 4 of the interview covered the major issues related to the success of BPMS adoption. The most important findings are presented and discussed in this section, thus providing answers to the second research question (**RQ2**) about the benefits and advantages, but also about the issues and obstacles of BPMS adoption initiatives. The differences in technological CSF assessment prior to and after BPMS implementation are also discussed here.

BPMS ADOPTION IN ORGANIZATION A

The most important result of BPM initiative in Organization A is the new software platform that manages the process of granting transport tickets for 130 000 citizens with beneficial rights and their vehicles in liner shipping and coastal maritime traffic. Additionally, the reporting IS was developed and data made available to relevant users (citizens and employees of government organizations). The BPMS was adequately selected: Bizagi BPM Suite functionalities were tailored to the BPM initiative goals and the cost was appropriate. BPMS functionalities were used to (1) model and design the selected process, and (2) build process application. Though minimal coding was required to turn business process models into a web application, additional software tools were also used. The implemented BPMS and developed business applications entirely fulfilled the expectations, though the relevance of both advanced reports and analytics (CAP-3) and mobile and tablet access to BPMS (CAP-8) were graded too low prior to implementation. After adoption, the interviewee decided to give the highest score to these CSFs. Business partner data transfer and IS integration was noted as a project risk, though these obstacles were successfully overcome.

The CSFs of the organizational dimension fit well with the characteristics of the third stage of BPMS adoption. Top management supported the BPM initiative and understood its importance. The BPM initiative was defined as a strategic goal for the organisation. Employees were motivated to accept changes in working procedures, thus a lack of BPM knowledge and education did not influence project success. Process jobs and roles were not established, since this was an individual project, and not a continuous and strategic BPM approach.

The influence of the external environment was of the highest importance for this project. The slowness and resistance of business partners and other government organizations to introduce changes in their external business processes was a great obstacle for this project. Therefore, the government support and willingness to amend and adopt the law and regulations to ensure alignment with the project's goals were crucial for the BPM success. Several acts and regulations were amended and adopted to support this initiative, such as: (1) Regulation on the conditions and evaluation of the criteria for the award of concession and contract on public services for public transport in liner shipping and coastal maritime traffic; (2) Rules of compliance for ships and ship-operators participating in public transport in liner shipping and coastal maritime traffic; (3) Rules on the conditions and procedures for granting beneficial rights in public transport in liner shipping and coastal maritime traffic; and (4) Decision on the amount of the discount on regular prices for transport tickets with beneficial rights for the passengers and vehicles in public transport in liner shipping and coastal maritime traffic.

BPMS ADOPTION IN ORGANIZATION B

The results of BPMS adoption in Organization B were: (1) business process repository with AS-IS and TO-BE models of 15 core (end-to-end) business processes; (2) business process analysis results, and (3) a software platform to manage and support three processes (procurement, contracting and filing lawsuits). To achieve the initiative's goals, a complex, powerful and expensive BPMS was selected. While the functionalities of the Oracle BPM Suite 12c fully met the requirements, this was not the case for external consultants. Though the social BPM (CAP-4), i.e. the ability to support human collaboration and integration with social media and the low-code development (CAP-6) functionalities were graded as "very important" prior to implementation, after adoption these factors were evaluated as "absolutely essential". Similarly, BPMS complexity (COMPL-1; COMPL-2 and COMPL-3) was beyond expectations. The ratings of these CSFs, which were given excessively low scores prior to implementation, were rated with the highest scores after the adoption of BPMS. Despite the complexity, the selection of BPMS was a good business decision since it will be capable of meeting the requirements of future initiatives.

During implementation, several issues in BPM were identified at different organizational levels, such as: (1) inadequate top-management support, lack of widespread employee awareness of BPM importance in the organization, (2) lack of standards and lack of BPM education at the tactical level; and (3) miscommunication of BPMS capabilities at the operational level. The comprehensive scope of the project was considered a great challenge of this initiative. However, due to the intensive efforts of project team members, these issues were successfully resolved. Following completion of the initiative, the organizational characteristics were typical for the fourth stage of BPMS adoption: design of a roadmap for BPM adoption; employee acceptance of business process terminology; introduction of process roles; establishment of a business process governance officer during the initiative.

A highly competitive external environment was a driver of the BPMS initiative and this partly affected BPMS adoption. Due to constant change on the market, the business process models were amended during the BPM initiative, thus causing changes to business processes in the organization. Consequently, certain processes were re-modelled, which required additional effort, though this did not affect the successful completion of the project (within budget and on time).

BPMS ADOPTION IN ORGANIZATION C

The results of BPMS adoption in Organization C indicate the presence of all phases of the BPM lifecycle, such as:

- Process identification – the process landscape is identified, process owners identified and strategic process goals defined using BSC (Balanced Scorecard) functionality;
- Process discovery – AS-IS business process repository is developed, low-level details of documenting of passenger service and aircraft ground handling processes modelled, process performance goals defined and quick-wins implemented;
- Process analysis – passenger service and aircraft ground handling AS-IS processes analysed in relation to organizational units' time and cost, simulation and what-if analysis of flight departures process conducted, performance issues identified and optimization priorities assigned;
- Process redesign – analysis of resources capacity and utilization is conducted, process changes and optimization proposed, TO-BE models of passenger service and aircraft ground handling processes designed;
- Process implementation – business process changes are implemented, the concept of change management introduced, new business applications procured and implemented to support the changed business processes;
- Process monitoring and control – process performance monitoring system for passenger service and aircraft ground handling processes is developed and implemented, dashboarding/reporting of flight data and aircraft ground handling process introduced, process metrics and key performance indicators such as process time, delays and reasons for the delay in ground handling operations and customer experience scores used.

The advantage of Software AG (previously ARIS, IDS Scheer) was in its modularity, thereby enabling Organization C to purchase those functionalities that were relevant for its specific BPM initiative goals. The appropriate BPMS functionalities and excellent support of the external consultants were recognized as the main success factors of the BPM initiatives. BPMS functionalities and BPMS maintenance fully met the requirements.

According to the characteristics of the organizational dimension, Organization C falls into the fifth stage of BPMS adoption: (1) presence of employee buy-in; (2) a common mind share of BPM and strong support at all management levels positively affected the adoption success; (3) BPM goals were derived from strategic goals of organization; (4) links were established

between business process outcomes, KPIs and the strategic goals of the organization; (5) establishment of the BPM Centre of Excellence responsible for BPM-related activities and a process-oriented organizational structure.

The external environment triggered BPM initiatives (Organization C intended to become and stay competitive) but did not affect adoption success. During the 15-year period, several BPMS adoption initiatives were conducted smoothly and successfully, without major issues or obstacles. Presently, a new BPM goal has been identified, i.e. the organization is aiming to invest efforts in the field of social BPM and customer experience.

BPMS ADOPTION SUCCESS FACTORS: A RECAPITULATION

According to the results presented in Figures 1 and 2, it can be concluded that for some technological factors of BPMS adoption, all practitioners shared the same opinion. For most of these factors, all practitioners assigned the highest level of importance both prior to BPMS implementation and after BPMS adoption. Those factors are supported by the functionalities and features of BPMSs that can be considered as core, such as those related to:

- (CAP-1) Process modelling, analysis and design;
- (CAP-2) Business rules modelling;
- (CAP-7) Enactable models and process engine;
- (CAP-10) Security and reliability;
- (COMPA-1) Existence of compatibility;
- (COMPA-2) Simplicity of integration;
- (REP-2) Presence on the local market;
- (REP-3) BPMS documentation;
- (REP-4) BPMS installation and maintenance.

These functionalities of BPMS should definitely be considered when selecting the BPMS for specific implementation, regardless of the business type, size of organization, vendor maturity, and other organizational and environmental factors of BPMS adoption. The fact that almost half of the 20 established technology factors were considered by all practitioners to be “absolutely essential”, indicates that we have succeeded in identifying the important technological features of BPMSs.

It is also apparent that the study participants had differing attitudes about certain categories. Discrepancies were most evident in the issues on social BPM (CAP-4), low-code development (CAP-6), mobile & tablet functionalities (CAP-8), web platform, cloud capabilities (CAP-9), simplicity of BPMS use (COMPL-2), vendor maturity (REP-1) and BPMS implementation costs related to budget (COST-1). Some reasons that can justify these divergences are differences stemming from: (1) organizational and environmental factors, (2) stages of BPM adoption in the organization, (3) types of processes implemented, (4) final phases of implementation for particular process, and (5) the quality of the relationship between the organization and consultants and vendors.

These observations suggest that the framework formally presented in the section *Development of Research Model*, and then evaluated using the developed research instrument in three organizations, could be valuable to practitioners as guidelines in selecting BPMS. Organizations whose management is planning to adopt a BPMS need to investigate the organizational and environmental factors that may influence their future BPMS initiative, in any way. According to this multiple-case study, it is necessary to identify the organization-specific and mission-related requirements to keep the focus on supporting selected processes related to strategic goals. Our research has shown that complexity, costs and certain capability options related to emerging technologies vary in their influence on BPMS

adoption, mostly due to the organization's specific BPM goals, its technological maturity and BPM project scope. Clearly stated technological requirements regarding other capability options and compatibility, as well as thoroughly investigated and mapped features provided by reputable vendors, enhance the success of BPMS adoption.

CONCLUSIONS

This study investigated the contextual and technological aspects of BPMS adoption and related CSFs. A theoretical framework with identified fundamental dimensions of CSF for the BPMS adoption is presented. Each dimension is defined on a vast scientific literature review. A considerable amount of literature was focused on systematization and analysis of the contextual, i.e. organizational and environmental, dimension. In contrast, the number of publications exploring the technological dimension is considerably smaller, and even smaller is the number of publications in which CSFs have been empirically explored from the perspective of all three dimensions: organizational, environmental and technological. We believe that we have made substantial progress in that direction.

Furthermore, we have established a set of BPMS selection guidelines in relation to organizational, environmental and technological CSFs of BPMS adoption. The proposed framework and BPMS selection guidelines were tested using a case study approach. The study comprises three BPMS adoption initiatives that differ in relation to organisation ownership, size, type of business and process characteristics. Their BPM initiatives have different scopes, objectives and goals and belong to different BPMS adaptation stages. The differences between the organizations and their BPM initiatives are not considered a limitation of this study, since the intention is not to compare the findings, but to reveal the relationship between the contextual, environmental and technological characteristics of BPMS adoption initiatives and its success for three different organizations.

Qualitative and quantitative data collected in this study were analysed and discussed. We believe that the quantitative analysis of numerically evaluated components of the technological dimension and guidelines given thereto serve as a sound basis for BPMS selection. To further our research, we plan to analyse the quantitative data gathered here using recognized methods [51] for quantitative data analysis, e.g. AHP.

This study has several clear limitations. The first limitation is the number of case studies involved. Given the small number of case studies, caution must be taken when making general conclusions. In future research, we should answer the question: "Would the research results be different if the number of organizations involved is much higher?". Despite this, this study can serve as a foundation for future studies. Next, this study comprises the perspective of business practitioners concerning BPMS adoption, though to obtain a bigger picture of the field, the attitudes of BPM experts and BPM vendors should also be explored.

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NETWORK ANALYSIS OF INNOVATION IN THE INTERNET OF THINGS

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ABSTRACT

Background: In the Internet of Things (IoT) firms, innovation beyond the border of a company is important. Furthermore, advantageous positioning in the innovation network is thought to enhance the result of innovation and ultimately contribute to profit. **Objectives:** The objective of this research is to clarify empirically the influence of the network structure among companies on innovation in the IoT field. **Method:** In this research, the relationship between the network structure and the result of innovation was analysed through social network analysis. Joint application patents related to the IoT companies were extracted from the intellectual property database. **Results:** As a result, the difference in the network structure of a company was related to the result of research and profitability. In particular, a company with a platform type of business model is considered highly profitable in the IoT business field. **Conclusion:** Drawing on an intellectual property database and employing social network analysis, this research quantifies the structure of innovation networks in terms of the results and operational efficiency of R&D.

KEY WORDS

social network analysis, innovation, Internet of Things (IoT), joint application patent

CLASSIFICATION

JEL: O32

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INTRODUCTION

The objective of this research is to clarify empirically the influence of the network structure among organizations on innovation in the Internet of Things (IoT) business field.

At present, IoT businesses are attracting considerable attention and are rapidly advancing. In Europe, Industry 4.0 and other trends in automation are mentioned as similar notions. Transformations in information and communication technologies before the IoT included advances in computing, the spread of the Internet and so on. The IoT directly concerns autonomy and the advanced features of all devices in a process termed ‘smartization’. The impact of the IoT on changes in industrial structure is important. Various myriad devices collect big data autonomously. Big data are shared by the Internet as a database and are analysed through artificial intelligence, etc. Moreover, various devices are controlled automatically and in an integrative fashion. Porter and Heppelmann [1] compared the IoT using several examples. For instance, a farm tractor evolves from a stand-alone farming implement into a complex system of agricultural automation. It is thought that the impact of the IoT on industrial structure is considerable and its coverage is wide. The IoT constitutes a significant business opportunity. Moreover, many companies are beginning to enter into the area of IoT business all at once and all around the world and competition in terms of technological development is extremely high. For a company to produce excellent results from research in the context of such competitive environment, with rapid technological development, it is necessary to increase both the speed and efficiency of research and development (R&D).

Recently, open innovation [2] has attracted attention as a means of enhancing the efficiency and speed of R&D. That is, it is a strategy which promotes innovation through cooperation with an external organization, leveraging the specific technical resources of the company. It is thought that speeding up development and its correspondence with various areas can be attained through open innovation, using the technology of an external organization. In carrying out business in the IoT field, there are various related technical factors, for example ensuring cooperation among various systems in terms of hardware, software, network communications, database applications, etc. To enable such cooperation, there is a need for technology, such as information and telecommunications, analysis and security. It is difficult for a single company alone to bring these various technical developments to bear simultaneously. It is thought that by cooperating with many companies, excellent research results can be produced.

However, if a company depends too greatly on external technology, there is a risk that the company-specific capability to create technology may decline. If the technological capabilities of the company decline, there is also a risk that the capability to understand external technology and to utilize it may decline. Therefore, the need to increasing the level of cooperation and extending the research area is not necessarily linked to the results of research.

This is a point also made concerning the relationship between the results of R&D and profitability. That is, the results of R&D are not necessarily related to revenue due to various problems. In the area of technology management research, the problems of the Death Valley Curve and digital Darwinism are widely acknowledged. Regardless of the results of research, they do not necessarily expand the revenues of a company. IoT businesses are still on the path to development and a number of businesses have begun this process in various industries. Moreover, while there are some IoT businesses which have large revenues, many do not. One of the aspects addressed in this study is raising awareness of the problem of the difference between businesses in which the results of R&D are readily connected with revenues and those in which this is not the case. For example, in the computer industry, there are plentiful

examples to date in which a restrictive and strong connection in R&D with a specific external company has increased the potential for the growth and profitability of a company, as in the case of Intel and Microsoft. Furthermore, in the motor vehicle industry, in-depth and narrow cooperation with a specific company with strength in R&D has induced strong competitiveness and has realized high profitability. Thus, it can be argued that R&D partnerships differ in terms of increasing profitability depending on the traits of the product or the industry.

Thus, this research analysed the actual effect of the R&D relationship empirically in IoT firms. The research employed social network analysis, which has attracted attention as an analytic tool for examining inter-organizational relationships. The object of the analysis comprised the application patents among the major companies related to the IoT business field, extracted from the patent information database.

LITERATURE REVIEW

INTERPERSONAL TIES

Granovetter's article [3] on the strength of weak ties was a seminal work in the study of social networks and is an extremely famous publication in sociology more generally. According to [4], interpersonal ties generally come in three varieties: strong, weak or absent. Weak social ties, it is argued, are responsible for the majority of the embeddedness and structure of social networks in society, as well as the transmission of information through these networks. Specifically, more information that is novel flows to individuals through weak rather than strong ties. As close friends tend to move in the same circles, the information they receive overlaps considerably with what is already known. Acquaintances, in contrast, know people in other circles and thus receive more information that is novel. Granovetter [3] argues that for diffusion across a network, weak ties are most valuable.

However, according to [5], there are some problems with Granovetter's definition. Krackhardt [5] contends that there are subjective criteria in the definition of the strength of a tie, such as emotional intensity and intimacy. He considers that strong ties are very important in cases of severe change and uncertainty.

The notion of structural holes theory [6] is related to some extent to the strength of weak ties theory. This theory draws on the fundamental idea that the homogeneity of information, new ideas and behaviour is generally higher within any group of people compared to that between two groups of people [7]. An individual who acts as a mediator between two or more closely connected groups of people could gain important comparative advantage. In particular, the position of acting as a bridge between distinct groups allows a person to transfer or gatekeep valuable information from one group to another. In addition, the individual can combine all the ideas received from different sources and come up with the most innovative idea based on all the information. At the same time, a broker also occupies a precarious position, as ties with disparate groups can be fragile and time consuming to maintain.

OPEN INNOVATION

According to [2], conventional innovation has been performed primarily through vertical integration model in one industrial group. However, in terms of the speed of the transmutation of management environments, for example resulting from the development of a technique or the diversification of a market, innovations will support these developments in a network of various companies. Innovation involves a high level of uncertainty and entails a necessary process of trial and error. The greater the divergence that a player brings to the process of innovation, the more instances of trial and error will be generated by the various players. There are many ways for innovation to be achieved. The greater the diversity of

different kinds of attempts at innovation, approaching problems from different perspectives, such as the external viewpoint, the user's viewpoint, the viewpoint of a different society, or the viewpoint of a different culture, the more it is thought that innovation can be facilitated.

Dittrich et al [8] describe the different approaches in a joint research network as comprising an exploitation strategy and a pursuit strategy. In an exploitation strategy, an alliance partner has a funding relationship, generally related to the same technological or business field. It is rare for a new alliance partner to participate in a collaborative network and the speed with which an alliance partner changes is slow. An exploitation strategy is similar to a closed innovation, in which a development is made in an originally outstanding field mostly with a specific partner. In a pursuit strategy, an alliance partner does not have a funding relationship and is in many cases in a different technological or business field. In the pursuit strategy, many new alliance partners participate in a collaborative network and alliance partners change rapidly.

Christensen [9] defines organizational capability as comprising special technical and integration capabilities. The special technical capability is the team's basic capacity to mobilize resources for a specific production activity. Integration capability is a high-level administrative ability, which mobilizes, cooperates in and develops exchangeable resources or capabilities, yielding value and competitive advantage at the system level. Thus, special technical capability is promoted through the resources inside an organization, whereas integration capability serves as the central resource of open innovation and organizational boundaries may differ according to managerial resources.

PLATFORM LEADERSHIP

Gawer and Cusumano [10] define external or industry platforms as products, services or technologies developed by one or more firms, which serve as foundations upon which a larger number of firms can build further complementary innovations in the form of specific products, related services or component technologies. Iansiti and Levin [11] note the role of the 'keystone firm', i.e. one that drives industrywide innovation for an evolving system of separately developed components. Industry platforms tend to facilitate and increase the degree of innovation in complementary products and services. The greater the innovation in such complementary aspects, the more value is created for the platform and its users via network effects, creating a cumulative advantage for existing platforms. As these grow, they become harder for rivals or new entrants to dislodge; the growing number of complements acts as a barrier to entry. Highlighting the complex trade-offs between 'open' and 'closed' innovations, Gawer and Cusumano [12] suggest that while opening up interfaces will increase complementors' incentives to innovate, it is important to preserve some source of revenue and profit as proprietary.

According to [13], switching costs and network effects bind customers to vendors if products are incompatible, locking customers or even markets into early choices. Lock-in hinders customers from changing suppliers in response to (predictable or unpredictable) changes in efficiency and gives vendors lucrative ex-post market power over the same buyer in the case of switching costs (or brand loyalty), or over others with network effects.

RESEARCH HYPOTHESES

According to existing studies, the network structure regarding innovation with an external organization affects the results of innovation and the financial impact. However, there is no consensus in terms of what kind of network structure is effective.

The first issue is the comparison between a broad network and a narrow network. IoT companies consider to be involved in more technological areas than conventional businesses.

In terms of deriving results from research in an unknown area, it is assumed that technological results that are more radical can be achieved by cooperating with a wide range of companies. Therefore, it is assumed that a broader network confers an advantage.

To obtain innovative technological results, homogeneous relationships in the same industry may not be appropriate. Connecting with companies in different industries, locations, etc., is thought to be helpful in achieving wide-ranging technological results.

However, to convert a technological result into a profit-making business, considerable resource inputs and long-term effort are necessary. The various technical factors necessary for a business must be integrated and a revenue-sourcing scheme must be accomplished. In a partnership with an external company, business success may be derived from building strong fiduciary relations. For this purpose, it may be more effective to build a strong partnership with a specific external company than associating with many, unspecified companies more broadly.

In addition, the opportunities to earn profits can be expanded by developing the spread of the technical standard of the company from the viewpoint of a technological strategy. In particular, in the dawn or the growth phase of a new industry, as in the IoT, the competition for a standard with an exclusive competing product is important to the business. With this in mind, it is important to segment the companies concerning complementary technology and domain identity and to form a group. Good cases of precedence, for example, are Intel and Microsoft in the personal computing industry and Apple in the Smartphone industry. If the technology of a company is transformed into an industry aggregate platform technology, it may also be possible to promote the product of the company through the evolution of the industry aggregate. The spread of technical standards and the increase in revenue are thought to result in a virtuous cycle.

Based on the above, the following hypotheses are developed:

- H1.** A broad network between organizations regarding innovation enhances the results of innovation.
- H2.** Networking with a distant organization enhances the results of innovation.
- H3.** A narrow (strong) network between organizations regarding innovation enhances the results of such innovation.
- H4.** A platform style network between organizations enhances the results of innovation.

VERIFICATION METHOD

OBJECT OF ANALYSIS

As an analytic method, IoT-related patents were extracted from the open Japanese patent database. The relationships between companies regarding innovation were surveyed by analysing the joint application status of patents. When two or more companies applied for a patent jointly, it was assumed that there was cooperation regarding R&D among these companies.

In detail, concerning each joint application patent, the applicants' names and number of applications, etc., were extracted and an adjacency matrix was created. The adjacency matrix data were analysed using social network analysis. Finally, the relationship between each network indicator and each indicator regarding the results of R&D were analysed. The methods and indicators of social network analysis employed are addressed later.

IoT-related technology is an emerging and evolving field. In extracting the patents related to IoT technology from the [14], various search terms related to engineering were employed as keywords, namely the following: information network, big data analysis, artificial intelligence, cyber security, software-based technology, etc. In all, 921 open patents (2005 or later) entailing joint applications by two or more legal persons regarding IoT-related technology were extracted.

To investigate R&D networking with external organizations, patent applicants in the same industrial group were excluded; for example, joint applications for patents by Toshiba Corp. and the Toshiba Solutions Corporation were excluded. In addition, we accounted for the name of an old company transposed to a new company or a merged company.

Moreover, to address the importance of the patent, we not only considered the number of patents but also the number of references. An indicator often used as a means of the objective evaluation of patent value is reference information. Although there are critiques of this method, the number of references is understandable as a patent value indicator. For example, according to [15], the number of patent citations can be correlated with the evaluation of the significance of the patent by an expert. In addition, Schoenmakers and Duysters [16] value innovations by the number of references during observed period, and value patent importance with the number of patent citations.

In terms of financial data, the average of the operating profit for sales in the latest three years was computed from the financial statements of each company. It should be noted that in cases in which the company was involved in two or more businesses, the information on the segment thought to be the IoT-associated business was extracted.

NETWORK ANALYSIS INDICATORS

This section addresses the method and indicators of social network analysis used for verification in the study. Social network analysis is the process of investigating social structures using network and graph theories [17]. It characterizes networked structures in terms of nodes (individual actors, people, or things within the network) and the ties, edges, or links (relationships or interactions) that connect them. Examples of social structures commonly visualized through social network analysis include social media networks [18], message propagation in a social network service [19], friendship and acquaintance networks, collaboration graphs, kinship, disease transmission and sexual relationships [20, 21]. These networks are often visualized through socio-grams, in which nodes are represented as points and ties are represented as lines. Network features can be at the level of individual nodes, dyads, triads, ties and/or edges, or the entire network. For example, node-level features can include network phenomena such as betweenness and centrality, or individual attributes such as age, sex, or income [22].

Social network analysis software generates these features from raw network data formatted as an edge list, adjacency list, or adjacency matrix (also called a socio-matrix), often-combined with (individual/node-level) attribute data [22]. Although the majority of network analysis software uses a plain text ASCII data format, some software packages contain the capability to use relational databases to import and/or store network features. Either network analysis software generally consists of packages based on graphical user interfaces (GUIs), or packages built ztools are more powerful and capable of extension. Widely used and well-documented GUI packages include NetMiner, UCINet, Pajek (freeware), GUESS, ORA, Cytoscape, Gephi, SocNetV (free software) and muxViz (open source). In this research, UCINet 6 for Windows was used.

With regard to the aforementioned hypotheses, of the various indicators employed in social network analysis, ‘degree centrality’ was used as an indicator of network breadth. In graph theory and network analysis, indicators of centrality identify the most important vertices within a graph. Applications include identifying the most influential person(s) in a social network, key infrastructure nodes in the Internet or urban networks and super-spreaders (of disease). Centrality concepts were first developed in social network analysis and many of the terms used to measure centrality reflect their sociological origin [23]. Degree centrality is defined as the number of ties related to a node. UCINet (<https://sites.google.com/site/ucinetsoftware/home>)

calculates the degree, and normalized degree centrality of each vertex and provides the overall network degree centralization. The number of vertices adjacent to a given vertex in a symmetric graph is the degree of that vertex. For non-symmetric data, the in-degree of a vertex u is the number of ties received by u and the out-degree is the number of ties initiated by u . In addition, if the data are valued, the degrees (in and out) will consist of the sums of the values of the ties. The normalized degree centrality is the degree divided by the maximum possible degree expressed as a percentage.

Next, ‘constraint’ was used as an indicator of the relationship with a distant organization. A structural hole is a relationship with no redundancy between two contacts. Constraint is essentially a measure of the extent to which ego is invested in people who are invested in other alters of the ego [7]. UCINet (<https://sites.google.com/site/ucinetsoftware/home>) computes several measures of structural holes, including all of the measures developed by Burt. The measures are computed for all nodes in the network, treating each one in turn as the ego. Constraint is a measure of the extent to which ego is invested in people who are invested in other alters of the ego [24].

Next, ‘ego density’ was used as an indicator of a strong narrow network. Density refers to the ‘connections’ between participants. Density is defined as the number of connections a participant has, divided by the total possible connections a participant could have. For example, if there are 20 people participating, each person could potentially connect to 19 other people. A density of 100 % (19/19) is the greatest density in the system. A density of 5 % indicates there is only 1 of 19 possible connections [25]. UCINet (<https://sites.google.com/site/ucinetsoftware/home>) computes standard ego network measures for every actor in a network. This routine systematically constructs the ego network for every actor within the network and computes a collection of ego network measures. Both in and out networks can be considered separately or together.

In addition, ‘brokerage’ and ‘betweenness’ were used as indicators of the style of network platform. Brokerage is the number of pairs not directly connected. The idea of brokerage is that the ego is the ‘go-between’ for pairs of other actors. In an ego network, the ego is connected to every other actor. If these others are not connected directly to one another, the ego may be a ‘broker’ ego, intervening in the paths between others. UCINet (<https://sites.google.com/site/ucinetsoftware/home>) computes the number of times the ego lies on the shortest path between two alters, i.e. the number of pairs of alters that are not directly connected. Normalized brokerage is the brokerage divided by the number of pairs. This assesses the extent to which the ego’s role is that of broker. One can be in a brokering position a number of times, but this is a small percentage of the total possible connections in a network. UCINet (<https://sites.google.com/site/ucinetsoftware/home>) computes brokerage normalized by the number of brokerage opportunities, which is a function of ego network size.

Betweenness is an aspect of the larger concept of ‘centrality’. Ego is ‘between’ two other actors if it lies on the shortest direct path from one to another. The ego betweenness measure indexes the percentage of all geodesic paths from neighbour to neighbour that pass through the ego. UCINet (<https://sites.google.com/site/ucinetsoftware/home>) computes the sum of the proportion of times the ego lies on the shortest path between each pair of alters. For alters connected to each other, the contribution between the pair is zero. For alters connected to each other only through the ego, the contribution is 1. For alters connected through the ego and one or more other alters, the contribution is $1/k$, where k is the number of nodes connecting that pair of alters. Normalized betweenness compares the actual betweenness of the ego and the maximum possible betweenness in the neighbourhood of the size and connectivity of the ego. The ‘maximum’ value for betweenness would be achieved in the case that the ego is at the centre of a ‘star’ network; that is, no neighbours communicate directly with one another and all

communications between pairs of neighbours go through the ego. UCINet (<https://sites.google.com/site/ucinetsoftware/home>) computes Ego Betweenness normalized by a function of the number of nodes in the ego network. The notions of ‘brokerage’ and ‘betweenness’ are differing ways of indexing just how ‘central’ or ‘powerful’ the ego is within its own neighbourhood. This aspect of how an actor’s embedding may provide strategic advantage has received a great deal of attention.

RESULTS AND DISCUSSION

RESULTS

Correlation analysis was conducted between the network analysis indicator computed using the aforementioned analytic method and the total number of registered patents and an operating profit ratio. The number of patents registered is a proxy variable for the results of R&D. The number of patents registered is not the number of applications, but the number of patents approved. SPSS Version 23 was used for the correlation analysis. The results of the correlation analysis are shown in Table 1.

Table 1. Coefficient of correlation between the network indicator, registered patents and profit ratio.

| Network indicator | Total number of registered patents | Operating profit ratio |
|----------------------------|------------------------------------|------------------------|
| Degree Centrality | 0,487** | -0,006 |
| Constraint | -0,427* | -0,297 |
| Density | 0,164 | 0,383* |
| nBroker | 0,164 | 0,383* |
| Normalized Ego Betweenness | 0,138 | 0,394* |

*statistically significant at 5 %

** statistically significant at 1 %

DISCUSSION

Each hypothesis is considered based on the results of the aforementioned correlation analysis. First, H1 concerns the breadth of the innovation network. ‘Degree centrality’ was used as the network analysis indicator. The analysis shows a significant correlation between network breadth and the number of registrations of patents. In the IoT field, R&D results can be generated through wide-ranging cooperation with many companies. This shows that open innovation is effective in R&D within the IoT field. This may be because IoT is realized through cooperation among wide-ranging technologies and industries.

However, there was no significant correlation between network breadth and the profitability ratio. The breadth of the innovation network is not necessarily linked to the profitability of the IoT business. To advance a joint research project with many companies, it is assumed that considerable investment in R&D is necessary. If investment in R&D increases, the volume of its results may also increase. However, if the results of such research are not connected with the business, cost effectiveness may be lower.

H2 concerned innovation networks involving companies with a distant relationship. ‘Constraint’ was used as a network analysis indicator, with the analysis showing a negative correlation between constraint and the number of registered patents. Moreover, there was no correlation with profitability. That the value of constraint is low shows that the degree of freedom of an entity is high. When the constraint is small, it may be easy to reproduce the results of research. Granovetter’s hypothesis that ‘weak ties are strong’ is

posed to be applicable to IoT-related R&D. However, the volume of research results is not necessarily connected to profitability as in the aforementioned centrality. To increase profitability, it is argued that it is not only the novelty and number of R&D results that matter, but also the existence of a business strategy or scheme.

H3 concerned the narrowness (depth) of an innovation network. ‘Ego density’ was used as the network analysis indicator analysing the correlation with the reciprocal number. The results of the analysis were the opposite of those for degree centrality and constraint: that is, although the narrowness (depth) of the innovation network was not significantly correlated with the number of patents registered, there was a significant correlation with the profitability ratio. Thus, the optimal strategy may not necessarily be to undertake R&D with a wide range of external companies; rather, IoT companies may seek to narrow the scope of R&D and build a close relationship with a specific collaborator. In terms of specialization, the capability to understand and utilize the external results of research may also increase. As a result, the ratio of operational efficiency over R&D investment may increase.

H4 concerned innovation related to the style of the platform network. As network analysis indicators ‘nBroker’ and ‘Normalized Ego Betweenness’ were employed, considering intervention tendency. The results of the correlation analysis were the same as for the narrowness (depth) of an innovation network. As mentioned above, the network platform style is not simply related to network size or breadth. It is assumed that different industrial or technological groups are connected through a certain company. For example, in personal computing, Microsoft’s OS came together by uniting hardware and software, thus generating profitability. The same structure may apply to the dawn of an IoT business. However, the formation of the platform style of an innovation network does not necessarily correlate with the volume of research results. This may show the advantage of a technological strategy that focuses on the company at the centre of the network, rather than distributing R&D resources widely.

At present, in the dawn and the growth phase of IoT businesses, various large-scale corporations, start-up companies, research institutions, etc. globally are investing many research resources and are performing a wide range of R&D activities in such firms. To succeed in the face of extreme innovation competition, it is important to have an excellent technological strategy. It is considered desirable to strengthen strategic cooperation, makes the company the platform of an innovation network and selecting an external company or companies with which to cooperate carefully rather than distributing R&D resources widely, thus increasing the efficiency of R&D.

CONCLUSIONS

The objective of this research was to analyse quantitatively the relationship between innovation network structure and the results of innovation in relation to the dawn and growth phase of IoT firms. Using intellectual property database and employing social network analysis, this research investigates quantitatively the structure of innovation networks in terms of the results and operational efficiency of R&D.

As an implication of this research, it is expected that the results of this quantitative analysis will serve as criteria for evaluation by managers of companies considering R&D strategy in the IoT field, which is in line with numerous previous research [26-28]. In terms of the limitations of this research, there is no telling whether the traits of the birth and growth phases of such firms will be appropriate in later phases. In addition, the object of analysis concerned only Japanese firms and thus the results of the analysis may not be generalizable to other contexts. Therefore, further research, particularly undertaking international comparisons, is needed.

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SUSTAINABLE DEVELOPMENT, TECHNOLOGICAL AND INDUSTRIAL IMPACTS ON ENGINEERING EDUCATION

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ABSTRACT

The past industrial revolutions had negative effects on our world especially on environmental and social aspects. Hence, our societies must be able to steer the continued industrial revolution into the direction of sustainability. In particular, the current industrial revolution relies on the technologies of the Internet of Things, which open the ways to the development of sustainable solutions in order to meet the needs of the present without compromising the needs of the future. In the transition towards a sustainable society, teaching sustainability is necessary to ensure sustainable design and preserve the ecosystem. Consequently, educating engineering students on sustainable development is wide spreading and is actually taking place worldwide in many modern faculties and universities. This article examines the teaching methods for a sustainability subject and builds on the experience of others and a wide spectrum of methods in order to provide guidelines for curriculum design. The design is based on innovations in technologies to cover sustainability along with environmental and social implications. The article also provides a criterion for evaluating the impact of executing the proposed sustainable development curriculum.

KEY WORDS

sustainable development, teaching methodology, learning outcomes, ICT, IoT

CLASSIFICATION

JEL: Q56

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INTRODUCTION

The aim of the new industrial revolution is the ability to be sustained, which is the ability of not depleting natural resources or harming the environment. The developing sustainable products that use energy wisely can support long-term ecological balance and preserves the natural resources for future generations. As such, sustainable development aims to meet human development goals while at the same time sustaining the natural resources. To work toward this goal, it is a must to strive to utilize sustainable workforce where people are educated to practice the new strategic sustainability goals.

Hence, education for sustainability is becoming extremely important in the strive to reach a sustainable world. The education for sustainability is defined as a transformative learning process that equips students, teachers, and school systems with the new knowledge and ways of thinking needed to achieve economic prosperity and responsible citizenship while restoring the health of the living systems upon which our lives [1]. However, the design and introduction of a new curriculum into an educational system requires the compliance with many factors including the study program that is being followed by the institution, the need and capabilities of the students and governing laws and regulations. Some of these regulations are inflexible and may require many levels of approval. This adds some challenges on the course designer and the way to implement the course. A good method should not only allow flexible design but allows the gradual introduction with wide availability to all the intended users. As such, the approach followed in the design of the curriculum uses compatible models in teaching engineering students. The course can be introduced gradually into the various departments as per a pre-set plan then get expanded into the school curriculum in subsequent semesters.

Education around the world depends more and more on the use of technology and the integration of the new teaching methods. Educational technology is “The study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources” [2]. However, while smart educational environment uses the newest trends of Information Communication Technology (ICT), it can also have negative impacts on the world resources. ICT effects of the production, use, and disposal of products. As an example, the energy consumed for production of hardware affects the environment. ICT also effects of the functions provided during use of the technology. As an example, ICT enables new work models that can change workforce’s commuting habits. As such, there is a need to investigate the effect of using ICT equipment on the environment, society, and the sustainable development (SD). Moving forward, the enabling technologies such as Internet of Things (IoT) can be used in many ways to help sustainability.

The environment and society are very much close to sustainable development, after all, it is the environment that need to be improved for the best conditions of the society. As a result, the concepts of sustainable development can be combined with environment and society into one syllabus. Therefore, it is essential to educate the future professionals who will work in the sustainability field. The teaching must be done in a way that it becomes relevant and possible for the students to relate to and this can be achieved by introducing stimulating exercises.

Hence, it is becoming clear that sustainable development requires good attention, in particular, within the fields of engineering. The United Nations (UN) Sustainable Development Goals (SDG) are agreed upon in 2014 [3]. The 17 SDGs cover not only engineering aspects but all other areas that affect the environment and society. It is important to notice the characteristics of sustainability and its relation to the environmental issues; such as climate change, reducing greenhouse gas emissions, and the limited supplies of non-renewable resources.

Furthermore, the ICT community needs to conduct research on how to educate students on topics of sustainable development [4]. The students need to be taught how to get the required answers on their own and then work on applying the obtained knowledge to their future professions. The instructor has to engage the students and make an impact on their thinking [5].

The purpose of this article is to investigate the relatively new area of sustainable development within the field of engineering education. First, the teaching methods in similar published research papers are reviewed with the aim of coming up with an innovative method for introducing the topics to engineering students who have no prior knowledge about the subject area. Next, this article introduces a methods for assessing the effectiveness of the new curriculum mainly through specially designed surveys conducted on the participating students. The following section reviews the related work after which a section is written to introduce the methodology of new curriculum development. A section that covers the evaluation criteria of the curriculum is then introduced followed by the conclusion.

RELATED WORK

In reviewing of relevant systems, the different methods used in teaching sustainable development are explored. One relevant example is the Royal Institute of Technology (KTH). This institute has taken a long trip on teaching sustainability to students. Each student enrols in at least one SD course during his/her degree. A sample of engineering related courses is given in Table 1.

Table 1. A Sample of Related Sustainability Courses. Source: actual course contents prepared by the authors.

| |
|---|
| AG1815 Sustainable Development, ICT and Innovation |
| AG1814 Sustainable Development for Computer Science |
| AG3206 Futures Studies for Sustainability |
| DM2573 Sustainability and Media Technology |
| DM2720 Sustainable ICT in Practice |
| EH1110 Global Impact of Electrical Engineering |
| EH2221 The Sustainable Electric Power Engineer |
| EH2220 The Sustainable Electric Power Engineer |

The teaching method varies from one course to another; some use direct method while others use indirect method. The first method relies on a fixed SD curriculum with pre-determined related topics given in lectures, and the students are then given assignment or projects related to these topics. The later method uses topic from the specific engineering discipline and ask the students to figure out the effect of a particular problem on sustainability. In both cases, wide spectra of teaching methods and techniques, including student projects and presentations, can be used. Moreover, external seminars by subject matter experts can broaden the students' knowledge areas and experience. It is worth mentioning that the introduction of sustainability via a mixture of the above methods is quite possible with availability of the learning techniques and seminars.

KTH also has a two-year master program in sustainable technology that is based on the concept of Industrial ecology with focus on balancing technical, economic, social, and environmental systems and processes. It is composed of some mandatory courses (like environmental system analysis, industrial ecology, technology and ecosystems, and research methodology) and some elective courses (like trans-disciplinary approaches for system innovations, waste management, ecological economics, environmental modelling and management), and then it ends with a degree project and a thesis [6].

Another good example is the master program in sustainable development at Uppsala University. The program is composed of four semesters and 120 credit hours. It introduces sustainable

development's worldviews and visions towards natural resources, society and environment; energy, water and food. It also ends with a degree project in sustainable development [7].

The United Nations (UN) has been inspirational instrument in developing the concepts of Engineering Education for Sustainable Development (EESD). The UN has named the decade 2005-2014 the UN Decade of Education for Sustainable Development led by the UNESCO [8]. Consequently, there has been substantial achievements made internationally relevant to EESD [9]. Examples of EESD initiatives were documented by academic authors in papers published in either conference proceedings or peer-reviewed scientific journals.

In Europe, at Delft University of Technology, Netherland, Mulder presented sustainability as a tool to open up the windows of engineering education [10]; followed by Kamp who discussed engineering education in sustainable development [11]. In Sweden; Lundqvist and Svanstrom presented inventory of content in basic courses in environment and sustainable development at Chalmers University of Technology [12]. Hanning et al. addressed the issue of educating engineers for sustainability and presented a comparison between obtained competencies and Swedish industry's needs [13]. In United Kingdom; Fenner et al. illustrated embedding sustainable development into curricula of engineering departments at Cambridge University [14]. Humphries-Smith discussed sustainable design and the design curriculum at Bournemouth University [15]. Fletcher et al. presented the teaching of sustainable development at Aston University [16]. Lozano elaborated on diffusion of sustainable development in universities' curricula at Cardiff University [17]. In Spain; Ferrer-Balas et al. discussed education transformation towards sustainable development at the Technical University of Catalonia [18].

In the United States of America; Allenby et al. published a national overview of EESD in the American institutions of higher education [19]. Epstein et al. presented EESD case study at the Massachusetts Institute of Technology [20]. In Japan; Onuki and Takashi elaborated on the graduate program in sustainability science at the University of Tokyo [21]. Uwasu et al. discussed mobilizing science and technology towards sustainability at Osaka University [22]. In China; Xu, K. presented the status of EESD in Chinese universities within a national overview about engineering education and technology in a fast developing China [23].

In Australia; Mitchell discussed concentricity and its consequences upon integrating sustainability in chemical engineering practice and education at University of Sydney [24]. Bryce. et al. implemented a program in sustainability for engineers at Sydney University of Technology [25]. Daniell and Maier illustrated their embedding sustainability in civil and environmental engineering courses at University of Adelaide [26]. Davis and Savage discussed the challenges and opportunities for professional education with EESD perspective at Queensland University of Technology [27]. Goh presented a proposal for reform aiming at curriculum renewal in engineering management education at University of Southern Queensland [28]. Koth and Woodward presented result of auditing a course titled civil engineering for sustainability at the University of South Australia [29]. In New Zealand; Mann and Smith presented computing education for sustainability at Otago Polytechnic [30].

It is clear from the above references that sustainable engineering education is getting major attention from academic institutions all over the world. In fact, sustainable development enables the role of engineers in all the engineering professions, and as such, this article focuses on introducing sustainability curriculum for institutions that are starting to join the race for a sustainable world.

METHODOLOGY OF CURRICULUM DEVELOPMENT

The design of a new sustainable development curriculum must include a rich set of features that allows it to be used for wide range of educational purposes. The curriculum should not

only introduce the concepts of the sustainability requirements but also covers topics on environment and society such as the greenhouse effect, global warming, and climate changes. A list of the curriculum main topics is given in Table 2. The concepts of sustainable development are first introduced along with the United Nations definitions and future plans. Next, ICT solutions for sustainable development are introduced followed by the concept of smart sustainable cities and their environment.

The United Nations Brundtland Report, issued in 1987 [31], states that Sustainable development is development that meets the needs of the present without compromising the needs of future. While the general meaning of this definition can be understood, it is not specific to be used for implementing sustainability. As such it took several rounds until the UN came up with agreed upon sustainable development goals in 2014. On 25 September 2015, the UN General Assembly adopted the 2030 Agenda for Sustainable Development and each country started its planning to take action in accordance with its respective capabilities.

Table 2. The Overall Course Topics. Source: actual course contents prepared by the authors.

| |
|---|
| Introduction to Environment and Sustainability |
| Humans and the Environment |
| Gases Contributing to the Greenhouse Effect |
| Global Warming and Climate Change |
| Concept of Sustainable Development and UN plans |
| Introducing ICT-Solutions for Sustainable Development |
| Concept of Smart Sustainable Cities and the Environment |
| Air Pollution and the Environment Air Quality Index |
| Water Resources and Ground Water |
| Water Pollution and Wastewater Treatment and Disposal |
| Solid Pollution and Solid Waste Management |
| Control and Disposal of Wastes, Mitigation, Reuse/Recycle |
| Industry Growth and Alternative/Green Energies |

Engineering students in particular should be taught how to perform sustainable design, which is a collaborative approach to fulfil sustainable development strategies and goals. The design strategies include things such as energy conservation and elimination of toxic materials. Sustainable architecture education for engineers should focus on using the knowledge and skills in sustainable design in order to achieve energy efficiency as well as convenience in the built environment [32]. The main objective is to meet the main pillars of sustainability; economic (growth, capital, etc.), social (human resources, health, education, etc.), and environmental (habitat, species, biodiversity, etc.).

While ICT has positive effects on the society, it also has negative effects. The positive effects include increased access to information, increased opportunities for education, and improved telecommunications. The negative impact of ICT on society includes reduced personal social interaction in daily lives and also causing some ethical problems due to the amount of misleading information available on the internet. Sustainable development requires a deep societal transformation in many areas and ICT is already affecting the society. Hence, there is a need to steer the digital revolution into the direction of sustainability. The current cyber-physical revolution is in a position to give a big boost to sustainability.

It must be mentioned that ICT has adverse effects on sustainability as well. The most apparent effect is due to the life cycle of ICT equipment themselves. For instance, the production of ICT hardware consumes a vast amount of energy, not to mention the energy consumed during the operation of ICT hardware and the data centres. Another important negative factor is due to the mining of scarce metals raw materials for ICT hardware which causes depletion of natural resources as well as the social and environmental impacts of

mining. Then, comes the pollution caused by informal recycling and final disposal of ICT hardware. In order to mitigate the ICT related issues, the effect of hardware production needs to be reduced via things such as optimizing materials used for building the hardware, designing hardware and software that are aware of energy consumption, and build software that runs on multiple versions of hardware without a need for upgrade.

As mentioned before, the IoT enabling technologies can be used in many ways to help sustainability. IoT can support the monitoring of sustainable development impacts by providing ways to assess the carbon footprint, assess the scrap recycling, and assess the agriculture irrigation, just to name a few. As such, the proposed curriculum is based on introducing the IoT technology to the targeted students as it can be utilized in all the engineering disciplines. The students are also provided with examples from different engineering areas to broaden their understanding of the use of the new technology.

The IoT itself is a global infrastructure where devices, machines and sensors can connect and exchange information over the Internet. It relies on using wide variety of sensors such as temperature sensors, pulse sensors, location sensors, accelerometers, and even microphones and cameras. There are many research groups and consortiums [33] that focus on IoT development and there are abundant of IoT applications in all areas including education, transportation, and manufacturing, leading the way to smart cities.

Meeting sustainability goals in cities requires sustainable use of resources which requires the evolution of cities into smart cities or a smarter cities with many smart applications. Internet of Things technology is the critical enabler of smart city development and also of meeting the sustainability requirements such as energy efficiency, improved security, and other convenient applications. It is known that cities consume about 75 % of the globally produced energy [34]. Technological advances must make cities becoming more intelligently connected in order to save energy and operating costs. IoT enables energy technologies to be more efficient and sustainable by supporting new ideas such as virtual power stations and energy storage technology having the potential for energy savings [35].

Thus, the implementation of the curriculum utilizes various techniques in order to provide the maximum benefits to the students. In addition to the lectures on the topics listed in Table 2, the students are exposed to another weekly session where they present their acquired knowledge. At the beginning of the course, a list of possible topics are given to the students to select the ones that interest them. The students can also select a relevant topic outside the list if they wish to do so.

The course itself is composed of four contact hours per week; two hours for lecturing on the identified topics using two way interactive communication with the students. The other two hours are used for various objectives, the first of which is to involve the students in researching topic related to sustainable development. Teams of two-students each are formed and are asked to collect information on one of pre-selected topics then present it in the class with all other students attending. Second, inviting guest speaker on relevant topics provides the students with empirical explanations and open discussions. In addition to these activities, site visits to related organizations are arranged for the same concept.

After completing the lectures on sustainable development, the students were asked to participate in a survey in order to assess their understanding of the sustainability issues and the way the information was disseminated to the class. The results of this experiment can be used to further improve the course contents and teaching methods in order to produce better learning outcomes.

EVALUATION CRITERIA OF THE CURRICULUM

To evaluate the impact of the sustainability development education on students' knowledge, there must be a way to assess the learning outcomes of the curriculum on the students. This

can be done through a formal survey about the sustainability course under consideration. The survey has to be conducted on a proper sample of the students so as the results of the course statistics can be properly documented. The structure of the proposed survey measures the sustainable development course topic acceptability, the teaching methods, the acquired knowledge, and the sustainable development applicability as assessed by the student sample.

First, regarding the teaching methods, when a high percentage of the students (more than 85 %) are satisfied with the teaching methods used in the sustainability course, the intended impact of the course on the students can be easily achieved. From our experience, a high percentage can be obtained through several factors, among which is the interactive class lectures, the posting of the class materials on the web, and the quality of the materials and animation that help the students study the sustainability course. When the students find the sustainable development lecture notes clear and easy to read and study, it will increase their interest in the abstract ideas included in teaching the sustainability concepts. In addition, the students can be extremely satisfied if the instruction dissemination is done through social media which can aid them in communicating their ideas about sustainable development outside classroom formalities.

Moreover, the course should utilize a weekly tutorial section that is very beneficial to getting better knowledge out of the course. The tutorial can organize student teams to work on a prominent topic in sustainable development and present the results to the rest of the class. The student presentations help in enriching the knowledge about related diverse topics as the students are requested to find the relevant literature on the internet related to sustainable development. The tutorial can also include external seminars by guest speakers to help widen the scope of knowledge about sustainable development. A partial sample of the survey form is shown in Table 3.

Table 3. Sample Survey Items. Source: part of actual course survey prepared by the authors.

| No. | Item |
|-----|--|
| 1 | Introducing sustainable development course is essential for engineering students |
| 2 | Studying sustainability helps in understanding the social and environmental issues |
| 3 | Taking this course broaden my thinking about engineering effects on sustainability |
| 4 | Sustainability knowledge will help in getting better job opportunities |
| 5 | Taking this course opened my eyes to the importance of sustainable development |
| 6 | Sustainability skills and environmental awareness is a priority in many corporations |
| 7 | A course covering sustainability should be taught in every engineering department |
| 8 | Studying sustainability helps in pursuing advanced post graduate studies |
| 9 | Studying sustainability helps change the behaviour towards the environment |
| 10 | I believe engineers are mostly responsible for solving the negative environmental effects due to extensive and diverse industrialization |

The survey should give the students a way to express their views about the possible course improvements. A percentage of more than 75 % in this regards is a good indication about the students' involvement in the course materials. For example, some of the students may suggest course improvement or projects related to sustainable development and the environment. This type of suggestions can be easily incorporated in the next offering of the course. From our experience, this course could be more beneficial by arranging field trips to professional environmental organizations and consulting firms.

Topic acceptability within the engineering curriculum via the introduction of a new sustainable development course must be sold to the students. A percentage of 65 % or more on the related survey questions indicates good level of the students' acceptability. The percentage indicates that studying sustainability help the students in understanding the social

and environmental issues and broaden their thinking about the overall engineering effects on sustainable development. Basically, taking this course opens the students' eyes to the importance of sustainable development.

The same results can indicate that a course covering the concept of sustainable development should be taught in every engineering department as engineers are mostly responsible for solving the negative environmental effects due to extensive and diverse industrialization and the studying of sustainability help in changing the behaviour towards the environment.

Another indicator is percent of students who believe that sustainability knowledge will help in getting better job opportunities. The answer to this type of questions can vary from college to another and from country to country as the sustainability skills and environmental awareness are still not a high priority in many corporations. It is important to note that the sustainability development goals are only approved in 2014 and as such the awareness about the topic is not very high worldwide.

On the acquired knowledge area, the overall results should reveal that more than 80 % of the students became aware of the sustainability issues including natural system functions, ecological diversity, and balancing the use of renewable energy sources. This percentage reflects the students' belief that sustainability protect the natural environment while influencing the way we live and that the economic development is giving people what they want without compromising the quality of life.

Moreover, it is interesting to find out if the students understand that the SDGs should not be assessed individually for their feasibility and suitability, without considering the remaining goals and that these goals are inter-related. For instance, reducing inequality within and among cities is one of the sustainability goals that is touching all aspects of human life. Sustainability draws on politics, economics, philosophy and other social sciences. As such, sustainable development focuses on balancing the fine line between the ever increasing human needs and the need to protect the environment.

Finally, relating to SD applicability in different disciplines and the new enabling technologies, it is expected that a small percentage of students be aware of the extended applications. The majority of the students can understand the ICT effects and how they make daily live more productive, and that the future of IoT applications will enhance smart living and build new sustainable smart cities.

CONCLUSION

The innovations in technology and the recent cyber-physical industrial revolution have opened the way for exploring the area of learning, teaching, and curriculum development. The proper teaching of sustainability should be an approach that uses both dedicated specific courses and relevant activities that are integrated into the rest of the teaching curriculum. The importance of this topics comes from the limited resources that must be sustainable in order to balance the quality of life for generations to come [36]. Teaching young generations about sustainable world is of major importance as these generations will have to perform the recommendations of the research studies in this area. Economic, social, environmental, and even cultural concerns must be well understood by the students.

This article addresses the importance to teaching the sustainable development topics into engineering profession and assess its impact. The proposed curriculum is built upon innovations in technologies to cover sustainability along with environmental and social implications. Based on the proposed sustainable development curriculum, a criteria for evaluating the course teaching experience is introduced. Applying the resulting criteria produces great potential in steering engineers in the direction of sustainable design.

It is important to note that teaching for sustainability must rely not only on instruction but also on participation and collaboration. As such, it is instrumental to add tutorial sessions to the course to help in widening the scope of the students. Working in small groups to research a particular related topic and present it to the whole class allows the students to interact among themselves and with the course instructors. Also, using external subject matter experts and visiting actual sites with activities relevant to course topics are effective in motivating the interest of students in learning sustainable development as a new paradigm and finding related applications in the respective engineering disciplines.

Given the limitation on the number of newly introduced curriculum changes that can go into an already accredited engineering study program, the article showed the possible way to tackle the sustainability topics. Based on the importance of this topic for engineers and the effect it has on societal and industrial transformations, the futuristic plan is to introduce a chapter on sustainability in several related courses to be selected from the current study program.

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DESTINATION MARKETING ORGANISATIONS' USE OF HUMOUR AND CO-CREATION: AN EXPLORATORY STUDY FROM CROATIA

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ABSTRACT

Tourists are more active, experienced and picky, eager for new, unforgettable experiences tailored to their needs. Innovations are imperatives, especially in tourism where new ideas can be easily copied. What better solution could there be than to engage tourists in the creation of the tourist product of their dreams?

The principles of co-creation, along with the appeal of humour in tourism are still under-researched topics as well as rarely used in practice. Especially in the case of Destination Marketing Organisations (DMOs) in Croatia, publicly funded entities that do not create tourism products, yet are responsible for the valorisation of unmanaged tourism attractions.

An exploratory study was carried out whose main contribution was to assess current practices of DMOs and their tendencies towards using humour and co-creation in their marketing agendas. The purpose of this study is to raise awareness of the benefits of applying those two concepts in the marketing activities of DMOs.

A case study project, aimed at tourism attractions in the destination, to inspire DMOs is also presented.

KEY WORDS

co-creation, humour, tourism attractions, DMOs

CLASSIFICATION

JEL: L83, Z32

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INTRODUCTION

The factors that affect tourism now will affect it in the future too, but with a few changes. These are the demographic changes, aging of the population, declining fertility and increasing life expectancy. Changes are expected in economic growth, higher income in the developed countries, increased mobility, more spare time, as well as higher sensitivity towards sustainable development and environmental protection. Tourism shows that in the future it will depend more and more on innovations, particularly those involving ICT. Hedonism rises, but not only as a physical manifestation, but also a spiritual retreat – beauty, peace, tranquillity, happiness, health and joy are sought after. The 3E acronym (“entertainment, education and experience”) is more and more present. It implies humour as its integral component. The element of humour can easily be added to various marketing instruments, especially in the representation of tourism attractions and in marketing communication in general. The concept “value for money” is no longer enough to express these aspirations from travel, it might be more adequate to refer to it “experience for money”, which is in line with the experience economy.

Co-creation implies the process of inclusion of customers in developing tourism products which is initiated by the “producer” [1]. In unmanaged tourism attractions, this role is taken over by the DMO, applicable also to this article. In recent years, the rise of co-creation has gathered considerable attention across a broad range of fields, including information systems, economics, management, and marketing [2; p.10]. Co-creation is viewed as a joint value-realising process that occurs as the organisation and its customers interact [3]. Dialog is an important element in the co-creation view, because markets can be viewed as a set of conversations between the customer and the firm [4; p.9].

This research aims at answering DMOs’ notion, perceived benefits, disadvantages and threats regarding the use of co-creation, their experience in the application of both co-creation and humour and their future plans to act upon. It discloses the vision of DMOs regarding their future role in co-creation. How many will mainly identify themselves as providers who could initiate the creation of new tourism products?

Other similar researches have been conducted in Europe: in Finland and in Estonia. In the Estonian research co-creation was linked to service design and humour in accommodation establishments` marketing communication and service processes [5]. In Finland, co creation, as experience innovation, used humorous video clips to co create experiences with customers [6]. The contribution of this article lies in the assessment of attitudes and perceptions of DMOs in Croatia engaging tourists in laughter and co-creation.

In this article, composed of six sections, the literature review deals with the topics of tourism attractions, humour and co-creation. The third section explains the research methodology whose target population were DMO representatives, followed by results. The example of the application of humour in the valorisation of tourism attractions in the town of Vodnjan is given in the fifth section entitled *Appeal to humour – a case study from Vodnjan, Croatia*. The last section provides concluding remarks.

LITERATURE REVIEW

HUMOUR AND CO-CREATION IN TOURISM

Encyclopaedia Britannica defines humour as a form of communication in which the stimulus produces diversion and it can be agreed upon that the stimulant here could be a joke, a smile, a funny act, or a funny comedy strip [7]. According to Peterson’s and Seligman’s classification

scheme, humour is defined as “an enjoying, non serious communication, maintaining a good mood, being composed and cheerful, even when adversity strikes and using wit to affect emotional states in others.” [8]. The concept of humour has been very extensively discussed by philosophers, psychologists and linguists but it still remains an under-researched topic in social sciences, especially in tourism [9; p.1]. The leading theoretical approaches to humour fall into two groups. One group consists of the psychological theories, concerned primarily with the reasons for humour; these include the so-called “supremacy theory,” which claims that humour arises from feelings of supremacy over others, and “relief theory” which sees humour as a “way to release energy generated by repression” [9; p.1]. Theories in the second group are concerned with the inner, logical, or linguistic structure of humour, and include the so called “incongruity theory,” which interprets humour as a “response to an incongruity, a term broadly used to include ambiguity, logical impossibility, irrelevance and inappropriateness [10]. Although to this division even a third category can be added, the relief theory [11; p.423], which is very important in tourism because humour allows to redefine the situation and add an element which reduces the sense of having a disagreeable experience [12; p.249]. A very well-known example comes out from the aviation industry where the Southwest Air cabin crew encouraged to use humour during an in-flight emergency briefing [13]. Another example, related to Croatian heritage, are funny songs in Slavonia. The possibilities of using humour in the service sector are shown in Table 1.

Table 1. Possibilities of using humour in different aspects of service [11, 15].

| Different approach of humour | Possibilities of using humour in marketing communication and service processes |
|---|---|
| using humour at someone`s expense | communication has to be delicate and careful not to offend receiver, normally jokes would be at expense of someone that client does not relate to |
| a puzzle or hidden joke, that requires the receiver to think | a specially designed action or story that will culminate with a humorous solution |
| an unexpected result or surprise | explaining unique aspects of an accommodation establishment that visitor would not understand or notice otherwise |
| using humour as social control tool (mechanism and stabilizer) | a humorous sign or manual to explain how something should be done |
| using humour as a relief tool for breaking the tension or to cope with difficult or unexpected situations | humour in an interaction to solve a problem |
| overcoming an unpleasant situation | explaining shortcomings with humour |

Respondents appear to feel more involved in the “consumption of tourism’ products” that added humour as an ingredient, affecting thus positively their memories [14]. Humour is applied in storytelling in tourism lately including forms such as travel writers, blogs, films [15], also promotional and amateur tourism videos etc. It is related closely to a newly coined term – positive tourism, which brings enjoyment and positivity to the tourism experience [16]. It has been used widely for a long time in marketing in tourism, known as the appeal to humour, an attention grabber.

In communication humour affects the listener in a way to convince him/her to accept or to reject any idea or a proposal [17; p.67]. Humour, in tourism, can be studied like an essential element in sightseeing. For example, except to souvenirs, humour plays a major role in breaking the predefined stereotypes during sightseeing, because every time when a tourist guide tells a joke he/she breaks the monotony of recounting and highlights his presence and by doing that, he/she reacquires the attention of tourists [18; p.313].

The authors in [15] explored how humour can be used in tourism promotion. They further investigated the relationship between humour and tourism in terms of impact of humour on the tourist's experience, such as how comical events can become tourist attractions, and what is the impact of funny performances on tourism development [19; p.707]. Santos and Proffitt have studied how popular are humour and the usage of jokes in tourism when describing the multicultural communications between the tourists and the local population [20; p.51]. Humour and jokes, as one integral part, can be studied in tourism as an indispensable element of sightseeing.

Humorous stories have characteristic patterns of participation: in particular, co-narration is acceptable whenever it creates humour [5; p.24]. Familiar humorous stories regularly appear, and co-narration of such stories occurs quite commonly as well [21; p.397]. Co-creation is an important process in both service production and delivery of humour and „many companies allow customers to „play” with services and products, engaging them to service creation [22].

The core principle of co-creation is engaging people to create valuable experiences together while enhancing network economies, and there are four elements that have been suggested for co-creation: experience mind-set, context of interactions for collective intelligence, engagement platform and network relationships [23]. Customers are gaining power, therefore organisations have to include them in all critical phases from planning to control of services delivered. “The better a company's focus on the consumer context and their match with the individual's living environment, the more co-creation experience value increases” [24]. Organisational culture and communication quality are key ingredients to better relationships with the market [25].

Tourists co-create value by integrating their personal skills (operant resources) with the challenges (operand resources) posed by the service setting, including the social aspects of that setting in the sense of customer to customer (C2C) interactions [26]. Co-creation of experiences, as a theoretical construct, considers the consumer an active agent in the consumption and production of values and regards customer involvement as essential for defining and designing the experience [27]. While during a vacation, co-creating experiences involve the interaction with other people like the interaction between hosts and guests. Finally, with the idea that co-creation is a consequence of active participation in producing tourist experiences such as involvement, resources and time use are modelled as predictors of attraction [27]. An example of co-creation is the application “Waiting for Van Gogh” induced by visitors faced with long waiting lines to access the artists' museum [28]. However co-creation is rarely used in tourism, which represents an immense opportunity, as exactly in their spare time, people want to be engaged into something they care about [24]. Tourists co-create value by integrating their personal skills (operant resources) with the challenges (operand resources) posed by the service providers which includes the social aspects of that setting in the sense of customer to customer (C2C) interactions [26; p.359].

Co-creation of experiences, as a theoretical construct, considers the consumer an active agent in the consumption and production of values and deems customer involvement as essential for defining and designing the experience [27; p.241]. Co-creating experiences during a vacation involves the interaction with other people like the interaction between hosts and guests. Finally, with the idea that co-creation is a consequence of active participation in producing tourist experiences such as involvement, resources and time use are modelled as predictors of attraction [27; p.252].

Even the 3C humour model [15] implies collaboration with tourists:

- comfort (creating a relaxing atmosphere),
- concentration (making tourists mindful),
- connection (building report between tourists).

While co-creation in tourism can be organized and planned, using humour in interaction is often accidental. The best way to engage customers is through stories that “speak” to them [5].

TOURISM ATTRACTIONS

Visitor attractions lie at the heart of the tourism industry; without them there would be little point in anyone travelling and no need for the various accommodation and transport undertakings that make up the industry [29]. A tourist attraction is an every single unit, landmark or a small geographic area that is accessible to tourists who are interested in visiting it during their holidays [30; p.111]. In essence, tourist attractions consist of all those elements of a “nonhome” place that draw discretionary travellers away from their homes [31; p.575]. Attractions serve two key purposes in any destination whereas the most important one is to act as a demand generator that induces visitation or causes tourists to extend their stays. Alternatively, they can have utility if they provide high quality experiences that enhance satisfaction levels [32]. Tourist attractions basically are divided into natural and man-made attractions [33]. A more complex division of tourist attractions distinguishes the following:

- basic attractions – natural and man-made attractions,
- primary attractions - they create the main motivation for visiting and experiencing them,
- secondary attractions – they have a tourist attractiveness but they are not the main reason for traveling and visiting a destination,
- real tourist attractions – tourist attractions with a provided accessibility and
- potential tourist attractions – those are tourist attractions with no accessibility for tourists.

According to Leiper tourist attractions are part of the tourist attractions system along with just the tourists and the market [34; p.86]. According to Leiper there are three main groups of tourist attractions or nucleuses, and they are [34; p.15]:

- the first group – includes worldwide famous tourist attractions that represent the main reason for which tourists decide to travel to distant destinations in order to visit them,
- the second group – tourist attractions located near the worldwide famous tourist attractions. Tourists usually know them and decide to visit them only after visiting the attractions from the first group,
- the third group – attractions that are completely unknown to tourists until they arrive at the destination.

The tourism resources can be defined as natural or anthropogenic goods that can be exploited [35; p.762]. All the tourist attractions are also tourist resources, but at the same time not all tourist resources can become tourist attractions, which means that tourist resources may become tourist attractions only if it is noticed that they might have a usage value [36; p.62]. Furthermore, it can be explained in the following way: the essential difference between a tourist resource and a tourist attraction lies in the possibility of its management and valorisation. Every tourist resource that can be managed and which can generate income from the tourism activities becomes automatically a tourist attraction. Four different key groups of resources must exist if the destination wants to attract tourists [36; pp.62-63]:

- resources in the form of natural and anthropogenic attractions that encourage people to travel,
- resources in the form of facilities and services including human resources which will allow them to stay in the area,
- resources in the form of infrastructure and services that make the destination accessible as well as a variety of attractions, facilities and services within the same destination. The process of giving information to customers in order to inform them about the destination and its resources.

Heritage valorisation represents a social, economic and political determination. Heritage promotion dates back to the 1980s when the French government decided to publish a list of

the culinary heritage in the inventory of French traditional treasures, along with churches and castles [37]. The valorisation of cultural heritage in the context of the marketing approach has many possibilities for the improvement of the product or the service in the function of tourism development, and one of the primary elements of the marketing mix is the development of products or services that can be fully adapted to the needs and preferences of the consumers [38]. The elements of the intangible cultural heritage in tourism can be valorised in the following ways: the SWOT analysis, the Hillary du Cross method, the tourist valorisation of elements of intangible heritage as a part of the event tourism, etc. [39].

REASEARCH METHODOLOGY

DATA

Primary data were obtained by interviewing representatives of DMOs in person. The convenience sample consisted of 5 DMOs representing one Croatian destination each. Three DMOs' were interviewed in Zagreb on 30th November 2017, while they were attending a professional education for DMOs and agreed to approach the interview. The DMOs were representatives at the local level. The answers to the questions were annotated by the authors.

RESEARCH INSTRUMENT

The research was carried out using semi-structured interview technique with predominantly open-ended questions. The interview was developed on purpose for this research in order to fulfil the goal of the article. It consisted of eight questions in total:

1. Do DMOs perceive the importance of co-creation for their tourism destinations?
2. What are the possible down-sides of applying co-creation?
3. What are the obstacles to the implementation of the principles of co-creation in their marketing activities?
4. What is the frequency of use of the appeal to humour in marketing communication? Please provide an example.
5. Do you plan to integrate humour in your marketing activities in the next 3-year period?
6. Have you ever taken part in the co-creation of tourism products? Please describe it.
7. Do you have any ideas regarding co-creation which could be implemented in your tourist destination?
8. What is the role of DMOs in order to trigger product development using co-creation principles?

METHODS

Given the novelty of the topic and related exploratory nature of the research, it was decided not to distribute the developed research questions in the form of a questionnaire, but have it answered personally. One of the first obstacles detected was the possible ignorance of the term "co-creation". The probable non-use of both concepts researched (humour and co-creation), might have been a reason for non- responding.

This qualitative research, besides the described interviews, features also a case study from Vodnjan. The analyses of the collected data, is presented in the next section.

RESEARCH RESULTS

None of the selected DMOs has ever heard of co-creation. They have also asked for clarification of the concept. They were sceptical how they, as DMOs not involved in the creation of tourism products, could use this technique, therefore the authors provided them examples.

1. Once explained the concept of co-creation, DMOs stated the biggest importance of co-creation reflects in receiving the feedback from guests and shaping tourism products accordingly, as stated by DMOs: “getting to know tourists better”, “market research and product development” and “creation of new products” (3/3).
2. The main obstacle, as explained earlier, comes from their primarily role, as DMOs in Croatia are still more marketing organisations which was pointed out by 3/3 DMOs questioning how they could implement co-creation.
3. Question three, regarding obstacles to implementation of co-creation, remained unanswered, as respondents could not think of any other reason, beside the above mentioned obstacle (0/3).
4. Humour was not used at all (0/3).
5. One DMO said they would integrate humour in their marketing communication, without specifying examples, as they have not planned it yet. The remaining two DMOs did not know (1/3).
6. None of the respondents has ever taken part in the co-creation of products (0/3).
7. No ideas about the possible use of co-creation in their destinations were suggested (0/3).
8. Two DMOs did not yet thought about ideas related to co-creation implementation, but are positive towards finding something that could be done. The remaining one, showed no particular interest into the concept (2/3).

The most common reason to non-answering questions and non/providing ideas and attitudes, was related to the fact that participants have not thought of the issues of humour and co/creation earlier, as discussed with two DMOs after the interview.

One respondent was particularly interested in co-creation, deepening the conversation in order to learn more about it. Although humour was also not applied in their marketing communication activities up to now, another DMO stated humour was an unintentional output of a misprint.

Generally, it can be concluded that two out of three interviewers were inspired with co-creation and expressed their willingness to investigate more deeply how it could be applied in the future. One out of three is prone to integrate humour in their marketing communication in the next three years.

APPEAL TO HUMOUR: A CASE STUDY FROM VODNJAN, CROATIA

The town of Vodnjan counts 6 000 inhabitants and is situated in the inland of the peninsula of Istria. It is mainly a half-day excursion destination, a bit more crowded in case of rain which prevents tourists from enjoying the beach. In 2016 it has gained a negative review from *Lonely planet* which referred to it as a place to avoid, featuring only mummies in the local church. It also mentioned the town has the biggest Rom community in Croatia. Some of the terms included in the review were: “macabre, sleepy, decay/restoration”. This dark tourism connotation was the base to redefine the destination towards something more positive by applying humour to the valorisation and interpretation of tangible cultural heritage.

The appeal to humour will be adopted in the valorisation of the narrowest street in Vodnjan, where it is planned to add fun tables (instead of the classical educational tables). On the beginning of the narrowest street will be placed a challenging inscription “Skinny test – can you pass it without turning sideways?”. On the end of the street there will be a photo point with another inscription like a “Diploma” for passing successfully Vodnjan’s skinny test, perfect also for a selfie including in the background also the narrowest street.

Another planned project integrating humour, is related to street art [40]. More than 30 murals are painted on Vodnjan’s facades, most of them as a project output of Boombastick, an art

festival. The murals are not marked, the refigurations do not have any titles, artists' names or short description, as usually displayed in classical educational tables. Instead of these predictable tables, it is suggested to use funny quotes and comments of visitors and locals to the murals. It is planned to include tourists' quits in the compilation of these fun tables, applying thus also co-creation. These educational tables are planned to be larger than the initial text insertion, enabling new phrases to be added.

Along with those, numerous other project initiatives and projects will be undertaken whereas in some, the principles of gamification, implying fun again, will be applied.

CONCLUSION

As tourism nowadays is an experience and knowledge creating industry [41], the roles of co-creation and humour should be particularly significant. Co-creation in tourism is a process in which value is co-created together with tourists, which often emerges over social media [42, 43]. Humour is one of the essential components of leisure time and in this context, laughter and humour can be of a great help and benefit, because both can affect the generation of many positive emotions during the trip and stay of tourists in a tourist destination, which directly affects the level of the tourist's expectations fulfilment. Besides assessing DMO's poor use of humour and co-creation, the theoretical contribution is concealed in the development of an original research instrument – the questionnaire used in semi-structured interviews.

The contribution to practice is reflected in the case study of Vodnjan, demonstrating how DMOs can add the element of humour to unmanaged tourism attractions. The theoretical contribution is reflected in linking humour and co-creation as marketing ingredients used to create unique experience for tourists. This is one of the first studies dealing with the issues of co-creation and humour in destination marketing in Croatia and wider.

By using co-creation, the interaction between tourists and DMOs could become more profound and more personal, adding up additional value in customer relationships. Tourist could also become more prone to recommend tourism destinations where they were engaged in the creation of tourism products or where the positive effects of humour were experienced. These stated implications could be the basis for future research along with widening the population of the presented study. Sample size represents its main limitation, thus its results cannot be generalised.

The interviewed DMOs were not familiar to the concept of co-creation, meaning that more attention should be stressed on educations of DMOs' employees. Humour as a known concept, whose benefits are perceived, is not widely used either, nor were respondents so prone to its use (except one DMO), suggesting that humour as a topic of research and a practical notion in tourism has remained quite neglected, underestimated and under-investigated [40]. Assessing its importance it is the first step towards the introduction of humour in marketing communication of Croatian DMOs. Current practices of DMOs do not support completely the application of co-creation, as DMOs in Croatia are not creators of tourism products. Therefore, the preconditions to remove these barriers need to be formed. Although, even now there is room for manoeuvre, in the case of unmanaged tourism attractions, where DMOs should adopt a more customer centric approach.

Other proposal for the future research could focus on the evolving role of DMOs and the implementation of new techniques and tools that would involve tourists in the creation of their unique and personalized experiences. There are numerous determinants of humour and co-creation such as language and cultural background, which are a call to engage in the

debate multidisciplinary researchers. A sporadic contribution is also represented by the phrase “value for experience” instead of the well-known “value for money” which is in line with the experience economy.

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ANALYSIS OF THE LEADERSHIP STYLE IN RELATION TO THE CHARACTERISTICS OF CROATIAN ENTERPRISES

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ABSTRACT

Given the specificity of leadership, as well as the characteristics of the leader and their associates, but also the current business situation, it is necessary to adapt at all times in order to achieve maximum results together with employee satisfaction. The goal of the article is to explore the presence of different leadership styles (authoritarian, democratic, and laissez-faire) in Croatian enterprises. Survey research was conducted on a sample of enterprises, and level of usage of different leadership styles was measured using Leadership Styles Questionnaire. Six groups of enterprises were compared using Mann-Whitney test according to the level of usage of different leadership styles: (i) small and medium enterprises (≤ 250 employees); (ii) large enterprises (> 250 employees); (iii) enterprises in the growth and maturity phase (leaders); (iv) enterprises in the stagnation phase (followers); (v) enterprises with the main orientation towards international market, and (vi) enterprises with the main orientation towards domicile market. Results indicated that democratic style is the most present in all groups of enterprises, but in some groups of enterprises autocratic and laissez-faire are also often present.

KEY WORDS

leadership styles, Croatia, Mann-Whitney test, leadership styles questionnaire

CLASSIFICATION

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INTRODUCTION

The first scientific research in the field of leadership was recorded at the beginning of the twentieth century, as reported by Judge et al [1]. Numerous models, approaches and leadership theories have been formed based on a large amount of research and written studies on the importance and impact of leadership. The analysis of those studies made it possible to define three key factors that contribute to a better understanding of leadership: (i) characteristics of the leader, (ii) characteristics of their subordinates and (iii) characteristics of the situation.

According to those three factors which have an impact on leadership, leadership theories can be categorized into four key groups: (i) leadership theories based on leader's traits, (ii) leadership theories based on leader's behaviour, (iii) situational leadership theories and (iv) contemporary leadership theories.

At the beginning of the twentieth century, when the research of leadership and characteristics of a successful leader began, personal traits were the starting point, as indicated by Yammarino et al. [2]Error! Reference source not found.. Cowley very early indicated that it was believed that leaders were born, not made and that it was a matter of genetic predisposition whether someone would become a successful leader or not [3].

Further research raised the question of leadership's behaviour and, therefore, in the second half of the twentieth century, many theories of leadership styles that describe leadership ranging from authoritarian (i.e. task-oriented leadership style) to democratic (i.e. people-oriented leadership style) appeared [4]. In addition, the attitude that leaders are born, not made has changed into the attitude that leadership is a skill that can be learned.

The continuation of scientific research on leadership showed that the personality of the leader and his behaviour are not the only factors, which have an impact on the successful leadership style, but that it is also necessary to take situational factors into account [5]. In other words, the leader should first define factors that are crucial in a particular situation in order to apply the appropriate leadership style in accordance with requirements of the situation.

Research in the area of leadership at the end of the twentieth century led to another change, which implies that a successful leader should not adapt their leadership style to the situation in which they are, but instead they should encourage changes in their surroundings and change it to create situations within which the set goals will be achieved [6]. The last-mentioned developmental phase of leadership was created within contemporary leadership theories, in which the transformational leadership stands out.

Nowadays, leaders are expected to create changes in the enterprise and encourage employees to change in order to achieve the set goals [7]. Only the leader who is an expert, who is educated and empathetic, can expect employee recognition, i.e. they can convince employees to follow them and contribute to the successful realization of the set goals [8].

Initial studies of leader's traits did not result in success, and thus scientists began studying leader's behaviour by focusing on a characteristic that differentiates them, and which could be relevant to leadership success. Also, the paradigm of leadership changed, which up to then had been based on the assumption that leaders are born, not made, and since then the assumption that behavioural patterns which are essential to leadership can be taught has been supported. This approach leads to new opportunities for social and economic development.

Scientists who supported behaviour-based leadership theories tried to define the best leadership style that would be effective in all situations, which lead to several theories and leadership models, such as: autocratic, democratic and laissez-faire leadership style.

When it comes to business start-ups as well as during business growth, it is extremely important to motivate employees and to encourage them to work. In addition, leaders should build harmonious relations with employees at the very beginning in order for their future collaboration to be successful. Transformational leadership is appropriate when it comes to business start-ups and during business growth, as it implies the ability to inspire and motivate associates to achieve goals [9].

Maturity and stagnation is a period in which enterprises need to take certain steps in order to re-establish the competitive advantage and become the market leader again [10]. When reoccupying a particular market share, it is necessary to have a task-oriented leader in order to achieve the goals as efficiently and effectively as possible and to restart the growth of the enterprise [11]. Leaders who are maximally oriented to the task and achieving business results are authoritative leaders [12]. The enterprise should be ready for employee dissatisfaction in those moments, but it is important to go back to the growth phase from the stagnation phase as soon as possible and focus on employee satisfaction, which is, in fact, what successful enterprises base their success on [13].

Small and medium-sized enterprises are mostly focused on employee relations and good customer relations, which means that it is important for a leader to be a person who trusts their associates, accepts their ideas and encourages a reward system and mutual communication [14]. The success of small and medium-sized enterprises depends mostly on innovativeness and creativity, which means that an innovative and creative way of directing and encouraging employees is expected from leaders too [15]. Large enterprises, which often have international offices as well, are extremely focused on international success and the achievement of competitive advantages on the international market, which requires a large number of employees. It is difficult to manage a large number of people and direct them towards a common goal, therefore it is very important to have a leader who is capable of motivating their associates to work and collaborate. Leaders who use benevolent-authoritative and/or consultative leadership styles can stand out in large enterprises [16],[17]. It is important to emphasize that the combination of several leadership styles is the best, i.e. that it is important to adapt to the situation in which the enterprise is. The research on leadership styles in the hotel industry, carried out in the Dubrovnik-Neretva County in the Republic of Croatia, has shown that participatory leadership style is the most common style of hotel managers, especially when it comes to motivating employees and encouraging them to work and achieve goals. Authoritative leadership style is used by hotel managers when making decisions and analysing responsibility for achieving goals. It can be concluded that hotel managers from the Dubrovnik-Neretva County adapt to the situation and behave accordingly with their subordinates [18]. Other examples of research of leadership style and related research on human resources were conducted by Lojpur et al. [19], Pejic-Bach, et al. [20],[21], and Rožman et al. [22].

Previous research conducted by Miloloža [23][24] has shown the use of leadership in Croatian enterprises regardless of the characteristics of the enterprise, which revealed that the dominant leadership style was the democratic style. However, the question arises whether it is like that in all enterprises, and what the differences in the enterprises in relation to their characteristics are. The aim of this article is to explore the use of leadership in Croatian enterprises in relation to different characteristics of the enterprise: (i) SME (≤ 250 employees); (ii) large enterprises (> 250 employees); (iii) enterprises in the growth and maturity phase (leaders); (iv) enterprises in the stagnation phase (followers); (v) enterprises with the main orientation towards international market, and (vi) enterprises with the main orientation towards domestic market.

RESEARCH METHODOLOGY

The Leadership Styles Questionnaire from the book *Introduction to Leadership* by P.G. Northouse was used for the research. Respondents indicated on a scale of 1 to 5 to what extent they agree with each claim.

Claims that measure the presence of an autocratic leadership style are:

- *L1.* Employees need to be supervised closely, or they are not likely to do their work.
- *L4.* It is fair to say that most employees in the general population are lazy.
- *L7.* As a rule, employees must be given rewards or punishments in order to motivate them to achieve organizational objectives.
- *L10.* Most employees feel insecure about their work and need direction.
- *L13.* The leader is the chief judge of the achievements of the members of the group.
- *L16.* Effective leaders give orders and clarify procedures.

Claims that measure the presence of a democratic leadership style are:

- *L2.* Employees want to be a part of the decision-making process.
- *L5.* Providing guidance without pressure is the key to being a good leader.
- *L8.* Most workers want frequent and supportive communication from their leader.
- *L11.* Leaders need to help subordinates accept responsibility for completing their work.
- *L14.* It is the leader's job to help subordinates find their "passion".
- *L17.* People are competent and if given a task will do a good job.

Claims that measure the presence of a laissez-faire leadership style are:

- *L3.* In complex situations, leaders should let subordinates work problems out on their own.
- *L6.* Leadership requires staying out of the way of subordinates as they do their work.
- *L9.* As a rule, leaders should allow subordinates to appraise their own work.
- *L12.* Leaders should give subordinates complete freedom to solve problems on their own.
- *L15.* In most situations, workers prefer little input from the leader.
- *L18.* In general, it is best to leave subordinates alone.

Leadership items measuring autocratic, democratic, and laissez-faire style were compared using Mann-Whitney test among the following groups of enterprises: (i) SME (≤ 250 employees); (ii) large enterprises (>250 employees); (iii) enterprises in the growth and maturity phase (leaders); (iv) enterprises in the stagnation phase (followers); (v) enterprises with the main orientation towards international market, and (vi) enterprises with the main orientation towards domicile market.

RESULTS

ANALYSIS OF THE USE OF LEADERSHIP IN RELATION TO THE SIZE OF THE ENTERPRISE

Table 1 shows answers of the respondents – managers who are members of the board of directors – to questions by which they evaluated to what extent they agree with the attitudes that reflect the autocratic leadership style, with the average answers of the respondents from large enterprises and small and medium-sized enterprises (SME enterprises) being compared. It can be noticed that respondents from small and medium-sized enterprises agree mostly with item *L7.* As a rule, employees must be given rewards or punishments in order to motivate them to achieve organizational objectives (average rating 4.23). The respondents agree the least with item *L4.* It is fair to say that most employees in the general population are lazy. (average rating 1,57). Standard deviations range from 0,74 to 1,43, indicating that the average ratings are representative.

Table 1. Presence of the autocratic leadership style in relation to the size of the enterprise. Source: author's research.

| Claim | Size | N | Average | St. dev. |
|---|-------|----|---------|----------|
| L1. Employees need to be supervised closely, or they are not likely to do their work. | SME | 30 | 2,87 | 1,25 |
| | Large | 30 | 2,43 | 1,19 |
| L4. It is fair to say that most employees in the general population are lazy. | SME | 30 | 1,57 | 0,86 |
| | Large | 30 | 1,93 | 1,23 |
| L7. As a rule, employees must be given rewards or punishments in order to motivate them to achieve organizational objectives. | SME | 30 | 4,23 | 1,04 |
| | Large | 30 | 4,00 | 0,98 |
| L10. Most employees feel insecure about their work and need direction. | SME | 30 | 2,90 | 1,21 |
| | Large | 30 | 2,33 | 0,92 |
| L13. The leader is the chief judge of the achievements of the members of the group. | SME | 30 | 4,13 | 0,82 |
| | Large | 30 | 4,07 | 0,74 |
| L16. Effective leaders give orders and clarify procedures. | SME | 30 | 2,83 | 1,39 |
| | Large | 30 | 2,87 | 1,43 |

In order to determine whether the differences between large and SME enterprises were statistically significant, a Mann-Whitney test of comparison of the presence of the autocratic leadership style in relation to the size of the enterprise was carried out (Table 2). Only one statistically significant difference at the probability level of 5 % was found ($Z = -2,021$; p -value = 0,043), for item *L10. Most employees feel insecure about their work and need direction*, which the respondents from SME enterprises rated with an average rating of 2,90, and the respondents from large enterprises with an average rating of 2,33.

Table 2. The Mann-Whitney test of comparison of the presence of the autocratic leadership style in relation to the size of the enterprise.

| Claim | Mann-Whitney U | Wilcoxon W | Z | P-value |
|--|----------------|------------|--------|---------|
| L 1. Employees need to be supervised closely, or they are not likely to do their work. | 358,500 | 823,500 | -1,389 | 0,165 |
| L 4. It is fair to say that most employees in the general population are lazy. | 381,500 | 846,500 | -1,130 | 0,259 |
| L 7. As a rule, employees must be given rewards or punishments in order to motivate them to achieve organizational objectives. | 374,000 | 839,000 | -1,206 | 0,228 |
| L 10. Most employees feel insecure about their work and need direction. | 318,500 | 783,500 | -2,021 | 0,043** |
| L 13. The leader is the chief judge of the achievements of the members of the group. | 429,000 | 894,000 | -0,334 | 0,738 |
| L 16. Effective leaders give orders and clarify procedures. | 449,500 | 914,500 | -0,008 | 0,994 |

**statistically significant at 5 %

Table 3 shows answers of the respondents to questions by which they evaluated to what extent they agree with the attitudes that reflect the democratic leadership style, with the average answers of the respondents from large enterprises and small and medium-sized enterprises (SME enterprises) being compared. It can be noticed that respondents from small and medium-sized enterprises agree mostly with item *L11. Leaders need to help subordinates accept responsibility for completing their work* (average rating 4,43). The respondents agree the least with item *L14* (average rating 3,23). Standard deviations range from 0,66 to 1,05, indicating that the average ratings are representative.

Table 3. Presence of the democratic leadership style in relation to the size of the enterprise. Source: author's research.

| Claim | Size | N | Average | St. dev. |
|---|-------|----|---------|----------|
| <i>L 2.</i> Employees want to be a part of the decision-making process. | SME | 30 | 4,03 | 0,81 |
| | Large | 30 | 4,07 | 0,79 |
| <i>L 5.</i> Providing guidance without pressure is the key to being a good leader. | SME | 30 | 4,17 | 0,95 |
| | Large | 30 | 3,83 | 1,05 |
| <i>L 8.</i> Most workers want frequent and supportive communication from their leader. | SME | 30 | 4,13 | 0,68 |
| | Large | 30 | 4,23 | 0,77 |
| <i>L 11.</i> Leaders need to help subordinates accept responsibility for completing their work. | SME | 30 | 4,43 | 0,68 |
| | Large | 30 | 4,20 | 0,85 |
| <i>L 14.</i> It is the leader's job to help subordinates find their "passion". | SME | 30 | 3,23 | 0,90 |
| | Large | 30 | 3,23 | 0,90 |
| <i>L 17.</i> People are basically competent and if given a task will do a good job. | SME | 30 | 3,50 | 1,01 |
| | Large | 30 | 3,80 | 0,66 |

In order to determine whether the differences between large and SME enterprises were statistically significant, a Mann-Whitney test of comparison of the presence of the democratic leadership style in relation to the size of the enterprise was carried out (Table 4). No statistically significant difference was found for pairs of enterprises in relation to their size.

Table 4. The Mann-Whitney test of comparison of the presence of the democratic leadership style in relation to the size of the enterprise. Source: author's research.

| Claim | Mann-Whitney U | Wilcoxon W | Z | P-value |
|--|----------------|------------|--------|---------|
| <i>L 2.</i> Employees want to be a part of the decision-making process. | 440,000 | 905,000 | -0,160 | 0,873 |
| <i>L 5.</i> Providing guidance without pressure is the key to being a good leader. | 368,000 | 833,000 | -1,281 | 0,200 |
| <i>L 8.</i> Most workers want frequent and supportive comm. from their leader. | 406,500 | 871,500 | -0,721 | 0,471 |
| <i>L 11.</i> Leaders need to help subordinates accept response. for completing their work. | 387,000 | 852,000 | -1,019 | 0,308 |
| <i>L 14.</i> It is the leader's job to help subordinates find their "passion". | 443,500 | 908,500 | -0,104 | 0,917 |
| <i>L 17.</i> People are basically competent and if given a task will do a good job. | 374,000 | 839,000 | -1,215 | 0,224 |

Table 5 shows answers of the respondents – managers who are members of the board of directors – to questions by which they evaluated to what extent they agree with the attitudes that reflect the laissez-faire leadership style, with the average answers of the respondents from large enterprises and small and medium-sized enterprises (SME enterprises) being compared.

It can be noticed that respondents from small and medium-sized enterprises agree mostly with item *L18*. *In general, it is best to leave subordinates alone* (average rating 3,53). The respondents agree the least with item *L3*. *In complex situations, leaders should let subordinates work problems out on their own* (average rating 2,73).

In order to determine whether the differences between large and SME enterprises were statistically significant, a Mann-Whitney test of comparison of the presence of the laissez-faire leadership style in relation to the size of the enterprise was carried out (Table 6).

Table 5. Presence of the laissez-free leadership style in relation to the size of the enterprise. Source: author's research.

| Claim | Size | N | Average | St. dev. |
|---|-------|----|---------|----------|
| L 3. In complex situations, leaders should let subordinates work problems out on their own. | SME | 30 | 2,73 | 1,36 |
| | Large | 30 | 2,83 | 1,32 |
| L 6. Leadership requires staying out of the way of subordinates as they do their work. | SME | 30 | 3,23 | 1,01 |
| | Large | 30 | 2,80 | 1,03 |
| L 9. As a rule, leaders should allow subordinates to appraise their own work. | SME | 30 | 2,77 | 1,07 |
| | Large | 30 | 2,77 | 1,04 |
| L 12. Leaders should give subordinates complete freedom to solve problems on their own. | SME | 30 | 3,17 | 1,15 |
| | Large | 30 | 2,63 | 1,09 |
| L 15. In most situations, workers prefer little input from the leader. | SME | 30 | 3,27 | 1,20 |
| | Large | 30 | 2,67 | 0,84 |
| L 18. In general, it is best to leave subordinates alone. | SME | 30 | 3,53 | 0,97 |
| | Large | 30 | 2,73 | 1,36 |

Item *L12. Leaders should give subordinates complete freedom to solve problems on their own*, rated by the respondents from SME enterprise with an average rating of 3,17, and rated by the respondents from large enterprises with an average rating of 2,63 is statistically significant at the probability level of 10% ($Z = -1,739$; $p\text{-value} = 0,082$). Item *L12. Leaders should give subordinates complete freedom to solve problems on their own*, rated by the respondents from SME enterprises with an average rating of 3,17, and rated by the respondents from large enterprises with an average rating of 2,63 is statistically significant at the probability level of 10 % ($Z = -1,739$; $p\text{-value} = 0,082$).

A statistically significant difference at the probability level of 5 % was found for the following two items: *L15. In most situations, workers prefer little input from the leader* (rated by the respondents from SME enterprises with an average rating of 3,27, and rated by the respondents from large enterprises with an average rating of 2,67; $Z = -2,473$; $p\text{-value} = 0,013$) and item *L18. In general, it is best to leave subordinates alone* (rated by the respondents from SME enterprises with an average rating of 3,53, and rated by the respondents from large enterprises with an average rating of 2,73; $Z = -2,574$; $p\text{-value} = 0,010$).

Table 6. The Mann-Whitney test of comparison of the presence of the laissez-faire leadership style in relation to the size of the enterprise. Source: author's research.

| Claim | Mann-Whitney U | Wilcoxon W | Z | P-value |
|---|----------------|------------|--------|---------|
| L 3. In complex situations, leaders should let subordinates work problems out on their own. | 434,500 | 899,500 | -0,238 | 0,812 |
| L 6. Leadership requires staying out of the way of subordinates as they do their work. | 349,500 | 814,500 | -1,553 | 0,120 |
| L 9. As a rule, leaders should allow subordinates to appraise their own work. | 441,000 | 906,000 | -0,139 | 0,890 |
| L 12. Leaders should give subordinates complete freedom to solve problems on their own. | 336,000 | 801,000 | -1,739 | 0,082* |
| L 15. In most situations, workers prefer little input from the leader. | 289,000 | 754,000 | -2,473 | 0,013** |
| L 18. In general, it is best to leave subordinates alone. | 283,000 | 748,000 | -2,574 | 0,010** |

*statistically significant at 10 %

**statistically significant at 5 %

ANALYSIS OF THE USE OF LEADERSHIP IN RELATION TO THE GROWTH PHASE OF THE ENTERPRISE

Table 7 shows answers of the respondents – managers who are members of the board of directors – to questions by which they evaluated to what extent they agree with the attitudes that reflect the autocratic leadership style, with the average answers of the respondents from enterprises in relation to their growth phase (market leader and other enterprises) being compared. It can be noticed that respondents from market leader enterprises agree mostly with item *L13. The leader is the chief judge of the achievements of the members of the group* (average rating 4,25) and item *L7. As a rule, employees must be given rewards or punishments in order to motivate them to achieve organizational objectives* (average rating 4,03). The respondents agree the least with item *L4. It is fair to say that most employees in the general population are lazy* (average rating 1,64). Standard deviations range from 0,80 to 1,41, indicating that the average ratings are representative.

Table 7. Presence of the autocratic leadership in relation to the growth phase of the enterprise. Source: author's research.

| Claim | Growth phase | N | Average | St. dev. |
|---|-------------------|----|---------|----------|
| <i>L 1. Employees need to be supervised closely, or they are not likely to do their work.</i> | Market leader | 36 | 2,56 | 1,11 |
| | Other enterprises | 24 | 2,79 | 1,41 |
| <i>L 4. It is fair to say that most employees in the general population are lazy.</i> | Market leader | 36 | 1,64 | 1,02 |
| | Other enterprises | 24 | 1,92 | 1,14 |
| <i>L 7. As a rule, employees must be given rewards or punishments in order to motivate them to achieve organizational objectives.</i> | Market leader | 36 | 4,03 | 1,06 |
| | Other enterprises | 24 | 4,25 | 0,94 |
| <i>L 10. Most employees feel insecure about their work and need direction.</i> | Market leader | 36 | 2,50 | 1,13 |
| | Other enterprises | 24 | 2,79 | 1,06 |
| <i>L 13. The leader is the chief judge of the achievements of the members of the group.</i> | Market leader | 36 | 4,25 | 0,73 |
| | Other enterprises | 24 | 3,88 | 0,80 |
| <i>L 16. Effective leaders give orders and clarify procedures.</i> | Market leader | 36 | 3,03 | 1,42 |
| | Other enterprises | 24 | 2,58 | 1,35 |

In order to determine whether the differences between market leader enterprises and other enterprises were statistically significant, a Mann-Whitney test of comparison of the presence of the autocratic leadership style in relation to the growth phase of the enterprise was carried out (Table 8). A statistically significant difference was found for variable *L13*.

Table 8. The Mann-Whitney test of comparison of the presence of the autocratic leadership style in relation to the growth phase of the enterprise. Source: author's research.

| Claim | Mann-Whitney U | Wilcoxon W | Z | P-value |
|---|----------------|------------|--------|---------|
| <i>L 1. Employees need to be supervised closely, or they are not likely to do their work.</i> | 393,000 | 1059,000 | -0,604 | 0,546 |
| <i>L 4. It is fair to say that most employees in the general population are lazy.</i> | 362,000 | 1028,000 | -1,178 | 0,239 |
| <i>L 7. As a rule, employees must be given rewards or punishments in order to motivate them to achieve organizational objectives.</i> | 379,000 | 1045,000 | -0,858 | 0,391 |
| <i>L 10. Most employees feel insecure about their work and need direction.</i> | 367,000 | 1033,000 | -1,019 | 0,308 |
| <i>L 13. The leader is the chief judge of the achievements of the members of the group.</i> | 313,500 | 613,500 | -1,924 | 0,054* |
| <i>L 16. Effective leaders give orders and clarify procedures.</i> | 360,500 | 660,500 | -1,110 | 0,267 |

*statistically significant at 10 %

Table 9 shows answers of the respondents – managers who are members of the board of directors – to questions by which they evaluated to what extent they agree with the attitudes that reflect the democratic leadership style, with the average answers of the respondents from enterprises in relation to their growth phase (market leader and other enterprises) being compared.

It can be noticed that respondents from market leader enterprises agree mostly with *L11. Leaders need to help subordinates accept responsibility for completing their work* (average rating 4,47) and item *L8. Most workers want frequent and supportive communication from their leader* (average rating 4,25). The respondents agree the least with item *L14. It is the leader's job to help subordinates find their "passion"* (average rating 3,22). Standard deviations range from 0,58 to 0,82, indicating that the average ratings are representative.

Table 9. Presence of the democratic leadership style in relation to the growth phase of the enterprise. Source: author's research.

| Claim | Growth phase | N | Average | St. dev. |
|---|-------------------|----|---------|----------|
| <i>L 2. Employees want to be a part of the decision-making process.</i> | Market leader | 36 | 4,06 | 0,83 |
| | Other enterprises | 24 | 4,04 | 0,75 |
| <i>L 5. Providing guidance without pressure is the key to being a good leader.</i> | Market leader | 36 | 3,86 | 1,13 |
| | Other enterprises | 24 | 4,21 | 0,78 |
| <i>L 8. Most workers want frequent and supportive communication from their leader.</i> | Market leader | 36 | 4,25 | 0,81 |
| | Other enterprises | 24 | 4,08 | 0,58 |
| <i>L 11. Leaders need to help subordinates accept responsibility for completing their work.</i> | Market leader | 36 | 4,47 | 0,74 |
| | Other enterprises | 24 | 4,08 | 0,78 |
| <i>L 14. It is the leader's job to help subordinates find their "passion".</i> | Market leader | 36 | 3,22 | 0,99 |
| | Other enterprises | 24 | 3,25 | 0,74 |
| <i>L 17. People are basically competent and if given a task will do a good job.</i> | Market leader | 36 | 3,83 | 0,85 |
| | Other enterprises | 24 | 3,38 | 0,82 |

In order to determine whether the differences between market leader enterprises and other enterprises were statistically significant, a Mann-Whitney test of comparison of the presence of the democratic leadership style in relation to the growth phase of the enterprise was carried out (Table 10). A statistically significant difference was found for variables L11 and L17.

Table 10. The Mann-Whitney test of comparison of the presence of the democratic leadership style in relation to the growth phase of the enterprise. Source: author's research.

| Claim | Mann-Whitney U | Wilcoxon W | Z | P-value |
|---|----------------|------------|--------|---------|
| <i>L 2. Employees want to be a part of the decision-making process.</i> | 416,500 | 716,500 | -0,253 | 0,800 |
| <i>L 5. Providing guidance without pressure is the key to being a good leader.</i> | 371,000 | 1037,000 | -0,972 | 0,331 |
| <i>L 8. Most workers want frequent and supportive communication from their leader.</i> | 351,500 | 651,500 | -1,361 | 0,173 |
| <i>L 11. Leaders need to help subordinates accept responsibility for completing their work.</i> | 306,000 | 606,000 | -2,080 | 0,038** |
| <i>L 14. It is the leader's job to help subordinates find their "passion".</i> | 429,000 | 1095,000 | -0,049 | 0,961 |
| <i>L 17. People are basically competent and if given a task will do a good job.</i> | 305,000 | 605,000 | -2,072 | 0,038** |

**statistically significant at 5 %

Table 11 shows answers of the respondents – managers who are members of the board of directors – to questions by which they evaluated to what extent they agree with the attitudes that reflect the laissez-faire leadership style, with the average answers of the respondents from enterprises in relation to their growth phase (market leader and other enterprises) being compared. It can be noticed that respondents from market leader enterprises agree mostly with item *L18. In general, it is best to leave subordinates alone* (average rating 3,06). The respondents agree the least with item *L3. In complex situations, leaders should let subordinates work problems out on their own* (average rating 2,67). Standard deviations are in the range of 0,92 to 1,16, indicating that the average ratings are representative.

Table 11. Presence of the laissez-faire leadership style in relation to the growth phase of the enterprise. Source: author's research.

| Claim | Growth phase | N | Average | St. dev. |
|--|-------------------|----|---------|----------|
| <i>L 3. In complex situations, leaders should let subordinates work problems out on their own.</i> | Market leader | 36 | 2,67 | 1,43 |
| | Other enterprises | 24 | 2,96 | 1,16 |
| <i>L 6. Leadership requires staying out of the way of subordinates as they do their work.</i> | Market leader | 36 | 2,86 | 1,07 |
| | Other enterprises | 24 | 3,25 | 0,94 |
| <i>L 9. As a rule, leaders should allow subordinates to appraise their own work.</i> | Market leader | 36 | 2,83 | 1,13 |
| | Other enterprises | 24 | 2,67 | 0,92 |
| <i>L 12. Leaders should give subordinates complete freedom to solve problems on their own.</i> | Market leader | 36 | 2,81 | 1,17 |
| | Other enterprises | 24 | 3,04 | 1,12 |
| <i>L 15. In most situations, workers prefer little input from the leader.</i> | Market leader | 36 | 2,75 | 1,03 |
| | Other enterprises | 24 | 3,29 | 1,08 |
| <i>L 18. In general, it is best to leave subordinates alone.</i> | Market leader | 36 | 3,06 | 1,15 |
| | Other enterprises | 24 | 3,33 | 1,09 |

In order to determine whether the differences between market leader enterprises and other enterprises were statistically significant, a Mann-Whitney test of comparison of the presence of the laissez-faire leadership style in relation to the growth phase of the enterprise was carried out (Table 12). A statistically significant difference was found for variable L15.

Table 12. The Mann-Whitney test of comparison of the presence of the laissez-faire leadership style in relation to the growth phase of the enterprise. Source: author's research.

| Claim | Mann-Whitney <i>U</i> | Wilcoxon <i>W</i> | Z | P-value |
|--|--------------------------|----------------------|--------|---------|
| <i>L 3. In complex situations, leaders should let subordinates work problems out on their own.</i> | 372,500 | 1038,500 | -0,934 | 0,350 |
| <i>L 6. Leadership requires staying out of the way of subordinates as they do their work.</i> | 341,500 | 1007,500 | -1,427 | 0,154 |
| <i>L 9. As a rule, leaders should allow subordinates to appraise their own work.</i> | 393,000 | 693,000 | -0,613 | 0,540 |
| <i>L 12. Leaders should give subordinates complete freedom to solve problems on their own.</i> | 380,000 | 1046,000 | -0,810 | 0,418 |
| <i>L 15. In most situations, workers prefer little input from the leader.</i> | 297,000 | 963,000 | -2,117 | 0,034** |
| <i>L 18. In general, it is best to leave subordinates alone.</i> | 359,500 | 1025,500 | -1,141 | 0,254 |

**statistically significant at 5 %

ANALYSIS OF THE USE OF LEADERSHIP IN RELATION TO THE INTERNATIONAL ORIENTATION OF THE ENTERPRISE

Table 13 shows answers of the respondents – managers who are members of the board of directors – to questions by which they evaluated to what extent they agree with the attitudes

that reflect the autocratic leadership style, with the average answers of the respondents from enterprises in relation to the international orientation of the enterprise (domicile or international market orientation) being compared.

It can be noticed that respondents from enterprises oriented towards domicile market agree mostly with item *L13. The leader is the chief judge of the achievements of the members of the group* (average rating 4,21) and item *L7. As a rule, employees must be given rewards or punishments in order to motivate them to achieve organizational objectives* (average rating 4,08).

The respondents agree the least with item *L4. It is fair to say that most employees in the general population are lazy* (average rating 1,84). Standard deviations range from 0,75 to 1,37, indicating that the average ratings are representative.

Table 13. Presence of the autocratic leadership style in relation to the international orientation of the enterprise. Source: author's research.

| Claim | Market orientation | N | Average | St. dev. |
|---|--------------------|----|---------|----------|
| <i>L 1. Employees need to be supervised closely, or they are not likely to do their work.</i> | Domicile | 38 | 2,84 | 1,18 |
| | International | 22 | 2,32 | 1,29 |
| <i>L 4. It is fair to say that most employees in the general population are lazy.</i> | Domicile | 38 | 1,84 | 1,15 |
| | International | 22 | 1,59 | 0,91 |
| <i>L 7. As a rule, employees must be given rewards or punishments in order to motivate them to achieve organizational objectives.</i> | Domicile | 38 | 4,08 | 0,97 |
| | International | 22 | 4,18 | 1,09 |
| <i>L 10. Most employees feel insecure about their work and need direction.</i> | Domicile | 38 | 2,74 | 1,08 |
| | International | 22 | 2,41 | 1,14 |
| <i>L 13. The leader is the chief judge of the achievements of the members of the group.</i> | Domicile | 38 | 4,21 | 0,78 |
| | International | 22 | 3,91 | 0,75 |
| <i>L 16. Effective leaders give orders and clarify procedures.</i> | Domicile | 38 | 3,03 | 1,40 |
| | International | 22 | 2,55 | 1,37 |

In order to determine whether the differences between enterprises oriented towards domicile market and enterprises oriented towards international market were statistically significant, a Mann-Whitney test of comparison of the presence of the autocratic leadership style in relation to the international orientation of the enterprise was carried out (Table 14). No statistically significant difference was found for the analyzed pairs of enterprises.

Table 14. The Mann-Whitney test of comparison of the presence of the autocratic leadership style in relation to the international orientation of the enterprise. Source: author's research.

| Claim | Mann-Whitney U | Wilcoxon W | Z | P-value |
|---|----------------|------------|--------|---------|
| <i>L 1. Employees need to be supervised closely, or they are not likely to do their work.</i> | 315,000 | 568,000 | -1,623 | 0,105 |
| <i>L 4. It is fair to say that most employees in the general population are lazy.</i> | 371,000 | 624,000 | -0,804 | 0,421 |
| <i>L 7. As a rule, employees must be given rewards or punishments in order to motivate them to achieve organizational objectives.</i> | 370,500 | 1111,500 | -0,782 | 0,434 |
| <i>L 10. Most employees feel insecure about their work and need direction.</i> | 347,500 | 600,500 | -1,124 | 0,261 |
| <i>L 13. The leader is the chief judge of the achievements of the members of the group.</i> | 322,000 | 575,000 | -1,584 | 0,113 |
| <i>L 16. Effective leaders give orders and clarify procedures.</i> | 337,500 | 590,500 | -1,270 | 0,204 |

Table 15 shows answers of the respondents – managers who are members of the board of directors – to questions by which they evaluated to what extent they agree with the attitudes that reflect the democratic leadership style, with the average answers of the respondents from enterprises in relation to the international orientation of the enterprise (domicile or international market orientation) being compared. It can be noticed that respondents from enterprises oriented towards domicile market agree mostly with item *L11. Leaders need to help subordinates accept responsibility for completing their work* (average rating 4,42) and item *L8. Most workers want frequent and supportive communication from their leader* (average rating 4,26). The respondents agree the least with item *L14. It is the leader's job to help subordinates find their "passion"* (average rating 3,34). Standard deviations range from 0,58 to 1,01, indicating that the average ratings are representative.

Table 15. Presence of the democratic leadership style in relation to the international orientation of the enterprise. Source: author's research.

| Claim | Market orientation | N | Average | St. dev. |
|---|--------------------|----|---------|----------|
| <i>L 2. Employees want to be a part of the decision-making process.</i> | Domicile | 38 | 3,97 | 0,79 |
| | International | 22 | 4,18 | 0,80 |
| <i>L 5. Providing guidance without pressure is the key to being a good leader.</i> | Domicile | 38 | 3,90 | 1,01 |
| | International | 22 | 4,18 | 1,01 |
| <i>L 8. Most workers want frequent and supportive communication from their leader.</i> | Domicile | 38 | 4,26 | 0,80 |
| | International | 22 | 4,05 | 0,58 |
| <i>L 11. Leaders need to help subordinates accept responsibility for completing their work.</i> | Domicile | 38 | 4,42 | 0,83 |
| | International | 22 | 4,14 | 0,64 |
| <i>L 14. It is the leader's job to help subordinates find their "passion".</i> | Domicile | 38 | 3,34 | 0,94 |
| | International | 22 | 3,05 | 0,79 |
| <i>L 17. People are basically competent and if given a task will do a good job.</i> | Domicile | 38 | 3,63 | 0,88 |
| | International | 22 | 3,68 | 0,84 |

In order to determine whether the differences between enterprises oriented towards domicile market and enterprises oriented towards international market were statistically significant, a Mann-Whitney test of comparison of the presence of the democratic leadership style in relation to the international orientation of the enterprise was carried out (Table 16).

Only one statistically significant difference was found at the probability level of 10 % ($Z = -1,879$; $p\text{-value} = 0,060$) for item *L11. Leaders need to help subordinates accept responsibility for completing their work*, rated by the respondents from the enterprises oriented towards domicile market with an average rating of 4,42, and rated by the respondents from enterprises oriented towards international market with an average rating of 4,14.

Table 16. The Mann-Whitney test of comparison of the presence of the democratic leadership style in relation to the international orientation of the enterprise. Source: author's research.

| Claim | Mann-Whitney U | Wilcoxon W | Z | P-value |
|---|----------------|------------|--------|---------|
| <i>L 2. Employees want to be a part of the decision-making process.</i> | 351,500 | 1092,500 | -1,104 | 0,270 |
| <i>L 5. Providing guidance without pressure is the key to being a good leader.</i> | 344,000 | 1085,000 | -1,199 | 0,230 |
| <i>L 8. Most workers want frequent and supportive communication from their leader.</i> | 324,000 | 577,000 | -1,616 | 0,106 |
| <i>L 11. Leaders need to help subordinates accept responsibility for completing their work.</i> | 306,000 | 559,000 | -1,879 | 0,060* |
| <i>L 14. It is the leader's job to help subordinates find their "passion".</i> | 338,500 | 591,500 | -1,325 | 0,185 |
| <i>L 17. People are basically competent and if given a task will do a good job.</i> | 409,000 | 1150,000 | -0,149 | 0,881 |

*statistically significant at 10 %

Table 17 shows answers of the respondents – managers who are members of the board of directors – to questions by which they evaluated to what extent they agree with the attitudes that reflect the laissez-faire leadership style, with the average answers of the respondents from enterprises in relation to the international orientation of the enterprise (domicile or international market orientation) being compared.

It can be noticed that respondents from enterprises oriented towards domicile market agree mostly with item *L18. In general, it is best to leave subordinates alone* (average rating 3,11) and item *L12. Leaders should give subordinates complete freedom to solve problems on their own* (average rating 3,03). The respondents agree the least with item *L3. In complex situations, leaders should let subordinates work problems out on their own* (average rating 2,71). Standard deviations range from 0,88 to 1,39, indicating that the average ratings are representative.

Table 17. Presence of the laissez-faire leadership style in relation to the international orientation of the enterprise. Source: author's research.

| Claim | Market orientation | N | Average | St. dev. |
|--|--------------------|----|---------|----------|
| <i>L 3. In complex situations, leaders should let subordinates work problems out on their own.</i> | Domicile | 38 | 2,71 | 1,31 |
| | International | 22 | 2,91 | 1,38 |
| <i>L 6. Leadership requires staying out of the way of subordinates as they do their work.</i> | Domicile | 38 | 2,90 | 1,06 |
| | International | 22 | 3,23 | 0,97 |
| <i>L 9. As a rule, leaders should allow subordinates to appraise their own work.</i> | Domicile | 38 | 2,74 | 1,11 |
| | International | 22 | 2,82 | 0,96 |
| <i>L 12. Leaders should give subordinates complete freedom to solve problems on their own.</i> | Domicile | 38 | 3,03 | 1,15 |
| | International | 22 | 2,68 | 1,13 |
| <i>L 15. In most situations, workers prefer little input from the leader.</i> | Domicile | 38 | 2,79 | 1,14 |
| | International | 22 | 3,27 | 0,88 |
| <i>L 18. In general, it is best to leave subordinates alone.</i> | Domicile | 38 | 3,11 | 0,95 |
| | International | 22 | 3,27 | 1,39 |

In order to determine whether the differences between enterprises oriented towards domicile market and enterprises oriented towards international market were statistically significant, a Mann-Whitney test of comparison of the presence of the laissez-faire style leadership with regard to the international orientation of the enterprise was carried out (Table 18). Only one statistically significant difference was found at the probability level of 10 % ($Z = -1,650$; $p\text{-value} = 0,099$) for item *L15. In most situations, workers prefer little input from the leader*, rated by the respondents from the enterprises oriented towards domicile market with an average rating of 2,79, and rated by the respondents from enterprises oriented towards international market with an average rating of 3,27.

Table 18. The Mann-Whitney test of comparison of the presence of the laissez-faire leadership style in relation to the international orientation of the enterprise. Source: author's research.

| Claim | Mann-Whitney U | Wilcoxon W | Z | P-value |
|--|----------------|------------|--------|---------|
| <i>L 3. In complex situations, leaders should let subordinates work problems out on their own.</i> | 380,500 | 1121,500 | -0,598 | 0,550 |
| <i>L 6. Leadership requires staying out of the way of subordinates as they do their work.</i> | 338,500 | 1079,500 | -1,274 | 0,202 |
| <i>L 9. As a rule, leaders should allow subordinates to appraise their own work.</i> | 397,500 | 1138,500 | -0,328 | 0,743 |
| <i>L 12. Leaders should give subordinates complete freedom to solve problems on their own.</i> | 347,000 | 600,000 | -1,124 | 0,261 |
| <i>L 15. In most situations, workers prefer little input from the leader.</i> | 314,500 | 1055,500 | -1,650 | 0,099* |
| <i>L 18. In general, it is best to leave subordinates alone.</i> | 367,000 | 1108,000 | -0,816 | 0,415 |

*statistically significant at 10 %

DISCUSSION

In this article, the following goals regarding the leadership styles in enterprises of different characteristics have been achieved.

Leadership styles in relation to the size. The research has shown that the democratic style is the most common leadership style in small, medium-sized and large enterprises, with the ratings of the respondents, which demonstrate the presence of the democratic style ranging from 3,23 to 4,43. The Mann-Whitney test has shown that there is no statistically significant difference between small and medium-sized enterprises and large enterprises in relation to the presence of the democratic style. Small, medium-sized and large enterprises use the autocratic style somewhat less in their business, with the ratings of the respondents, which demonstrate the presence of the autocratic style ranging from 1,57 to 4,23. The Mann-Whitney test has shown that there is no statistically significant difference between small and medium-sized enterprises and large enterprises in relation to the presence of the autocratic style, except for one item – namely, the respondents from small enterprises find more often that most employees feel insecure about their work and need direction. In small and medium-sized enterprises, but also in large enterprises, the laissez-faire style is the least common leadership style, with the ratings of the respondents, which demonstrate the presence of the laissez-faire style ranging from 2,67 to 3,53. However, in some situations, the laissez-faire style is present more often in small and medium-sized enterprises than in large enterprises, while the attitude is that in most situations employees want little input from their leader and that it is best to leave subordinates alone. These results might seem contradictory at first glance, but they actually express the attitude of management, which believes that subordinates should be left alone, but that they also need some additional input.

Leadership styles in relation to the growth phase. The research has shown that the democratic style is the most common leadership style in both market leader enterprises and market follower enterprises as well, with the ratings of the respondents, which demonstrate the presence of the democratic style ranging from 3,22 to 4,47. The Mann-Whitney test has shown that there is no statistically significant difference between market leader enterprises and market follower enterprises in relation to the presence of the democratic style, except for the attitude that leaders need to help subordinates accept responsibility for completing their work. Both market leader enterprises and market follower enterprises use the autocratic style slightly less in their business, with the ratings of the respondents, which demonstrate the presence of the autocratic style ranging from 1,64 to 4,25. The Mann-Whitney test has shown that there is no statistically significant difference between market leader enterprises and market follower enterprises in relation to the presence of the autocratic style, except for one item – namely, the respondents from market leader enterprises consider more often that the leader is the chief judge of the achievements of the members of the group. The laissez-faire style is the least common leadership style in both market leader enterprises and market follower enterprises, with the ratings of the respondents, which demonstrate the presence of the laissez-faire style ranging from 2,67 to 3,29. However, in some situations, the laissez-faire style is present more often in market leader enterprises than in market follower enterprises, while the attitude is that in most situations employees want little input from their leader.

Leadership styles in relation to the international orientation. The research has shown that the democratic style is the most common leadership style in both enterprises with international orientation and enterprises with domicile orientation as well, with the ratings of the respondents, which demonstrate the presence of the democratic style ranging from 3,05 to 4,26. The Mann-Whitney test has shown that there is no statistically significant difference between enterprises with international orientation and enterprises with domicile orientation in relation to the presence of the democratic style, except for the attitude that leaders need to

help subordinates accept responsibility for completing their work. Both enterprises with international orientation and enterprises with domicile orientation use the autocratic style slightly less in their business, with the ratings of the respondents, which demonstrate the presence of the autocratic style ranging from 1,59 to 4,21. The Mann-Whitney test has shown that there is no statistically significant difference between enterprises with international orientation and enterprises with domicile orientation in relation to the presence of the autocratic style. In both enterprises with international orientation and enterprises with domicile orientation, the laissez-faire style is the least common leadership style, with the ratings of the respondents, which demonstrate the presence of the laissez-faire style ranging from 2,68 to 3,27. However, in some situations, the laissez-faire style is more often present in enterprises with international orientation than in enterprises with domicile orientation, while the attitude is that in most situations employees want less input from their leader.

CONCLUSION

Article presents the results of the measurement of presence of three main leadership styles in Croatian enterprises. Several limitations need to be taken into account in relation to the presented research. First, the research has been conducted on a limited sample of Croatian enterprises, and using cross-sectional approach. Second, the Leadership Style Questionnaire was used for measuring the presence of the leadership style in Croatian companies, which was developed on a sample of US enterprises. Therefore, future research should be oriented toward broadening the research sample and considering a development of the novel questionnaire that could be more adapted to the enterprises in post-transition countries, like the Croatia.

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INTERNET MARKETING AS A BUSINESS NECESSITY

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ABSTRACT

The pace at which marketing discipline evolves each year is challenging for both individual marketing experts and companies as systems, which are permanently competing for global consumers. With the development of the Internet as the main channel and best opportunity for the implementation of the optimal “one-to-one” marketing model, Internet marketing as a new area of marketing theory and practice has emerged and is constantly improving. On the other side, the power and attractiveness of online surrounding have also transformed the way consumers behave, creating new patterns and lifestyle that have to be taken into account when creating appropriate Internet marketing strategies, far different from the traditional ones. Thus, the aim of this article is to examine fundamentals of Internet-based marketing, and to analyse challenges and opportunities that should be addressed by modern companies in their Internet marketing strategies, together with possible limitations and risks that emerged in the electronic marketplace. The method used in the article is secondary research, and implies a detailed analysis of researches and studies in the given field.

KEY WORDS

internet marketing, digital marketing, online marketing, online consumer

CLASSIFICATION

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INTRODUCTION

Globally, the number of web sites increased from 17 million in 2000 to 1 billion US\$ in 2014 [1]. Worldwide business-to-consumer e-commerce sales increase by 20,1 % in 2014 reaching 1500 trillion US\$ [2]. There is an expansion of online and mobile users across the globe, especially from emerging markets, m-commerce sales is constantly rising, shipping and payment options have been simplified and major global brands have been pushed into new international markets [2]. The age of Internet and digitalization is here, and Internet economy is growing rapidly each day.

Following improvements in mobile and tablet technology, together with social media, marketing has set itself in a new, complex and challenging market environment. Internet has become the primary business playground and the most popular communication channel, creating new rules and new roles on both supply and demand side, and Internet marketing and e-commerce have emerged as a major preoccupations and business skills in all industrial branches. Marketing has become completely new discipline today compared with the one that was known a decade ago, making traditional marketing methods less effective and expensive [3].

Thus, the aim of this article is to examine fundamentals of Internet-based marketing, starting with pointing out its scope and terminology variety, since it is a wide used term and very popular subject of research. By analysing online customer behaviours and new models of interaction and communication among customers, authors point out all challenges and opportunities that should be addressed by modern companies in their Internet marketing strategies, together with limitations and risks that emerged in electronic marketplace. Relying on secondary research method, that implies detailed analysis of researches and studies in the given field, the article has made a contribution in modern discussion how Internet improvements are going to create even more dynamic and challenging business environment in just next few years, and point out that embracing digital marketplace rules and engaging in full range of Internet marketing activities is a necessity for companies across all industries.

INTERNET MARKETING – SCOPE AND TERMINOLOGY

Internet marketing is a term that is expanding its scope each day. Besides, communication with consumers through the Internet channel is getting various forms and names almost each day. Generally, this is the area that implies fast changes and new dimensions in all its segments. Thus, it is important to become familiar and follow the pace of all changes in Internet marketing, given that there is a whole new terminology connected with a variety of Internet-based marketing approaches and strategies that are fundamental for gaining sustainable competitive advantage.

The most common comparison is made between Digital and Internet marketing. These two terms are similar but not synonyms. Even though Digital marketing is also known as Internet marketing, online marketing, web marketing or data-driven marketing [4], it is the umbrella term for a group of marketing processes that exploit all available digital channels and Internet technologies with the aim of promotion of branded products and services. Its development is a direct result of the increased electronic data, digital media usage and its impact in business sphere globally. So, its development has primarily followed Internet improvements, which is the reason why it has so many manifestations.

Some authors claim that Digital marketing and Internet marketing are not the same things [5]. Accordingly, Digital marketing is wider term that includes both online and offline digital technologies and multiple channels under it, while Internet marketing bases its activities only on the Internet. Some of digital marketing channels are “sms marketing, digital print ads,

television marketing, radio advertising, etc.” [5; p.29]. This is not the case with Internet marketing, given that some of Digital marketing channels don’t necessarily require Internet connection. Furthermore, both Digital and Internet marketing cover web, search, social media, e-mail, digital advertising and media buying [6], and both are very effective in conducting, analysing and measuring total effects of marketing campaigns.

Internet marketing use modern technologies and Internet connection for reaching marketing objectives [7]. Some of the most common subjects that various authors addressed in their scientific papers are linked with marketing mix evolution because of wide Internet adoption [8]. Internet channels superiority over traditional channels and media, emergence of new marketing channels etc. [9, 10]. Further, in this article, authors will focus on Internet marketing analysis from the perspective of new consumer behaviour, Internet marketing channels strategy.

INTERNET CUSTOMERS INSIGHT

Internet and modern technology also transformed the way people behave, interact, communicate and purchase. Big data has become not only the business reality, but also the reality of each consumer, that has to adopt to the informational age and develop new patterns of behaviour. Entering the Internet market companies are actually taking the veil of a massive market and new age audience that cannot be ignored [11].

Internet customers are easy for tracking, especially because smartphones has become dominant medium for accessing Internet across all age groups [12]. They prefer digital channels for investigating, selecting and purchasing brands [13].

Internet customers are not passive observers of the market happenings; they are active participants of a dialog with companies, co-creators of marketing strategies and active judges of all companies’ activities and decisions. Their power is related to four sources [14; p.51]: (i) “technological – right to be heard; (ii) economic – right to choose; (iii) social – right to be informed, and (iv) legal – right to safety”.

Besides sharing information about products and services they use, they are highly attracted with multiple options for sharing information about themselves [15]. Yung [16] described online public as “discerning, fragmented and cynical”, indicating the amount of freedom, space and power they gained over the last few years. Online consumers are very demanding in terms of their satisfaction with marketing communication and experience with the products and services they use. Information without engagement and entertainment is not enough for reaching delight [15]. Consumers are looking for special, different and hyper-personalized content all the time that is in accordance with their lifestyle and ideal self-image. They use all online options to discover the best solution for their interests.

Phases that consumer passes through while engaging with brands in online environment are [11]: awareness, engagement, purchase, post purchase, advocacy, and brand evangelist. They expect the relevant and inspiring content at every point of their journey.

INTERNET MARKETING CHANNELS

Although, beginnings of Internet marketing are associated with advertising boom and first versions of search engine optimisation (SEO) in 1995 [17], today, it is an umbrella term for “email marketing, search engine optimization, social media marketing, pay per click, display ads on websites, gaming advertising, search engine marketing, call back or hold-on mobile ring tone, etc.” [5; p.30]. Internet marketing is a subset of Digital marketing, its main component, and it exploits dominantly Internet channel for the promotion of brands. Major channels of Internet marketing are the following [5]:

- Web Site,
- Search Engine Marketing,
- Social Media Marketing,
- Content Marketing,
- E-mail Marketing,
- Mobile Marketing,
- Banner Advertising.

Web site is a starting point in Internet marketing campaign and communication with customers [18]. It is a “place” in digital space “owned” by a company, where all information about the company and its products can be found. This is also the final destination of all banners, social media profiles, texts and similar content that exist across the Internet about the company. Specific and very popular type of web site is blog, which generates its power to make an influence on consumers by providing information about particular subject (usually about products) in a form of personal opinion, usually given by an expert or just an ordinary consumer that is expressing his first impressions about the subject in a form of personal diary [19]. The idea that stands behind blogging is electronic word-of-mouth and encouraging communication about the product between consumers that has experience with it.

Search Engine Marketing (SEM) is a tool for increasing visibility of a company’s website and making online promotion of a company more effective. It uses paid advertisements links (pay per click platforms – e.g. Google Adwords) and Search Engine Optimization (e.g. Google, Bing, Yahoo) for acceleration of website traffic – specifically, the aim is to attract as many targeted users as possible and to increase visits to a website and awareness of company’s brands [18]. In this process, special attention should be put on the process of designing unique and attractive content for the targeted audience.

Social media marketing is “an innovative tool that organizations use for creating a very strong public relation with the customers on the virtual networks” [20]. Social media platforms (e.g. Facebook, Twitter, Instagram, LinkedIn etc.) consist of large and various communities of customers that are not that easily available and visible in traditional channels. Those groups have a great power in sharing information about the company and its products, expressing personal opinion, rating their experience that can be both positive and negative. Social media web sites help in enhancing the communication with all users, and each social media site demands different approaches, techniques and strategies of marketing. Conducting marketing through social media networks “is not about you getting your story out; it’s about your customers; it’s about being more transparent, earning trust, and building credibility” [21; p.36]. Social networks provide great opportunity for reaching maximum results with minimum investment [22].

Content marketing is “a strategic marketing approach focused on creating and distributing valuable, relevant, and consistent content to attract and retain a clearly defined audience and, ultimately, to drive profitable customer action” [23; p.8]. It is a “good story about the company that is described in hundred words, without mentioning company’s references, brands and all other superlatives, and that, even without these components, carry attributes authentic, focused, and relevant” [20]. The aim is driving and retaining customer action and interaction with company and its brands with authentic, original and inspiring content.

E-mail Marketing is the direct way for personal and customized communication with new and old customers. It helps in reaching more customers and conveying a wide variety of messages in creative forms with the possibility of getting direct feedback from customers’ and measuring its effectiveness easily [5]. E-mail marketing campaigns are cost effective, personalised, fast, massive but targeted, approved by consumers that are usually consciously registered on the companies e-mail list, easily tracked etc. However, it is very important to

avoid spamming consumers with lot of information that are not relevant but rather sent just to remember the consumers about the company's presence.

Mobile marketing is about creating content or ads that is viewable and suitable for a mobile device [18]. It implies "any marketing activity conducted through a ubiquitous network to which consumers are constantly connected using a personal mobile device" [24; p.132]. Mobile marketing has become business necessity in the last few years, given that "the extent of mobile engagement by consumers is so pervasive that it can't be ignored by any business", and implying that "all marketing must be optimized for mobile, first" [15]. Smart phones are devices that are always "in the pocket" of its users, with constant connection to the Internet, so the opportunity mobile marketing provides for a company is creating fully customised information to customers, depending of their location, time, activities and other data about the person that could be tracked through mobile device and application installed on it.

Display Advertising is focused on the usage of visual elements like images, videos, animations, rather than text, in creating brand awareness and image, and finally sales [5].

Internet marketing channels, together with all possibilities and opportunities they give for growing business online, can also be presented as "The Internet marketing tree". The main parts of the tree – deep roots, sturdy trunk and branches – demonstrate priority and order in conducting Internet marketing strategy [25].

INTERNET MARKETING STRATEGY

The creation of new positions like Chief Digital Officer (CDO), Chief Information Officer (CIO), Chief Technology Officer (CTO) and various others testify how important is for a company to keep up with trends in digital age, especially in terms of transformation of traditional organizational systems and cultures. Consulting firm Russell Reynolds Associates describes the CDO as "an individual who helps a company drive growth by converting traditional "analogue" businesses to digital ones, and by overseeing operations in the rapidly-changing digital sectors like mobile applications, social media and related applications, virtual goods, as well as "wild web-based information management and marketing" [26]. Accordingly, in the years ahead, whole marketing discipline must be adapted to the new business climate. Understanding Internet marketing postulates and all the possibilities of its channels is the essence of new age marketing strategy.

Successful Internet marketing strategy requires integrated campaign, collaboration and coordination of all actions and actors, in order to avoid generating duplicate or unadjusted content that is not aligned with the general marketing aim. Transparency is on the highest level, and each activity is recorded and can be tracked [15]. "Marketers must move from the reactionary (cost-centre) mentality but view themselves as growth strategists – and execute a digital plan around their member's buying journey – including awareness, consideration, purchase, adoption and advocacy." [15].

Sweetwood [6; p.5] explained that the basic marketing specialist's skills today are associated with data management, analytics, data governance and reporting. Besides, he highlighted the role of Inbound marketing and the art of engaging with customers in every point of decision journey, by creating a "deeper and more intelligent conversation with potential customers". Inbound marketing, as one of the basic Internet marketing strategies, refers to the preferred and highly effective approach in reaching consumers who are overloaded with information from different media, and refers to catching consumer attention by providing value that will firstly create a relationship, develop trust and finally lead to sales [27].

Guidance for effective Internet marketing strategy, given by Vaughan [3] emphasizes the following important ingredients of "inbound" approach:

- creating a keyword strategy and optimising website – in order to be easily found by customers through SEO,
- creating blog and marketing offers – driving the right people to your business and offering a value for them,
- promoting content through social media – using the “buzz” power of social media platforms and creating a group of advocates that will engage in sharing of the company’s content viral,
- converting web site traffic into leads – transforming visitors of a web site into potential consumers,
- nurturing leads with targeted messages – staying at the top-of-the-mind of potential customers and creating a desire for purchase,
- optimizing marketing for mobile viewing – making all content and offerings optimized for mobile devices,
- analysing and refining business and marketing strategies – conducting examination of marketing strategy from the beginning to the end and improving it in all points.

Given that customers are very attracted with making an impact among members of their online social community, influencer marketing together with content marketing has become very effective and creative tools in “reaching multiple micro-markets that company wouldn’t traditionally reach in online or TV advertising campaigns” [15].

Internet marketing demands a holistic strategy and engagement of all the channels that are available in online space, with constant evaluation and improvement of Internet marketing manager skills and expertise.

Riefenstahl [28; p.90] suggested that when planning Internet marketing strategy, companies should “focus on rational and emotional benefits for the company, products or services in each medium”. Besides, he gave the next tips that should be taken into account in making marketing plans [28]:

- each company should have its own web site,
- company’s web site must be optimized for desktop, iOS, Android phones and tablet usage,
- blogging is a great tool for keeping in touch with customers, and blog section on web site should be inspirational,
- communication should be crafted according to different interests of multiple target audiences,
- all marketing messages in each medium should be integrated carefully,
- public profiles of all employees should be in accordance with organizational image and interests,
- design of all messages is very important part of communication and driving attention,
- talking through videos and live streaming is effective in online communication,
- highlight and distinguish business from competition with a unique message,
- engaging with customers through social media is necessity,
- track customers interests and adapt permanently.

Generally, according to Jones et al. [17], there are three general cornerstone principles of Internet marketing that are crucial for success in virtual market: (i) immediacy with timely response to the audience, (ii) personalization, and (iii) relevance of information.

The power of marketing strategy in Internet environment, especially through social media platforms, is the fact that with investing less money a company can reach higher scores, and additionally, comparing with traditional marketplace, there are no geographical and time limitations [29].

LIMITATIONS AND POSSIBLE RISKS OF INTERNET MARKETING

On the other side, when planning optimal online strategy, it is very important to be aware of all limitations and possible risks of Internet marketing implementation.

Empowering customers to be informed, to say or write directly what they think and what they want, mean demanding much more than a company maybe initially planned to give [30]. All stakeholders are looking for long-term relationships that are based on high value delivery, and business partners are necessary if a company want to keep the pace with innovation [31]. Additionally, the competition in electronic marketplace is tougher than ever, switching from one to another product is easier than ever, since diversity of supply is high, which makes the process of engaging customers and keeping their loyalty one of the most difficult tasks of a company.

In online world, content is everything. It is one of basic means of Internet marketing and social media that have become “new hybrid component of integrated marketing communications” that is a powerful weapon in engaging customers and create meaningful relationships [32; pp.357-360]. However, controlling content is not an easy task – it is rather a challenging issue that is in forefront of each successful Internet marketing strategy. The second dilemma in online business is whether a company should have both social media business page and website, or just the first one. The importance of professional company’s website is growing and it has become a standard in Internet marketing strategy, since it allows “better search engine marketing, full control of content and consequently better branding” [4].

Limitations and risks in Internet marketing content also depends on the level of development of a country. Primarily, they were linked with “connection costs, connection speeds, limited credit card availability and usage, lack of secure online payment methods, availability of local content, availability of own-language web sites, logistical barriers related to physical product delivery and fulfilment, etc.” [33]. Gregorio et al [34] summed all these restraints, on both developed and developing markets, in six important predictors of e-business activities: (i) English language capabilities, (ii) internet infrastructure, (iii) computer infrastructure, (iv) affordable telephone service, (v) literacy rates, and (vi) logistical infrastructure.

Server and data limitations, reaching specific groups of consumers, making backups and various other can also harm a strategy, so a company should always have a backup plan in case of their manifestation.

CONCLUSION

Internet technology has moved the boundaries in company-customer relationship, and completely transformed management and organizational processes. For marketing discipline, connected world has brought plethora of opportunities and challenges.

In this article, authors have examined Internet marketing from various perspectives. Since its growing importance and popularity in business circles, it was important to point out its scope and terminology. Likewise, observation of online customer behaviours and new models of interaction and communication among customer in marketing generally, and now in Internet environment especially, is absolutely necessary for spotting right directions of marketing operations. In addition, authors point out all challenges and opportunities that should be addressed by modern companies in their Internet marketing strategies, together with limitations and risks that emerged in electronic marketplace. Finally, the article has given contribution in modern discussion how Internet improvements are going to create even more dynamic and challenging business environment in just next few years, and point out that embracing digital marketplace rules and engaging in full range of Internet marketing activities is a necessity for companies across all industries.

On the other side, besides numerous opportunities, implementation of Internet marketing and reaching success in this area is not an easy task. Online audience is “discerning, fragmented and cynical” more than ever [16]. Modern customers are highly demanding in terms of content and experience they get from companies and brands, and very interested and active in interaction

with the members of their online network through word-of-mouth communication that resonates across the whole market. For a company, this can be a chance as well as obstacle, which is the reason why crafting right marketing strategy in each phase of customer journey is crucial for converting potential consumers into advocates. With ever-changing products, services and technology, timely response and adoption to a new market reality (with reaching the highest level of consumer satisfaction), requires much skill and effort. Acquaintance of the essence of Internet marketing methods and manifestations is vital in competitive business landscape. It means dealing with a variety of online business options as well as mastering new rules of Internet marketing strategy and creating “digital relationship” with customers [35].

Keeping up with trends, innovations and new patterns of behaviour of both competitors and customers has become an important part of the process of creating distinctive competitive advantage and reaching targeted segments of customers in digital age. Virtual world provides a lot of room for improvements, creative strategic approaches and superior performance – it is up to a company how will take advantage of it.

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EXPLORING THE LINK BETWEEN CORPORATE STAKEHOLDER ORIENTATION AND QUALITY OF CORPORATE SOCIAL RESPONSIBILITY REPORTING

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ABSTRACT

Increased requests for transparent business operations as well as stakeholder pressures led to an increase in the number of corporate social responsibility (CSR) reports published by companies around the world. Still, the quality and quantity of these reports vary. As stakeholder orientation can be seen as a significant indicator of the quality of CSR reporting, the goal of this article is to explore the link between stakeholder orientation and quality of CSR reporting. Quality and stakeholder orientation were assessed from CSR reports retrieved from the GRI Database and from companies' official websites. Stakeholder orientation index included an analysis of orientation towards shareholders, suppliers, employees, local community and customers. The empirical analysis was done on a sample of 69 companies from 10 European countries. Research results indicate a positive link between the level of corporate stakeholder orientation and the quality of CSR reporting as well as the variable shareholders and employees to have a statistically significant positive influence on the quality of CSR reporting. Additionally, characteristics and quality of current CSR reporting among sampled companies are presented.

KEY WORDS

corporate social responsibility, stakeholder, stakeholder orientation, CSR reporting

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INTRODUCTION

In the context of modern economy and the role of corporation in modern society, the concept of sustainability and corporate social responsibility (CSR) takes a special role. Organizations are encouraged by stakeholders to embrace a more holistic social behavior [1] and balance between the need for profitability and need to contribute to local community, social equity and environmental protection [2]. A large public interest and initiatives for these corporate social activities as well as for transparency, led to development of a new form of reporting – a non-financial or corporate social responsibility (CSR) reporting. These reports go beyond the existing financial ones, providing insight into organizational corporate social activities oriented towards wellbeing of various stakeholders, and taking into account their different economic, social and environmental needs.

Stakeholders, especially investors and buyers have increased their requests for transparent business operations. Accordingly, there is an increase in the number of CSR reports published by companies around the world along with their financial statements (so called integrated reports). Still the quantity and quality of these reports varies [3], being influenced not just by the political, social, and cultural context (including historical legacy, cultural context and legislative environment [4], but also under the influence of company characteristics (industry, size, profitability, corporate governance mechanisms, stakeholder pressures and ownership structure) [5-6].

Therefore, many prior researches are oriented to a specific industry or sector [4, 7-10], provide country focus analysis [11-12], make comparative analysis of CSR report practices in several countries [13] or analyze influence of specific factor such as financial factors on the quality of CSR reporting [14].

Stakeholder theory emphasizes a specific role given to various organizational stakeholders and their influence on organizational social behavior. Moreover, as Lee [15] emphasizes organizational social behavior is under the influence of organization's relations to its stakeholders and the strength and direction of this relations is dependent on the degrees of resource dependence between organization and its stakeholders. As such, quality of CSR reporting is considered to be closely connected with the stakeholders to whom the reports actually refer. Still, it is necessary to emphasize that corporate social responsibility is driven by multiple and conflicting goals, and interdependencies among various stakeholders and their needs [16]. Capturing these various interests and balancing among them, makes the biggest challenge organizations face with their corporate social responsibility actions and reporting. Many authors [17, 18] emphasize different roles and importance given to various stakeholders, where requests of more powerful ones will dominate.

This study applies the stakeholder theory and as such emphasizes that stakeholder orientation can be seen as a significant indicator of quality of CSR reporting. Besides analyzing characteristics and quality of current CSR reporting, the goal of this article is to explore the link between stakeholder orientation and quality of CSR reporting. In this article, we analyze stakeholder orientation and its connection with quality of CSR reporting on a sample of 69 companies from 10 European countries. The CSR reports were retrieved from the GRI Database and from companies official websites. The GRI offers a unique framework and universal guidelines for preparing CSR reports and is one of the most applied model used by organizations to report on their CSR activities. Corporate stakeholder orientation is based on an adapted version of index of stakeholder orientation developed by Greenley and Foxall [19]. Each group of stakeholders, namely shareholders, suppliers, employees, local community and customers are analyzed through defined elements of stakeholder orientation index, based on

information from companies' reports. After introduction of certain EU directives, preparation of CSR report will become a major accounting challenge for companies affected by directives [20] and the question of quality of these reports will certainly emerge. This article contributes to the existing literature by providing overview of current quality of CSR reports among selected EU countries, as well as through examining roles of different stakeholders in the quality of these reports.

After introduction, the article provides overview of corporate social responsibility and stakeholder orientation, followed by overview of CSR reporting. After theoretical part, empirical research is presented. Methodology of the research as well as the main findings of the analysis are given. At the end, discussion of results, as well as limitations of the research and future studies directions are provided.

CORPORATE SOCIAL RESPONSIBILITY AND CORPORATE STAKEHOLDER ORIENTATION

Corporate social responsibility includes different stakeholder-oriented behaviors that go beyond just profit maximization for an organization and lead into improving other stakeholders' welfare [21]. One of the most emphasized definitions states that „social responsibility of business encompasses the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time” [22; p.500].

Organizations are increasingly accepting this new strategic agenda that encompasses inclusion of economic, environmental and social concerns in all aspects of business activities [23, 24]. Acting in this way enhances social well-being of those affected by organizational activities and contributes to organizational competitiveness, successful differentiation on the market and eventually financial performance [25-29].

Positioning stakeholders as a central figure in determining organizational activities, stakeholder theory has emerged as a dominant paradigm in CSR literature [29]. Understanding stakeholder needs and their influence on organization as well as how organization can influence on them becomes the central point. As such, the concept of corporate stakeholder orientation emerged describing a company's ability to attend to the interests of all its relevant stakeholders [30]. More precisely it can be defined as “a legitimacy signal consciously used by firms to demonstrate their shareholder and specific stakeholder orientations in the midst of multiple coercive, normative, and mimetic pressures that differ across industries” [31; p.716].

Benefits of strong relationships with key stakeholders are seen in creation of a relational capital that significantly increases organizational capacity to generate new technologies, create new products and enter new markets [29]. Quality of relations among company and shareholders can be seen a key factor that affects organizational efforts towards differentiation from competitors [27]. In the long run, benefits from stakeholder orientation materialize as organizations acquire intangible resources such as legitimacy, trust, and corporate reputation, that can lead to sustainable competitive advantage [32, 33].

Interestingly, organizations are more likely to send stronger signals to those stakeholders they perceive crucial for their social legitimacy and, as Jain et al. [31] emphasize, they will communicate this intent and orientation through corporate reporting. Similar is provided by De Villiers and Van Staden [17] stating that requests of more powerful stakeholders will dominate in defining CSR activities and reporting. In addition, for instance O'Dwyer and Owen [34] emphasize low stakeholder engagement in reports is influencing the quality of CSR reporting.

IMPORTANCE AND QUALITY OF CSR REPORTING

CSR reporting presents a systematic communication between organization, its stakeholders and general public about social responsibility activities including organizational social and environmental impacts, as well as corporate governance impacts, which are not covered by financial performance indicators [5, 35]. It is a mechanism through which organizational obligations related to their accountability in society may be released [7]. Benefits a company can realize by CSR reporting include creation of a positive image and reputation as well as greater market growth potential.

Previous literature focuses on the impact of company characteristics (e.g. size or industry), general contextual factors (e.g. national, social, political and economic context) on internal context (e.g. company chair identity or existence of social reporting committee) on CSR reports [36], as well as the level of stakeholder engagement in their preparation [37]. As there is no statutory form of reporting, reports differ greatly in terms of content, methodology, reporting intervals, distribution channels, and the quality and relevance of the information published in the report. However, to all corporate stakeholders, reports present an insight and an opportunity to evaluate non-financial business operations and socially responsible activities.

In order to provide certain guidelines and ensure a universal tool for reports several CSR reporting models have been developed, such as EMAS, the ISO 14000 series, SA8000, AA1000, the Global Reporting Initiative, and the Copenhagen Charter [38]. Global Reporting Initiative (GRI) are the first and most widely adopted global standards for sustainability reporting, as 93 % of the world's largest 250 corporations report on their sustainability performance by using GRI [39]. It provides universal methodology, process of creating reports, and set of indicators that enable presentation of results gained by given organizations [40]. Reporting framework outlines key performance indicators that organizations can monitor, measure, and report in accordance with the sustainability reporting principles which are all related to economic, environmental, and social impacts and risks of organizations [4].

GRI also defines principles of quality CSR reporting and those include: (1) *balance* as report should contain positive and negative aspects of performance and CSR activities; (2) *comparability* as reports should contain information that are selected, compiled, and reported consistently to enable stakeholders to compare with other companies over time; (3) *accuracy* as reported informations need to be sufficiently accurate and detailed in order for stakeholders to assess the reporting organization's performance; (4) *timeliness* assuring reporting on a regular schedule and available information in time for stakeholders to make informed decisions; (5) *clarity* as reports need to be understandable and accessible to stakeholders using the report; and (6) *reliability* in order for methods used to prepare the report can be verified by a third party who checks the quality of reporting [40]. The quality and quantity of CSR reporting according to Schreck [5] directly affects organizational performance and indirectly financial performance as the company will prepare and publish reports if it has certain advantages of it.

METHODOLOGICAL FRAMEWORK

In order to analyze the link between corporate stakeholder orientation and quality of CSR reports an empirical research was designed and conducted. Beside analyzing current level of CSR reporting and quality of reports from selected European companies, our goal was to carefully examine if there is a positive link between what is being communicated through reports and orientation towards different stakeholders. As information were retrieved from existing CSR reports, we used content analysis to make an assessment of relevant data. This is a method widely accepted as it allows repeatability and valid conclusions from data according to their context (Krippendorff as cited in [37]).

SAMPLE CHARACTERISTICS

Sampled companies originating from Austria, Belgium, Croatia, France, Germany, Italy, Netherlands, Sweden, Switzerland and United Kingdom were selected from the list of Fortune 500 largest companies or they were registered in the GRI databases. The sample included 69 companies. Table 1. provides distribution of companies by headquarters countries. Table 2. provides distribution of samples companies according to an industry sector they belong to.

Table 1. Number of companies by their headquarters country.

| Country | Number of companies | Structure, % |
|----------------|---------------------|--------------|
| Austria | 4 | 5,80 |
| Belgium | 2 | 2,90 |
| Croatia | 3 | 4,35 |
| France | 8 | 11,59 |
| Germany | 14 | 20,29 |
| Italy | 10 | 14,49 |
| Netherlands | 2 | 2,90 |
| Sweden | 7 | 10,14 |
| Switzerland | 5 | 7,25 |
| United Kingdom | 11 | 15,94 |
| Total | 69 | 100,00 |

Table 2. Number of companies by industry sector.

| Industry sector | Number of companies | Structure, % |
|---|---------------------|--------------|
| Real estate business | 9 | 13,04 |
| Computer services | 10 | 14,49 |
| Energy | 5 | 7,25 |
| Financial and insurance activities | 13 | 18,84 |
| Food product and beverage manufacturing | 4 | 5,80 |
| Production, processing and supply of petroleum products and gas | 7 | 10,14 |
| Production and sale of pharmaceutical products | 4 | 5,80 |
| Wholesale and retail trade | 3 | 4,35 |
| Telecommunication services | 8 | 11,59 |
| Provision of tourist services | 3 | 4,35 |
| Production of soaps and detergents, cleaning and polishing agents | 3 | 4,35 |
| Total | 69 | 100,00 |

RESEARCH INSTRUMENT

Corporate stakeholder orientation in this article was analyzed with the help of CSR reports that were retrieved from the GRI Database or from the companies' official websites. Appendix 1 provides overview of independent variables.

We employed a previously developed and validated corporate stakeholder orientation index [42]. This is a modified version of index of stakeholder orientation developed by Greenley and Foxall [19] and it includes three segments: i) understanding interests, needs and expectations; ii) the level of stakeholder involvement in shaping the company's goals and strategies; iii) the extent to which the value of organizational culture promotes the values of the stakeholders and supports their joint strategic planning. Each group of stakeholders, namely shareholders, suppliers, employees, local community and customers were analyzed through defined elements of stakeholder orientation index, based on information from companies' reports.

Shareholders as Stakeholders includes five subvariables (SHARE_RG4.4, SHARE_RG4.12, SHARE_RG4.13, SHARE_RG4.14, and SHARE_RG4.17) (Cronbach alpha 0.819); *Suppliers as Stakeholders* includes two subvariables (SUP_HR2 and SUP_EC6) (Cronbach alpha 0.688); *Employees as Stakeholders* have nine subvariables (EMP_LA4, EMP_LA5, EMP_LA6, EMP_LA7, EMP_LA8, EMP_LA9, EMP_LA10, EMP_LA11, and EMP_LA12) (Cronbach alpha 0.807);, *Local Communities as Stakeholders* has four subvariables (LOC_SO1, LOC_SO3, LOC_SO4, and LOC_SO5) (Cronbach alpha 0.735); and *Customers as Stakeholders* has seven subvariables (CUS_PR1, CUS_PR2, CUS_PR3, CUS_PR4, CUS_PR5, CUS_PR6, and CUS_PR7) (Cronbach alpha 0.839). Concerning reporting, all independent variables were assessed by a mark in the range of 1 to 3 (1 – fully, 2 – partially and 3 – not reporting).

Source of data for the quality of CSR reporting is GRI's CSR report database. Table 3. shows the dependent variable Quality of CSR Reporting which refers to the level of application of the GRI framework for nonfinancial reporting with modalities of Levels A and A+, Levels B and B+, as well as Levels C and C+, where Levels A and B are high levels and Levels C are low levels.

Table 3. Dependent variable Measure of Quality of Socially Responsible Reporting.

| Variable Name | Variable Description | Modalities | Variable Measurement |
|--------------------------|--|--|---|
| Quality of CSR Reporting | level of application of the GRI framework for nonfinancial reporting | high levels (Levels A, A+, B and B+) low levels (Levels C and C+) | high levels – coded as 1 low levels – coded as 2 |

DESCRIPTIVE ANALYSIS

Table 4. shows descriptive statistics of independent variables of corporate stakeholder orientation.

Out of the five independent variables pertaining to the Shareholders, the highest average rating has an independent variable Share_rg4.13 (1.435). Out of the two independent variables pertaining to the Suppliers, the higher average rating has an independent variable Sup_hr2 (1.844). Out of the nine independent variables pertaining to the Employees, the highest average rating has an independent variable Emp_la6 (2.232). Out of the four independent variables pertaining to the Local Community, the highest average rating have the independent variables Loc_so1 and Loc_so4 (1.739). Out of the seven independent variables pertaining to the Customers, the highest average rating has an independent variable Cus_pr4 (2.449).

Table 5 shows the number of companies in regard to the quality of nonfinancial reporting. It can be noticed that the largest number of companies achieved status B and B+.

Out of a total of 69 companies, 48 are categorized as companies reporting on social responsibility at Levels A and B, while 21 companies are categorized as companies reporting on social responsibility at Levels C.

Table 4. Descriptive statistics of independent variables of corporate stakeholder orientation. All items are assessed using scale: 1 – fully reporting, 2 – partly reporting and 3 – non-reporting.

| Item | N | Minimum | Maximum | Mean | Std. deviation |
|--------------|----------|----------------|----------------|-------------|-----------------------|
| SHARE_RG4.4 | 69 | 1 | 3 | 1.333 | 0.679 |
| SHARE_RG4.12 | 69 | 1 | 3 | 1.377 | 0.769 |
| SHARE_RG4.13 | 69 | 1 | 3 | 1.435 | 0.795 |
| SHARE_RG4.14 | 69 | 1 | 3 | 1.072 | 0.312 |
| SHARE_RG4.17 | 69 | 1 | 3 | 1.420 | 0.775 |
| SHARE_total | 69 | 1 | 3 | 1.328 | 0.526 |
| SUP_EC6 | 69 | 1 | 3 | 1.739 | 0.885 |
| SUP_HR2 | 69 | 1 | 3 | 1.884 | 0.916 |
| SUP_total | 69 | 1 | 3 | 1.812 | 0.786 |
| EMP_LA4 | 69 | 1 | 3 | 1.812 | 0.928 |
| EMP_LA5 | 69 | 1 | 3 | 2.087 | 0.951 |
| EMP_LA6 | 69 | 1 | 3 | 2.232 | 0.926 |
| EMP_LA7 | 69 | 1 | 3 | 1.739 | 0.779 |
| EMP_LA8 | 69 | 1 | 3 | 1.812 | 0.912 |
| EMP_LA9 | 69 | 1 | 3 | 2.217 | 0.921 |
| EMP_LA10 | 69 | 1 | 3 | 1.739 | 0.852 |
| EMP_LA11 | 69 | 1 | 3 | 1.739 | 0.869 |
| EMP_LA12 | 69 | 1 | 3 | 1.638 | 0.857 |
| EMP_total | 69 | 1 | 3 | 1.890 | 0.558 |
| LOC_SO1 | 69 | 1 | 3 | 1.739 | 0.902 |
| LOC_SO3 | 69 | 1 | 3 | 1.710 | 0.859 |
| LOC_SO4 | 69 | 1 | 3 | 1.739 | 0.885 |
| LOC_SO5 | 69 | 1 | 3 | 1.536 | 0.850 |
| LOC_total | 69 | 1 | 3 | 1.681 | 0.653 |
| CUS_PR1 | 69 | 1 | 3 | 1.986 | 0.915 |
| CUS_PR2 | 69 | 1 | 3 | 2.420 | 0.864 |
| CUS_PR3 | 69 | 1 | 3 | 1.942 | 0.922 |
| CUS_PR4 | 69 | 1 | 3 | 2.449 | 0.850 |
| CUS_PR5 | 69 | 1 | 3 | 1.841 | 0.933 |
| CUS_PR6 | 69 | 1 | 3 | 1.797 | 0.948 |
| CUS_PR7 | 69 | 1 | 3 | 2.203 | 0.948 |
| CUS_total | 69 | 1 | 3 | 2.091 | 0.651 |

Table 5. Number of companies by quality of nonfinancial reporting.

| Level of application of the GRI framework | Number of companies | Structure, % | Cumulative, % |
|--|----------------------------|---------------------|----------------------|
| A | 5 | 7,25 | 7,25 |
| A+ | 19 | 27,54 | 34,78 |
| B | 15 | 21,74 | 56,52 |
| B+ | 9 | 13,04 | 69,57 |
| C | 16 | 23,19 | 92,75 |
| C+ | 5 | 7,25 | 100,00 |
| Total | 69 | 100,00 | |

LOGISTIC REGRESSION MODEL AND ANALYSIS

Table 6 shows the estimated values of logistic regression parameters with binomial dependent variables (1 – A and B, high level GRI; 2 – C, low level GRI) and independent variables (level of stakeholder orientation). Results indicate that two independent variables: Shareholders with a probability level of 1% (p-value = 0.004) and Employees with a probability level of 5% (p-value = 0.021) have statistically significant positive influence on the dependent variable. Control variables industry and country don't have a statistically significant influence.

Table 7 shows indicators of regression model representativeness with binomial dependent variable (1 – A and B, high level GRI; 2 – C, low level GRI) and independent variables (level of stakeholder orientation). Based on the Nagelkerke R Square indicator, it can be concluded that the model is representative since the 50,2 % variable dependent variation can be interpreted by variations of independent variables.

Table 6. Estimated values of logistic regression parameters.

| Parameter | B | S.E. | Wald | df | Sig. | Exp(B) |
|-----------------|--------|-------|--------|-------|---------|--------|
| SHARE | 2,391 | 0,819 | 8,519 | 1 | 0,004** | 10,922 |
| SUP | -0,267 | 0,644 | 0,172 | 1 | 0,678 | 0,766 |
| EMP | 2,406 | 1,046 | 5,287 | 1 | 0,021* | 11,085 |
| LOC | -0,068 | 0,694 | 0,010 | 1 | 0,922 | 0,934 |
| CUS | 0,288 | 0,687 | 0,176 | 1 | 0,675 | 1,334 |
| Industry | 0,017 | 0,110 | 0,024 | 1 | 0,876 | 1,017 |
| Country | -0,124 | 0,142 | 0,768 | 1 | 0,381 | 0,883 |
| Constant | -8,581 | 2,228 | 14,830 | 1,000 | 0,000 | 0,000 |

*statistically significant at 5 %

**statistically significant at 1 %

Table 7. Indicators of regression model representativeness.

| Step | -2 Log likelihood | Cox & Snell R Square | Nagelkerke R Square |
|------|-------------------|----------------------|---------------------|
| 1 | 54,527 | 0,355 | 0,502 |

Logistic regression model showed high representativeness as well as the variable Shareholders and Employees to have a statistical significant positive influence on the quality of nonfinancial reporting. Therefore, a positive link between the level of corporate stakeholder orientation and quality of CSR reporting can be confirmed.

DISCUSSION AND CONCLUSION

Organizations need to demonstrate that their business activities create the lowest possible level of negative externalities to the commons [4]. Results of previous empirical and meta-analytic studies [25, 29] demonstrate that integrating a social perspective with core business strategies can help enhance financial performance and create shareholder value.

Under these pressures, organizations are also increasingly issuing CSR reports, independently or as a part of their financial reports, to provide information on their business practices and activities related to various environmental, social and economic issues. CSR reporting is a form of increased transparency that implies providing relevant and timely information to all interested users in order to optimize understanding and decision making and ensure more transparent and efficient business.

While some of the previous papers analyzed whether stakeholder engagement in sustainability reporting is present [37], this article provides analysis of impact and level of

their influence on quality of CSR reporting. By analyzing corporate stakeholder orientation on the basis of CSR reports, employees and shareholders have shown to have a positive impact on the quality of CSR reporting. Many authors state organizations encounter different institutional pressures from multiple stakeholders and intensity of such pressures depends upon the industry they belong as well as upon national and cultural specific context [30]. Still, our results showed that neither country nor the industry have a statistically significant impact on the quality of CSR reporting. The findings of this study therefore draw attention to the important role of stakeholders for the quality of CSR reporting.

Still it is necessary to emphasize certain research limitations. One of the limitation of this article is derived from a sample characteristic as it includes only companies from a limited number of countries or approximately similar countries in the context of CSR application. Conducting research on a larger sample of companies from many countries, or companies from completely different political and economic frameworks would provide more concrete and more specific results on which more general conclusion could be made. Furthermore, this research analyzed only a direct causal link between the dependent and independent variables. In this way, the influence of other variables on CSR was neglected. It would be interesting for instance to analyze whether the influence of IT development among companies affects this relation. Results show IT to have an important role on information sharing and CSR reporting, but at the same time results imply differences in IT adaption among companies [43, 44] which can affect CSR reporting. Additionally, in this research we used a cross-sectional approach in this research, where data was observed only in one period. Using a longitudinal approach would overcome this limitation and provide even better insight into causal relations.

APPENDIX: DESCRIPTION OF CODES

Table 8. Research instrument – independent variables (continued on p.299). All items were assessed using scale 1 – fully reporting, 2 – partly reporting and 3 – non-reporting.

| Code / Segment | | Description |
|-------------------------------------|------|--|
| Shareholders as stakeholders | | |
| SHARE_R G4.4 | III. | Report processes for consultation between stakeholders and the highest governance body on economic, environmental and social topics. If consultation is delegated, describe to whom and any feedback processes to the highest governance body. |
| SHARE_R G4.15 | III. | List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses. |
| SHARE_R G4.16 | III. | List memberships of associations (such as industry associations) and national or international advocacy organizations |
| SHARE_R G4.24 | II. | List of stakeholder groups engaged by the organization. |
| SHARE_R G4.27 | II. | Report key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. |
| Suppliers as stakeholder | | |
| SUP_HR9 | I. | Total number and percentage of operations that have been subject to human rights reviews or impact assessments |
| SUP_EC6 | III. | Proportion of senior management hired from the local community at significant locations of operation |

Table 8. Research instrument – independent variables (continued from p.298). All items were assessed using scale 1 – fully reporting, 2 – partly reporting and 3 – non-reporting.

| Employees as stakeholders | | |
|--------------------------------|------|---|
| EMP_4.12 | III. | Report the percentage of total employees covered by collective bargaining agreements. |
| EMP_LA4 | III. | Minimum notice periods regarding operational changes, including whether there are specified in collective agreements |
| EMP_LA5 | I. | Percentage of total workforce represented in formal joint management–worker health and safety committees that help monitor and advise on occupational health and safety programs |
| EMP_LA6 | I. | Type of injury and rates of injury, occupational diseases, lost days and absenteeism, and total number of work-related fatalities, by region and by gender |
| EMP_LA7 | I. | Workers with high incidents or high or high risk of diseases related to their occupation |
| ZAP_LA8 | I. | Health and safety topics covered in formal agreements with trade unions |
| EMP_LA9 | II. | Average hours of training per year, per employee by gender, and by employee category |
| EMP_LA10 | II. | Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings |
| EMP_LA11 | II. | Percentage of employees receiving regular performance and career development reviews, by gender and by employee category |
| Local community as stakeholder | | |
| LOC_SO3 | I. | Total number and percentage of operations assessed for risk related to corruption and the significant risks identified |
| LOC_SO4 | II. | Communication and training on anti-corruption policies and procedures |
| LOC_SO5 | II. | Confirmed incidents of corruption and action taken |
| LOC_SO9 | III. | Percentage of new suppliers that were screened using criteria for impacts on society |
| Customers as stakeholders | | |
| CUS_PR1 | I. | Percentage of significant products and services categories for which health and safety impacts are assessed for improvement |
| CUS_PR2 | I. | Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes |
| CUS_PR3 | II. | Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirements |
| CUS_PR4 | II. | Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes |
| CUS_PR5 | II. | Results of surveys measuring consumer satisfaction |
| CUS_PR6 | III. | Sale of banned or disputed products |
| CUS_PR7 | III. | Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by type of outcomes |

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SOUNDNESS AND SUSTAINABILITY RESEARCH IN THE REGIONAL AND SETTLEMENT DEVELOPMENT PROGRAMMES (2014-2020)

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ABSTRACT

This article presents the results of projects the “Establishment of a green town”, which is one of the Regional and Municipality Development Operational Programs (TOP) programs. The objective is to present the soundness of the utilisation, sustainability and needed for a measurement plan for the small European town, along with the primary and secondary data. The cohesion of the project compared to the strategic documents of the municipality is also investigated. The research results can be of help for the project planners and municipality stakeholders of the European Union.

KEY WORDS

spatial and municipality development, sustainability, strategic document, EU project

CLASSIFICATION

JEL: P25

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INTRODUCTION

The problem of sustainability has become one of the most crucial issues on the highest European levels. The European Parliament has voiced its support of action plans and their elements regarding sustainable consumption and production. One practical manifestation is the fact that in the programming period 2014-2020 sustainable development appears as a requirement of the EU *subsidy* systems. The EUROPE 2020 strategy and the system of the Innovative Union describe the pillars and goals of the action plan. The most important notions from the perspective of the research are the development of the low carbon-dioxide emission economy, the improvement of quality services, the increase of environmental protection and resource-efficiency and the bolstering of sustainable development.

Our research problem is focused to a Central-European touristic centre, the town of Sárvár, which is one of the most developed touristic centres in Hungary. A decision was made by the town administration to start the “Green town” project, which includes the self-governmental infrastructure development, and the establishment of commercial and service spaces. The economic and environmental sustainability is a key requirement and the development has to fit into the long-term strategic objectives of the town, which are highly relevant taking into account the relationship with the community stakeholders [1, 2].

The research is based on primary research and questionnaire inquiries among the stakeholders. The data are analysed and evaluated with a chi-square analysis and a descriptive data analysis. The analytical work is conducted on the basis of the secondary research was aimed at the comparison with strategic documents. The research-related, available documents were collected, organised and elaborated. The up to date status of available documents during data collection was a major concern. This article presents the branch-specific programs and systemises those bits of information, which describe the criteria system of the “Green Town” project. It also introduces the analytical work and criteria system necessary for implementing a successful project.

BACKGROUND

The Lisbon Agenda aimed at the development of the competitiveness of the European Union finished 2010. It was the time of the global financial and economic crisis, when the economic and political steps of the EU member states aimed to the reduction of the adverse impacts of the crisis and the acceleration of recovery. This was the reason why the member states adopted the new Europe 2020 Strategy as quickly as possible. This new strategy defines three main priorities (intelligent, sustainable and inclusive growth) and 11 thematic objectives [3]. The most important objectives are: bolstering the research, technological development and innovation, supporting the conversion to a low carbon-dioxide emitting economy, assisting the adaption to climate change, increasing the efficiency of environmental protection and resources. There are several initiatives to reach these objectives, and the Innovative Union Initiative is one of them. The program is an innovation oriented perspective with the objective of reducing administration, creation of innovative products and services, while searching answers for social challenges (e.g. environmental sustainability) [4].

The EU rendered its Multiannual Financial Framework to the strategy, where the main objectives are the preservation and management of natural resources and competitiveness for the sake of growth and employment. The poorer member countries (typically Central-European countries) are among the net paying countries. The EU signed a Partnership Agreement with the member states with the economic development and employment being the most pivotal points of the Agreement. The Operative Programs span over 9 main areas. The counties and

towns with county rights became the planning levels of the Spatial and Settlement Development Operative Program (henceforward: TOP). The financial frame-system allocated to the strategy started these developments. This was a true restart.

The planning can thus be interpreted along the following hierarchy [5]:

1. EU Regulations,
2. Community Strategic Framework,
3. Partnership Agreements (between the member-state and the EU for every Fund),
4. Operative Programs,
5. Priorities and
6. Actions.

THE RELATION BETWEEN THE NATIONAL AND EU-LEVEL DEVELOPMENT IN THE PERIOD 2014-2020

Member states organise the planning on the national levels in their own competences, however this must be synchronised with structures on the EU Community level. A Community Strategy Program was developed on the basis of the EU2020 Strategy for the period 2014-2020 on EU level, on the basis of which the EU signed a Partnership Agreement with each member state. Operative Programs can be financed on the basis of this. In Hungary, there is long-term planning document, the National Development and Spatial Development Concept (OFTK) which is the basis of the planning. Figure 1 shows the relation of these two systems.

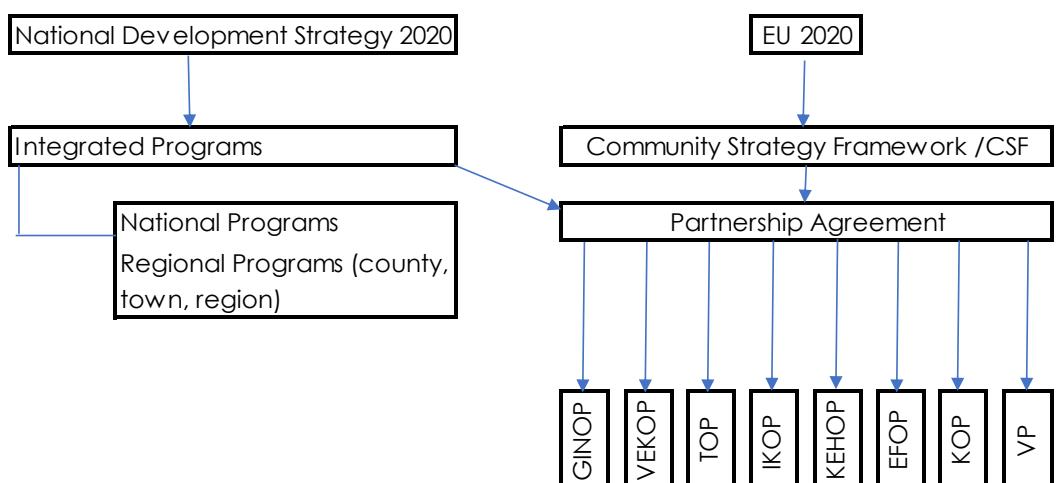


Figure 1. The relation between the OFTK and the EU2020 [5].

The Settlement and Spatial Development Program (TOP) is important from the point of view of the research, because the practical work is related to the elaboration of such a program. The counties became the coordinators of the TOP programs in Hungary, thus the county spatial development concepts and programs and the related smart specialization strategies were compiled.

SPATIAL AND SETTLEMENT DEVELOPMENT OPERATIVE PROGRAM (TOP)

The primary aim of the TOP is a decentralised economic development and the increase of employment and thus the securing the wellbeing of local employees. Each priority, action directly, or indirectly contributes to this objective. The TOP primarily provides sources to the development of self-governments and supports the economic development and related town and settlement development actions.

The TOP is primarily related to the national development priority V. of the Partnership Agreement, i.e. the implementation of local and regional developments assisting the economic growth. According to this the other dimension of competitiveness is the bolstering of the local and regional economic systems. The priority sets a great emphasis on the utilisation of the local opportunities of employment which creates a chance for the groups usually outside of labour markets. The aim is to strengthen the economic organisation power of towns and to improve the attractiveness of towns via settlement development actions, the access to work, and economical, physical and social renewal [6]. The TOP provides subsidies on the basis of integrated regional programs for the development coordinated on the level of counties and towns with county rights.

The most important objective of the TOP is to find and strengthen the development areas showing development elements in case of adverse regions and municipalities which the potentials, resources can be unfold and activated. Therefore, the primary objective of the TOP is the increase of the local economic development and employment [7].

Based on the aforementioned the program is based on the following priorities: (1) creating local conditions for bolstering economic growth and the increase of employment, (2) Enterprise friendly urban development, meeting the demands of the inhabitants: Development of urban green areas and small-scale environmental infrastructure; Development of sustainable urban traffic; Improvement of the energy efficiency of local administration buildings; Development and expanding of public services; Development of adverse urban areas; and Increasing the local communities and the cooperation.

The researched project is built upon this priority which has the aim of motivating economic growth and the preserving and developing green urban areas. The economic growth potential is present in the researched settlements via the tourism as well: the town is one of the most important touristic centres with a strong development potential, it is one of the most promising development centres in Middle-Europe. The “Green town” development program of the settlement can also be interpreted from the directions of developing urban infrastructure, tourism-growth and environmental sustainability.

SMART SPECIALISATION

A novelty of the new EU call system lies in the application of the smart specialisation strategic (S3) aspect. In the following the authors wish to summarise the main characteristics and local practices of the S3. The EU pays special attention to research development, innovation and the motivation of the social-economic use of its results in the planning period 2014-2020. Thus key objectives over those seven years are to make Europe a scientific player on the global level, remove obstacles to innovation and bolster the relations between the public and private sectors. It is important that all nations and regional units coordinate their own research and innovation strategies with each other. These documents are the basis for the smart specialisation strategies [8].

Intelligent specialisation has become one of the topics of EU debates, however, it still has a logic [9]. In order for the EU to be successful, the policy – just like the regional policy – meant the involvement of more partners operating on the various levels of government. Complementary, mutually assisting impacts can be reached the best way, if they occur on local and regional levels.

Foray [10] clearly explains that the term of intelligent specialisation puts the decentralised knowledge acquired in the wake of changes into the centre of all policies. At the same time the term of intelligent specialisation preserves the privilege of policy-makers to define the points of interference by themselves. The most important merit is that there should be a

balance between the industrial policy (with the aim of supporting the development of regional economies) and the bottom-up informational processes, which in the end brings the discoveries of enterprises into the policy/strategy.

The intelligent specialisation and the regional development can increase the non-localised and localised processes for the sake of economic growth and higher quality of life [11]. The new S3 strategies differ from their predecessors: (i) the wide range of the local target group and resources are involved into strategy-building; (ii) the focus is shifted from the technological research-development to the support of the whole range of innovation; and (iii) they do not merely copy the best practices, but base upon economic competition advantages and future potentials after having recognised the individual strengths and values of the areas.

Foray and Goenaga [12] defined the goals of intelligent specialisation as follows: (i) appearance and growth of new activities capable of further development and which are rich in innovation; (ii) diversification of regional systems by means of generating new possibilities/options; and (iii) creating critical masses, networks and clusters in diverse systems. McCann and Ortega-Argilés [9] state that the SMEs are special stakeholders of the intelligent specialisation policy. The focus in some regions of Europe is put on launching new enterprises, while in other regions the priority is the increase of the number of existing enterprises and again in other regions the development of the supply chain can be prevailing. Wherever the priority is, it must be clear that among the indicators of these noe policies the degree of the participation, mobility and dynamism of the enterprises is of key importance.

Intelligent specialisation is actually finding the way to be special in a highly competitive world. In order to grant this specialisation, Foray [10] suggests regional economies to understand this intelligent process as a kind of evolution, building on the economic strengths of a given region, or economy, while completing all this with new, knowledge-based processes.

In the spring of 2014 there were two rounds of S3 workshops held in all 19 counties of Hungary involving the entire range of decision-makers and entrepreneurs. The main task of the county events was to formulate region-specific industry/branch-related priorities on the basis of relevant county-related R+D+I statistics and documents, and introduce specialisation directions. The real objective was that the entrepreneurs and (regional and national) political decision makers listen to each other's reasoning and elaborate the potential development directions of the given region (in a bottom-up way). Regional and local political decision makers could make suggestions on the basis of that for infrastructure developments which provide the foundation for further solid businesses of entrepreneurs. Thus working next to each other and depending on the other party for the sake of success (for the sake of innovative, competitive regions). The research was conducted in Vas county where the tourism industry amounts to a major percentage of the GDP. Subsequently the national priority of "healthy society and well-being" meant the specialisation on medicinal- and health-tourism in Vas county [6; pp.61-63].

In connection with the above notions the Leipzig Charta [13] must be mentioned, which though outpaced the compilation of the above mentioned strategies in time, yet it signalled the way for the future development directions.

LEIPZIG CHARTA

The Ministers of the member states of the European Union responsible for urban development approved the text of the Charta during their meeting in Leipzig 2007. The Leipzig Charta about sustainable European towns is a document of the member states and it was elaborated under the wide-range and clearly arranged participation of major European

stakeholders. Being aware of the chances and challenges, as well as the different economic, historical, social and environmental backgrounds the ministers of the member states responsible for urban development agreed on common urban development political principles and strategies. Correspondingly, on national level, the governmental bodies must clearly recognise the importance of towns in the implementation of national, regional and local levels and the impact that policies have on the towns. The urban development related activities, or the ones affecting urban affairs of governmental organisations must better be accorded and integrated with each other in order to complete each other's activities, rather than causing a conflict among them.

The Charta highlights that urban development policies must be defined on the national level and innovative solutions must be worked out on both national and local levels. It is necessary that the towns receive enough competence of action and a reliable financial source which secure the long-term stability. Subsequently it is also vital that the member states can utilise the European Structural Funds for their integrated urban development programs of proper importance. Local authorities must acquire the skills necessary for implementing integrated urban development policies and the aspects of the quality and sustainability of built environment while focusing on efficiency [13]. The introduction of the theoretical framework system leads to the practical introduction of the research. The project is the “Green town” project of the Spatial and settlement development operative programs based on the above theoretical foundations.

TOURISM, ENERGY EFFICIENCY AND SUSTAINABILITY

Tourism is one of the most dynamically developing branches of the service sector in Hungary, its GDP share is 5,9 % and its direct share amounts to nearly 10 %. There are approximately 320 000 people employed in tourism. In accordance with the EU2020 objectives, the priorities of the national specification strategy and the development directions defined in the Partnership Agreement the quality service development built on energy efficiency, environmental and economic sustainability can be one way of achieving a healthy society and well-being. The European Union can be regarded as one of the vanguards in the battle for the new energy economy, especially on the fields of alternative energies and climate policy. The economic policy of the future must focus on rural areas. State-owned resources must be focussed on strategically important areas as renewable energy sources and health tourism [14].

Hungary is not rich in natural gas and fuel sources, therefore available national renewable energy potential must not be left unused. It is important that investments are not spontaneous initiatives, but parts of a long-term objective implemented as a part of a development concept. The task of spatial development policy today is not only a mere compensation of the undesired regional impacts of other branches and market processes. The main function of the renewable spatial development policy is the creation of the regionally efficient operation and the balanced regional development of the country. This must aim at securing the regional competitiveness and the sustainable regional development [15]. Thus, it is worth thinking in terms of the developments which serve the objectives of these strategic fields and have an impact on the directions of tourism, commerce and service functions and sustainability supported by renewable energy sources at the same time.

GREEN TOWN PROGRAM

The action primarily supports infrastructure-developments which improve the general environmental condition of settlements, assist the setting of the municipality on the path of sustainable development and mean the application of technologies and methods during the

implementation which provide the functioning of the settlement and the built infrastructure in an environmentally and naturally protective way, aid sustainable development, in accordance with the binding Settlement Development Concept and the Integrated Settlement Development Strategy and contribute to the economic development aims of the TOP, and thus to the keeping of the inhabitants of the towns in the town. The objective aiming at economic stakeholders, providing attractive business environments, enhancing the role of towns as a target of economic investments and motivating the role of local economy is the renewal of suitable green fields and related infrastructural elements owned by the local governments. As a result of the developments the objective is the long-term cooperation between the local administration and the entrepreneurs, the coordination of the developments planned by the public and private sectors, which results in the renewal of the urban environment, but also the economic development and the increase of employment. In the course of developments the environmental, family-, and climate friendly of urban public spaces must be taken into consideration, i.e. it is important that the areas of intervention are suitable for the useful spending of the leisure times of families and youngsters, while the developments serve the criteria of environmental sustainability and contribute to the economic upholding [15].

METHODOLOGY

RESEARCH PROPOSITIONS

The municipality of the town of Sárvár, as one of the most important touristic centres, made a decision about implementing the “Green town” program within the frame of the TOP. The research objective was to inquire the soundness of the project via primary and secondary data collection and analysis and the measurement of the cohesion with other strategic documents of the town. This article thus has the objective to present the research results related to the soundness and to inform the decision-makers about matching call objectives. The soundness is presented with the help of a need inquiry and the compilation of an availability plan. A primary questionnaire research was conducted for the need inquiry. A secondary research and data analysis was used for the comparison with the strategic documents of the town.

In accordance with the previously defined notions the research propositions are the following:

RP₁. *A significant connection can be shown between the demographic and personal parameters, the parameters being affected to the town and development needs formulated toward the project*

RP₂. *The defined strategic goals of the town provide a major basis for the development needs.*

RESEARCH INSTRUMENT

The primary research was conducted in September and October 2016. This period does not belong into the major touristic season and the objective was to conduct the questionnaire in the development area, or its vicinity. Thus the interviewees could immediately see and feel the development area. Table 1 shows the questionnaire structure. The questions can be grouped into four categories: demographic and person-related parameters, parameters of commitment to Sárvár, needs in connection with the Green town project, use of the Green town project area.

SAMPLE CHARACTERISTICS

A total of 191 questionnaires were filled in. Table 2 shows the sample characteristics. Among the interviewees there were 96% representing the “active and typically working as an employee” group. Inhabitants from Sárvár were represented in 93,7 % and almost 72 % work in the town.

Table 1. Research instrument. Source: authors' work.

| | |
|--|--|
| Demographic characteristics | Gender |
| | Age |
| | Work (employment) status |
| Parameters of committment to Sárvár | Resident status (Likert 1-5) |
| | Workplace settlement (Likert 1-5) |
| | Length of residential living in Sárvár area (Likert 1-5) |
| | Committment to the town (Likert 1-5) |
| Needs in connection with the Green town project | Green area development |
| | Commercial function |
| | Fair function |
| | Street furniture, terraces |
| The Green town project area focus | Rest |
| | Entertainment |
| | Visiting fairs, events |
| | Traffic |
| | Fairs – selling |

Table 2. Sample characteristics. Source: authors' work.

| Characteristic | Modalities | Frequency | Percentage |
|---------------------------|-------------------------------|-----------|------------|
| <i>Gender</i> | <i>Male</i> | 77 | 40,3 |
| | <i>Female</i> | 114 | 59,7 |
| <i>Age</i> | <i>Below 18</i> | 3 | 1,6 |
| | <i>Between 18-65</i> | 184 | 96,3 |
| | <i>Above 65</i> | 4 | 2,1 |
| <i>Job type</i> | <i>Entrepreneur</i> | 10 | 5,2 |
| | <i>Owner of Ltd. Or LLC</i> | 5 | 2,6 |
| | <i>Employee</i> | 142 | 74,3 |
| | <i>Student</i> | 19 | 9,9 |
| | <i>Retired</i> | 8 | 4,2 |
| | <i>Jobless</i> | 1 | 0,5 |
| | <i>Child care</i> | 5 | 2,6 |
| | <i>Other</i> | 1 | ,5 |
| <i>Resident in Sárvár</i> | <i>Resident in Sárvár</i> | 179 | 93,7 |
| | <i>Tourist</i> | 12 | 6,3 |
| <i>Working in Sárvár</i> | <i>Working in Sárvár</i> | 137 | 71,7 |
| | <i>Working outside Sárvár</i> | 54 | 28,3 |

RESULTS

Table 3 presents selected characteristics of respondents.

The analysis of the parameter “Committment to Sárvár” indicated that 139 of the 179 inhabitants work in Sárvár. Working in situ indicates a greater committment, as people spend more time in the town. In addition, almost 60% have been continuously living in the town for more than 25 years. This is typical for Hungarian residents which high immobility. The fact that 94 % of the interviewees have been living in the town for 5 years shows that they already have a local background and know the local environment. All this assumes that their opinion about the targeted project developments is – based on the proper knowledge of the environment – is reliable.

Another important value is the commitment to Sárvár which above the average with 67 % of the interviewees. The average (4,56) shows a remarkably positive relation to the town. These basic parameters already convey the hope that the answers received are “valid” and give a true picture about the development objectives.

Table 3. Selected characteristics of respondents. Source: authors' work.

| Characteristic | Modalities | Frequency | Percentage |
|---------------------------|------------------------|-----------|------------|
| Resident in Sárvár | resident in Sárvár | 179 | 93,7 |
| | tourist | 12 | 6,3 |
| Working in Sárvár | working in Sárvár | 137 | 71,7 |
| | working outside Sárvár | 54 | 28,3 |
| How long living in Sárvár | 0-5 years | 11 | 5,8 |
| | 6-10 years | 11 | 5,8 |
| | 11-15 years | 10 | 5,2 |
| | 16-20 years | 19 | 9,9 |
| | 21-25 years | 19 | 9,9 |
| | more than 25 years | 113 | 59,2 |
| | not from Sárvár | 8 | 4,2 |
| Your loyalty to Sárvár | 1 | 0 | 0,0 |
| | 2 | 1 | 0,5 |
| | 3 | 19 | 9,9 |
| | 4 | 43 | 22,5 |
| | 5 | 128 | 67,0 |

The research objective was to analyse the need for the inquiry plan of the project area and to bolster, or deny it. The task was to receive feedback from the users (town inhabitants, tourists) regarding the planned development demand and usability.

Table 4 shows the planned intervention areas of the project area. All questioned categories received remarkable results. The establishment of the commerce and service platform received a subsidy rate of 83 %, yet this can also be considered remarkable. The high rate of the four planned interventions tells investors that the time has come to step onto the road of physical implementation. The task for the future is how the four functions can be implemented as a unit and in a healthy ratio, and the answers are aligned to the modern spatial functions.

Table 5 presents the planned future development of the area. Questions in six categories were asked about the future usability of the project area. Regarding any other usage of the spaces the commerce and service functions are rather favoured (77,5 %, 67 %). Events are preferred by 63,9 % while 48 % of the interviewees like relaxation spaces, or parts of spaces.

Table 4. Agreement with planned developments. Source: authors' work.

| Target of development at project area | Modalities | Frequency | Percentage |
|--|------------|-----------|------------|
| Developing by planting trees, bushes, grass | No | 3 | 1,6 |
| | Yes | 188 | 98,4 |
| Develop to be a commercial area that offers products and services | No | 32 | 16,8 |
| | Yes | 159 | 83,2 |
| Develop to be place of fairs, and open terraces | No | 20 | 10,5 |
| | Yes | 171 | 89,5 |
| Develop to install facilities to support commercial activities and relaxation closed to nature | No | 12 | 6,3 |
| | Yes | 179 | 93,7 |

Table 5. Plans for the future development of the area. Source: authors' work.

| Use of future developed area | Modalities | Frequency | Percentage |
|--|-------------------|------------------|-------------------|
| resting, going out | No | 43 | 22,5 |
| | Yes | 148 | 77,5 |
| going out by visiting pub, restaurants | No | 63 | 33,0 |
| | Yes | 128 | 67,0 |
| visiting fair and events | No | 69 | 36,1 |
| | Yes | 122 | 63,9 |
| walking, looking around | No | 99 | 51,8 |
| | Yes | 92 | 48,2 |
| selling products, services during fair | No | 174 | 91,1 |
| | Yes | 17 | 8,9 |
| selling products, services by chance | No | 164 | 85,9 |
| | Yes | 27 | 14,1 |

DISCUSSION

First research proposition was defined as the following:

RP₁. *A significant connection can be shown between the demographic and personal parameters, the parameters being affected to the town and development needs formulated toward the project*

The chi-square analysis of the demographic characteristics and the planned activities was done with the aim of finding significant relations ($p < 0,05$), which were found in five cases, although the connection showing the strength of the relation (Cramer's V) indicated medium strength of the relations.

Table 6 shows the detailed data e.g. men and women would enjoy being close to the nature to an almost equal degree and both genders – projected onto the base multitude – would enjoy fairs and events. The commitment to the town and fair venue function is also significant and could be recommended to decision-makers. The same applies for the years/age division. In the course of the chi-square analysis the number of cases in the cells is below five on four occasions, this must be marked as the research limitation.

Second research proposition was defined as the following:

RP₂. *The defined strategic goals of the town provide a major basis for the development needs.*

Another question of the research was the manner in which strategic documents of the town support development, i.e. how the previously defined objectives harmonise with them and what message does the mission of the town convey to the project evaluators. This was done with a secondary research and the analyses of documents. The formulated mission of the town is the following: “Sárvár, as an international spa town, becomes a liveable place and a town offering an ever higher life standard for the inhabitants and visiting guests.”

The following strategic documents are taken into consideration for the purpose of this work:

- Integrated Town Development Strategy
- Settlement planning tools
- Asset management plans
- Economics programme

Table 6. Cross tabulation and chi-square analysis of variables. Source: authors' calculations.

| Respondent characteristic | Variable | | Chi-square (p-value) | Cramer's V |
|--|----------|-------|-------------------------|------------|
| Develop to install facilities to support commercial activities and relaxation closed to nature | | | | |
| <i>Gender</i> | Disagree | Agree | 6,402 (0,011*) | 0,183 |
| <i>Male</i> | 9 | 68 | | |
| <i>Female</i> | 3 | 111 | | |
| Develop to be place of fairs, and open terraces | | | | |
| <i>Commitment to Sárvár</i> | Disagree | Agree | 9,140 (0,027*) | 0,219 |
| <i>2 – less committed</i> | 1 | 0 | | |
| <i>3 – moderately committed</i> | 2 | 17 | | |
| <i>4 – highly committed</i> | 3 | 40 | | |
| <i>5 – fully committed</i> | 14 | 114 | | |
| Visiting fair and events | | | | |
| <i>Gender</i> | Disagree | Agree | 7,952 (0,005**) | 0,200 |
| <i>Male</i> | 37 | 40 | | |
| <i>Female</i> | 32 | 82 | | |
| <i>Age</i> | Disagree | Agree | 8,208 (0,017**) | 0,207 |
| <i>below 18</i> | 3 | 0 | | |
| <i>between 18-65</i> | 63 | 121 | | |
| <i>above 65</i> | 3 | 1 | | |
| Going out by visiting pub, restaurants | | | | |
| <i>Length of residence in Sárvár</i> | Disagree | Agree | 11,609 (0,05**) | 0,247 |
| <i>0-5 years</i> | 3 | 8 | | |
| <i>6-10 years</i> | 3 | 8 | | |
| <i>11-15 years</i> | 0 | 10 | | |
| <i>16-20 years</i> | 5 | 14 | | |
| <i>21-25 years</i> | 3 | 16 | | |
| <i>more than 25 years</i> | 45 | 68 | | |
| <i>not from Sárvár</i> | 4 | 4 | | |

**statistically significant at 5 %

Integrated Town Development Strategy (ITS). The Integrated Town Development Strategy defines the major directions of the town development and the necessary specific interventions for a mid-term period (7 years). According to this the mid-term expectations of the ITS – aligned into thematic objectives – serve the reaching of long-term future perspective. The ITS defines those necessary strategic interventions, actions for the coming period. Subsequently the mid-term expectations for Sárvár in the period 2014-2020 are the following: Future perspective: conscious development of Sárvár by building upon high-quality services, the good environmental conditions and the local characteristics. Table 7 shows the objective system of the ITS.

Settlement planning tools. The settlement regulates the specific construction regulations binding for its public administrative area and the structure of regional use. The development of the town, the validation of public and private interest and the adaptation to the changing demands local construction regulations require the periodical modification of settlement planning tools.

Asset management plan of Sárvár. The task of an asset management plan is to set the guidelines of necessary actions in the various fields of asset management, and to formulate the most important objectives of an efficient and responsible asset management for the future.

Economic program. The economic program defines all those objectives and tasks, which in accordance with the budget of the settlement serve to secure the tasks to be provided and the improvement of their level. The economic program of Sárvár for the period 2014-2019 centres on the following fields: a) tourism, b) town marketing, destination building, and c) infrastructure development tasks.

Table 7. The objective system of the ITS. Source: authors' work based on ITS document.

| DEVELOPMENT AREAS | STRATEGIC OBJECTIVES |
|-------------------------------|--|
| Economy | Tourism development |
| | Diversification of the economy |
| Built and natural environment | Conscious urban development |
| | Validating the principles of sustainability and environmental consciousness |
| Society | Establishing and maintaining a quality and competitive knowledge |
| | Creating the access to quality public services, securing equal opportunities |
| | Creating a safe urban environment and cohesive society |

CONCLUSION

The analysis of the four documents revealed that the development objective of the call is in accordance with the above documents both the source of financing and the physical structure support the call criteria. Research revealed that the strategic documents of the town are coherent and provide the proper foundation for elaborating the call. The target system of the documents helps to establish sustainable developments. The elaboration of the call material was fruit-bearing in the end and the research supported its success. Authors agree with the reasoning of Németh [5], who believes that the solution of sustainability-related questions and the reaching of regional and national development policy objectives lies in the performance ability of smaller regional units of a country. Therefore, the cooperation with the stakeholders is the mainly important factor of the process [1, 2].

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RAZUMIJEVANJE ČIMBENIKA USPJEŠNOSTI PRIHVAĆANJA SOFTVERA ZA UPRAVLJANJE POSLOVNIM PROCESIMA: STUDIJE SLUČAJA

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SAŽETAK

Identifikacija čimbenika koji su ključni za prihvaćanje koncepta upravljanja poslovnim procesima cilj je brojnih istraživanja. Istovremeno, zbog složenosti i sveobuhvatnosti područja, još uvijek ne postoji opće prihvaćen okvir čija bi primjena osigurala uspješno prihvaćanje ovog koncepta. Ipak, opće je prihvaćeno mišljenje da implementacija softvera za upravljanje poslovnim procesima pozitivno utječe na uspješnost prihvaćanja koncepta upravljanja poslovnim procesima. Konsenzus oko definicije softvera za upravljanje poslovnim procesima još uvijek ne postoji, a definiranje kriterija za njegov odabir je otežano. Neki od često navođenih razloga jesu: (i) radi se o složenom području koje obuhvaća veliki broj različitih vrsta softvera; (ii) određivanje korisničkih zahtjeva prema softveru je složen zadatak; (iii) ponuda na tržištu je raznovrsna, s velikim rasponom funkcionalnosti i mogućnosti, ovisno o proizvođaču softvera. Cilj ovog članka je identificirati i analizirati ključne čimbenike uspješnosti prihvaćanja softvera za upravljanje poslovnim procesima te istražiti tehnološku i kontekstualnu perspektivu njegovog prihvaćanja, pri čemu su kontekstualnom perspektivom obuhvaćeni elementi organizacije i okruženja. Rezultati istraživanja pružit će potporu informatičarima i poslovnim stručnjacima pri odabiru softvera za upravljanje poslovnim procesima. U tu svrhu provedeno je empirijsko istraživanje u nekoliko kompanija koje su uspješno završile implementaciju softvera za upravljanje poslovnim procesima te su prikupljeni kvalitativni i kvantitativni podaci o ključnim čimbenicima uspješnosti prihvaćanja softvera za upravljanje poslovnim procesima.

KLJUČNE RIJEČI

upravljanje poslovnim procesima, softver za upravljanje poslovnim procesima, ključni čimbenici uspješnosti, studija slučaja, Hrvatska

MREŽNA ANALIZA INOVACIJE ZA INTERNET STVARI

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SAŽETAK

U poduzećima orijentiranim na internet stvari inovacije su vrlo važne. Nadalje, smatra se kako povoljna pozicija u inovacijskoj mreži povećava inovacije i u konačnici doprinosi dobiti. Cilj istraživanja je empirijsko razjašnjavanje utjecaja strukture mreže poduzeća na inovacije u području interneta stvari. U istraživanju je analizirana relacija između strukture mreže i rezultata inovacija, pimjenom društvene analize mreža. Iz baze intelektualnog vlasništva izdvojene su zajedničke patentne prijave vezane za poduzeća koja se bave internetom stvari. Kao rezultat, razlika u strukturi mreže u poduzeću povezana je s rezultatima istraživanja i isplativosti. Posebno poduzeća s poslovnim modelom platforme smatra se izrazito profitabilnima u području interneta stvari. Zaključno, korištenjem baze podataka o intelektualnom vlasništvu i primjenom društvene analize mreža, ovo istraživanje kvantificira strukturu inovacijskih mreža na temelju rezultata i operativne učinkovitosti razvoja i istraživanja.

KLJUČNE RIJEČI

analiza društvenih mreža, inovacija, internet stvari, zajednička patentna prijava

ODRŽIVI RAZVOJ, TEHNOLOŠKI I INDUSTRIJSKI UTJECAJ NA INŽENJERSKO OBRAZOVANJE

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Aleksandrija, Egipat

SAŽETAK

The past industrial revolutions had negative effects on our world especially on environmental and social aspects. Hence, our societies must be able to steer the continued industrial revolution into the direction of sustainability. In particular, the current industrial revolution relies on the technologies of the Internet of Things, which open the ways to the development of sustainable solutions in order to meet the needs of the present without compromising the needs of the future. In the transition towards a sustainable society, teaching sustainability is necessary to ensure sustainable design and preserve the ecosystem. Consequently, educating engineering students on sustainable development is wide spreading and is actually taking place worldwide in many modern faculties and universities. This article examines the teaching methods for a sustainability subject and builds on the experience of others and a wide spectrum of methods in order to provide guidelines for curriculum design. The design is based on innovations in technologies to cover sustainability along with environmental and social implications. The article also provides a criterion for evaluating the impact of executing the proposed sustainable development curriculum.

KLJUČNE RIJEČI

održivi razvoj, metodologija poučavanja, ishodi učenja, informacijsko-komunikacijske tehnologije, internet stvari

PRIMJENA HUMORA I KOKREACIJE TURISTIČKIH ZAJEDNICA: EKSPLORATIVNA STUDIJA IZ HRVATSKE

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SAŽETAK

Turisti su sve aktivniji, iskusniji i izbirljivi, željni novih, nezaboravnih iskustava koji su prilagođeni njihovim potrebama. Inovacije su imperativ, posebice u turizmu gdje se nove ideje mogu lako kopirati. Što je onda bolje od uključivanja turista u oblikovanje turističkih proizvoda iz snova?

Načela ko-kreacije i apel na humor još uvijek su nedovoljno istražene teme u turizmu, kako u praksi tako i teoriji. Isto vrijedi i za turističke zajednice u Hrvatskoj, javnih subjekata koji, iako ne stvaraju turističke proizvode, ipak su odgovorni za valorizaciju brojnih turističkih atrakcija.

Provedena je istraživačka studija čiji je glavni doprinos sažet u analizi sadašnjih praksi DMO-a i njihovih tendencija pri primjeni humora i kokreacije u svojim marketinškim kampanjama. Svrha ove studije je isticanje važnosti i prednosti primjene tih dvaju koncepata u marketinškim aktivnostima DMO-a.

Ujedno je predstavljena jedna studija slučaja koja se odnosi upravo na valorizaciju turističkih atrakcija, kako bi se potaknulo DMO-e da slično provedu turističkim destinacijama u kojima djeluju.

KLJUČNE RIJEĆI

kokreacija, humor, turističke atrakcije, turističke zajednice

ANALIZA STILOVA VODSTVA U ODNOSU NA KARAKTERISTIKE HRVATSKIH PODUZEĆA

I. Miloloža

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SAŽETAK

Cilj ovog rada je istražiti prisutnost različitih stilova vođenja (autoritativni, demokratski i *laissez-faire*) u hrvatskim poduzećima. Istraživanje je provedeno na uzorku poduzeća, a razina korištenja različitih stilova vodstva mjerena je upitnikom stilova vodstva. Uspoređeno je šest skupina poduzeća pomoću Mann-Whitney testa prema razini uporabe različitih stilova vođenja: (i) mala i srednja poduzeća (≤ 250 zaposlenika); (ii) velika poduzeća (> 250 zaposlenika); (iii) poduzeća u fazi rasta i zrelosti (vođe); (iv) poduzeća u fazi stagnacije (sljedbenici); (v) poduzeća sa glavnom orijentacijom prema internacionalnom tržištu i (vi) poduzeća sa glavnom orijentacijom na domicilnom tržištu. Rezultat pokazuje da je demokratski stil najpristupačniji stil u svim grupama poduzeća.

KLJUČNE RIJEČI

stilovi vodstva, Hrvatska, Mann-Whitney test, upitnik stilova vodstva

INTERNETSKI MARKETING KAO STANDARD U POSLOVANJU

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SAŽETAK

Tempo razvoja kojim područja marketinga svake godine je izazovan kako za pojedince, stručnjake marketinga, tako i za poduzeća kao kompleksne sustave koji se međusobno i stalno natječu za pažnju globalnih potrošača. Razvojem Interneta, kao glavnog komunikacijskog kanala i novog tržišnog prostora, stvara se mogućnost primjene idealnog modela marketinga, tzv. marketinga „jedan na jedan“. Internetski marketing je preuzeo vodstvo u teoriji i primjeni marketinga i konstantno napreduje. S druge strane, moć i atraktivnost digitalnog okruženja transformirali su način na koji se potrošači ponašaju, stvarajući nove obrasce i stil života, što se mora uzeti u obzir i detaljno analizirati prilikom stvaranja odgovarajućih strategija internetskog marketinga, a koje se značajno razlikuju od tradicionalnih. Ciljevi rada su istraživanje osnova internetskog marketinga, analiziranje izazova i prilika na koje nailaze poduzeća prilikom stvaranja svojih strategija internetskog marketinga, kao i razmatranje potencijalnih ograničenja i rizika koji se pojavljuju u digitalnom okruženju. Metoda rada temelji se na sekundarnim istraživanjima te uključuje detaljni analizu istraživanja iz područja internetkog marketinga.

KLJUČNE RIJEČI

internetski marketing, digitalni marketing, *online* marketing, *online* potrošač

ISTRAŽUJUĆI VEZU IZMEĐU DIONIČKE ORIJENTACIJE PODUZEĆA I KVALITETE IZVJEŠTAVANJA O DRUŠTVENOJ ODGOVORNOSTI PODUZEĆA

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SAŽETAK

Sve snažniji zahtjevi za transparentnim vođenjem poslova kao i pritisak dionika doveli su do većeg broja izvješća o društvenoj odgovornosti poduzeća (DOP) koje su objavile kompanije širom svijeta. Ipak, kvaliteta i količina tih izvješća se razlikuju. S obzirom da se dionička orijentacija može smatrati značajnim pokazateljem kvalitete DOP izvještavanja, cilj ovog rada je istražiti vezu između dioničke orijentacije i kvalitete izvještavanja o DOP-u. Kvaliteta DOP izvješća i dionička orijentacija procijenjena su iz DOP izvješća koji su preuzeti iz GRI baze podataka i službenih web stranica poduzeća. Indeks dioničke orijentacije uključuje analizu orijentacije prema ključnim dionicima poput dioničara, dobavljača, zaposlenika, lokalne zajednice i kupaca. Empirijska analiza provedena je na uzorku od 69 poduzeća iz 10 europskih zemalja. Rezultati istraživanja ukazuju na pozitivnu vezu između razine dioničke orijentacije pojedine korporacije i kvalitete izvještavanja o DOP-u, kao što i varijable dioničara i zaposlenika imaju statistički značajan pozitivan utjecaj na kvalitetu izvještavanja o DOP-u. Osim toga, predstavljena su obilježja i razina kvalitete izvještavanja o DOP-u među poduzećima iz uzorka.

KLJUČNE RIJEČI

društvena odgovornost poduzeća, dionik, dionička orijentacija, DOP izvještavanje

ISTRAŽIVANJA RAZVIJENOSTI I ODRŽIVOSTI U REGIONALNIM RAZVOJnim PROGRAMIMA (2014-2020)

T. Máhr, Z. Birkner i N. Rodek Berkes

Panonsko sveučilište
Nagykanizsa, Mađarska

SAŽETAK

Rad prikazuje rezultate projekta „Uspostava zelenog grada“, koji je dio Operativnog programa za regionalni i gradski razvoj. Cilj je izložiti razvijenost uporabljivosti, održivosti i potrebe za planom mjerjenja učinaka malog europskog grada, zajedno s primarnim i sekundarnimm podacima. Također je istražena kohezija projekta usporedbom sa strateškim dokumentima. Rezultati istraživanja mogu pomoći predlagateljima projekata i dionicima regija u Europskoj uniji.

KLJUČNE RIJEČI

prostorni i općinski razvoj, održivost, strateški dokument, EU projekt

MANUSCRIPT PREPARATION GUIDELINES

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ABSTRACT Concisely and clearly written, approx. 250 words.

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