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Organizational factors influencing effective use of CRM solutions

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Abstract

In this paper we discuss the issues of effective use of information solutions of customer relations management. The conceptual model is developed based on the Technology acceptance model (TAM). In the literature we can see that researchers often analyze the usefulness of CRM solutions at the level of individuals, and less at the level of organization and its orientations. These aspects are included in the model, proposed in this article, by the set of organizational factors which may influence the effective use of CRM solutions. Organizational factors are reflected in the three types of orientations – in process, technological and innovation orientation of organization. The conceptual model is presented and organizational factors are discussed in more detail. The original value of this paper is in the constructed conceptual model that combines use of CRM solutions at the level of organization and critical organizational factors. The platform of the conceptual model enables its future empirical testing.

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1. Introduction

For a long time the belief prevailed that an important aspect of the operation of the organization is to acquire and keep the customers [1]. New forms of competition and structural changes in the exchange processes have led to a paradigm to create long-term relationships between stakeholders in the market. Due to increasingly demanding

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customers and their complex and differentiated needs and expectations, organizations pursue to introduction and use of new IT solutions, under which the CRM solutions has increasing role [2]. Reasons for the increased interest in the use of CRM solutions are technology advances, greater alignment with the customers and information about them and consequently stance on knowledge about customers, greater market competitiveness and reduced customers loyalty. All this has led to the need for the introduction of new IT solutions, which enable organizations to provide consumers with increasingly customized products/services [3,4,5,6,7,8]. Globalization, internationalization, deregulation, the progress of information technology, short product life cycle, developing awareness of the link between customer retention and profitability has in part also led to this situation [9,10,11,12]. CRM solutions enables organizations to achieve positive effects, such as increased sales and thus profits, greater competitive advantage in the market, increasing customer loyalty and customer satisfaction, generate new knowledge about customers, improving the performance and the quality of customer relationships, acquire new customers, encourage existing customers to purchase, maintain good relation with customers as well as increase value for customers, and thus the image of an organization can be improved [13,14,15,16,17,18,19,20,21].

Despite the positive effects of CRM solutions, some researchers warn that use of CRM solutions can also have negative effects on the operations of organization. The most common causes of the negative effects are inadequate measurement systems, low support and involvement of management of the organization, lack of understanding of the business benefits of CRM solutions, low quality and range of data, exceeding the planned cost and lack of skills in setting up and using CRM solutions [22,23,24,25,18]. Many researchers also point to the lack of understanding of CRM solutions, as many users treat it as a technological tool, while forgetting the strategic aspect that goes beyond information technology [18]. Despite the fact that CRM was very promising in the mid 90's, there have been a number of errors that have led to concerns about its use. Most of the problems in the application of CRM solutions is not technical, but organizational and include organizational changes and disturbances, different views of customer data and changes in business processes, so it is necessary to more fully devote time to examining organizational factors [26,27].

To this end, the researchers have focused on the study of differentiated critical factors that are important for the adoption and use of CRM solutions [28,29,30]. Researchers often base their work on TAM model and extend it with factors associated with level of individuals at the different working positions, as well as at the level of the whole organization; some are also oriented towards research of factors influencing the usefulness of IT solutions and technologies and clients on the market [31,32,33]. Reviewing the research, we have perceived deficit area on the relationship of critical organizational factors and perceived use of IT solutions at the level of the entire organization.

The basic objective of this paper is to develop a conceptual research model for the effective use of IT solutions on basis of CRM, which takes into account the critical organizational factors (process orientation, technological orientation and innovative orientation) as a prerequisite for the effective use of CRM solutions. In this paper we want to explain how the organization must function as a whole if it wants to introduce effective and efficient use of CRM solutions, by creating high-quality information system to make competent business decisions. Presented conceptual model is as a theoretical basis for its empirical verification, but this is not the objective of this paper and is not its integral part.

2. Critical factors of the use of CRM solutions

Effective CRM solution is about acquiring, analyzing and sharing knowledge about and with customers for the quick and timely service to the customer. CRM solutions provides an integrated view of customer interactions starting with software applications that capture these interactions and with the effective analyses of the data to reveal the hidden and important information required for improving the relationship of firms with the customers [30]. For the effective use of integrated IT solutions it is necessary to take into account a number of internal and external factors that are the starting point for the process and technological orientation of the organization, as they involve process and technological aspects of the treatment factors. Critical factors of information solutions implementation are spread over number of areas and must be met for the successful implementation of CRM solutions. In Table 1 we present the literature review of critical factors that are important for the effective use of CRM solutions. Researchers identify the critical factors of CRM solutions from the processes, technology and human resources. The literature review reveals that at the organizational level the critical factor that is taken into account is the orientation

of organization on the customers (f.e. [34]). Very often researchers treat stance of the organization from a strategic point of view, which includes technological orientation, customer orientation, competition orientation, internal/cost orientation, innovation orientation, entrepreneurial orientation, quality orientation and productivity orientation [103,105]. Strategic orientations are the guiding principles that influence a firm's strategy-making activities. Strategic orientation is reflected in strategic directions implemented that lead to superior performance [103,106,107]. Also, some researchers analyzed the performance of CRM solutions and the impact of organizational factors on it - they have found that organizational factors (management, structures and employees) have a major impact on performance of CRM solutions [30].

3. Customer relationship management solutions (CRM solutions) and Technology acceptance models (TAM)

Technology Acceptance Model (TAM model) was adapted from the TRA model – Theory of reasoned action – and was aimed at modeling user's acceptance and use of information technology in the workplace. TAM model comprises external variables, perceived usefulness, perceived ease of use, attitude toward using, behavioral intention to use and actual system use [35]. Model TAM has become the most widely adopted model in information system applications and a major research mode for examining the determinants of information technology acceptance and utilization among users. Researchers often base their work on TAM model and extend it with factors associated with the level of individuals at the different working positions, as well as at the level of the organization as a whole; some are also oriented towards research of factors influencing the usefulness of IT solutions and technologies for clients on the market [31,32,33]. TAM model has been expanded and adapted by a number of researchers and has been applied to many different technologies including e-commerce and data mining tools [35,36,37]. TAM model is expanded to various constructs depending on the research area in question [38,39]. Literature review revealed the lack of reliable research in the area of relationships among critical organizational factors and perceived use of CRM solutions at the level of the entire organization. At the same time, very little research results is reported on thorough examination and dissemination of TAM model of CRM solutions use.

Askool and Nakata studied the social CRM and TAM model and extended it with the characteristics of Web 2.0 technologies, whereby they examined the ease of networking, the ease of participation and the ease of collaboration [40]. At the same time, the researchers connected the TAM model with perceived trustworthiness. Venkatesh and others offered UTAUT, linking up theory of rational action (TRA), the Technology Acceptance Model (TAM), Motivational Mode, Theory of Planned Behavior (TPB) theory combined with TAM and TPB, Model of PC utilization, innovation diffusion theory and Social Cognitive Theory [41]. On the basis of the new model of UTAUT researchers have studied the use of CRM solutions and have found that there is significant correlation between performance expectancy, effort expectancy, social and behavioral intention, facilitating the link between the condition and user behavior and the link between behavior intention and user behavior of CRM [19]. Karahanna and others expended the CRM TAM models with the following factors: compatibility/existing work practices, compatibility/prior experience and compatibility/values [42]. With the TAM model the use of CRM was discussed from two perspectives, namely the usage scope and usage intensity. They found that all factors were significantly associated with usage scope and usage intensity (compatibility/existing work practices, compatibility/values). It was also found that perceived ease of use of CRM is not typically associated with usage intensity. In the existing research reports in the literature it is often found that TAM model may represent also only a part of the research model and not all of constructs (variables) are considered. Within the framework of the TAM model, Tung and others pointed out the perceived usefulness, perceived ease of use and behavioral intention to use of CRM, and found that there exists significant relationship between constructs [57]. Meanwhile, the focus has been also put on trust, compatibility and perceived financial cost and they found that these factors affect behavioral intention to use CRM solutions.

Table 1. Literature review of critical factors of CRM solutions

Authors	Type/phase of CRM	Factors
[43, 44]	Basic CRM	Information technology, management commitment, human resource knowledge, knowledge of CRM, organizational culture; Effective customer communication strategy, profitable marketing strategy and IT infrastructure, suitable <u>organizational strategy and administrative support</u>
[45]	Adoption of CRM technology	Management characteristics, involvement of the employees, employee characteristics, IT resources, firm's characteristics (size, industry, perceived market position, innovativeness)
[29]	Basic CRM	Add goals or benefits from implementing CRM, tools and technology of CRM, participation of consumers and users of CRM, carefully gathering information on the implementation of CRM by employees at different levels and professional qualifications of CRM
[28]	Implementation of CRM	CRM solutions implementation issues, implementation of CRM through employees, CRM business strategies of organization, interpretation and synchronization of service, customer centric approach, differences between IT and CRM, right method to interact with customer, right tool of data mining, clear methodology and steps, measurable goals and ROI (Return on investment) of <u>organization and training of the front people</u>
[46]	CRM implementation	Contextual factors (Competitive pressures, environmental pressures, relations with customers, peer influence), organizational factors-technical factors (IT infrastructure, IT Training, IT maintenance plan, IT application complexity), organizational factors-social factors (top management support, human resource management, size of organization, organizational change management, knowledge management), individual factors (computer anxiety, user acceptance, personal innovativeness, user resistance, computer experience, user personal dispositions, user capacity of acquired IT knowledge)
[34]	CRM implementation	Strategic factors (top management support, organizational culture, developing a clear CRM strategy, clear project vision and scope, and benchmarking), tactical factors (employee acceptance, CRM software selection, integration with other systems and training in CRM efforts), operational factors (realistic CRM implementation schedule, enterprise performance metrics for CRM, personalization, customer orientation, and data mining)
[47]	Implementation of CRM	Change management, operational management, knowledge management, marketing management, sales management, <u>customer support management, technology management, project management</u>
[48]	CRM success	<u>Organizational factors (employees, leadership, organizational structure)</u>
[49, 50]	CRM implementation	Organisational factors (Benefits; Staff ICT (Information and Communication Technologies), ICT skills; Organisation size; Internal barriers; Support; Funding; Strategy; Business objectives; Customer response/attitude; Government; Competitive pressure; External barriers; and Suppliers); Technical factors (ICT infrastructure; Purchase, Implementation and integration cost; System evaluation and selection criteria; Complexity; Integration; Vendor after sale support; and Software selection criteria); Data quality (Evaluation of the Data Quality Tools & Processes; Evaluation of the quality of customer data; Customer data infrastructure; Customer data types classification; and Customer data sources classification); Leadership of the top management, human resource management, functional integration, and <u>organizational structure</u>
[51]	CRM implementation	Process (marketing, sales, services, define and communicate CRM strategy, customer involvement, personalization process, time and budget management), Human (Client Aspects, Organizational Aspects, Top management commitment and support, Define and communicate CRM strategy, Assurance of top management commitment for CRM), Technology (Sales force automation, Software for CRM, Data warehouse and data mining, Help desk, Call centers, Internet influence)
[52]	Adoption of CRM system	Characteristics of Organization (size of organization, IS capabilities of staff, innovation of senior executives, knowledge management capabilities), Characteristics of CRM (relative advantage, complexity)
[53]	CRM implementation, project and system	Implementation CRM (Organizational culture, User-friendly system, Easy to manage system, Top management support and implemented modules, flexibility in adaption of working & management process), Organizational aspects CRM project (workers' attitude towards the system), Technical aspects of CRM project (Scope, Implementation according to planned schedule, <u>Implementation according to planned budget, Modules crucial to the system's implementation</u>),
[54, 31]	Basic CRM	Establishing measurable business goals, aligning business and IT operations, getting executive support up front, allowing business goals drive functionality, minimizing customization by leveraging out-of-the-box functionality, using trained, experienced consultants, actively involving end users in solution design, investing in training to empower end users, using a phased rollout schedule, measuring, monitoring, and tracking; Social factors, organizational factors and factors of an employee
[55]	CRM implementation	Customer-centric strategy, commitments from people, improved or redesigned process, software technology and infrastructure
[56]	CRM technological initiatives	Operational and strategic perceived benefits, top management support, organizational readiness, knowledge management capabilities

In Table 2 we present an overview of research reports that examined CRM solutions based on TAM. The table brings results on impact of different factors: (i) factors that expanded the TAM: F - different factors influencing the components of TAM and are explained in the third column of the Table 2 for each research as well as S-user satisfaction; (ii) components, that are consisting parts of TAM: A-acceptance; U-perceived usefulness; E-perceived ease of use CRM solutions; AT-attitude toward CRM solutions; BI-behavioral intentions; Use-decision for use of the CRM solutions.

Table 2. Previous TAM research of CRM solutions

Authors	Survey	Factors (F)	F	F	E	E	U	S	E	U	A	E	U	E	U	E	U	AT
			↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
			U	E	U	S	S	A	A	A	Use	Use	Use	BI	BI	AT	AT	BI
[58]	CRM adoption in tax affairs organization (140 persons)	Organizational factors (Training, Cooperation, Satisfaction)	***	***					***	***								
[59]	CRM (274 managers in a community bank)	/			***								***	***				
[60]	E-CRM (85 questionnaires, 15 clothing companies)	Innovation factors (relative advantage compatibility complexity, observability trialability)	*	*	*	*	*	*	*	*	*							
[42]	CRM (78 users of a customer relationship management system in the context of a large bank)	Compatibility/ existing work practices, compatibility/ prior experience, compatibility/ values	***	***	***							***	***					
[61]	CRM (385 medical staff, administrative staff, and staff that provides direct service in 7 military hospitals)	Personal innovativeness, interpersonal influence, computer self-efficacy	***	**	***	***										***	***	***
[31]	CRM (240 users-salespeople)	Social factors, organizational factors and individual factors	*	*	***	***	***	n.s.	n.s.	***								

Note: n.s. – not significant at 0.05 level; * p ≤ 0.05; ** p ≤ 0.01; ***p ≤ 0.001.

3. Conceptual research model

Based on the literature review we designed a conceptual model presented by Figure 1. The purpose of this paper is to contribute to the further technological and information development and use of CRM solutions based on the theoretical framework by developing a conceptual model that incorporates the impact of critical factors for organizations, namely their process orientation, technological orientation and innovative orientation, as well as organizations’ stance on the usefulness of CRM solutions. This conceptual model also incorporates the impact of the perceived usefulness of CRM solutions on the perceived quality of information and consequently the satisfaction with chosen support for decision-making. Particular emphasis in the model is put on intended use of CRM solutions as a support for decision-making in organizations. The primary objective of this paper is therefore the development of a conceptual model of use of integrated IT solutions based on CRM solutions, that takes into account critical factors, such as organizational prerequisites for the successful use of CRM solutions and the display of results in the form of high-quality information for effective decision support. We want to develop a conceptual model so that the subsequent empirical analysis (which is not part of this paper), will answer the following research question: *Do organizations with more pronounced process, technological and innovative attitude show also more effective use of CRM solutions than those with less pronounced process, technological and innovative attitudes?*

In order to verify the basic thesis: “*Organizations with more pronounced process, technological and innovative attitude show also more effective use of CRM solutions than those with less pronounced process, technological and innovative attitudes*” we formed several hypotheses linking organizational factors with critical indicators of usefulness of CRM solutions. Based on the theoretical framework we formed hypotheses to test the relationship between the following multi-dimensional variables: process orientation, technological orientation and innovative stance of the organization, perceived usefulness of CRM solutions, CRM solutions intensity of use, perceived quality and satisfaction information to support decision-making. In this paper we discuss only the relationship between the critical factors of organization and use of CRM solutions.

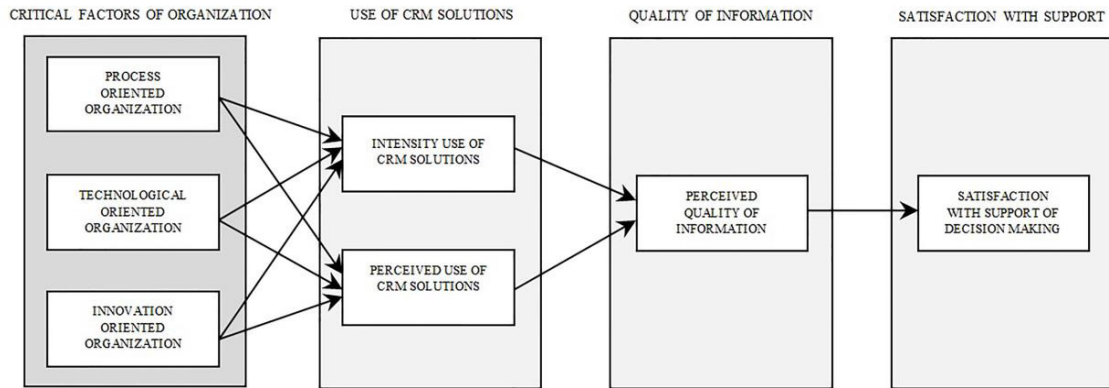


Fig. 1. Conceptual Research Model

3.1. Process orientation and use CRM solutions

Process-oriented approach within organizations gives priority to processes rather than to hierarchy, whereby the business processes play a strategic role in creation of value [62,63]. For the measurement, the researchers suggested a number of dimensions of process-oriented organization [101,102]: organizational structure, language, documentation, utilization, information systems, performance measurement, customer requirements, process view, process jobs, process management and measurement,... Efficient use of CRM solution depends on how the CRM is integrated with existing processes and structures [64]. Most CRM solutions require firms to be process-oriented. Some researchers argue that the CRM is an integrated approach, taking into account the process, so it is important that the organization is process-oriented if it is to be able to effectively use CRM solutions [65,66]. CRM solutions require a process oriented organization. This is particularly true in the implementation phase of CRM solutions, because the transition from vertically oriented functional organization to process oriented organization is an extremely complex and demanding process [67]. Researchers emphasize that the success of CRM solutions depends on the management processes of the organization. CRM success is highly dependent on a process management orientation; by focusing on CRM processes, managers can ensure the effective deployment of organizational resources toward the creation of desired outcomes [68]. Research results in the literature reveal that the lack of a business process orientation in organization leads to substantial delays in the CRM solutions implementation process [69,70]. Based on the theoretical background we can assume that the more process oriented organizations are, higher the perceived use and perceived intensity of use of CRM solutions is, as compared to organizations that are less process oriented.

3.2. Technological orientation and use CRM solutions

Technology-oriented organizations promote research and development activities, acquisition of new technological solutions and use of the latest technologies, while at the same time they accumulate rich technological knowledge through past experiences and processes, such as investment in research and development and the rapid acquisition of new technologies [71,72]. Researchers in the context of measuring technological orientation take into account the development of new products using new technologies in and outside organizations, investing profits back into research and development, industry standards, etc. [104]. Technological orientation should be seen as an incentive for the realization of CRM solutions [73,74]. Chen and Popovich also designate the technology as an important factor of CRM solutions [65] and several studies show positive relationship between the perceived usefulness of the new information solutions and attitude towards technology [75,76]. Cheng and Ching emphasize that the more we invest in IT, the higher performance of CRM solutions it provides [77]. CRM solutions require the

use of IT to capture, store, modify and distribute large amounts of data among stakeholders in the market [78,79]. In this way the organization utilizes data and uses business intelligence tools to better understand the behavior of their customers. Researchers agree that technology is an important factor for use of CRM solutions – therefore it is even more important that the high level of technological orientation of an organization enables the organization to effectively adopt, deploy and use CRM solutions. This is important because new technological innovations that could become an important source of information for the organization and CRM solutions constantly appear on the market. Innovation and network infrastructure, client/server computing and business intelligence applications are leading factors in CRM development [65]. Despite the fact that researchers in the technological orientation of the organization emphasize R&D resources and technological base, which play a central role in introducing innovative products, prior to this the organizations need information, which they use as a basis for the development of new products [80]. We believe that organizations that are technologically oriented, place greater emphasis on new technological solutions and seek to exploit the technological advantages of establishing contacts with customers and the acquisition of key data via new communication channels, which are also allowed by the new information technologies. Therefore, organizations that are more technologically oriented, perceive the use and intensity of use of CRM solutions to a greater extent than organizations that are less technologically oriented.

3.3. Innovation orientation and use CRM solutions

Kundu and Katz consider that “being innovative” is a key factor in overcoming barriers [81] and improving the ability of organizations to successfully adopt or implement new systems, processes or products [72]. Menon and Varadarajan argue that the cultures which promote innovation in organizations also promote the exchange of and use of information [82]. Zhang and Duan added that the managers who have information are more likely to use it in more creative ways and will use it to create more innovative products [83]. Market information can be generated using IT solutions by using, among other means, the CRM solutions. Irian and Buttle found in the context of organizational culture that in the organization, in which employees place more emphasis on innovation, it is more likely for the CRM solutions to be used successfully than in the environment of organizations in which the employees put less emphasis on innovation [84]. Nguyen and Waring found that innovative management in the organization has a significant impact on the perception of the use of CRM solutions [45]. At the same time the researchers recognize that innovation orientation has a positive impact on the organizations using CRM solutions, enabling the use of more business tools and technologies that enable collection, analysis and dissemination of customer information. Innovation oriented organizations are focused on the research and development of new products. Researchers at measuring the innovative orientation of the organization tend to emphasize the support for searching for new ideas, innovation, research-based innovation and involvement in projects and programs. [103]. To develop new products successfully, organizations need adequate information about customers that can be obtained with the help of CRM solutions tools. Research review reveals that researchers have not studied the relationship between the innovative orientation of the organization and the use of CRM solutions. But at the individual level, it has been found that innovation has impact on the use of new IT solutions and technologies that the researchers derived from the TAM model [85]. Analysis results of Law supported the thesis that attributes of innovation, attitude towards change, market orientation, innovation orientation, perceived accessibility of IT solutions, competition intensity and desire of customer intimacy were the antecedents of CRM adoption [86]. Therefore, organizations that are more innovation-oriented rather tend to use CRM solutions than organizations that are not innovation-oriented.

3.4. Perceived use and intensity of use of CRM solutions and perceived quality of information

Information is a strategic business resource of organization, and the quality of information facilitates better business performance and presents competitive advantage. Therefore, quality information on CRM solutions constitutes the foundation of a successful business operation [87]. CRM solutions use various information technologies and applications so as to enable organization to capture, integrate and distribute information. Zahay and others found that the increased use of customer data results in higher quality of CRM system [88]. CRM

solutions include a comprehensive database of customers, which is operated by the organization. Database management system requires the use of analytical tools of CRM solutions; thereby enabling organizations to possess and use useful and high-quality customer information. Organizations that intensively use the CRM solutions, also endeavor to acquire, by the data collected, quality information necessary for further business process. Although customer information processing is crucial, the significance of its impact on CRM performance depends on the quality of customer information. If employees using a CRM system share no useful, timely, or accurate customer information, then neither the firm nor the customers derive any benefits. Therefore, CRM systems allow firms to process customer information at a high level of efficiency. Firms' infrastructure capability that is supportive and compatible with their CRM systems enables the CRM systems to obtain timely, up-to-date, correct, accurate, complete, and relevant data or information from multiple internal and external sources, and helps the CRM systems integrate and process those data or information effectively [89,8]. CRM systems can increase the timeliness of customer information (e.g., offering quick, superior front-line support, or executing marketing actions more efficiently) [90,65]. Therefore, we assume that those organizations which increasingly perceive the use of CRM solutions, and therefore use it more intensively, have higher perception of the quality of information obtained through CRM solutions as compared to those, that do not.

3.5. Perceived quality of information and satisfaction with support of decision making

Since strategic decisions are essential for the survival and functioning of the organization, decision makers have to have access to relevant information if they wish for organization to develop. Quality of decision-making depends on many factors, including the availability of information in the environment and its application techniques and methods of decision-making [91]. Therefore good information is essential for the effective functioning and decision-making at all levels of the organization [92,93]. There are some differences in obtaining information for strategic and tactical decisions. For tactical decisions more often internally focused information is used, while strategic decisions utilize outward-looking information. Both types of decision-making are influenced by information about the competitive environment [94]. Accurate and timely information supplied by the IT support provides management support in decision making [95]. Research has shown that the availability of IT increases communication and decision-making opportunities and improves the quality of decision-making [96]. However, Cokins and others believe that people typically focus on technology rather than on the relevance of the information in relation to good decision-making [97]. More research is focused on studying the understanding of information requirements in order to ensure a high quality of managerial decisions [99]. Medina and Chaparro found that there is a significant link between the quality of information within information systems and creating the best decisions [98]. Bharati and Chaudhury support this by stating that the quality of information obtained through the web-based system has a positive effect on satisfaction with decision-making [100]. To this end, we have been setting the assumption that higher the perceived quality of information obtained through the CRM solutions, higher on average the satisfaction with the CRM solutions to support business decisions.

4 Conclusions

In this paper we have dealt with the question of where and how the critical factors in organization affect the use of CRM solutions. We have found that researchers studied a number of critical factors of organizations that are associated with the use of CRM solutions, but at the same time they are not sufficiently comprehensive about the organization and its orientation, in particular what regards the process, innovative and technology, that are representing a prerequisite for the effective use of CRM solutions. In the context of innovation, researchers examine factors as a result of the use of CRM solutions, although it should be pointed out that the organization with its innovative attitude expresses interest in introduction and efficient application of CRM solutions, with which it would acquire useful information for the development of new products/services as a result of the use of CRM solutions. We therefore believe that the results of the effective use of CRM solutions are conditioned with the orientation of the organization.

To this end, we have developed a conceptual model which we derived from the TAM. Literature review revealed that there is not a lot of research done which would link critical factors of the organization with the TAM in

the field of CRM solutions. Conceptual model presented in this paper expands TAM with three critical factors in organizations (process, innovative and innovative stance). We have also included the intensity of use and the “results” of CRM solutions, such as high-quality information and satisfaction with CRM solutions to support business decision-making. In this paper we put focus only on theoretical consideration of the relationship between critical factors. Our further research and scientific contribution will emphasise on figuring out the benefits perceived by organizations by the intensity of use and perceived usefulness of CRM solutions, which are reflected in the quality of information and, consequently, the satisfaction with decision support.

4.1. Empirical research

The conceptual model serves as a basis for its empirical verification, which is no longer an integral part of this paper. The study, based on modeled conceptual model consists of several structured phases, which will be a prerequisite for the implementation of empirical research, as we will in the following steps create a measurement instrument. The first phase of the research will provide a review of the theoretical principles and design of measurement scales for each interdependent multidimensional variable that represent the described concepts. By creating and verifying measurement scales, we will ensure an adequate level of validity and reliability. The questionnaire, which will contain the individual constructs, will be measured using a 7- point scale with the degree of consensus. The second part of the questionnaire is going to contain closed questions, which will be related to the characteristics of the organization. In this way we will ensure the appropriate control variables (size of the organization, activity, level of investment in information technology, information technology detected changes, perceived competitive advantage in information technology ...). The second phase is the survey itself. The purposed sample will include 500 organizations that have a CRM solution brought into the operating system. The third phase of the research, after obtaining the sample data will consist of the data analysis, where the univariate, bivariate, and multivariate statistical methods will be used. Due to the large number of variables - items included into the single construct, the exploratory factor analysis (EFA) will be used. After EFA we will perform confirmatory factor analysis. Analysis of modeling with structural equations that follows will take place in the following steps: consistency of study design by a theoretical model will be tested to the absolute, relative, parsimony indexes compliance and indices based on non-central chi-square distribution. Beside software that was already mentioned the statistical program SPSS ver. 21, software WarpPLS, SmartPLS and STATA will be used.

References

- [1] Drucker P. The Practice of Management. New York: HarperBusiness; 1954.
- [2] Sen A, Sinha AP. IT alignment strategies for customer relationship management. *Decision Support Systems* 2011; 51 (3): 609–619.
- [3] Peppard J. Customer Relationship Management (CRM) in Financial Services. *European Management Journal* 2000; 18 (3): 312–327.
- [4] Teoa TSH, Devadosb P, Panb SL. Towards a holistic perspective of customer relationship management (CRM) implementation: A case study of the Housing and Development Board, Singapore. *Decision Support Systems* 2006; 42 (3): 1613–1627.
- [5] Almotairi M. A framework for successful CRM implementation. *European and Mediterranean Conference on Informaon Systems*; 2009 July 13/14: 1–14.
- [6] Stein A, Smith M. CRM systems and organizational learning: An exploration of the relationship between CRM effectiveness and the customer information orientation of the firm in industrial markets. *Industrial Marketing Management* 2009; 38 (2): 198–206.
- [7] Fazlzadeh A, Ghaderi E, Khodadadi H, Nezhad HB. An Exploration of the Relationship between CRM Effectiveness and the Customer Information Orientation of the Firm in Iran Markets *International Business Research* 2011; 4 (12): 238–249.
- [8] Chuang SH., Lin HN. The roles of infrastructure capability and customer orientation in enhancing customer-information quality in CRM systems: Empirical evidence from Taiwan. *International Journal of Information Management* 2013; 33 (2): 271–281.
- [9] Chandra C, Kumar S. Supply chain management in theory and practice: a passing fad or a fundamental change? *Industrial Management & Data Systems* 2000; 100 (3): 100–114.
- [10] Zineldin M, Jonsson P. An examination of the main factors affecting trust/commitment in supplier-dealer relationships: an empirical study of the Swedish wood industry. *The TQM Magazine* 2000; 12 (4): 245–266.
- [11] Sahay BS. Understanding trust in supply chain relationships. *Industrial Management & Data Systems* 2003; 103 (8): 553–563.
- [12] Stefanou CJ, Sarmaniotis C, Stafyla A. CRM and customer-centric knowledge management: an empirical research. *Business Process Management Journal* 2003; 9 (5): 617–634.
- [13] Colgate MR, Danaher PJ. Implementing a customer relationship strategy: The asymmetric impact of poor versus excellent execution. *Journal of the Academy of Marketing Science* 2000; 28 (3): 375–387.

- [14] Dowling GR. Customer relationship management: In B2C markets, often less is more. *California Management Review* 2002; 44 (3): 87–104.
- [15] Messner W. The beauty and importance of quality customer information. *Marketing Review* 2004; 4 (3): 279–290.
- [16] Mithas S, Krishnan MS, Fornell C. Why do customer relationship management applications affect customer satisfaction? *Journal of Marketing* 2005; 69 (4): 201–209.
- [17] Jayachandran S, Sharma S, Kaufman P, Raman P. The role of relational information processes and technology use in customer relationship management. *Journal of Marketing* 2005; 69 (4): 177–192.
- [18] Pedron CD, Saccol AZ. What Lies behind the Concept of Customer Relationship Management? Discussing the Essence of CRM through Phenomenological Approach. *Brazilian Administration Review* 2009; 6 (1): 34–49.
- [19] Pai J-C, Tu F-M. The acceptance and use of customer relationship management (CRM) systems: An empirical study of distribution service industry in Taiwan. *Expert Systems with Applications* 2011; 38 (1): 579–584.
- [20] Sivaraks P, Krairit D, Tang JCS. Effects of e-CRM on customer–bank relationship quality and outcomes: The case of Thailand. *The Journal of High Technology Management Research* 2011; 22 (2): 141–157.
- [21] Khodakarami F, Chan YE. Exploring the role of customer relationship management (CRM) systems in customer knowledge creation. *Information & Management* 2014; 51 (1): 27–42.
- [22] Newell F. *Why CRM doesn't work: how to win by letting customers manage the relationship*. Princeton, New Jersey: Bloomberg Press; 2003.
- [23] Boulding W, Staelin R, Ehret M, Johnston WJ. A customer relationship management roadmap: what is known, potential pitfalls, and where to go. *Journal of Marketing* 2005; 69 (4): 155–166.
- [24] Ngai EWT. Customer relationship management research (1992–2002): an academic literature review and classification. *Marketing Intelligence & Planning* 2005; 23 (6): 582–605.
- [25] Payne A, Frow P. The role of multi-channel integration in customer relationship management. *Industrial Marketing Management* 2004; 33 (6): 527–538.
- [26] Kaushik M, Kundan S. CRM: A Strategic Approach. *Journal of Management Research* 2009; 8 (2): 65–82.
- [27] Finnegan, DJ, Currie WLA. A multi-layered approach to CRM implementation: An integration perspective. *European Management Journal* 2010; 28: 153–167.
- [28] Sharma S, Goyal DP. Critical Success Factors for CRM Implementation: A Study on Indian Banks. *Information Intelligence, Systems, Technology and Management. Communications in Computer and Information Science* 2011; 141: 32–40.
- [29] Kavosh K, Abu Bakar AH, Melati AA, Siti Zaleha AR. Critical success factors in customer relationship management implementation. *American Based Research Journal* 2012; 1 (1): 1–13.
- [30] Davood Karimzadgan M, Davood V, Rahebeh A. Investigating Factors that Affect CRM Success with Using Structural Equation Modeling (Case Study: between Staffs in Isfahan R&D Scientific Small City). *International Journal of Academic Research in Economics and Management Sciences* 2013; 2 (2): 160–168.
- [31] Avlonitis G, Nikolaos J, Panagopoulos G. Antecedents and consequences of CRM technology acceptance in the sales force. *Industrial Marketing Management* 2005; 34 (4): 355–368.
- [32] Lee, donH., Sang M, Olson DL, Chung SH. The effect of organizational support on ERP implementation. *Industrial Management & Data Systems* 2010; 110 (2): 269–283.
- [33] Giovanis A, Biniaris S, Polychronopoulos G. An extension of TAM model with IDT and security/privacy risk in the adoption of internet banking services in Greece. *EuroMed Journal of Business* 2012; 7 (1): 24–53.
- [34] Al-Hudhaif SA. The Critical Success Factors for Implementation of Customer Relationship Management in the Banking Sector of Saudi Arabia. *Journal of Global Business Management* 2011; 7 (1): 1–7.
- [35] Davis FD., Bagozzi RP, Warshaw PR. (1989). User acceptance of computer technology: A comparison of two theoretical-models. *Management Science* 1989; 35 (8): 982–1003.
- [36] Le TM, Jun JK. Contextual perceived value? Investigating the role of contextual marketing for customer relationship management in a mobile commerce context. *Business Process Management Journal* 2007; 13 (6): 798–814.
- [37] Huang TC-K, Liu C-C, Chang D-C. An empirical investigation of factors influencing the adoption of data mining tools. *International Journal of Information Management* 2012; 32: 257–270.
- [38] Lewis W, Agarwal R, Sambamurthy V. Sources of Influence on Beliefs about Information Technology Use: An Empirical Study of Knowledge Workers. *MIS Quarterly* 2003; 27 (4): 657–678.
- [39] Sternad Zabukovšek S, Bobek S. ERP business solution acceptance in companies. *Global Conference on Managing in Recovering Markets "GCMRM" 2014*.
- [40] Askool S, Nakata K. A conceptual model for acceptance of social CRM systems based on a scoping study. *Journal AI & Society* 2011; 26: 205–220.
- [41] Venkatesh V, Morris MG, Davis GB, Davis FD. User acceptance of information technology: Toward a unified view. *MIS Quarterly* 2003; 27(3): 25–47.
- [42] Karahanna E, Agarwal R, Angst CM. Reconceptualizing Compatibility Beliefs in Technology Acceptance Research. *MIS Quarterly* 2006; 30 (4): 781–804.
- [43] Bavarsad B, Hosseinipour G. Studying the Factors Affecting the Customer Relations Management (CRM) in Marun Petrochemical Company. *Interdisciplinary Journal of Contemporary Research in Business* 2013; 4 (11): 845–857.
- [44] Sarmaniotis R, Assimakopoulos C, Papaioannou P. Successful implementation of CRM in luxury hotels: determinants and measurements. *EuroMed Journal of Business* 2013; 8 (2): 134–153.

- [45] Nguyen TUH, Waring TS. The adoption of customer relationship management (CRM) technology in SMEs. *Journal of Small Business and Enterprise Development* 2013; 20 (4): 824–848.
- [46] Lawson-Body A, Willoughby L, Mukankusi L, Logossah, K. The critical success factors for public sector CRM implementation. *The Journal of Computer Information Systems* 2011; 52 (2), 42–50.
- [47] Al-Mudimigh AS, Ullah Z, Saleem F. Successful implementation of CRM: The role of data mining. *International Conference on Computer Engineering and Applications IPCSIT* 2011; 2: 424–429.
- [48] Garrido-Moreno A, Padilla-Meléndez A. Analyzing the impact of knowledge management on CRM success: The mediating effects of organizational factors. *International Journal of Information Management* 2011; 31: 437–444.
- [49] Alshawi S, Missi F, Irani Z. Organisational, technical and data quality factors in CRM adoption — SMEs perspective. *Industrial Marketing Management* 2011; 40: 376–383.
- [50] Moreno AG, Melendez AP. Analyzing die impact of knowledge management on CRM success: The mediating effects of organizational factors *International Journal of Information Management* 2011; 31 (5): 437–444.
- [51] Arab F, Selamat H, Ibrahim S, Zamani M. A Survey of Success Factors for CRM. *Proceedings of the World Congress on Engineering and Computer Science WCECS* 2010; October 20-22: 1–5.
- [52] Hung S-Y, Hung W-H, Tsai C-A, Jiang S-C. Critical factors of hospital adoption on CRM system: Organizational and information system perspectives. *Decision Support Systems* 2010; 48: 592–603.
- [53] Rahimi I, Berman U. Building a CSF framework for CRM implementation. *Database Marketing & Customer Strategy Management* 2009; 16 (4): 253–265.
- [54] Maleki M, Anand D. The Critical Success Factors in Customer Relationship Management (CRM) (ERP) Implementation. *Journal of Marketing & Communication*, 2008; 4: 67–80.
- [55] Tan X, Yen DC, Fang X. Internet Integrated Customer Relationship Management. *The Journal of Computer Information Systems* 2002; 42 (3): 77–83.
- [56] Croteau A-M, Li P. Critical success factors of CRM technological initiatives. *Canadian Journal of Administrative Sciences* 2003; 20 (1), 21–34.
- [57] Tung F-C, Lee M-S, Chen C-C, Hsu Y-O. An extension of financial cost and tam model with idt for exploring users' behavioral intentions to use the CRM information system. *Social Behavior and Personality* 2009; 37 (5): 621–626.
- [58] Hashemi H, Peydaei MM, Khodadadi A. The Impact of Organizational Factors of Customer Relationship Management (CRM) on CRM Adoption in Tax Affairs Organization of Tehran. *International Journal of Advanced Studies in Humanities and Social Science* 2013; 1 (10): 1665–1676.
- [59] Vella J, Caruana A. Encouraging CRM systems usage: a study among bank managers. *Management Research Review* 2012; 35 (2): 121–133.
- [60] Sanayei A, Ansari A, Ranjbarian B. A Hybrid Technology Acceptance Approach for Using the E-CRM Information System in Clothing Industry. *International Journal of Information Science and Management* 2010; January/June, 15–25.
- [61] Chen R-F, Yeh FC, Liu C-F. Critical factors affecting the intention for adoption of customer relationship management system: a study of military hospitals in Taiwan. *Proceedings of the 10th Annual Conference of Asia-Pacific Decision Sciences Institute* 2005; 1–10.
- [62] McCormack K, Johnson B. Business process orientation, supply chain management and the ecorporation. *IIE Solutions, Norcross* 2001; 33 (10): 33–37.
- [63] Škrinjar R, Bosilj-Vukšić V, Indihar-Štemberger M. Adoption of Business Process Orientation Practices: Slovenian and Croatian Survey. *Business Systems Research*; 2010; 1 (1-2): 1–50.
- [64] Boulding W, Staelin R, Ehret M, Johnston WJ. A customer relationship management roadmap: what is known, potential pitfalls, and where to go. *Journal of Marketing* 2005; 69 (4), 155–166.
- [65] Chen IJ, Popovich K. Understanding customer relationship management (CRM): People, process and technology. *Business Process Management Journal* 2003; 9 (5): 672–688.
- [66] Lassar WM, Lassar SS, Rauseo NA. Developing a CRM Strategy in Your Firm. *Journal of Accountancy* 2008; 206 (2): 68–70.
- [67] Gentle M. *The CRM Project management handbook. Building realistic expectations and managing risk.* (2002). London: Kogan Page Limited.
- [68] Zablah AR, Bellenger DN, Johnston WJ. An Evaluation of Divergent Perspectives on Customer Relationship Management: towards a Common Understanding of an Emerging Phenomenon. *Industrial Marketing Management* 2004; 33 (6): 475–489.
- [69] Raman P, Wittmann CM, Rauseo NA. Leveraging crm for sales: the role of organizational capabilities in successful CRM implementation. *Journal of Personal Selling & Sales Managemen* 2006; XXVI (1): 39–53.
- [70] Owolabi OO, Adeleke OY, Abubakar K. Technology Enabled Customer Relationship Management in Supermarket Industry in Nigeria. *American Journal of Industrial and Business Management* 2013; 3: 222–228.
- [71] Gatignon H, Xuereb J-M. Strategic Orientation of the Firm and New Product Performance. *Journal of Marketing Research*, 1997; 34 (February); 77–90.
- [72] Zheng Zhou K, Gao GY, Yang Z, Zhou N. Developing strategic orientation in China: antecedents and consequences of market and innovation orientations. *Journal of Business Research* 2005; 58: 1049–1058.
- [73] Ryals L, Knox S. Cross-functional issues in the implementation of relationship marketing through customer relationship management. *European Management Journal* 2001; 19 (5): 534–542.
- [74] Bose R. Customer relationship management: key components for IT success. *Industrial Management & Data Systems* 2002; 102 (1/2): 89–97.

- [75] Vijayasathary LR. Predicting consumer intentions to use on-line shopping: the case for an augmented technology acceptance model. *Information & Management*, 2004; 41 (6): 747–762.
- [76] Plewa C, Troshani I, Francis A and Rampersad G. Technology adoption and performance impact in innovation domains. *Industrial Management & Data Systems* 2012; 112 (5): 748–765.
- [77] Chen J-S, Ching KHR. An empirical study of the relationship of IT intensity and organizational absorptive capacity on CRM performance. *Journal of Global Information Management* 2004; 12 (1): 1–17.
- [78] Piccoli G, O'connor P, Capaccioli C, Alvarez R. Customer relationship management - a driver for change in the structure of the US lodging industry. *Cornell Hotel and Restaurant Administration Quarterly* 2003; 44 (4): 61–73.
- [79] Ling R, Yen DC. Customer relationship management: an analysis framework and implementation strategies. *Journal of Computer Information Systems* 2001; 41 (3): 82–97.
- [80] Jeong I, Pae JH, Zhou D. Antecedents and consequences of the strategic orientations in new product development: The case of Chinese manufacturers. *Industrial Marketing Management* 2006; 35: 348–358.
- [81] Kundu SK, Katz JA. Born-International SMEs: BI-Level Impacts of Resources and Intentions. *Small Business Economics* 2003; 20 (1): 25–47.
- [82] Menon A, Varadarajan RP. A Model of Marketing Knowledge Use Within Firms. *Journal of Marketing* 1992; 56 (October): 53–71.
- [83] Zhang J, Duan Y. Empirical study on the impact of market orientation and innovation orientation on new product performance of Chinese manufacturers. *Business Review International* 2010; 1 (2): 214–231.
- [84] Iriana R, Buttle F. Customer Relationship Management (CRM) System Implementations. *International Journal of Knowledge, Culture and Change management* 2006; 6 (2): 137–147.
- [85] Zarpou T, Saprikis V, Markos A, Vlachopoulou M. Modeling users' acceptance of mobile services. *Electronic Commerce Research* 2012; 12 (2): 225–248.
- [86] Law LKY. Crm adoption and its Impact on organisational Performance. 2009. PhD thesis, University of Nottingham.
- [87] Reid A, Catterall M. Invisible data quality issues in a CRM implementation. *Journal of Database Marketing & Customer Strategy Management* 2005; 12 (4): 305–314.
- [88] Zahay D, Peltier J, Krishen AS. Building the foundation for customer data quality in CRM systems for financial services firms. *Journal of Database Marketing & Customer Strategy Management* 2012; 19: 5–16.
- [89] Mueller H, Nyfeler T. Quality in patent information retrieval – Communication as the key factor. *World Patent Information* 2011; 33 (4): 383–388.
- [90] Dutta R, Narasimhan O, Rajiv S. Success in high technology markets: Is marketing capability critical? *Marketing Science* 1999; 18 (4): 547–568.
- [91] Pavić I. Nature of Managerial Decision Making Along the Continuum of the Decision Making Pyramid. *The Business Review, Cambridge* 2008; 10 (2): 199–206.
- [92] Egelhoff WG. Strategy and structure in multinational corporations: An information processing approach. *Administrative Science Quarterly* 1982; 27 (3): 435–458.
- [93] Kaye D. The importance of information. *Library Management* 1995; 16 (5): 6–15.
- [94] Sko TK, Hewlin PF. Information cues and decision making: The effects of learning, momentum, and social comparison in competing teams. *Group & Organization Management* 2002; 27 (3): 374–407.
- [95] Li AM, Yatrakis P, Turner D, Yen B, Hsu J. The Relationship Between Internet Usage and Decision Making: The Case of Information Technology (IT) Managers in China. *Journal of Applied Management and Entrepreneurship* 2003; 8 (3): 48–68.
- [96] Goodman SK. Information needs for management decision-making. *RMA Records Management Quarterly* 1993; 27 (4): 12–23.
- [97] Cokins G, Euske KJ, Milush G, Nostrom P, Vercio A. Ertify the quality of a manager's information. *Strategic Financ* 2008; 9 (6): 39–45.
- [98] Medina M, Chaparro J. The impact of the human element in the information systems quality for decision making and user satisfaction. *The Journal of Computer Information Systems* 2007; 48 (2): 44–52.
- [99] Kongkiti, P, Kanchana R, Binshan L. Information requirements for managerial decisions in manufacturing. *Business Process Management Journal* 2009; 15 (2): 267–285.
- [100] Bharati P, Chaudhury A. An empirical investigation of decision-making satisfaction in web-based decision support systems. *Decision Support Systems* 2004; 37 (2): 187–197.
- [101] Reijers H.A. Implementing BPM systems: the role of process orientation. *Business Process Management Journal* 2006; 12 (4): 389–409.
- [102] Tang J, L.G. P., Iijima J. Investigating the effects of business process orientation on organizational innovation performance. *Information & Management* 2013; 50: 650–660.
- [103] Theodosiou M., Kehagias J., Katsikea E. Strategic orientations, marketing capabilities and firm performance: An empirical investigation in the context of frontline managers in service organizations. *Industrial Marketing Management* 2012; 41: 1058–1070.
- [104] Kim N., Im S., Slater S.F. Impact of Knowledge Type and Strategic Orientation on New Product Creativity and Advantage in High-Technology Firms. *Product Development & Management Association* 2013; 30 (1): 136–153.
- [105] Altuntaş G., Semerciöz F., Eregez H. Linking strategic and market orientations to organizational performance: the role of innovation in private healthcare. *Organizations. Social and Behavioral Sciences* 2013; 99: 413–419.
- [106] Noble, C.H., Sinha, R.K., Kumar, A. Market orientation and alternative strategic orientations: A longitudinal assessment of performance implications. *Journal of Marketing* 2002; 66: 25–39.
- [107] Slater, S.F., Olson, E.M., Hult, G.T.M. The moderating influence of strategic orientation on the strategy formation capability–performance relationship. *Strategic Management Journal* 2006; 27: 1221–1231.