



DETERMINANTS OF ENTERPRISE RESOURCE PLANNING ADOPTION ON ORGANIZATIONS' PERFORMANCE AMONG MEDIUM ENTERPRISES

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ABSTRACT. Background: Enterprise Resource Planning (ERP) is a method of using computer system technology to integrate all functions in various departments, such as marketing, inventory control, accounting and human resource across an entire company. ERP system intends to facilitate information sharing, business planning, and decision making in enterprises organization. This study proposes a theoretical framework that will determine the factors affecting ERP system adoption among medium-sized enterprise firms based on a case study.

Methods: This present study applied resource based value and contingency theories to explain the factors that affect ERP system adoption and firm's performance. The study proposes a framework which was prepared on the basis of results obtained from the questionnaire research. The specially prepared questionnaire was distributed to 217 companies of various medium sizes, located in Oyo State, Nigeria. CEO / MD and managers were selected as the key respondents of the questionnaire. After the completion of data collection, the empirical data were analyzed using the Partial Least Squares Structural Equation modelling.

Results: The result reveals that organizational structure and technological change have a significant influence on the adoption of the ERP system to improve the performance of medium size enterprise firms. In this regard, the effectiveness of ERP system adoption would strongly affect a firm's performance.

Conclusions: This paper proposes an enhanced theoretical framework that examines the vital issues concerning ERP system factors of adoption, thus, providing valuable outcomes for medium-sized enterprise firms. The originality of the paper is supported by its three-dimensional approach.

Key words: Enterprise resource planning, Organizational Structure, Technological Change, Firm's Performance, Medium size enterprises firm.

INTRODUCTION

In the new global economy, meeting competitive advantage and acquiring revenues are the key factors in enhancing most business organizations. One of the ways of meeting the competitive advantage in a business environment is employing information system such as Enterprise Resource Planning (ERP) to increase business effectiveness, reduce cycle times, decrease production cost and improve customer service. ERP has evolved from Manufacturing Requirements Planning (MRP)

and is described as an integrated information system that supports business processes and functions. ERP is a major area of interest in most business organizations because it leverages information system packages that integrate business processes within functional boundaries in every business organizations [Aremu, Shahzad 2015]. Similarly, the use ERP systems is an increasingly important area of study in information management sciences due to its efficient manner of coordinating affairs of all the departments within an organization through a single database. Consequently, this improves the quality

of service and enhances decision making, while at the same time reduces operational time and cost [Awa, Ukoha, Emecheta 2016]. Hence, extensive studies affirming the ERP system are mostly focused on planning and managing the organizational resources in an efficient, productive and profitable manner to ensure an integrated business process [Aremu, Shahzad 2015, Hwang, Min 2013]. All types of organizations in both developed and developing countries can incorporate ERP systems in their business processes. Medium-sized enterprises (MSEs) comprise of organizations that employ 50 to 199 employees [Eniola, Entebang 2015]. MSEs have the ability to enhance the economic development of both developed and developing countries through their significant contributions to their country's gross domestic product (GDP). For instance, in Nigeria, MSEs are recognized to be the driver of economic growth and a major factor in promoting private sector partnership and development. Most firms have adopted and implemented the ERP system to ensure efficient business processes and to obtain a competitive advantage in the global market [Awa, Ukoha, Emecheta 2016]. The adoption of ERP system among Nigerian businesses organizations have enhanced effective communication between the employees within each organization, thereby, strengthening the links between the organizations and their customers [Aremu, Shahzad 2015].

However, there is an increasing concern on the impacts of external and internal factors of MSE through the adoption and implementation of ERP system on the organizational performance. ; Internal factors are factors within the organizations, including organizational culture, communication process and organizational structure. Meanwhile, external factors are factors outside the organization's controls such as technological change, government policy and information access.

It can be argued that both internal and external factors influence toward the business approach, functionalities and organizations' success. Thus, this study focuses on the organizational structure factor because it describes the different levels of organizational

hierarchies and functionalities of management in an organization [Worley, Doolen 2015]. Organizational structure impacts the adoption of ERP among MSE in terms of employees' commitment, organizational size, organizational financial capabilities, organization's policy and procedures [Rajan, Baral 2015, Kanten, Kanten, Gurlek 2015]. Technological change was also considered in this study because organizations are always confronted with the challenges of competing in terms of technological change and operation strategies [Makori, Osebe 2016]. A technological change ensures the organization focus on the ways to improve technological innovation and advancement as well as to enhance competition in the global market [Hwang, Min 2013].

Therefore, the main objective of this study is to examine the impact of technological change and organizational structure in the adoption of ERP systems to improve organizational performance of MSE in Nigeria. To achieve the stated objective, this study applied contingency theory and resource-based view theories to establish the study's framework. Therefore, contingency and resource-based view theories were used to support the framework in order to examine the adoption of ERP system impact on the performance of MSE, the impact of organizational structure on the MSE performance, and the impact of technological change on the performance of MSE in Nigeria.

LITERATURE REVIEW

Contingency Theory (CT)

Contingency theory (CT) is a theory of organizational management, which focuses on elaborate employees training and use of technology for the development and improvement of the organization [Li 2015]. CT was developed from behavioral theories, which focus on how environmental elements influence the behaviors of an organization in the late 1960s [Otley 2016]. According to Li [2015], CT describes good leadership (among managers) in the organization as to disseminate information within and outside the

organization. CT further explains how managers need to focus on the change and adoption of technologies outside the organization [Li 2015]. This includes organizational structure which is an example of the internal factor determined by the contingencies of the external environment and can reflect degree of environmental uncertainty and technological change [Otley 2016]. Similarly, researchers of management information systems generally assume that organizational performance is contingent on a number of variables such as strategy, adoption of technology, technological change or innovation, environmental change, organizational structure, size, task, and individual characteristics to influence the performance of organizations [Otley 2016]. Moreover, a recent study has demonstrated that when the fit between the stated variables is good, better performance is expected [Li 2015].

Resource-Based View Theory (RBV)

According to Hwang and Min [2013], for an organization to gain a competitive advantage against competitors, it needs to create a value by using resources that are available, valuable, non-substitutable, rare and inimitable. Thus, a firm's Resource-Based View (RBV) predicts that certain types of resources owned and controlled by enterprise have the potential and promise to generate competitive advantage, better organizational culture, technology infrastructures and top management support which eventually lead to superior organizational performance [Kellermanns, et al. 2016].

Enterprise Resource Planning (ERP)

The ERP system is a process of managing business techniques through an integrated system, usually in form of software. The literature has emphasized the importance of ERP system, particularly on the role in ERP as software to integrate and control all management levels in an organization through an integrated system [Hwang, Min 2013]. ERP system also has the ability of linking up both top, middle and lower level management [Aremu, Shahzad 2015], thereby, coordinating

all management levels along with their departments (such as: human resource, production department, finance department, quality control, logistics and marketing) through an integrated system [Aremu, Shahzad 2015]. Several past studies on the ERP system have established that it saves operational time, minimizes operational cost, and improves quality of product and services [Abu-Hussein, Hyassat, Sweis, Alawneh, Al-Debei 2016]. However, studies have identified that factors such as lack of education amongst users, inadequate training of users, technological change, user's interest, communication process problem, financial capability, top management support and organizational culture are affecting the adoption of ERP system business organizations [Bazhair, Sandhu 2015]. Past studies have also yet to establish aspects like users' interest on the usage of ERP system, perceived easiness or simplicity of use, the benefit of its utility and expertise in training the users to be familiar with the ERP system [Aremu, Shahzad 2015, Antero 2015]. Furthermore, they have failed to demonstrate ERP system link to other areas of organizations, the likes of financial performance, organization structural, organization culture, information access and top management support [Bazhair, Sandhu 2015, Asamoah, Andoh-Baidoo, Agyei-Owusu 2015]. Hence, it is suggested that ERP systems adoption is very important in middle size organization because it employs an integrated database system which enhances the competitive advantage of most organizations in the global market [Hwang, Min 2013].

H1. There is a positive relationship between ERP system adoption and performance of medium size enterprises organization.

Performance of Medium Size Enterprise Organization (PMSE) in Nigeria

According to Ebitu, Ufot and Olom [2015], MSE is an organization that consists of 50 to 199 workers. MSE has the capability to boast assets of 50 million Naira to 500 million Naira excluding land and buildings [Eniola, Entebang 2015]. This view was supported by Nigerian Federal Ministry of Industry and Commerce who states that MSEs are

organizations that employ about 50 employees along with a total capital of 50 million naira, excluding land and building [Eniola, Entebang 2015]. An MSE should also be a limited liability company with full organizational structure, management structure, technology usage, labor operation, limited access to capital employees and employer relations [Ebitu, Ufot, Olom 2015].

Subsequently, MSEs play a vital role in economic development in Nigerian. In fact, MSEs are regarded as the main drivers of economic growth in the country and a key factor in promoting private sector development and partnership in Nigeria. Generally, MSEs are responsible for repairs of second handed products, production, manufacturing, the motivation of organizational spirit as well as the availability of goods and services [Eniola, Entebang 2015]. In addition, MSEs have the ability to enhance employment opportunities, the standard of living and competitive advantage [Eniola, Entebang 2015]. The benefit of MSE can be extended to enhancing the development of local technology, providing an effective way of stimulation indigenous enterprises, mobilization and utilization of domestic products [Ebitu, Ufot, Olom 2015], MSE ensures the supply of high-quality parts, components and intermediate products, thereby strengthening the international competitiveness of manufacturing products [Hwang, Min 2013]. MSE also ensures mitigation of rural-urban migration, production of specialized items and quantity to meet current and diverse demands to strengthen the manufacturing sector of the Nigeria economy [Ebitu, Glory, Alfred 2016].

Eniola and Entebang [2015] argue that the success of most developing countries relies on the performance of MSE (PMSE). Ebitu, Ufot and Olom [2015] describe PMSE as a strong factor that can enhance the growth, development, survival, success and competitiveness of most organizations. Specifically, in Nigeria, PMSE have contributed to the Gross Domestic Product (GDP), which have resulted in the provision of employment, reduction of poverty and increase in revenue [Eniola & Entebang, 2015]. The study of Ebitu, Glory and Alfred [2016]

reported that despite the advantages of MSE, the study on PMSE in Nigeria is very low compared to developed countries (such as in the United Kingdom) and developing countries (such as South Africa). Similarly, previous studies have shown that there are limited studies on PMSE because of the challenges facing Nigerian organizations. These challenges include technological change, electricity problem, bad road, inconsistent government policy and fluctuations in currency exchange rate [Ebitu, Glory, Alfred 2016, Ebitu, Ufot, Olom 2015]. Therefore, there is need to study the adoption of ERP system in relation to PMSE to help reduce technological challenges presently facing most organizations in Nigeria.

Technological Change (TC)

Technological change is the replacement of old technologies with new ones to enhance the quality of products and services [BeedeEmerole, Mounanu, Agbaeze 2015]. The adoption of TC in business organizations aids customer attraction and enhances competitive advantage among organizations [Sheikh, Shahzad, Ishaq 2017]. Among the examples of TC is the adoption of ICT technologies that make use of ERP systems to increase quality control and customer satisfaction [BeedeEmerole, Mounanu, Agbaeze 2015]. In this light, previous studies conducted in Nigeria have affirmed that the adoption of ERP systems in MSEs have shown that ERP systems have the ability to minimize production cost, reduction in operational time, improve quality control and customer satisfaction [Aremu, Shahzad 2015]. However, the adoption of ERP systems in MSE is affected by poor electricity power supply, inadequate computer system literacy, lack of expertise to operate the adopted system, lack of awareness among the users, inadequate infrastructural support and poor internet services [Awa, Ukoha, Emecheta, 2016]. Therefore, this study seeks to investigate the impact of technological change in the adoption of ERP systems in MSE to enhance the performance of MSE in Nigeria.

H2. There is a positive relationship between technological change and performance of medium size enterprises organization.

Organization Structure (OS)

Worley and Doolen [2015] described organizational structure (OS) as information chart flow, management levels, departments, numbers of employees and other functional areas in a particular organization. An OS also serves as a pillar that coordinates and links all departments in the organization together [Kanten, Kanten, Gurlek 2015]. OS focuses on linking every individual in the organization together within their roles and control [Almajali, Masa'deh, Tarhini 2016]. OS is among the factors that affect the adoption of ERP system in MSEs [Hwang, Min 2013]. However, Rajan and Baral [2015] pointed out that, adoption of ERP systems in MSE requires changes in OS, employee roles and top management support. Therefore, MSE requires a broad organizational structure that would keep all employees informed to aid the adoption of ERP system.

Considering all the stated evidence, it seems there is need to study the effect of organizational structure and technological change in the adoption of ERP system on the organizational performance among MSE in Nigeria.

H3. A positive relationship exists between organizational structure and performance of medium size enterprises organization.

METHODOLOGY

Previous studies suggest the importance of adopting ERP system in MSE to integrate and control all management levels in the organization. Therefore, this study aims at investigating the effect of organizational structure and technological change in the adoption of ERP system on the organizational performance among MSE in Nigeria. Based on the reviewed studies in the previous section, this study developed a theoretical framework as depicted in Figure 1. The theoretical

framework shows the independent variables (ERP system adoption, Organizational structure and technological change) and the dependent variable (Performance of MSE).

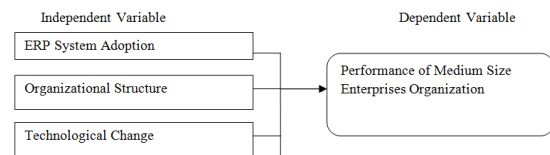


Fig. 1. Theoretical framework

Data Collection

The population used in this study is MSEs in Oyo state, Nigeria. Small and medium enterprises development agency of Nigeria MEDAN [2013] reported that the number of registered MSEs in Oyo state is 519. Krejcie and Morgan [1970] stated that if the population is under 519, then the sample size is 217. Therefore, 226 questionnaires were analyzed in this study.

Table 1. Performance of Medium Size Enterprises Firms

Performance	Cronbach Alpha
We improve long run level of Firm profitability.	0.859
We improve growth rate of sales and revenues.	
We improve on productivity	
We improve on overall competitive performance.	

Source: Schulz, Wu, Chow, 2010

Table 2. ERP System Adoption

ERP System Adoption	Cronbach Alpha
To align with changing organizational needs, we could easily alter ERP data items.	0.708
To align with changing organizational needs, we could easily alter ERP reports.	
To align with changing organizational needs, we could easily upgrade new ERP processes.	
To align with changing organizational needs, we could easily alter ERP adoption processes.	

Source: Hwang, Min, 2013

Table 3. Organizational Structure

Organizational Structure	Cronbach Alpha
Our ERP improves inter-departmental coordination.	0.828
Our ERP improves organizational-wide communication.	
Our ERP improves work-groups productivity.	
Our ERP creates a sense of responsibility.	

Source: Ifinedo, Nahar 2006

Table 4. Technological Change

Technological Change	Cronbach Alpha
In our industry, technological change transforms business practices. In our industry, keeping up with changes in technology is difficult. In our industry, technology quickly becomes obsolete.	0.766

Source: Hwang 2011

RESULTS AND DISCUSSIONS

Internal Consistency Reliability

In this study, the internal consistency reliability was assessed based on Cronbach Alpha [Cronbach 1951]. The estimation here is based on the indicators of manifest variables inter-correlations, whereby all the indicators are assumed to have the same outer loadings [Hair et al. 2014]. However, the main concern in PLS is the indicator's individual reliability. Therefore, due to the drawbacks of Cronbach Alpha, a more robust measure of assessing internal consistency reliability, known as composite reliability is proposed as discussed in [Hair et al. 2016]. Based on the criteria assessment of internal consistency reliability and to examine composite reliability.

Hair et al. [2016] suggest that the composite reliability value should be greater than 0.70, although they have provided a slack

of 0.60-0.70 as acceptable in exploratory research. Internal consistency reliability is deemed deficient when the values of composite reliability of less than 0.60, furthermore, the composite reliability for all the latent construct in this study was calculated in Partial Least Squares Structural Equation modeling standard algorithm and the result indicated that all the latent constructs have met and exceeded the minimum threshold value of 0.70 [Hair et al., 2014]. Table 6 depicts the dependent variable PME composite reliability is 0.901 and the independent variables organizational structure (0.885), technological change (0.771) and ERP (0.876).

Convergent Validity

Based on previous studies such as Hair et al. [2014], convergent validity is a degree of agreement among multiple items in measuring a particular concept. Average Variance Extracted AVE was used to evaluate the convergent validity criteria. According to Hair et al. [2016], latent construct should at least explain half of the variance of the indicators. The result of the PLS algorithm reveals that AVE values for all the constructs have met and exceeded the minimum threshold value discussed above.

Table 5. Cross Loading

Construct Items	ERP	Performance of medium Enterprises	Organizational Structure	Technological Change
ERP				
ERP1	0.821	0.112	0.123	-0.045
ERP2	0.847	0.123	0.159	0.006
ERP3	0.856	0.114	0.159	-0.010
ERP4	0.663	0.206	0.221	0.218
Performance Of PME1 Medium Enterprises	0.160	0.875	0.344	0.461
PME2	0.154	0.833	0.316	0.483
PME3	0.191	0.835	0.296	0.464
PME4	0.139	0.789	0.347	0.442
Organizational Structure				
OS1	0.207	0.386	0.821	0.394
OS2	0.232	0.321	0.817	0.302
OS3	0.152	0.296	0.807	0.336
OS4	0.114	0.224	0.801	0.301
Technological Change				
TC1	0.122	0.421	0.247	0.809
TC2	-0.059	0.478	0.267	0.815
TC3	0.196	0.300	0.467	0.540

Table 6. Convergent Validity

Construct	Items	Loading	Cronbach's Alpha	Composite Reliability	(AVE)
ERP	ERP1	0.821	0.825	0.876	0.641
	ERP2	0.847			
	ERP3	0.856			
	ERP4	0.663			
Performance of Medium enterprises	PME1	0.875	0.853	0.901	0.695
	PME2	0.833			
	PME3	0.835			
	PME4	0.789			
Organizational Structure	OS1	0.821	0.831	0.885	0.658
	OS2	0.817			
	OS3	0.807			
	OS4	0.801			
Technological Change	TC1	0.809	0.556	0.771	0.537
	TC2	0.815			
	TC3	0.540			

Table 7. Discriminant Validity

	ERP	Performance Of Medium Enterprises	Organizational Structure	Technological Change
ERP	0.801			
Performance of medium enterprises	0.193	0.834		
Organizational Structure	0.225	0.391	0.811	
Technological change	0.092	0.555	0.417	0.733

Table 8. Hypothesis Testing

	Beta	P (Value)	P (Values)	Decision
ERP ->Performance of medium Enterprises	0.112	2.026	0.043	Supported
OS ->performance of medium Enterprises	0.167	3.267	0.001	Supported
TC ->performance of medium Enterprise	0.475	8.895	0.000	Supported

In this study, the highest correlation among the construct is 0.821 between ERP and technological change, followed by organizational structure – performance of medium enterprises (0.225), technological change – ERP (0.092), the performance of medium enterprises – technological change (0.193) respectively. On the other hand, the values of the square root of average variance extracted for all the constructs in table 5 are all above the correlation among other constructs (the off- diagonal). Table 6 showed that the

lowest value of the square root of AVE is 0.537 for technological change, which is above the value of correlations of any constructs in the model. This is also in line with the criteria stated in Compeau et al. [1999] criteria.

Table 8 - highlights the results of three hypotheses testing; out of the three (3) direct hypotheses tested, the three factors considered- ERP – performance of medium enterprises (p. 0.043), organizational structure – performance of medium enterprises (p. 0.001), and

technological change -performance of medium enterprises (p. 0.000) were „supported”.

CONCLUSIONS AND RECOMMENDATIONS

This study has investigated how technological change and organizational structure influence the adoption of ERP system and relationship with the performance of MSE in Oyo's state Nigeria. The results of this study show that technological change and organizational structure influences the adoption of ERP system on the performance of MSE in Oyo state, Nigeria. It is revealed from the study that organizations need to focus on organization structure when changing from one system to the other. Hence, this study recommends the use of a qualitative approach in large-scale settings to determine respondent's perspectives on ERP systems. Equally, the multi-dimensional approach needs to be applied in ERP system adoption and implementation.

In addition, this study recommends organizations to have adequate technology infrastructures(both hardware, software and internet facilities)that support good data management system, a reasonable level of communication with strong organizational structures and strong top management support in order to ensure the performance of MSEs in Nigeria.

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CZYNNIKI WARUNKUJĄCE POMYŚLNE WDROŻENIE ERP W ŚREDNIEJ WIELKOŚCI PRZEDSIĘBIORSTWIE

STRESZCZENIE. Wstęp: ERP (Enterprise Resource Planning) jest metodą stosującą komputerowe systemy do zintegrowania wszystkich funkcji różnych działów przedsiębiorstwa, takich jak marketing, logistyka, księgowość i zarządzanie zasobami ludzkimi. System ERP ułatwia dzielenie się informacjami, planowanie działań przedsiębiorstwa oraz proces podejmowania decyzji biznesowych w obrębie organizacji przedsiębiorstwa. W prezentowanej pracy został zaproponowany schemat ramowy określający czynniki determinujące i wpływające na wdrożenie systemu ERP w średnich przedsiębiorstwach w oparciu o przeprowadzone studium przypadku.

Metody: W pracy zastosowano teorię wartości i przypadkowości w celu wyjaśnienia czynników wpływających na pozytywne wdrożenie systemu ERP w przedsiębiorstwie. Dane potrzebne do analizy zostały zebrane w trakcie badania ankietowego. Specjalnie przygotowane w tym celu kwestionariusze zostały przekazane do 217 przedsiębiorstw średniej wielkości, zlokalizowane w stanie Oyo w Nigerii. Osoby szczebla zarządzającego byli wybrani jako główni odbiorcy tej ankiety. Dane zebrane w ten sposób poddano następnie analizie statycznej przy użyciu modelu częściowych najmniejszych kwadratów.

Wyniki: Dane uzyskane podczas badania wskazują, że struktura organizacyjna ma istotny wpływ na pozytywne wdrożenie systemu ERP poprzez wzrost efektywności działania firm. Również istotny wpływ na pozytywne wdrożenie systemu ERP i w konsekwencji wzrost efektywności działania firmy ma zmiana technologiczna.

Wnioski: W pracy zaprezentowano teoretyczne ramy badania wpływu różnych czynników na pozytywne wdrożenie systemu ERP w przedsiębiorstwach średniej wielkości, co przekłada się na wzrost ich efektywności działania. Nowością pracy jest trójwymiarowe podejście do analizy.

Słowa kluczowe: planowanie zasobami przedsiębiorstwa, struktura organizacyjna, zmiana technologiczna, sposób działania przedsiębiorstwa, przedsiębiorstwa średniej wielkości

DIE FAKTOREN, DIE EINE ERFOLGREICHE EINFÜHRUNG DES ERP-SYSTEMS IM MITTELSTÄNDISCHEN UNTERNEHMEN BEDINGEN

ZUSAMMENFASSUNG. Einleitung: Das ERP-System (Enterprise Resource Planning) stellt eine Methode dar, die die Computer-Systeme zur Integrierung aller Funktionen innerhalb verschiedener Unternehmensabteilungen wie: Marketing, Logistik, Buchhaltung und Management von Human-Ressourcen anwendet. Es ermöglicht den Informationsaustausch, die Planung von Unternehmensaktivitäten und Treffen von wirtschaftlichen Entscheidungen innerhalb eines Unternehmens. In der vorliegenden Arbeit wurde ein Rahmenschema, das die Einführung des ERP-Systems in mittelständischen Unternehmen anhand eines durchgeführten Studienfalls determinierenden Einflussfaktoren bestimmt, vorgeschlagen.

Methoden: In dieser Forschungsstudie nahm man die Arbeitswert- und Zufälligkeitstheorie zwecks der Erläuterung der eine erfolgreiche Einführung des ERP-Systems im Unternehmen beeinflussenden Faktoren in Anspruch. Die für die betreffende Analyse nötigen Daten wurden anhand eines Umfrageverfahrens erfasst. Die extra dazu verfassten Umfragebögen wurden 217 mittelständischen, im Bundesland Oyo in Nigeria befindlichen Unternehmen zugesandt. Die Hauptadressaten des Fragebogens waren geschäftsführende Mitarbeiter dieser Unternehmen. Die auf diese Art und Weise erfassten Daten wurden anschließend einer statistischen Analyse unter Anwendung der Methode der kleinsten Quadrate unterzogen.

Ergebnisse: Die im Umfrageverfahren ermittelten Daten weisen darauf hin, dass die jeweilige Organisationsstruktur die erfolgreiche Einführung des ERP-Systems durch eine erhöhte Effizienz der Firmenbetätigung wesentlich zu beeinflussen vermag. Eine ähnlich positive Beeinflussung erfahren die Einführung des ERP-Systems und in Folge dessen der Zuwachs von Wirtschaftlichkeit in den betreffenden Firmen durch eine technologische Veränderung.

Fazit: In der vorliegenden Arbeit wurden die theoretischen Rahmen für die Erforschung der Einflussfaktoren bei einer erfolgreichen Einführung des ERP-Systems in mittelständischen Unternehmen, woraus ein Anstieg deren Effektivität resultiert, projiziert. Eine Neuigkeit dabei ist eine dreidimensionale Vorgehensweise an die betreffende Analyse.

Codewörter: Planung von Unternehmensressourcen, Organisationsstruktur, technologische Veränderung, unternehmerische Vorgehensweise, mittelständische Unternehmen

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