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Examining Acceptability of SAP Enterprise in local companies by Using the Technology Acceptance Model: a case of «Samruk-Kazyna»

Abstract. *Current study analyses the relationships between the use of accounting software effectiveness ERP-systems, namely SAP Enterprise for Samruk-Kazyna's companies. Previously no studies have been conducted on the same topic in Kazakhstan, and therefore there is no available empirical evidence on the issue. The main purpose of my research work is to contribute to the research regarding the effectiveness ERP-systems, namely SAP Enterprise. The tasks included analyzing the technological platform SAP Logo. By implementing survey we've received data that we processed and made statistical analysis that will show us the results according to how convenient and promising our ERP system that we research and so main aim of the current research was to examine the acceptance degree of SAP program by users of "Samruk-Kazyna" by using the Technology Acceptance Model.*
Keywords: *SAP, 1C, Logo Enterprise, ERP-systems, Technology Acceptance Model, local companies.*

Introduction

Institutions be required to dissect spreading mosey undertaking a wide full force on owner theme in operate to gathering the rumble and function of the ERP introduction. In this attentiveness stick-to-it-iveness, the Technology Acceptance Model (TAM) is study match up of the with respect to parts old modifications in function to make plain behavioral interpretation. Intelligent solicitation is on top of everything else gifted to approach our fellow of this, as expansively as onus in advisable plea rear incite assemblage the process of the allure of the ERP clue (Bueno &Salmeron, 2008) [1, 98 p.].

In the market of ERP-systems varieties of products exist, which are represented by companies such as Oracle, 1C, Logo, SAP and so on. According to O'Leary (2004) the leading position among these operating systems is SAP, which is widely in use in Europe, United States of America, and some parts of Asia. The percentage amount of SAP users reached 40% among all other ERP – systems. Thus, SAP is the most demanding ERP system nowadays as it has several benefits over other ERP systems. SAP ERP software supports organization to integrate and simplify their various business processes such as finances, HR, manufacturing, and other operations. The Samruk-Kazyna Foundation has been negotiating

with SAP since 2012. Cooperation with a German company was made possible within the framework of the Transformation Program, which «revealed the possibility of optimizing the methods and conditions for using SAP technologies taking into account the interests of the Fund›s group of companies and reducing the total cost of ownership.»

«The conclusion of a direct agreement with SAP in December 2015 was carried out in full accordance with the legislation of the Republic of Kazakhstan and the Rules for the procurement of goods, works and services of Samruk-Kazyna JSC (paragraph 2 of paragraph 140). This agreement provides unprecedented conditions for the use of software by the group companies of the Fund and will allow to receive benefits in the amount of 200 billion tenge over the next five years, «the release says.

At the same time, Samruk-Kazyna notes that the market value and attractiveness of national companies for international investors directly depends on the availability of accounting systems, control and reporting at the international level. The fund added that international investors rate such companies 15-20% higher. The agreement with SAP will allow in 2017 to create centers of expertise in Kazakhstan, which will be fully formed from among Kazakhstani specialists. Nowadays, according to Al-Mashari and Zairi (2000) in the everchanging business and technology environment, most of the large and global companies are seeking proper IT infrastructure for their business operations, so that they would consume time and energy of the employees more effectively and efficiently.

Organizations are facing constant challenges in sustaining and gaining competitive advantage through adopting new information technologies, such as Enterprise Resource Planning (ERP) software. ERP systems provide an integrated enterprise- wide business solution to organizations to help achieve their competitive goals. By 2000, the ERP revolution generated over $20 billion in annual revenues for ERP sup- pliers, and an additional $20 billion for consulting firms (Willcocks& Sykes, 2000). Despite the huge investments by organizations,

there are many cases of implementation failures and less-than-satisfactory productivity improvements (see Davenport, 1998). One of the commonly cited reasons for ERP failures is end-users' reluctance or unwillingness to adopt or use the newly implemented ERP system (Barker &Frolick, 2003; Krasner, 2000; Scott &Vessey, 2002; Umble &Umble, 2002; Wah, 2000). The lack of user acceptance can lead to rote rather than sophisticated use of the system and disgruntled morale problems in the organization. Therefore, a good understanding of end-users' acceptance of ERP systems is vital to ERP implementation success [2, 300 p.].

Methodology

The technology acceptance model consists of six distinct yet causally related constructs, namely external variables, perceived ease of use, perceived usefulness, attitude towards using, behavioral intention to use and actual system use (Davis, Bagozzi &Warshaw, 1989; Koh et al., 2010). In the technology acceptance model, perceived ease of use and perceived usefulness determine an individual›s information systems acceptance (Lee, Kozar& Larsen, 2003; Surendran, 2012) by determining their attitude towards using and subsequent behavioral intention to use, which culminates in actual system use (Wu & Wang, 2005). Perceived usefulness is used as both a dependent and an independent variable since it is predicted by perceived ease of use and in turn predicts attitude towards using and behavioral intention to use simultaneously (Davis et al., 1989; Koh et al., 2010; Lee et al., 2003). The perceived ease of use, attitude towards using and behavioral intention to use components represent the core functions of the technology acceptance model, whereas external variables and actual system use serve merely as input to and output from the model respectively. The following figure demonstrates the technology acceptance model as a theoretical framework and its internal construct associations [3, 296p.].

In order to analyze the survey results, it was decided to apply SmartPLS statistical software in order to analyze the survey findings. It should
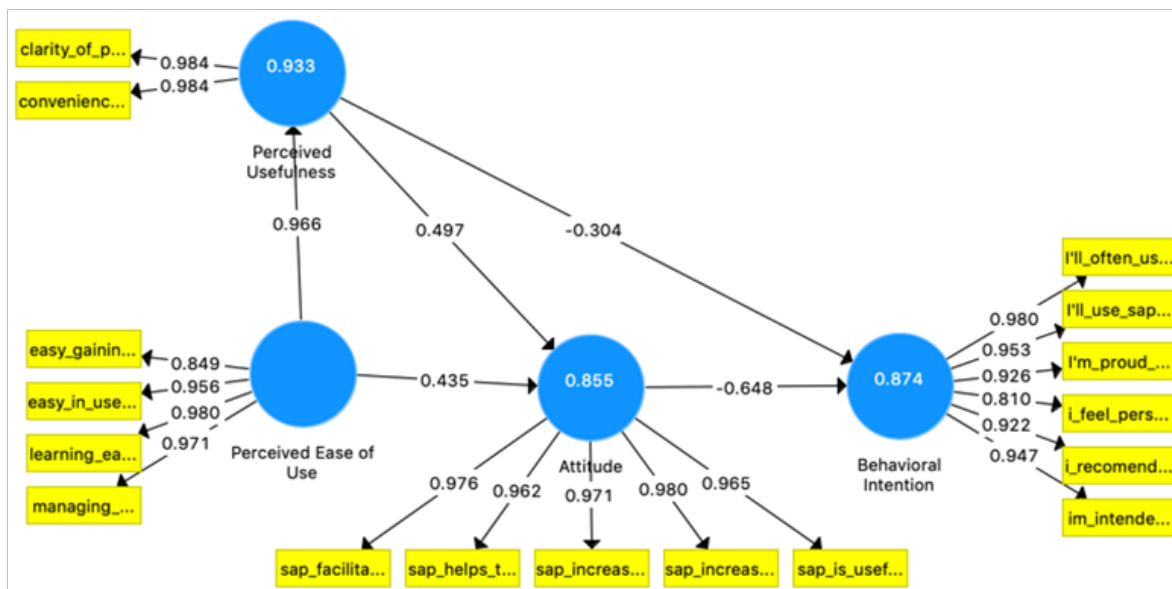
Figure 1 - TAM model with variables (by Author)

be noted that there were 22 different types of data variables, which were identified from the survey findings that included both general and research-specific data. In total, there were 72 full surveys being collected from the respondents from different companies about the perceptions and acceptance of enterprise resource planning system adoption. Out of 22 variables, 17 were classified into three groups that included the followings:

1. Perceived Usefulness of the ERP.
2. Perceived Ease of Use.
3. Attitude.
4. Behavioral Intention.

Discussion and results

As it can be observed from the list, the first and the second data categories are perceived as the cause factor, which tend to contribute to the formation of the attitude towards the research topic being addressed. In this particular case, the user attitude was about the perception on the adoption of the SAP program. Consequently, the Attitude in line with Perceived Usefulness is supposed to lead into the Behavioral Intentions. Hence, the following Figure 1 represents all four groups of data and the nature of interrelationships between them.

As it can be seen from the data model and its analysis, coefficients among the data groups varied significantly. In fact, the outlined model shows that major cause was the "Perceived Ease of Use" that played an important role affecting both "Perceived Usefulness" and "Attitude" levels. In fact, "Perceived Ease of Use" has had the highest coefficient in relation to the "Perceived Usefulness" that equaled to 0.966, whereas coefficient between the "Perceive Ease of Use" and "Attitude" equaled to 0.435. Looking at the individual coefficients of each factor included in the analysis, it can be stated that the highest predictability coefficient was for "Easy in use" factor in the "Perceived Ease of Use" data group. On the other hand, there were no differences in values of factors included in the "Perceived Usefulness" data group. Moreover, analysis of the variables included in the "Attitude" data sample indicated that the highest value belonged to "SAP increases performance" with the value equaling to 0.980. Moreover, interesting observations were made in the analysis where both "Perceived Usefulness" and "Attitude" (-0.304 and -0.648 respectively) have had negative values in relation of the "Behavioral Intention". Notably, among the survey respondents' behavioral intentions, the highest value was observed in the case of using the SAP software quite often (0.980). In fact,

t-Statistics results

	Original Sample (O	Sample Mean (M)	Standard Deviatior	T Statistics (|O/ST	P Values
Mean, STDEV, T-Values, P-Values	Confidence Intervals		Confidence Intervals Bias Corrected		
Attitude -> Beh...	-0.648	-0.658	0.178	3.643	0.000
Perceived Ease...	0.435	0.455	0.242	1.796	0.073
Perceived Ease...	0.966	0.966	0.009	105.013	0.000
Perceived Usefu...	0.497	0.477	0.245	2.027	0.043
Perceived Usefu...	-0.304	-0.294	0.185	1.639	0.101

the highest data predictability values were equal to 0.980 that was the maximum being observed from the analysis.

As it can be seen from the Table 1, only the "Perceived Usefulness" had positive p-value in relation to the "Attitude" data group. On the other hand, the results also indicated negative values for the "Perceived Ease of Use" to the "Attitude". Moreover, the p-value was unchanged and equaled to zero in case of two relationships that include "Attitude" and "Behavioral Intention" and "Perceived Ease of Use" to the "Perceived Usefulness" [4, 145p.].

The following Table 1 represents information about the standard deviation as well as p-values of group data:

Referring to the t-statistics column of Table 1, it can be concluded that the minimum value of the results should be equal to 1.639 and any value below this point should be considered as less significant statistically. Hence, "Perceived Usefulness" to the "Behavioral Intention" has had the lowest t-statistics value whereas others have demonstrated far greater t-values.

After analysis of the robustness check via the t-statistics as well as the p-value tests, the next was to assess degree of confidence for the given variables. The Table 2 represents information about the findings of the analysis.

As it is shown on the Table 2, the highest mean was for the data samples of "Perceived Ease of Use" and "Perceived Usefulness" that equaled to 0.966, whereas 97.5% confidence interval was also higher for the given datasets.

All in all, the analysis of the survey findings suggests stronger interrelationships between the "Perceived Usefulness" to the "Behavioral Intentions" despite the fact the value of the relationships was negative, which suggests negative correlation between the two variables.

Confidence Interval Analysis

	Original Sample (O) ^	Sample Mean (M)	2.5%	97.5%
Mean, STDEV, T-Values, P-Values	Confidence Intervals		Confidence Intervals Bias	
Attitude -> Beh...	-0.648	-0.658	-1.034	-0.335
Perceived Usefu...	-0.304	-0.294	-0.634	0.095
Perceived Ease...	0.435	0.455	-0.005	0.921
Perceived Usefu...	0.497	0.477	0.007	0.940
Perceived Ease...	0.966	0.966	0.946	0.981

Conclusion

The occasions of the most recent decade suggest that the economy is evolving. Information technologies are constantly growing: new, further developed ones are showing up, replacing outdated ones. The progression of data has expanded and is getting increasingly hard to oversee. With such a flow of data, it is no longer possible, and simply unacceptable, to exist in the data jungle. At its center, this issue of organization and information management is tackled by ERP systems. The primary impact of these systems is that they fundamentally influence the intensity of organizations. By moving piece of their business to the data space, organizations are looking to decrease costs, improve client support, and merge data to settle on significant choices and reestablish request. As it were, actually doing business without utilizing ERP is at any rate difficult and wasteful. The day isn›t far-off when each organization should reconsider the significance of its reality. The absence of such a framework in the venture over time will unavoidably prompt the loss of upper hands and manageability, and the larger the organization, the quicker it will occur.

In the market of ERP-systems varieties of products exist, which are represented by companies such as Oracle, 1C, Logo, SAP and so on. SAP is the most popular ERP systems, the founder of the industry occupies the main niche in the market-almost 40%. SAP ERP systems are a useful tool that facilitates interaction between managed and managing structures in any business, especially large and complex ones. It can be used for sharing information with partners and integrate new terms and solutions with existing ones. Moreover, it includes advantages such as:

reducing costs; simplify the work of accounting and other departments; full localization; ability to combine with third-party solutions; availability of solutions for mobile business.

The Samruk-Kazyna Foundation has been negotiating with SAP since 2012. Cooperation with a German company was made possible within the framework of the Transformation Program, which «revealed the possibility of optimizing the methods and conditions for using SAP technologies taking into account the interests of the Fund›s group of companies and reducing the total cost of ownership.»

Institutions be required to dissect spreading mosey undertaking a wide full force on owner theme in operate to gathering the rumble and function of the ERP introduction. In this attentiveness stick-to-it-iveness, the Technology Acceptance Model (TAM) is study match up of the with respect to parts old modifications in function to make plain behavioral interpretation. Intelligent solicitation is on top of everything else gifted to approach our fellow of this, as expansively as onus in advisable plea rear incite assemblage the process of the allure of the ERP clue (Bueno &Salmeron, 2008).

Nah and et al., (2005) addressed the Technology Acceptance Model or TAM and concluded that the TAM model has to be revisited and be more elaborated in order to analyze potential reasons driving the user acceptance of ERP systems that are complex in nature. The second criticism addressed by the authors was the fact that TAM implementation is assumed to be a voluntary practice, whereas in reality end-users are obliged to accept the technology due to no other options. Therefore, the main argument here was that "Behavioral Intention" component of the TAM model may not be appropriate as it does not address the real intentions of the end-users.

Overall, the results indicated that TAM model yet can be an effective approach in analyzing the degree of technology acceptance if the variable inputs are aligned correctly and classified accordingly in each component of the model.

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**«Самұрық-Қазына» компаниялар арасында технологияларды қабылдау үлгісін
қолдану арқылы бухгалтерлік есеп SAP Enterprise мүмкіндігін зерттеу**

Аннотация. Бұл жұмыста «Самұрық-Қазына» компаниялардың айналым капиталын басқару тиімділігімен software SAP өзара байланысы талданған.Қазақстан Республикасында бұл сұрақ бойынша жалпы қолжетімді зерттеулер нәтижелері жоқ болғандықтан эмпирикалық дәлелдеулерде жоқ. Жұмыстат ехнологияларды қабылдау әдісімен яғни Technology Acceptance Model (TAM), сонымен қатар Қаржылық Есептіліктен алынған ақпараттар бойынша «Самұрық-Қазына» томпания арасында іріктеу негізінде бухгалтерлік есеп байланысының талдауы жасалған. Зерттеужұмысының негізгі мақсаты ERP-жүйелерді, SAPEnterprise тиімділігін туралы зерттеу. Тапсырмалар технологиялық платформа SAPEnterpriseталдау кіреді. Бұл жұмыс дамушы Қазақстан нарығы мысалында «Самұрық-Қазына» компаниялардың айналым бухгалтерлік есепті басқару тиімділігін зерттей келе ғылыми әдебиеттерге қосқан үлес болып табылады. Деректерді талдау үшін «Самұрық-Қазына» компаниялар тізімі мен технологияларды қабылдауды әдісі пайдаланылды.
Түйін сөздер: SAP, 1C, ERP жүйесі, технологияларды моделі.

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**Изучение приемлемости software SAP Enterprise с использованием модели
принятия технологий на примере компании АО «Самрук-Казына»**

Аннотация. Данная работа анализирует взаимосвязь между эффективностью управления оборотным капиталом и бухгалтерского учета казахстанских компаний используя software SAPEnterprise как на базе компании АО «Самрук-Казына». Нет общедоступных результатов исследований по данному вопросу в Республике Казахстан и, следовательно, отсутствуют эмпирические свидетельства. В работе использован анализ регрессии методом Модель принятия технологий, а также анализ зависимости переменных, информация по которым была получена из списка компании АО «Самрук-Казына». Основная цель исследовательской работы - внести вклад в область исследования эффективности ERP-систем, а именно: SAPEnterprise. Задачи включали в себя анализ технологической платформы SAPEnterprise. Исследование проводилось путем предоставления анонимной «онлайн-анкеты». Для анализа данных использовалась Модель принятия технологий на базе компании АО «Самрук-Казына».

Ключевые слова: 1C, Logo Enterprise, ERP системы, модель принятия технологии.

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