

Statistical Analysis on Enterprise Resource Planning Systems (ERP) On End User Satisfaction

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Abstract: Enterprise Resource Planning (ERP) is one of the major IT innovations in the world today. In this study researchers selected Sri Lankan industry sector organizations those who are running ERP to analyze impact on end user satisfaction. Quantitative approach was employed in the data analysis and multi-stage stratified random sampling technique was used to select the respondents of ERP implemented companies. As the analysis techniques, this study used the descriptive statistical techniques and the method of Multiple Regression Analysis Technique. For the instrumentation web base online questionnaire and self-administered questionnaire were used to collect the primary data. Main purpose of this research was to find out what would be the impact on end user satisfaction, if the organization use ERP. Apart from that the main objective, sub divided in to three sub objectives to provide better clarification to the main objectives as to what extent the ERP systems influence on ERP end user satisfaction, investigate overall impact of End User Computing Satisfaction (EUCS) model on ERP systems adopted by the Organization and investigate association of the impact of individual characteristics of ERP systems to end user satisfaction in ERP implemented companies. Results of this study demonstrate that in the Sri Lankan Industry sector ERP systems context, the EUCS is a valid and reliable model consisting of one second-order factor (satisfaction) and five first-order factors (content, accuracy, format, ease of use and timeliness). Further the results suggested that besides timeliness, content, accuracy and format of information are essential factors for internal end-user's satisfaction in facilitating their interactions with others in their external and internal business environment. But Ease of use may not be a key priority in comparison with the other contributors in the model of Sri Lankan ERP industry sector. Finally, ERP software developers must address rich system features and powerful system functionality as important design objectives when developing systems in ensuring better output. And Sri Lankan industry sector should give special attention to the system selection. Hence the implementation of ERP should be based on the output and user oriented in order to make end user satisfaction.

Keywords: Information Technology, ERP, User Satisfaction, Software Industry

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I. Introduction

Today, technology has become a great connector of all societies over the millennia and a great platform for the people. The World is transformed by information systems, and has been connected by many ways. Information systems support to change the world over the decades. All major industries are transformed by information systems and people inspired by the technology. For centuries, technology has been going through very interesting cycles. As technology becomes more powerful, it brings the creativity, it gives to extraordinary power to people and organization, more and more capabilities are merged, people are amplified, they are able to do more, as the people do more, new forms of value get created, generate new ways to connect people, deliver capabilities surface, disintermediation of various thoughts happens and ultimately information systems with a state art of technology. Hence, technology no longer an option, that has been becoming indispensable to digital economy in order to have transformations with Cloud Computing, Internet of Things, Big Data and cognitive computation.

II. Statement of the Problem

Scholars have examined how organizations achieved high performance and high growth with the ERP solution. User experience (UX) being a hot topic in SAP. SAP is known as Popular ERP software vendor. They created a new product line in order to cater for that UX strategy (SAP Fiori). However, there are considerable amount of ERP implementation failures across the world. ERP end user's un-satisfaction, lack of benefits, application and system complexity, not easy to adopt to dynamic business environmental changes due unbendingly of the systems and lot more. Although an ERP application was developed to be an off-the-shelf package, organizations often found this software too complexed to install and run. One of the reasons is that ERP systems can change how people work and how businesses are run. ERP solutions projects are generally

known as time consuming complex activity and organization need to spend lots of money. Not only do ERP systems need plenty of time and money to implement, even successful implementations can dislocate a company's culture, create extensive training requirements and lead to productivity losses. On the other hand user training, customization, legacy integration and data conversion are the hidden cost of an ERP solution.

Significance of the study

ERP vendors say enormous success stories about their products and services on their web sites and market them in various ways, however, most of the organizations not able to predict the successful adaptation of ERP solution into their business vertical, sometimes it will not become success story due to various reasons.

The outcome of this research would provide useful information to Sri Lankan industry sector when they need to take investment decisions on ERP implementations and also in decision making for upgrading their existing Enterprise System or rolling out ERP solution to their different business sectors. Further, Sri Lankan organizations will obtain information on the importance of ERP investment in business performance and user satisfaction. Furthermore, this research provides a framework useful for organizations seeking to achieve business benefits from ERP adaptation, consultants seeking to work on ERP implementations, researchers seeking to understand barriers to successful ERP implementations and subsequent exploitation of sub systems and sponsors to assure successful ERP adaptation by mitigating the risk of investment. Finally, it revealed actual benefit and performance growth that the ERP system provided to the organization, and critical role of the end user computing satisfaction with End users.

Research Gap

With special reference to Sri Lanka there is no much empirical evidence on impact of ERP systems on User satisfaction. But scholars have proven that there is a significant relationship between Information systems usage and user satisfaction (Gelderman 1998). Majority of organizations neglecting user's satisfaction on ERP system. Mortezaiesays, end user satisfaction is a key and need to consider because successful information system adaptation into the business, End user plays critical role (Dastgir and Mortezaie 2012, Ali and Younes, 2013). Successful ERP adaptation and organization performance have significant relate. (Alkhaffaf and Aldalameh, 2016). End user performance also impacted to Information system (Ali and Younes 2013). It was very clear that in last decade, ERP systems have begun to attract the attention of researchers. However, little attention has been paid to their impact on individual satisfaction. Hence, there is knowledge gap on "how ERP system influence to user satisfaction and perceived organizational performance" special reference to Sri Lankan Industry sector who have adopted ERP solution. Hence this study will fill this knowledge gap.

Objectives of the study

Main objective in this study is to find out "The Impact of ERP solution on End User Satisfaction in ERP implemented companies in Sri Lankan industry sector. The main objective further sub divided in to three sub objectives to provide better clarification to the main objective. Therefore the objectives are as follows;

- I. Find out what extent the ERP systems influence on ERP end user satisfaction
- II. Investigate overall impact of End User Computing Satisfaction (EUCS) model on ERP systems adopted by the Organization.
- III. Investigate association of the impact of individual characteristics of ERP systems to end user satisfaction.

Limitation of the Study

This research is limited to ERP end users point of view only.

III. Literature Review

The History of ERP

Starting in late 1980's and in the beginning of 1990's, new software systems known in the industry as Enterprise Resource Planning (ERP) systems have surfaced in the market targeting mainly large complex business organizations (Rashid et al, 2002). By design ERP come as off-the-shelf solution to replace in-house systems to address to the key challenge in collaboration and data management. It is multi module commercial packages suitable for tailoring and adding add-ons as and when required. In 1960's majority of the organizations automated their Inventory Control (IC) system with centralized computing package. They used COBOL, ALGOL and FORTRAN like languages.

In 1970's, MRP were developed and MRP known as Material Requirements Planning systems. In this period the organizations mainly focused the high production volume, manage large inventory with low cost and minimize overall cost of the firm (Basoglu et al., 2007, Umble et al., 2003). Main function of that application is to plan the products or parts requirements as per the master production schedule. That took the lead and MRP II came into picture in 1980's, called Manufacturing Resource Planning (Basoglu et al., 2007). That product

focused to optimize manufacturing processes by synchronizing the materials with production requirements. This covers core business areas such as production and distribution management, project management, finance, human resources and engineering.

In late 1980's the change began on ERP. In 1990's they discussed about power of enterprise-wide inter functional coordination and integration. Adopting the technological platform of MRP and MRP II, ERP systems integrate business processes including Production, Sales and Distribution, Finance and controlling, human resource management, project management, material management, service and maintenance and logistics, providing accessibility, visibility and consistency across the enterprise.(Basoglu et al., 2007; Umble et al.,2003)Revolution begun with this and manufacturing theory was changed with the scope of change in the software. In order to get competitive edge, firms try to focus on quality. That was the boost for quality professionals (Robert et al,2007). And main drawback in MRP was incapability of managing production planning and scheduling, production orders and inventories. Further, limited focus on manufacturing activities, mass production forecast and poor budget control are some of other drawbacks. That was the turning point of totally integrated solution known as Enterprise Resource Planning (ERP).

In 1990's, Gartner Group adapted the term ERP. They integrated all operational departments together. The Y2K issue in 2000 course has many issues in the legacy systems and commonly most of the organizations adopted ERP as a fix for Y2K.They wanted to be Y2K compliance. After this incident, ERP industry became strong and matured. Relational Database (RDBMS), client server architecture and Graphical User interface are being incorporated into this.(Basoglu et al., 2007) Financial reports generation was the key in this with the enablement of setting the prices for their products, inventory data integrated with finance and sale. Human Resource Management processors integrated and it helped organizations to manage human resources.(Basoglu et al.,2007; Markus et al., 2000).

Enterprise Resource Planning Systems

Enterprise Resource Planning is witnessed and trusted foundation created to amplify capabilities of the companies in different business verticals. Industry, capacity, size and geographical limitations and barriers are being broken by the latest developments of ERP's. ERP products leverage role-based access to critical data, applications and analytical tools, streamline the business processes across procurement, manufacturing and logistics, service, sales, finance and HR like core business functions as well as Customer Relationship Management (CRM),Supplier Relationship Management(SRM) like cross business functions also integrated to core ERPs.

Enterprise Resource Planning Systems help managing and organizing all most all the business processors, internal activities, external activities (provided CRM and SRM are integrated)information flow as well as relationship within the departments of the organizations (Basoglu et al, 2007; Koh, Gunasekaran, and Rajkumar 2008; Robert Jacobs ,2007). ERP is integrated software solution which manage organizational resources (Basoglu, et al.2007).As per Watson and Schneider, ERP handles all most all the organizational requirements in all the functional areas of the business as integrated customized software package (Watson et al,2003.ERP systems provide a greater integration of all the information flows in an organization to eliminate cross - functional coordination issues in the business process (Davenport 1998).With ERP implementation, Organization can reduce the overall costs, make accurate data available in real time and exchange information with customers and suppliers (Basoglu, et al.2007; Umble, Haft, and Umble 2003).

ERP System Adaptation

ERP has attracted attention of both academic and industrial communities as packaged application solution that integrate different business functions together that can be adapted by the organization as their primary engine and the platform for integrating data, information and core business processes, in real time, across internal and external value chains (Shang and Seddon 2000).It impounds deep knowledge of business practices that vendors have accumulated from implementations in a wide range of client organizations that can exert considerable influence on the design of processes within new client organizations (Shang and Seddon 2000).ERPs complex functionalities capable enough to cover wider range of business verticals and involve comprehensive knowledge of both implementation and limitation of the software and it has the intelligence to manage processors and information. Comprehensive ERP software packages available in the market facilitates, share common information and activities throughout the organization (sometimes outside organizational), automation and integration of critical business processors, real time data access and real time analytics. Since ERP systems have impact on the productivity and efficiency in firms, the majority of organizations implement ERP systems to increase organizational competitiveness (Davenport 1998). ERP systems touch on many aspects of a company's internal and external operations and provide organizations with an overall view of the business through multidimensional information (Ragowsky and Gefen 2008).

Consequently, successful deployment and use of ERP systems are critical to organizational performance and survival (Markus and Tanis 2000).

There are few reasons why companies implement ERP solutions. Increased demand for real-time information; Information generation for decision making; Integration of applications (Spathis and Constantinides 2004). Organizations are very much keen on the ERP systems and ERP software market is boosted due to this attention since firms take investment decisions on ERP.

The organizational decision on ERP adaptation is to gain some advantage, cost savings, improve efficiency and performance or support to operational and strategic decision making. It is a well-known fact that the ERP systems give many benefits and it is very much important those benefits outweigh the cost of the investment. That is totally depending on the correct system chosen for the organizations and on whether the system is implemented properly. Furthermore both positive and negative aspects of enterprise systems implementation should be considered especially in the areas of economic, technical, organization and social (Soja 2008).

Concepts and Theoretical Models of the Study

Customer Satisfaction

There are set of theories in the field of marketing. The theories that are cope up with this study is giving important understand to study the differences and similarities between customer satisfaction and user satisfaction. After deep review on the available literature for ERP's there are few definitions for customer satisfaction. Customer satisfaction is an overall post- purchase evaluation based on the perceived product performance compared with pre-purchase expectations (Fornell 1992).

Customer satisfaction is defined as "conceptually, an outcome of purchase and use resulting from the buyer's comparison of the rewards and costs of the purchase relative to anticipated consequences. Operationally, similar to attitude in that it can be assessed as a sum of satisfactions with various attributes" (Churchill and Surprenant 1982,).It is considered as a judgment that the product or service itself or a product or service feature, provided (or is providing) a pleasurable level of consumption-related fulfillment (Oliver, 1997). When we consider those three definitions customer satisfaction depends on the customer and therefore it is subjective.

In general terms, read the customer and try to satisfy him/her leads to loyalty and for the attractiveness of new customers. Companies focusing on user satisfaction outperform on the market (Carson 2008). Furthermore, measuring and understanding user satisfaction can enable a company to save lots of money and to take relevant decisions regarding the future of the firm (Lang and Analyst 2012) given that there are lots of theories in this field and to present the ERP market.

Value and Satisfaction Model

When consider the value, it is something added to the customer's life by the product or service purchased. This addition can be cast in terms of utility, monetary worth or additional pleasure (Oliver, 1999). In terms of monetary and non-monetary cost (time and effort) value is the function of perceived sacrifices. These sacrifices are treated as **cost-based value**. **Value** is a negative function of what is sacrificed to purchase the good or service and a positive function of what is received from the purchase of the good or service (Oliver, 1999). What the customer receives from the purchase is the performance outcome of the product. Value as excellence- is equivalent to the quality of the product or service purchased (Oliver, 1999). In consumer's point of view, they assess value partly based on the quality. In reality, quality amplifies their consumption experience and provide them added utility. Quality can be visualized in three different perspectives which is attainment, desirability and usefulness where attainment describes the subjective object has achieved high level of technical accomplishment and desirability refers to the consumer's needs for attachment to the good or service. This perspective is related to the attractiveness of the consumable and suggests a level of quality that can be acquired. Usefulness reflects the influence of utility-based reasoning on different definitions of quality (Oliver, 1999). Performance outcome and the cost base value of the compression consider one of the antecedents of satisfaction. This is one of the comparative operations in post-purchase judgment (Oliver, 1999). This theory is being used in the research because it is fit to the purpose of given that cost based value does not only include the price but also the time and effort invest in the transaction.

Organizational Performance

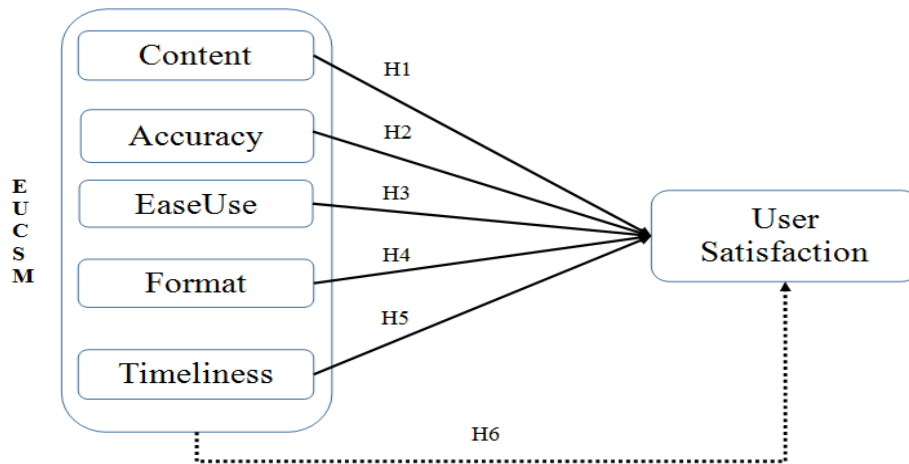
As it has strong relationship on user satisfaction, individual performance and organizational performance, this study focused on analyzing the ERP user satisfaction. ERP and its capabilities creates firm competitiveness with better information integration(Al-Mashari, Al-Mudimigh, and Zairi 2003; Davenport n.d.; Finney and Corbett 2007;).But there are some research available and they reports organizations fail to get the complete advantage and benefits from their ERP.

According to the scholars, though it is exists strong relationship on user satisfaction, individual

performance and organizational performance, this study focused on searching the literature on ERP user satisfaction. ERP and its capabilities creates firm competitiveness with better information integration(Al-Mashari, Al-Mudimigh, and Zairi 2003; Davenport n.d.; Finney and Corbett 2007).But there are some research available and they reports organizations fail to get the complete advantage and benefits from their ERP investment(Pollock et al, 2003).But those findings in the research not exactly match with the real world of ERP implementation because focus of those research are more towards to financial performance. ROI (Return on Investment), ROE (Return on Equity), Share price are the key productivity and profitability measure to quantified business.

Conceptual Framework

Independent Variables Dependent Variable



IV. Research Methodology

According to the Bryman & Bell says (Bryman and Bell 2011) a research strategy refers to the ontological and epistemological considerations . In one side, nature of the reality is the major concern in ontological considerations. There are two main ontological positions that it talks about, it is objectivism and constructivism. (Bryman et al. 2011) Objectivism states that social phenomena and their meaning can be viewed as objective entities that exist in reality independent or separate from social actors. The organization is a constraining force that influences its members. (Bryman et al. 2011). Constructionism maintains that social phenomena as social constructions built up by the social actors through their perception and their social interactions (Bryman et al. 2011). Hence in this research, deductive approach will be employed as it aims and testing the theory. And begins with hypothesis and emphasis generally on causality.

Available ERP success models have been used to generate and prove hypothesis in the research.(Mukti and Rawani 2016).Further it is discusses five tested factors that effects to the ERP end users satisfaction. Those been sleeted as independent variables in this study. Those element drawn from End User Computing Satisfaction Model(Doll and Torkzadeh 1988b).

The elements are content, accuracy, ease of use, format and timelines.

Population and Sampling

Target population known as group of individuals or objects which is having varying characteristics to which researchers are interested in generalizing the conclusions. In this study the target population was ERP End Users in the Organizations who have adopted ERP solutions in Sri Lanka .

Sampling Method of this Study

Multi stage stratified sampling method has chosen to select the respondents. Generally, in Multi Stage Stratified sampling method, the entire population divided into different strata andrandomly selects the final items proportionally from the different strata. Accordingly, inthis research Stratums are defined in to three categories as Business Organizations, ERP Business Organizations and other category according to the annual turnover as follows.

Stratum 3 - Grouped by Annual Turnover

Group A - Less than 10 Million

Group B - 10 – 30 Million

Group C - 30 – 50 Million

Group D - 50 – 100 Million
 Group E - above 100 Million

Data and Data collecting instruments

This study used primary data as well as secondary data. It was found that 160 ERP implemented companies in Sri Lanka. Out of 160 companies, 125 companies have been adopted major ERP products available in the market such as SAP, Oracle and Microsoft.

During the study period it was physically dealt with all the major ERP vendors and partners such as SAP, Oracle and Microsoft and that privileged to the researchers to have direct contacts with Chief Information Officers, in ERP implemented organizations.

Online questionnaire was used to collect the data. Most of the organizations are with major ERP vendors said above and that facilitate researcher to have direct contact with top table in the organization. And researchers obtained some information from ERP vendors’ web sites where they publish their customer list. Secondary data was collected through annual reports of the companies as well.

In this research it was used End User Computing Satisfaction Model by following some scholars information(Yoon, Nah, and Chin 2013).

Measuring Internal Reliability of the data

Table 1

Variables	Cronbach’s Alpha(Current)	Mean	Variance	Alpha (Coefficient) (Doll and Torkzadeh 1988a)	Alpha (Coefficient) Aggelidis and Chatzoglou 2012)
Content	0.877	3.976	0.837	0.89	0.92
Accuracy	0.825	3.916	0.899	0.88	0.91
Ease Use	0.766	3.530	0.936	0.89	0.85
Format	0.816	3.792	0.785	0.93	0.78
Timeliness	0.885	3.947	0.950	0.87	0.87
EUCS_Overall	0.746	3.188	0.648		

Data Analysis and Results

Descriptive Statistics

Descriptive statistics are useful for describing the basic features of data

Table 2- Descriptive Statistics

	Content	Accuracy	EoU	Format	Timeliness	US
N Valid	125	125	125	125	125	125
Missing	1	1	1	1	1	1
Mean	19.5940	11.3759	10.5902	11.3759	12.9060	25.7820
Std. Error of Mean	.17104	.13933	.14686	.13933	.08709	.23081
Median	20.0000	11.0000	11.0000	11.0000	12.0000	26.0000
Mode	20.00	12.00	11.00	12.00	12.00	26.00
Std. Deviation	2.78957	2.27240	2.39523	2.27240	1.42040	3.76446
Variance	7.782	5.164	5.737	5.164	2.018	14.171
Range	13.00	9.00	10.00	9.00	9.00	21.00
Minimum	11.00	6.00	5.00	6.00	6.00	14.00
Maximum	24.00	15.00	15.00	15.00	15.00	35.00
Sum	5212.00	3026.00	2817.00	3026.00	3433.00	6858.00

Descriptive statistics such as minimum, maximum, means, standard deviations and variance were obtained for the interval-scaled factors and for the dependent variable. The results of the computer output are shown in table 2.

Mean value basically used to measure central tendency. The mean value describes the sample with a single value that represents the center of the data .Many statistical analyses use the mean as a standard measure of the center of the distribution of the data. The mean value and the median value of the data set almost same and that indicate the collected data is symmetric. Same as mean value, median also used to measure the central tendency, and this study it can be seen mean and median values almost same.And the mode is the value that occurs most frequently in a set of observations. The mean and median require a calculation, but the mode is determined by counting the number of times each value occurs in a data set.

The mode in this study used to describe overall characterization of the data distribution. Obviously it was used mean and median values for this. This study confirms that there is no issue in the data set collected by interpreting the mode value. The data distribution confirmed the distribution not belongs to bimodal or multimodal.

The Standard error of mean (SE Mean) estimates the variability between samples means that would obtain if there is any repeated samples collected from the same population. Whereas the standard error of the mean estimates the variability between samples, the standard deviation measures the variability within a single sample. This study found smaller value of the standard error of the mean and that indicates a more precise estimate of the population mean. Usually, a larger standard deviation results in a larger standard error of the mean and a less precise estimate of the population mean.

The standard deviation is most frequently used measure of dispersion, in other word how spread out the data are about the mean. The symbol σ (sigma) is often used to represent the standard deviation of a population, while it used to represent the standard deviation of a sample.

In general, the standard deviation is used to explain how spread out the data are from the mean. A higher standard deviation value indicates greater spread in the data. A good rule of thumb for a normal distribution is that approximately 68% of the values fall within one standard deviation of the mean, 95% of the values fall within two standard deviations, and 99.7% of the values fall within three standard deviations. And the standard deviation can also be used to establish a benchmark for estimating the overall variation of a process.

Model Evaluation

The R-squared statistic (R2) provides a measure of how well the model is fitting the actual data. It takes the form of a proportion of variance. The R2 is a measure of the linear relationship between the predictor variable (Content, Accuracy, Ease of Use, Format and Timeliness in this study) and the response variable (User Satisfaction in this study). It always lies between 0 and 1 (i.e. a number near 0 represents a regression that does not explain the variance in the response variable well and a number close to 1 does explain the observed variance in the response variable). Results is presented in table 3.

Table 3-The Model Summery

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.764 ^a	.583	.577	2.44921	.583	91.259	4	261	.000	

R-squared is the fraction by which the variance of the errors is less than the variance of the dependent variable. It is very difficult to find recommended value for R squared but according to Leanerin 1999it should be greater than zero and equal or less than one. The value in the model depend on the sample size. In this study R squared value is acceptable level which is 58.4% .In the same table adjusted R square also not that differ from R squared value. For an r square of 0.584, it can conclude that the model explains 58.4% of the variations in real life and so the model is a good model.

Table 4 –Results of the Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2189.715	4	547.429	91.259	.000 ^b
	Residual	1565.638	261	5.999		
	Total	3755.353	265			

The initial null hypothesis of ANOVA tells that all predictors equal to each other and the alternate hypothesis tells predictors are not equal. The “F” value and the significance values will be the important values to be consider. A high value ofF means that there is more chance of the null hypothesis being rejected and alternate accepted, which means that all the predictors (independent variables) are different. Therefore it can be concluded that predictors are different. And the study confirmed that the five predictor variables are indeed different from each other and that they affect the User satisfaction in a different manner. Also the model is statistically significant.

Pearson Correlation Coefficient

Sekaran in 2000 says that the Pearson correlation coefficient is appropriate for interval- and ratio-scaled variables. This study does use ratio-scaled variables, the Pearson correlation is used to measure the level of correlation between the factors and also the overall EUCS. Table 5 shows the correlation coefficients for Overall EUCS, with content, accuracy, format, ease of use, timeliness.

By looking at correlation matrix overall EUCS (IVs) and the EUCS (DV) factors is fairly strong. And overall EUCS, significantly and positively correlated to the all factors namely; content, accuracy, format, ease of use and timeliness.

In Mohamed, Hussin and Hussein`s study the highest score of correlation coefficient is between content and overall EUCS namely 0.851. This is followed by ease of use and overall EUCS = 0.834; format and overall EUCS = 0.826; accuracy and overall EUCS = 0.819; timeliness and overall EUCS = 0.764; satisfaction with system speed and overall EUCS = 0.752; and system reliability and overall EUCS = 0.610. All of these values are significant at 0.01 level.(A. Mohamed et al. 2006).Further, in Doll and Torkzadeh study, correlations of each factor with the overall EUCS found: content = 0.69; accuracy = 0.55; format = 0.60, ease of use = 0.58; and timeliness = 0.60. Conclusively, the correlation in this study is higher than the correlation in Doll and Torkzadeh study. (Doll and Torkzadeh 1988)

Table 5- Correlation Matrix

		Content	Accuracy	EoU	Format	Timeliness	US
Content	Pearson Correlation	1	.964**	.581**	.964**	.659**	.723**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
Accuracy	Pearson Correlation	.964**	1	.563**	1.000**	.627**	.709**
	Sig. (2-tailed)	.000		.000	0.000	.000	.000
EoU	Pearson Correlation	.581**	.563**	1	.563**	.521**	.588**
	Sig. (2-tailed)	.000	.000		.000	.000	.000
Format	Pearson Correlation	.964**	1.000**	.563**	1	.627**	.709**
	Sig. (2-tailed)	.000	0.000	.000		.000	.000
Timeliness	Pearson Correlation	.659**	.627**	.521**	.627**	1	.602**
	Sig. (2-tailed)	.000	.000	.000	.000		.000
US	Pearson Correlation	.723**	.709**	.588**	.709**	.602**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000

Table 6- Summery Pearson Correlation with EUCS Model

		Content	Accuracy	EoU	Format	Timeliness	US
US	Pearson Correlation	.723**	.709**	.588**	.709**	.602**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	266	266	266	266	266	266

** . Correlation is significant at the 0.01 level (2-tailed).

Testing Hypothesis

Hypothesis 1 = There is a significant relationship between content and overall EUCS.

The hypothesis is to test the relationship between content and overall EUCS. It is well known in the previous studies that the content is acting as a higher contributor for satisfaction. From the relationship analysis both variables is highly correlated with r = 0.723 which is significant at the 0.01 level.

It looks like content is one of the factors that impacted to the overall EUCS. ERP users who is satisfied with the content of information produced by the system is also satisfied with overall system.

Hypothesis 2= There is a significant relationship between accuracy and overall EUCS.

The main objective of this hypothesis is to evaluate the relationship between accuracy and overall EUCS. Accuracy is integral part of the information systems and it is a key dimension to measure EUCS. With the accuracy of the information provided by the ERP systems will lead to increase good perception of the ERP systems and by that overall EUCS is impacted. And the strong co-relationship between both variables. It is highly significant at 0.01 level ($r = 0.709$). In other words, overall EUCS has a highly correlated with the accuracy of the system. With this result again the accuracy is one of the factors that represent the overall EUCS. The end users of ERP satisfied with the accuracy of information produced by the system is also satisfied with overall system.

Hypothesis 3 = There is a significant relationship between ease of use and overall EUCS.

The purpose of this hypothesis is to test the relationship between ease of use and overall EUCS. When end users find an application easy to use, they automatically convert into more advanced users and therefore they always take the benefit or advantage with systems capability. Therefore, ease of use supposed to change the overall EUCS positive manner.

In this study the relationship between the ease of use and overall EUCS is highly correlated at 0.01 level of significance($r = 0.588$). Therefore it shows that ease of use is one of the factors that represent the overall EUCS. The end users of ERP satisfied with the ease of use of the system is also satisfied with overall system.

Hypothesis 4 = There is a significant relationship between format and overall EUCS.

As describes by the analysis relationship between both variables is highly significant, correlated at 0.01 level of significance. In other words, overall EUCS has highly correlated with the format of the system.

Hypothesis 5 = There is a significant relationship between timeliness and overall EUCS.

The purpose of this hypothesis is to test the relationship between timeliness and overall EUCS. If the end-users satisfy with the timeliness of the report produced by the CAS, they might be satisfied with the overall of the system as well. Hence, timeliness is assumed to increase the level of overall EUCS. It is proven that there is a relationship between timeliness and overall EUCS. In other words, the hypothesis is substantiated and suggests that timeliness is one of the factors that represent the overall EUCS. The respondent who is satisfied with timeliness of the system to produce the report is also satisfied with the overall system.

Hypothesis 6

There is significant relationship between all the EUCS factors (dimensions) and overall EUCS (Dependent variable) .That is correlated at 0.01 level and r value is 0.760

Summary and Discussion

This research has proposed and evaluated EUCS with ERP systems to examine the factors which are contributing to End User satisfaction among the ERP users in the organization who have adopted ERP solution. The factors such as Content, Accuracy, Ease of Use, Format and Timeliness are being considered. In general, the result supports all the formulated hypotheses (H1 ,H2 ,H3, H4, H5 and H6) and also it matches and supports the previous findings by Doll and Torkzadeh (1988), Chin and Lee (2000) , McHaney et al. (2002) and also (A. Mohamed et al. 2006) as well. This is being analyzed with Pearson Correlation $n = 266$ Significant levels: $** p < 0.001$

Since there was a great interest for end user computing satisfaction across the globe in many countries EUCS model have been validated in different business and service sectors. The findings are varied in different study contexts (Doll and Xia, 1994; McHaney et al., 1999, 2002; Somers et al., 2003; Doll et al., 2004; Abdinnour-Helm et al., 2005; Heilman and Brusa, 2006; Pikkarainen et al., 2006; Wang et al., 2007; Azadeh et al. 2009).

As per Doll and Deng EUCS varied across the cultures and might mean differently from one group to another group (Doll et al. 2004; Deng et al. 2008). In this study it was hypothesized that EUCS is a valid model consisting of one second-order factor (satisfaction) and five first-order factors (content, accuracy, format, ease of use and timeliness). Further, researcher hypothesized that ERP end users in Sri Lankan Industry sector, Accuracy, Format and Content of information systems are the key contributors to end-user satisfaction.

And it has selected Sri Lankan industry sector organizations who are running ERP due to Sri Lanka's strategic geographical location and its position as an emerging economy that continues to attract foreign investors. Due to that reason there will be some joint ventures established with Sri Lankan investors and they will look at ERP implementation and therefore this study will be helpful for them in decision making. Further, there is no such study has so far been conducted in this context in Sri Lanka. This study's results demonstrate that in the Sri Lankan Industry sector ERP systems context, the EUCS is a valid and reliable model consisting of one second-order factor (satisfaction) and five first-order factors (content, accuracy, format, ease of use and timeliness).Study suggests that ERP solution is having accurate well formatted and consist with proper users

perceived the ERP system positively. These aspects cover information that is sufficient, meeting the user's needs, precise, accurate, useful and clear from the user's perspective.

Furthermore, has shown that the EUCS model is valid and its measures are reliable for ERP users in Sri Lankan Industry sector who have adopted ERP solution. The dimensions in the model, content, accuracy, format and ease of use and timeliness have contributed to user's satisfaction. This study it has presented an analysis of the factors in the model and compared them with those of previous researches in other study contexts and also gives empirical support for previous studies in EUCS and enhanced our understanding of user's demands for interactions with business.

Further, end-user computing satisfaction point of view, the findings of this research support previous suggestions made by several scholars. As it exists potential growth in ERP market and potential trend for the ERP implementation researches with five contributors of EUCS model is very important.

Implications for Future Research

This study has investigated and demonstrated the EUCS factors in the ERP implemented organizations in Sri Lankan Industry sector. The study also suggests that content, accuracy, format, ease of use, timeliness must be emphasized to the ERP solutions with reference to Sri Lankan Industry. Thus, ERP software developers must address rich system features and powerful system functionality as important design objectives when developing systems in ensuring better output.

Sri Lankan industry sector should give special attention to the system selection. The implementation of ERP should be based on the output and user oriented in order to make end user satisfied. Further, in this study the researchers found that the factors of the EUCS model and overall EUCS mediate the organizational performance. Another area that needs to be focused in future researchers is by applying several analytical approaches to the research model. Using different analytical approaches it could help to discover the reason behind several inconsistencies and might lead to different conclusions. There are also other systems factors which will have an impact on EUCS. System reliability, Systems adaptability, self-system support, professional support by vendors, manual and guides availability with the ERP solutions are few of those.

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