

A RELATIONSHIP BETWEEN THE COST AND ERP SOFTWARE USED IN THE EDUCATIONAL INSTITUTIONS – A STUDY

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Abstract: The purpose of the study is that the management is spending lot of money on the purchase of the ERP software and whether it helps in decision making and whether there are any tangible benefits in the use of the software. The research instrument used for this study is questionnaire. In the current study reliability of the instrument is assessed using the test_retest method. Validity was assessed using face value. The study was conducted to know the opinion of the users how it helps them and also to define the relationship between the different variables of an ERP system.

Keywords: ERP, Tangible benefits, Questionnaire, Reliability, Validity, Relationship, Variables.

I. INTRODUCTION

Enterprise resource Planning (ERP) systems are becoming popular among institute of higher education. The findings are based on a questionnaire survey performed among the various higher educational institutes. The purpose of the study is to identify the type of software, its benefits and economic effectiveness of the Enterprise Resource Planning (ERP) systems. In particular, it examines the cost and technical aspect of implementing ERP solutions by the institutions. This research study goes on to define the relationship between the different variables of the e_ERP system.

II. REVIEW OF LITERATURE

Higher Education Institutions (H.E.I.) are persisting in the Information Systems (I.S.) era by adopting and implementing ERP system. The need to evaluate their benefits and impacts on organizations and individuals are increasingly essential. Employing Information Systems in this sector is very critical to its success and its efficiency of services as ISs are critical factors that affect staff, tasks and quality of services and outcomes (Ahed Abugabah and Louis Sanzogni, 2010).

A growing number of companies are investing in ERP systems. Many ERP projects have resulted in substantial tangible and intangible improvements in a variety of areas for the organizations (Davenport, T. H., 2000); (Umble, E.J., & Umble, M.M., 2002) etc. However, there are a number of examples where organizations were not successful in reaping the potential benefits that motivated them to make large investments in ERP implementations (Bingi, P., Sharma, M.K., Godla, J.K., 1999); (Chen, I. 2001); (Davenport, T. H., 2000); (Griffith, T.L., Zammuto, R.F., Aiman-Smith, L., 1999); (Umble, E.J., and Umble, M.M., 2002). ERP projects have an abnormal number of problems, particularly related to cost, customization, and integration with existing systems as evidenced by the large number of failed projects, especially in organizations that are structurally complex and geographically dispersed (Markus, M. L., Axline, S., Petrie, D. & Tanis, C., 2000).

Every business ERP system implementation is expected to have enormous benefits - increased productivity, reduced operating costs, and flow of information, and improved performance management (M. Lutovac, D. Manojlov, 2012).

Many higher education institutions want to take advantages of ERP systems. They invest tens of millions of dollars in ERP projects that may go on for two, three or even more years (Swartz D, Orgill K, 2001). The investment in ERP systems represents the biggest investment in ICT for higher education institutions (Murphy C, 2005).

ERP systems are expensive and can represent one of the largest investments of human and financial resources by an institution (Dewey & DeBlois, 2006a, 2006b). They also bring a significant business process reengineering aspect to the institution and the implementation project by the integration of compiled industry best practices into the software. These embedded best practices often require the institution to alter its operations to match those delivered in the system. (Markus & Tanis, 2000; Pollock, Williams, & Procter, 2003; Wagner, Scott, & Galliers, 2006).

The main ERP Vendors for higher education in the world are Oracle, SCT, PeopleSoft, SAP, Jenzabar and Datatel. According to research carried out by ECAR organisation it can be noticed that none of these vendors is a market leader (King P., 2002).

III. METHODOLOGY

Quantative Research is used for examining the use of Educational ERP in the different institutions. Quantative research is a systematic, objective oriented methodology that mainly involves numerical data analyzing using statistical methods (Thomas, 2003; Creswell, 2003). It aims at determining or quantifying relationship between independent variables and dependent variables or outcome variables (Hopkins, 2000).

Descriptive Research studies are ideal for studying complete characteristic features of phenomenon under study (Montero and Leon, 2007). Hence, it accurately depicts and portrays research participants as the frame from where information is collected is not manipulated. A relationship between variables is examined and established in descriptive research studies (Hopkins, 2000; McMillan, 2010). Hence, a descriptive research study is widely deployed to assess association between variables and it is chosen study for carrying out this research work.

Time dimension for research studies can either be cross-sectional or longitudinal (Saunders et al., 2016). Time dimension used for this research study is Cross-Sectional for recording the findings of the study environment without any manipulation and interference. Cross-Sectional research involves analysis of data collected from the target population at a single time frame (Cross-Sectional study, Wikipedia).

The research instrument used for this study is Questionnaire. A questionnaire is a series of questions asked to individuals to obtain statistically useful information about a given topic (historylearingsite.co.uk, structured questionnaires). It is beneficial in capturing wide range of information from respondents.

The questions in the questionnaire revolve around measurement of constructs, their latent variables and have a rating scale to measure them effectively. The rating scale used is Interval Scale.

Likert scale and Stapel Scale are both interval scales and are used in this study for capturing respondent's opinions. Most of the questions had point Likert scale ranging from 'Yes' to 'No'. The Stapel Scale can be used in the questions where there is the range on a scale starting from of 1 to 5 (poor to excellent).

A frequency distribution is an orderly arrangement of data classified according to the magnitude of the observations. When the data are grouped into classes of appropriate size indicating the number of observations in each class we get a frequency distribution. By forming frequency distribution, we can summarize the data effectively. It is a method of presenting the data in a summarized form. Frequency distribution is also known as Frequency table.

In the current study reliability of the instrument is assessed using the test_retest method. In the test_retest reliability is assessed by administering the same instrument on the same respondent on two different occasions. In the current study since the variable are categorical variable, phi and cramer's V was used to study the degree of associations between the two set of responses.

Validity was assessed using face value. Face validity is a subjective way of assessing validity. Data collected was analysed to compute mean values using IBM SPSS-21.

IV. ANALYSIS AND INTERPRETATION

Descriptive Analysis

a) Frequency distribution for "which type of software is used (TOSU)".

Respondent were asked to tell which kind of software is used by using two response options:

1 = SAP, and

2 = Customize ERP

Table (a): Which type of software is used (TOSU)?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid SAP	3	2.3	2.3	2.3
Customize ERP	129	97.7	97.7	100.0
Total	132	100.0	100.0	

Interpretation: The above frequency distribution table shows that majority of the colleges uses customize ERP software. 97.7% of the college uses customize ERP and 2.3% uses SAP.

b) Frequency distribution for "Is the cost of purchase of software is affordable by the institution (COPOS)?"

Respondent were asked to tell whether the cost of purchase of software is affordable by the institution by using two response options:

1 = Yes, and

2 = No

Table (b): Is the cost of purchase of software is affordable by the institution (COPOS)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	131	99.2	99.2	99.2
No	1	.8	.8	100.0
Total	132	100.0	100.0	

Interpretation: The above frequency distribution table shows that the majority of the colleges are able to afford the cost of the purchase of the software by the institution. 99.24% of the colleges are able to afford the cost whereas only 0.76% colleges are unable to afford the cost.

The pie diagram enables us to show the partitioning of the total into component parts. In the below mention diagram a circle is divided into several sectors, area of which are proportional to the magnitude represented by table (a)

and table (b). The number of given by:

sectors will be equal to the number of components. The angle of a particular sector is

$$\theta^\circ = (\text{Partial Quantity}/\text{Total Quantity}) * 100$$

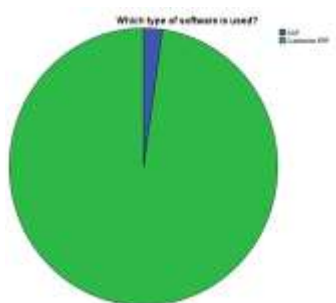


Fig. (a): Which type of software is used?

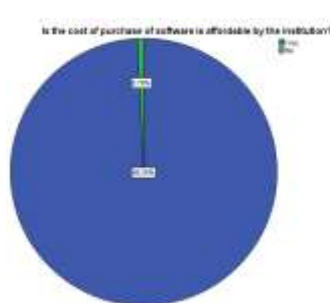


Fig. (b): Is the cost of purchase of software is affordable by the institution.

Table (c): Reliability Test – Retest Method (TOSU)

Pair	Coefficient Test	P Value	Result
TOSU(TEST)↔TOSU(RETEST)	Phi = 0.667	0.003	Reliability Supported

Table (d): Descriptive Statistics (TOSU)

	N	Mean	Std. Deviation
TOSU	5	4.80	.447
Valid N (list wise)	5		

Table (e): Reliability Test – Retest Method (COPOS)

Pair	Coefficient Test	P Value	Result
COPOS(TEST)↔COPOS(RETEST)	Phi = 0.630	0.005	Reliability Supported

Table (f): Descriptive Statistics (COPOS)

	N	Mean	Std. Deviation
COPOS	5	5.00	.000
Valid N (list wise)	5		

V. RESULT AND DISCUSSION

In the current study that “which type of software is used (TOSU)” is being done by the using different options. The variables under study are the categorical variable. The phi and cramer’s V was used to study the degree of associations between different sets of responses. Phi and cramer’s V value from the above Table (c): Reliability Test – Retest Method (TOSU) is more than 0.5 which indicates the reliability. In the current study the variables are above threshold, hence reliability is supported.

From the above Table (d): Descriptive Statistics (TOSU), it can be seen that the variables have the mean value above 4.0. Hence validity is supported.

Similarly, in the current study that “Is the cost of purchase of software is affordable by the institution (COPOS)” is being done by using different options. The variables under study are the categorical variable. The phi and cramer’s V was used to study the degree of associations between the different sets of responses. Phi and cramer’s V value from the above Table (e): Reliability Test – Retest Method (COPOS) is more than 0.5 which indicates the reliability. In the current study the variables are above threshold, hence reliability for the same is supported.

From the above Table (f): Descriptive Statistics (COPOS), it can be seen that the variables have the mean value above 4.0. Hence validity is also supported.

VI. CONCLUSION

In the current study, all variables are above the threshold, hence reliability and validity is supported and also it indicates that there is a degree of associations between all the different sets of the variables. Therefore, it indicates that the cost of purchase of the software is affordable by the institution.

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