

# End-user satisfaction as an impact of the system quality, information quality, and top management support, upon the perceived usefulness of technology utilization

*by* Mardiana Andarwati

---

**Submission date:** 21-Feb-2019 01:36PM (UTC+0700)

**Submission ID:** 1081309011

**File name:** prosiding\_ACMASS\_\_Annual\_Conference\_on\_M.pdf (491.72K)

**Word count:** 8479

**Character count:** 49548

## End-user Satisfaction as an Impact of the System Quality, Information Quality, and Top Management Support, upon the Perceived Usefulness of Technology Utilization

Nazief Nirwanto  
University of Merdeka Malang

Mardiana Andarwati

*The utilization of Accounting Information System (AIS) by the small, medium, and micro enterprises (SMEs) at present is apparently at the minimum level if not to mention the integrated operation. This study attempts to fathom and analyse, first, the impact of subsequently the system quality, the information quality, the top management support upon the perceived usefulness. Second, the effect of the system quality, the information quality, and the top management support on the end-user information satisfaction. Third, how the perceived usefulness affect the end-user information satisfaction. Fourth, to analyze the effect of the system quality, the information quality, and the top management support on end-user information satisfaction via the perceived usefulness.*

*The study observed the designated SMEs managers in a chosen area of targeted location in East Java, Indonesia. The structural equation modelling was employed to study the effect of those variables under study, namely the system quality, information quality, top management support on the end-user information satisfaction through the perceived usefulness.*

*The results revealed that the system quality, the information quality, as well as the top management support proven to be affect the designated SMEs perceived usefulness. Among those variables under study, it was proved that the system quality, information quality, top management support influence on the end-user information satisfaction. However, the perceived usefulness is an intervening variable that can mediate the effect of system quality, the information quality, the top management support on the end-user information satisfaction.*

### BACKGROUND

SMEs as prospective businesses are expected to be able to provide huge employment from various sectors as well as creating and developing start up local economy. However, the main constraint on the way is the provision of capital and its relatively high dependence on government support. Nearly all SMEs facing hindrance concerning with capital loan as there is no appropriate accounting system that eventually affect the accounting management. This, especially, applies to those SMEs in small and micro scales, while

those in medium scale are already using the proper system in spite of the fact the majority are still employing manual accounting financial report.

Bass and Schrooten (1996) noted that the majority of SMEs are not prepared to present the accounting information in order to provide the current conditions of the businesses. The accounting information is indispensable for the sustainability of the SMEs businesses for the management to a decision making, like for example in applying for a credit loan. Therefore, this study attempts to analyze how far is the accounting information provided by the accounting information system (AIS) benefice the management of medium scale SMEs so that the management is sufficiently satisfied with the output resulted from the SIA. The information end-user satisfaction can reflect the achievement of information system in use. By referring to the model of DeLone and McLean on the D&M IS success which comprise of three levels, i.e., technical level (system quality), semantic level (information quality), and effectiveness level (usage and end-user satisfaction).

This study examines the information system successfully achieved its goals by portraying the accounting information system using the end-user satisfaction of accounting information theoretical concept of End-User Computing Satisfaction (EUCS) and the Technology Acceptance Model (TAM) as an operational tool. The end-user satisfaction of accounting information is enhancing as the system quality, the information quality, and top management support are higher and yet after the SMEs management utilizing the AIS.

### Research Questions <sup>13</sup>

1. How system quality, information quality, and top management support affect the perceived usefulness?
2. How system quality, information quality, and top management support affect the end-user satisfaction of accounting information?
3. How perceived usefulness affect the end-user satisfaction of accounting information?
4. How system quality, information quality, and top management support affect the end-user satisfaction of accounting information via perceived usefulness?

### Research Objectives <sup>2</sup>

1. To analyze the influence of system quality, information quality, and top management support on the perceived usefulness.
2. To analyze the influence of system quality, information quality, and top management support on the end-user satisfaction of accounting information.
3. To analyze the perceived usefulness on the end-user satisfaction of accounting information.
4. To analyze the influence of system quality, information quality, and top management support on the end-user satisfaction of accounting information via perceived usefulness.

## LITERATURE REVIEW

In the '80s research on information system are grouped into two school of thought. First, one that focused on acceptance, adoption, and usage of information system technology. Second, the school of thought that focus on the achievement of information system implementation. This school of thought emphasizes on the acceptance and utilization of information system, which is known as TAM conceptual theory-----perceived usefulness among of those. Information system implementation is popularly known as the concept of EUCS or end-user computing satisfaction.

The end-user satisfaction according to Garrity and Sanders (1957:123), is defined as the extent to which users believe the information system available have met their transforming requirements. Past research uses end-user satisfaction as a measure of effectiveness for success or success of information systems such as Seddon and Kiew (1994); Seddon (1997); Rouibah et al. (2009); Seddon and Kiew (2003); Hasan et al. (2013). end-user satisfaction consists of two final user satisfaction of information system and end-user satisfaction to the output of information system. end-user satisfaction according to DeLone and McLean

(1992:68-69) is the recipient's response to the use of the output of an information system and the intended user is the information user. the ultimate user satisfaction of information is how much information system used can be trusted and can meet the information needs for end-users and the results are as expected (Ives *et al.*, 1983); Barki and Huff (1985); Alter, (1992) Omar, (1993), Halawi, McCarthy, and Aronson, (2008), Peter *et al.*, (2008), Hasan *et al.*, (2013), Kadir, (2003). Ives *et al.* (1983:1150) describe the accounting information end-user satisfaction as the measurement of end-user satisfaction due to the information availability in the organizational data compilation.

Perceived usefulness according to Preffer (1982:320) is defined as the extent to which a person believes that using a technology will enhance her or his performance. Perceived usefulness in information system specifically intended to predict the acceptance and eventually the usage of the system. According to Davis, Bagozzi and Warshaw (1989: 320) perceived usefulness is the level of confidence in the use of certain subjects that can provide benefits for those who use. Mangin *et al.*, (2008:14) defines as a person's confidence level using technology can improve performance. The result of Iqbaria (1994) research is the use of information not because of the pressure of AIS but influenced by perceived benefit on the use of information system.

The top management support according to Cash *et al.* (1992:133) is defined as the degree to which top management understands the importance of the information system function and are personally involved in information system activities (Cash *et al.*, 1992:133). Top management support is one part that leads to the success of information systems and project information systems being implemented within the organization (Young and Jordan, 2008). Zwikael (2008:501) states that top management support is the process that most determines the success of a project. The support process allows top management to use time and budget funds that support the success or success of a system (Zwikael, 2008: 499).

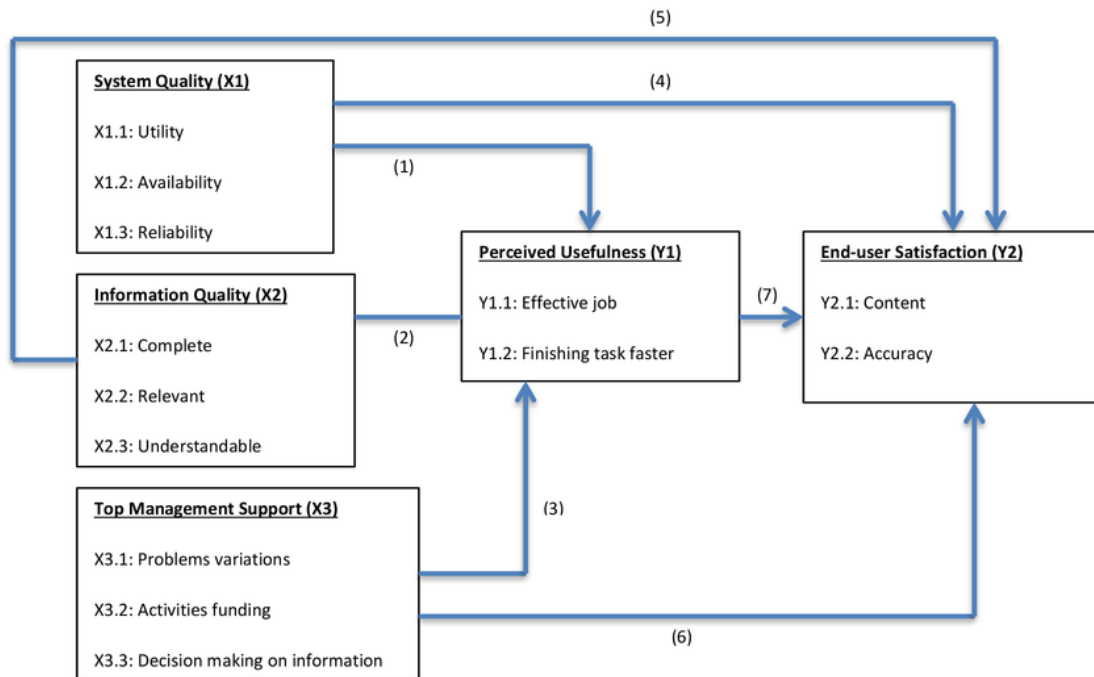
The quality of information is multidimensional which characterizes the extent to which information is suitable for a particular purpose (Zahedi, 1995:9). The quality of information is a quality to the extent that the information is consistent in meeting the requirements of all who need information (English, L.P: 1999). DeLone and McLean (1992) describe the quality of information is a desirable characteristic for the output of information systems. The quality of information in this study is related to the concept of information products consisting of two, namely information by using data as input to be processed and using information as data that has been processed so as to give meaning to the recipient of information (Al-Hakim, 2007).

The quality of the system is a consciously designed and integrated operation to create an effective and efficient process (Ryall and Kruithof, 2001:24). According to Chen (2010:310) as a measure processing information system process or used to measure the quality of information technology systems. The focus of the system is how well the hardware capabilities, software policy procedures of an information system capable of providing the required user (DeLone and Mclean, 1992).

## CONCEPTUAL FRAMEWORK

5 Figure 1 presents the conceptual framework developed from previous researches which interrelates the system quality, information quality, and top management support with the end-user satisfaction of accounting information via the perceived usefulness.

**FIGURE 1  
CONCEPTUAL FRAMEWORK**



- 1) and Kiew (1994:99); 2) Seddon (1997:245); Armstrong et al.(2005:3), Hasan et al. (2013:14); 3) Rouibah et al. (2009:341-342-348); Hasan, et al. (2013:14); 4) DeLone and McLean (1992:63); Seddon and Kiew (1994:99); DeLone and McLean (2003:14); Armstrong et al. (2005:3); 5) Seddon and Kiew (1994:99); Seddon (1997:245).

**HYPOTHESIS**

1. System quality, information quality, and top management support positively influence the perceived usefulness.
2. The quality of the system, the quality of information, and top management support have a positive effect on the end-user account information satisfaction.
3. Perceived usefulness has positive effect on end-user account information satisfaction.
4. The quality of the system, the quality of information, and top management support have a positive effect on the final user satisfaction of accounting information through perceived usefulness.

**METHODOLOGY**

The purpose of this research is basically the development of theory and problem-solving perceived usefulness and satisfaction of managers SMEs end-user accounting information. The results of the research are specifically intended as a descriptive study and hypothesis testing. The population used in this study is SMEs managers of medium scale businesses in the designated area of Malang Raya - East Java in accordance with Law no. 20 Year 2008 on Article 1 is the owner and leader of SMEs located in area under study.

The sample is based on predetermined criteria using purposive sampling method is sampling based on predetermined criteria, that is SMEs managers who are in medium scale business with criteria of at least one year have used AIS, and managers of SMEs that have produced financial report and supporting reports from AIS on a regular basis and used for management decision making. Based on these criteria, a preliminary survey with the stage to obtain the identity data of SMEs in accordance with the criteria obtained from the Office of Cooperatives of East Java Province in 2015 as many as 121 units of SMEs. Based on 121 questionnaires disseminated, there were 118 have met the criteria to be analyzed, while the other three did not answer the statement item completely. The number of questionnaires is still suitable for use as a sample as the number of samples required in SEM depends on the number of indicators used. The appropriate sample size in the SEM equation model is between 100-200 and the sample size guidance depends on the number of indicators multiplied by 5 to 10. The number of indicators in this study is 21 indicators, the minimum sample size is 105 SMEs managers. SEM criteria in this study used as many as 118 managers SMEs as a sample, while the operational definition of variables used consist of :

1. The quality of the system is the perception of end-users of information on the quality of accounting information systems, as for indicators of the quality of the system according to DeLone and McLean (2004: 24) is the usefulness, availability, reliability, adjustment, and time responded. The quality of information is the information required by AIS, as for indicators of information quality according to DeLone and McLean (2003:25) is complete, relevant, easy to understand, security, and personal.
2. Top management support is support for AIS use decisions and the necessary funding support related to the use of AIS, as for indicators of top management support by Rouibah et al. (2009: 348) is a variety of issues, the provision of funds for activities, decision-making related to the implementation of the system of information, and new technology.
3. Perceived usefulness is the user's perception of the extent to which AIS can benefit, there are also indicators of perceived usefulness according to Joo and Sang (2013: 2015) is to work effectively, complete tasks faster and work more easily.
4. The end-user satisfaction is the level of user satisfaction towards information generated from AIS, as for indicators of end-user satisfaction by Doll and Torkzadeh (1988:259) are the content, accuracy, format display, and timeliness.

The model built in this research consists of two clusters of variables, namely exogenous variables i.e. system quality, information quality, and top management support, and endogenous variables i.e., perceived usefulness and end-user satisfaction.

## RESULTS AND DISCUSSION

The empirical model in this study is built to examine, first, the influence of system quality, information quality, and top management support upon the perceived usefulness. Second, it attempts to test how the system quality, information quality, and top management support affect the end-user satisfaction of accounting information. Third, to test how the perceived usefulness affect the end-user satisfaction of accounting information. Finally, to test how the system quality, information quality, and top management support affect the end-user satisfaction of accounting information via perceived usefulness. The structural model evaluation presents the following Figure 2.

**FIGURE 2  
STRUCTURAL MODEL EVALUATION**

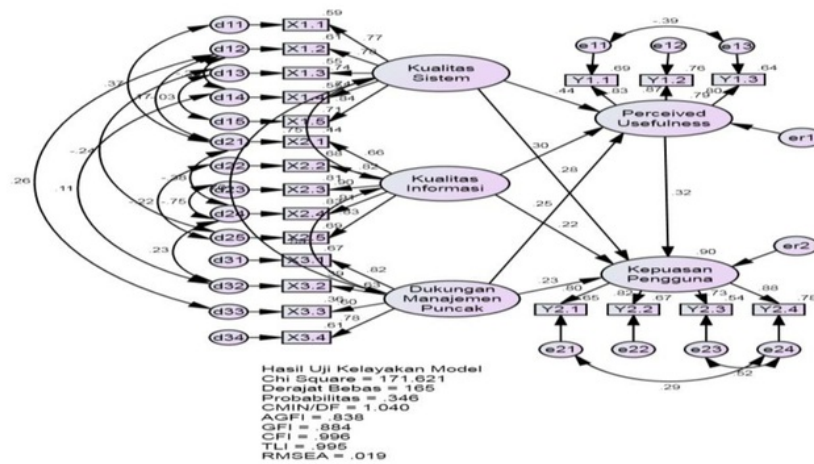


Table 1 presents the results of analysis recommended to estimate the model's fit. All measurement criteria have been met including Chi-square test. A model is considered fit when the *p* chi-square is greater than alpha 5 percentage significance.

**TABLE 1  
STRUCTURAL MODEL FIT INDEX EVALUATION**

Criteria	Cut-off value	Results	Note
Chi-square	≤ 195.973	171.621	Good
Degree of freedom	-	165	-
Probability	≥ 0.05	0.346	Good
CMIN/DF	≤ 3.00	1.040	Good
AGFI	≥ 0.90	0.838	Marginal
GFI	≥ 0.90	0.884	Marginal
CFI	≥ 0.95	0.996	Good
TLI	≥ 0.95	0.995	Good
RMSEA	≤ 0.08	0.019	Good

Source: Primary Data, 2016

Table 2 presents the factor loading of the entire instruments > 0,5 which means that the instrument employed in this model is considered valid and feasible to be used as the research hypothesis testing.

**TABLE 2**  
**THE FACTOR LOADING AND SIGNIFICANCE OF MEASUREMENT MODEL**

Variable	Indicator	Factor loading	CR	P-value	Note
System Quality (X1)	X1.1	0.770	9.546	***	Valid
	X1.2	0.779	9.632	***	Valid
	X1.3	0.741	9.117	***	Valid
	X1.4	0.743	9.243	***	Valid
	X.1.5	0.842	-	***	Valid
Information Quality (X2)	X2.1	0.663	7.876	***	Valid
	X2.2	0.824	10.112	***	Valid
	X2.3	0.902	12.271	***	Valid
	X2.4	0.913	12.315	***	Valid
	X2.5	0.828	-	***	Valid
Top management support (X3)	X3.1	0.818	8.756	***	Valid
	X3.2	0.626	6.618	***	Valid
	X3.3	0.599	6.174	***	Valid
	X3.4	0.782	-	***	Valid
Perceived Usefulness (Y1)	Y1.1	0.831	-	***	Valid
	Y1.2	0.875	11.190	***	Valid
	Y1.3	0.797	8.482	***	Valid
End-user Satisfaction (Y2)	Y2.1	0.804	13.240	***	Valid
	Y2.2	0.820	11.414	***	Valid
	Y2.3	0.752	13.041	***	Valid
	Y2.4	0.884	-	***	Valid

The results of structural model hypothesis related to the regression coefficient estimate are depicted in Table 3. The structural model of each variable is presented as follows:

- Perceived Usefulness = 0.444 System quality + 0.297 Information quality + 0.250 Top management support
- End-user satisfaction = 0.276 Syst.Qual + 0.221 Info.Qual. + 0.233 Top mgt support + 0.323 Perceived usefulness

**TABLE 3**  
**THE INFLUENCE OF EXOGENOUS VARIABLES ON ENDOGENOUS VARIABLE**

Exogenous	Endogenous	Std. Coeff.	CR	p	Note
System Quality	Perceived Usefulness	0.444	3.686	0.001	sig
Information Quality	Perceived Usefulness	0.297	3.181	0.001	sig
Top Management Support	Perceived Usefulness	0.250	2.535	0.011	sig
System Quality	End-user Satisfaction	0.276	2.177	0.029	sig
Information Quality	End-user Satisfaction	0.221	2.383	0.017	sig
Top Management Support	End-user Satisfaction	0.233	2.371	0.018	sig
Perceived Usefulness	End-user Satisfaction	0.323	2.224	0.026	sig

Source: Primary Data, 2016



Table 3 presents how exogenous variables affect the endogenous variables from its probability estimates of significance. The results depict that the hypothesis are proved significant with the probability  $\leq \alpha$  0.05. The indirect effect on hypothesis 4 was statistically accepted by looking at the significant direct effects of system quality, information quality, and top management support on perceived usefulness. Significant direct impact of system quality, information quality, and top management support to end-user accounting information satisfaction. While the significant direct effect of perceived usefulness on user satisfaction of accounting information.

**TABLE 4**  
**DIRECT, INDIRECT, AND TOTAL INFLUENCE**

From	To	Direct	Intervene	Indirect	Total
System Quality	Perceived Usefulness	0.444	-	-	0.444
Information Quality	Perceived Usefulness	0.297	-	-	0.297
Top Management Support	Perceived Usefulness	0.250	-	-	0.250
Perceived Usefulness	End-user Satisfaction	0.323	-	-	0.323
System Quality	End-user Satisfaction	0.276	Perceived usefulness	0.144	0.420
Information Quality	End-user Satisfaction	0.221	Perceived usefulness	0.096	0.317
Top Management Support	End-user Satisfaction	0.233	Perceived usefulness	0.081	0.314

Source: Primary Data, 2016

Table 4 shows that the quality of the system with perceived usefulness of 0.444 with CR of 3.686 proves perceived usefulness of the positive and significant relationship of the system quality variable to perceived usefulness. The quality of information with perceived usefulness of 0.297 with CR of 3.181 and p-value 0.001 indicates that perceived usefulness of a positive and significant relationship of information quality variables to perceived usefulness. Top management support with perceived usefulness of 0.250 with CR of 2.535 and p-value 0.011 indicate that perceived usefulness has a positive and significant effect of top management support variables on perceived usefulness.

Table 4 shows that the quality of the system with the final user satisfaction of accounting information is 0.276 with CR of 2.177 and p-value 0.029 gives the final user satisfaction of accounting information of the positive and significant relation of the final user satisfaction variable of accounting information to perceived usefulness. The quality of information with the end-user satisfaction of accounting information is 0.221 with CR of 2.383 and p-value 0.017 gives the end-user satisfaction of accounting information of the positive and significant relationship of the variable of the quality of information to the end-user satisfaction of accounting information. Top management support with end-user accounting information satisfaction 0.233 with CR of 2.371 and p-value 0.018 proves that the end-user accountability information of a positive and significant relationship of top management support variables to end-user account information satisfaction.

The perceived usefulness with end-user accounting information 0.323 with CR of 2.224 proves that end-user account satisfaction positive and significant relationship of end-user account satisfaction variable of perceived usefulness. Table 4 also presents the quality of the system has a direct and significant effect on the end-user satisfaction is 0.276 and the indirect effect of system quality on end-user satisfaction

through perceived usefulness is 0.144 so that the total influence of system quality to end-user satisfaction is 0.420. The total effect of system quality on end-user satisfaction is greater than the direct effect of system quality on end-user satisfaction, it indicates that perceived usefulness as a mediating variable the quality of the system to the ultimate user satisfaction of accounting information.

The quality of information directly affects the end-user satisfaction is 0.221 and the indirect effect of the quality of information to the end-user satisfaction through perceived usefulness is 0.096 so that the total influence of the quality of information to the end-user satisfaction of 0.317. The total effect of information quality on end-user satisfaction is greater than the direct effect of information quality on end-user satisfaction, it indicates perceived usefulness as a variable mediating the quality of information to end-user satisfaction.

The top management support directly affects the end-user satisfaction is 0.233 and the indirect effect of top management support on the end-user satisfaction through perceived usefulness is 0.081 so that the total influence of top management support on end-user satisfaction is 0.314. The total effect of top management support on end-user satisfaction is greater than the direct effect of top management support on end-user satisfaction. This shows perceived usefulness as a variable that mediates top management support to end-user satisfaction.

## DISCUSSION

The System Quality, the Quality of Information, Top Management Support, the Perceived Usefulness, allegedly have significant impact on the end-user of Accounting Information satisfaction. The quality of the system used by SMEs managers is the quality of AIS that has the utility, availability, reliability, adjustment, and response time. AIS's most focused quality is the time it responds to process sales transactions and purchase transactions more quickly because AIS is used already integrated (integrated software). In addition, accounting information systems (AIS) simplifies the processing of purchase and sale transactions because information system provides guidance and tutorials on the process of using AIS. AIS provides the features required for sales transactions and purchase transactions such as multicurrency for export business, multiple-warehouse for warehouse management, and quantity control measurement for control of the quantity of goods. AIS is believed to assist in completing sales and purchase transactions through data inputs to generate accounting information, initial data setup and available features able to match the needs of SMEs managers.

The quality of information used is the quality of source documents and supporting documents that can meet the needs of AIS. AIS quality is complete, relevant, easy to understand, secure, and personal information. The quality of the information focused is security because duplicate numbers on the numbering of source documents and supporting documents should be avoided to facilitate the arrangement of the filing. In addition, source documents and supporting documents are used to meet the need for data inputs on AIS, source documents and supporting documents as required for processing, information on source documents and supporting documents is concise and simple, the appearance of source documents and supporting documents is changed accordingly with AIS needs.

SMEs management support is support for the resolution of various issues related to the use of AIS, funding support for activities, decision support on the implementation of information systems, and new technologies. The focus of top management support is the variety of issues related to AIS improvements relating to technical issues and AIS improvements relating to operational issues by coordinating with software developers. Furthermore, top management as well as managers of SMEs provides funding for the development of AIS facilities and capacity including report facilities that can be customized in accordance with the needs of managers and capacity development of transaction volume and digit of transactions. SMEs managers make decisions related to the selection of AIS and hardware selection as a support for AIS activities and as SMEs are increasingly expanding their business, the more complex the accounting management will affect the development of hardware and AIS for upgrading.

Perceived usefulness occurs when work is effective, completes tasks faster, and works more easily. SMEs managers prioritize completing tasks faster as most SMEs managers need to complete their work on

time and help reduce work with high accuracy because AIS is already integrated to make it easier for SMEs managers to take advantage of AIS. Perceived usefulness in AIS makes work more effective because AIS produces output according to plan and just in time. Therefore, SMEs managers feel that by utilizing AIS, accounting work becomes easier because AIS is able to complete tasks quickly and make accounting work more effective. Utilizing AIS facilitates the process of data input and financial data processing with ease.

End-user satisfaction accounting information in question is the satisfaction of SMEs managers of the results obtained from AIS. SMEs managers are satisfied with the accounting information generated by looking from the content, accuracy, display format, and timeliness for financial reports and supporting reports. The most important satisfaction felt by SMEs managers is the timeliness of the financial statements and supporting reports produced earlier and not delayed because AIS provides financial statement facility with the desired period.

Effect of System Quality, Quality of Information, Top Management Support to Perceived Usefulness. The quality of the system is more focused on the response time for AIS which is applied for the processing of sales transactions more quickly. Based on the results of the evaluation has been done, shows that the response time is more dominant to be applied to the processing of sales transactions more quickly so that information system able to complete the work in time and has been targeted rather than controlling the numbering of the source document against the duplicate number and performing accounting information system (AIS) improvements with technical issues. SMEs managers focus more on AIS that is able to process sales transactions more quickly that is in accordance with the time already specified. Focus on sales transactions as they relate to income partially derived from repayment of accounts receivable from credit sales activities. Sales transaction management in information system provides a reminder of accounts receivable function to recall the collection schedule of receivable that has been due for repayment so that the reminder system helps to facilitate faster accounting record, especially receivable payment transaction. The findings of the study are the role of system quality to perceived usefulness more dominant than the role of information quality and top management support to perceived usefulness.

Effect of System Quality, Quality of Information, Top Management Support to end-user satisfaction Accounting Information. System quality is more focused on the time that information system responds to by managing sales transactions more quickly. Based on the results of evaluations that have been done, shows more dominant time that is responded to applied to information system that process sales transactions more quickly produce supporting report information obtained earlier and did not experience delays so that SMEs managers in the designated area of Malang Raya satisfied with accounting information supporting reports used to determine the financial condition rather than controlling the numbering of source documents in order to avoid duplicate number and make improvements to the AIS who experienced technical problems. The findings on the research is the role of system quality to end-user satisfaction accounting information is more dominant than the role of information quality and top management support to end-user satisfaction accounting information.

The influence of Perceived Usefulness on accounting information end-user satisfaction. Perceived usefulness is more focused on the completion of tasks more quickly applied to the ability of AIS to complete the work in accordance with the time so that managers SMEs in Malang Raya satisfied with the results of accounting information supporting reports. The main finding of this study is that the role perceived usefulness has an immediate effect on the end-user satisfaction of accounting information. The main finding of this study is that the role of perceived usefulness has an immediate effect on the end-user satisfaction of accounting information.

Effect of System Quality, Quality of Information, Top Management Support, to Perceived Usefulness through end-user satisfaction Accounting Information. Based on the final result of conceptual structural model analysis, system quality, information quality, and top management support have an effect on satisfaction of SMEs management through perceived usefulness. Perceived usefulness is able to mediate the effect of system quality, information quality, and top management support on the satisfaction of SMEs managers of end-user accounting information. Empirically to achieve satisfaction of managers SMEs accounting information required perceived usefulness. Perceived usefulness requires system quality, information quality, and top management support because information system is able to manage sales

transactions more quickly, numbering supporting documents does not occur duplicate number, and if information system is experiencing technical problems immediately repaired then SMEs managers feel AIS able to reduce job or bookkeeping task with a high level of accuracy and complete the work in accordance with the time so as to produce supporting reports and financial statements earlier and did not experience delays accounting information. Specifically, AIS is able to manage sales and purchase transactions more quickly then it can reduce bookkeeping jobs with a high level of accuracy so that information system is able to generate supporting report information early and do not experience delays.

The main finding of this study is the role of perceived usefulness as intervening variable predominantly mediate the quality of the system towards end-user satisfaction accounting information rather than mediate information quality and top management support to end-user satisfaction accounting information. The theoretical implication of this study is that perceived usefulness is used for non-mandatory users, meaning that using AIS is not based on obligation but because of the dependency of users on the existing AIS.

This study supports research conducted by Seddon (1997) and Livery (2005). which states that the quality of the system and the quality of information does not affect the use of information systems if the user is mandatory. The practical implication of this research is that SMEs managers in the area Malang Raya are satisfied that end-user satisfaction is capable to produce supporting reports to know the financial condition being managed. The creation of the supporting report is more important and more useful than the financial statements .

## CONCLUSION

End-user satisfaction is believed to help complete sales transactions and purchase transactions due to the fast transaction processing response, the end-user satisfaction feature is able to meet the needs of SMEs managers, guides or demo tutorials on technology utilization particularly information system are available, as well as setup data and features that are able to adapt to the needs of SMEs managers so that information system is used quality.

The source document and supporting documents are able to meet the data input requirements of information system which previously documented control of numbering in order to avoid duplicate numbers, information on the required documents is simple and concise, the document display meets information system technology needs to be used as a quality data input.

SMEs managers serve as top management prioritizing handling on technical issues and operational issues in information system. Although the information system used already has help desk facilities and live support but there are still SMEs managers who have not been able to solve the problem. Particularly related to the operational implementation of end-user satisfaction run by SMEs managers. Therefore, it must immediately coordinate with the Information System maker.

Perceived usefulness in end-user satisfaction able to complete tasks faster means to reduce bookkeeping work with a high level of accuracy and able to complete the work in accordance with the time so that SMEs managers feel the benefits. The timeliness of financial statements and supporting reports is obtained from end-user satisfaction which generates financial statement information and support reports and is obtained early and does not experience any delay because AIS is used by the managers to provide facilities and features that meet the needs. Early reports will be used more quickly in management decision-making.

The role of system quality to perceived usefulness is more dominant than the role of information quality and top management support to perceived usefulness. The role of system quality towards end-user satisfaction accounting information is more dominant than the role of information quality and top management support to end-user satisfaction accounting information.

Perceived usefulness has an immediate effect on the end-user satisfaction of accounting information. The role of perceived usefulness as intervening variables predominantly mediates the quality of the system against the end-user satisfaction of accounting information rather than mediating the quality of information and top management support to the end-user satisfaction accounting information.

## REFERENCES

- Acar, A. (1993, October). The Impact of Key Internal Factors on Firm Performance: An Empirical Study of Small Turkish Firms. *Journal of Small Business Management*, 86- 98.
- Adam, D., Nelson, R., & Todd, P. (1992). Perceived Usefulness, Ease of Use, and Usage of Information Technology: A Replication. *Journal Management Information System Quarterly*, 21(3), 227-247.
- Alter, S. (1992). *Information System, A Management Perspective*. The Benjamin Cummings Publishing Company, Inc.
- Alter, S. (1999, March). A General, Yet Useful Theory of Information System. *Communications of The Association for Information System*, 1(13), 1-70.
- Al-Khaldi, M., & Wallace. (1999). The Influence of Attitudes on Personal Computer Utilization Among Knowledge Workers: The Case of Saudi Arabia. *Journal of Information and Management*, 185-206.
- 1 Al-Adaileh, R. M. (2009). An Evaluation of Information Systems Success A User Perspective – The Case of Jordan Telecom Group. *European Journal of Scientific Research*, 37(2), 226-239.
- Al-Gharbi & Naqvi. (2008). The Use of Intranet by Omani Organizations in Knowledge Management Int. *J. Education and Development using Information and Communication Technology*, 4(1), 27-40.
- Al-Hakim. (2007). *Information Quality Management: Theory and Applications*. Hershey: Idea Group Publishing.
- Armstrong, Fogarty, Dingsdag, & Dimpleby. (2005). Validation of a Computer User Satisfaction Questionnaire to Measure IS Success in Small Business. *Journal of Research and Practice Information Technology*, (37)1, 27-42.
- Baas & Schrooten. (2006). Relation Banking and SMEs: A Theoretical Analysis, *Journal of Small Business Economics*, 27, 127-137.
- Bailey & Pearson. (1983). Development a Tool for Measuring and Analyzing Computer User Satisfaction. *Management Science*, 29(5), 530-545.
- Barki & Huff. (1985). Change, Attitude to Change, and Decision Support System Success. *Information and Management*, 261-268.
- Baroudi, Olson, & Ives. (1986). An Empirical Study of The Impact of User Implementation on System Usage and Informations Satisfaction. *Communication of The ACM*, 29(3), 232-238.
- Bell, J. (1984, February). The Effect of Presentation from on The Use of Information in Annual Reports. *Management Science*, 30(2), 169-185.
- Bergeron, F. (1986, September). Factors Influencing the Use of DP Chargeback Information. *MIS Quarterly*, 225-237.
- Besner, C., & Hobb, B. (2008). *The Reality of Project Management Practice: Phase Two of an on Going Study*. University of Quebec at Montreal.
- 15 Bharati, P., & Chaudhury, A. (2004). An Empirical Investigation of Decision Making Satisfaction in Web-Based Decision Support Systems. *Decision Support Systems*, 37(2), 187-197.
- Boynton, Zmud, & Jacobs. (1994). The Influence of IT Management Practice on IT Use in Large Organizations, *MIS Quarterly*, 18(3), 299-318.
- Bronas, AMK, & Louis. (1988, March). Restoring a Sense of Control During Implementation : How User Involvement Leads The System Acceptances. *Journal MIS Quarterly*, 111-124.
- Burch & Grudnitski. (1989). *Information Systems: Theory and Practice*, 5th Edition. John Wiley and Sons, Inc.
- 14 Cash, McFarlan, McKenny, & Applegate. (1992). *Corporate Information Systems Management: Text and Cases*. Third Ed., Irwin, Homewood, 111.
- Chen & Paulraj, A. (2004). Understanding Supply Chain Management: Critical Research and a Theoretical Framework. *International Journal of Production Research*, 42(1), 131-163.
- Chen & Hsiao. (2012). An Investigation on Physicians Acceptance of Hospital Information System: a Case Study. *International Journal of Medical Informatics*, 81(12), 810-820.

- Chin, W., & Todd, P. (1995). On The use Usefulness, Ease of use of structural equation Modeling in MIS. Research: A Note of Caution. *Management Information System Quarterly*, 21(3), 237-246
- Chung, K., & Megginson, L. (1981). *Organization Behavior Development Managerial Skills*. New York: Harper U Row.
- Choe, J-M. (1996). The Relationship Among Performance of Accounting Informations System, Influence Factors, and Evolution Level of Information System. *Journal of Management Information Systems*, 12(4), 215-239. <sup>3</sup>
- Chowa, Ceyaraj, & Sabherwal. (2016). Information System Success: Individual and Organizational Determinant. *Management Science*.
- Conrath & Mignen. (1990). What is Being Done to User Measures Satisfaction with EDP/MIS. *Information & Management*, 19, 7-19.
- Curtis, G. (1995). *Business Information System*. 2<sup>nd</sup> edition. Notingham, England: Addison Wesley.
- Cyert & March. <sup>14</sup>63). *A Behavioural Theory of The Firm*. N.J Englewood: Prentice-Hall.
- Daft, Lengel, & Trevino. (1987, September). Message Equivocality, Media Selection and Manager Performance: Implication for Information Systems. *Journal MIS Quarterly*, 355-366.
- dan Nwagwu, A. (2014). *Information Systems User Satisfaction: A Survey of The Postgraduate School Portal*, University of Ibadan, Nigeria. Library Philosophy and Practice. Paper 1192.
- dan Fishbein, A. (1980). *Understanding Attitudes and Predicting Social Behavior*. 83-111, Prentice Hall, Englewood Cliffs, New York.
- <sup>9</sup>n Reece, A. (1989). *Accounting, Text, and Cases* 8<sup>th</sup> ed. Homewood, Richard D. Irwin.
- Davis, F. (1986). Technology Acceptance Model for Empirical Testing New End-user Information System: Theory and Results. *Doctoral Dissertation, Sloan School of Management*.
- Davis, F. (1989, September). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319-340.
- Davis, F., Bagozzi, R., Warshaw, & Paul. (1989, August). *User Acceptance of Computer Technology: A Comparison Two Theoretical Models Management Science*. 982-1003.
- Debrabander, B., & Edstrom, A. (1977). Successful Information Systems Development Projects. *Management Science*, 24(2), 191-199.
- DeLone & McLean. (1992). Information System Success: The Quest for Dependent Variable. *Journal Information System Reserach*, 3.
- DeLone & McLean. (2003). The DeLone and McLean Model of Information Systems Success: A Ten-year Update. *Journal of Management Information Systems*, 19(4), 9-30.
- Ditsa, G., & McGregor. (1997). Our Mousetrap's Fine: So Why Aren't People Beating A Path To Our Door?. *Information Resources Management Journal*, 10(3), 28-29.
- Doll, W. (1985). Avenues for Top Management Involvement in Succesful MIS Development. *MIS Quartely*, 9(1), 17-35.
- Doll, William, & Torkzadeh. (1988, June). The Measurement of end-user Computing Satisfaction. *Journal MIS Quarterly*, 12(2), 259-274.
- Doll, William, & Trokzadeh. (1994). A Confirmatory Factor Analysis of The end-user Computing Satisfaction Instrument. *Journal MIS Quarterly*, 453-461.
- Edstrom, A. (1977). User Influence and The Success of MIS Project : A Contingency Approach. *Human Relation*, 30(7), 489-607.
- Emery, J. (1971). Cost/Benefit Analysis of Information Systems. *The Society for Management Information Systems*, Chicago, IL.
- English. (1999). *Improving Data Warehouse and Business Information Quality*. New York: John Wiley & Sons. <sup>12</sup>
- Fraser, Steven, & Salter. (1995). *A Motivational View of Information System Success: A Reinterpretation of deLone and McLean's Model*. Department of Accounting and Finance.
- Garrity, E., & Sanders, L. (1957). *Information Systems Success Measurement*. Idea Group Publishing.
- Gaskill, Auken, & Manning. (1993). A Factor Analytic Study of the Perceived Causes of Small Business Failure. *Journal of Small Business Management*, 31(4).18-31.

- Gelderman, M. (1998). *Translation and Validation of the Doll and Torkzadeh end-user Computing Satisfaction Instrument*. Amsterdam: Vrije University.
- Ginzberg, M. (1981). Early Diagnosis of Implementation Failure: Promising Results and Unanswered Questions. *Management Science*, 27(4), 459-478.
- Gorla, Somers, & Wong. (2010, September). Organizational Impact of System Quality, Information Quality, and Service Quality. *The Journal of Strategic Information System*, Elsevier, 19(3), 207-228.
- Goodhue & Thompson. (1995). Understanding User Evaluations of Information Systems. *Management Science*, 41(12), 1827-1844.
- Gul, F. (1991). The Effects of Management Accounting Systems and Environmental Uncertainty On Small Business Managers Performance. *Accounting and Business Research*, 22(85), 57-61.
- Guthrie & Parker. (1989). CSR: A Rebuttal of Legitimacy Theory. *Accounting and Business Research*, 19(76), 343-352.
- Haal, S., & Keen, P. (1996). *Information Technology, Tomorrow's Advantage*. McGraw-Hill.
- Halawi, L., McCarthy, & Aronson. (2008). An Empirical Investigation of Knowledge Management Systems' Success. *Journal of Computer Information Systems*, 48 (2),121-135.
- Hamilton, Scott, & Chervany. (1981). Evaluating Information System Effectiveness : Comparing Evaluating Approaches. *MIS Quarterly*, 5(3), 55-69.
- Hartwick & Barki. (1994, March). Measuring User Participation, User Involvement, and User Attitude. *Journal MIS Quarterly*. ABI/INFORM Global. 18(1), 59-82.
- Hasan, Al-Mamary, Shamsuddin, & Aziati. (2013). The Impact of Management Information Systems Adoption in Managerial Decision Making: A Review. *Journal Management Information Systems*, 8(4), 10-17.
- Holmes & Des Nicholls. (1989). Modelling The Accounting Information Requirement of Small Business. *Accounting and Business Research*, 19(74), 143-150.
- Holmes & des Nicholls. (1988). An Analysis of The Use of Accounting Information by Australian Small Business. *Journal of Small Business Management*, 26(20), 57-68.
- Ifinedo. (2011). Examining the influences of external expertise and inhouse Computer/IT knowledge on ERP system success. *Journal of Systems and Software*, 84(12), 2065-2078.
- Igbaria, M. (1989, December). The Impact of User Attitudes Toward Microcomputer Usage on System Usage and User Satisfaction. *Communication of The ACM*, 12(2), 15-21.
- Igbaria, Zinatelli, Cragg, & Cavaye. (1997). Personal Computing Acceptance Factor in Small Firms: A Structural Equation Model. *MIS Quarterly*, 21(3), 279-305.
- Igersheim, R. (1976). *Managerial Response to an Information System, Proceedings of the National Computer Conference 4*. AFIPS Press, Montvale, N.J. 877-882.
- Ives, M. O., & Jack, B. (1981, September). User Involvement in Systems Design: An Empirical Test of Alternative. *Information and Management*, 4(4), 183-195.
- Ives, M. O., & Jack, B. (1983). The Measurement of User Information Satisfaction. *Communications of the ACM*, 26(10), 785-793.
- Izzo, J. (1987). *A View of Tomorrow's Systems Architecture, Embattled Fortress (Chapter 6)*. Jossey Bass, San Francisco, CA.
- Janson, Marius, & Subramanian. (1996). Package Software: Selection and Implementation Policies. *INFOR*, 34(2), 133-151.
- Jantan, Ramayah, & Chin. (2001). Personal Computer Acceptance by Small and Medium Companies Evidance from Malaysia. *Jurnal Manajemen & Bisnis*, 3(1), 1-14.
- Jarvenpaa & Ives. (1991). Executive Involvement and Participation in The Management of Information Technology. *Journal MIS Quarterly*, 15(2), 205-227.
- Joo, J., & Sang, Y. (2013). Exploring Koreans Smartphone usage: an Integrated Model of The Technology Acceptance Model and User and Gratifications Theory. *Computers in Human Behavior*, 29(6), 2512-2518.

- Kappelman & McLean, E. R. (1991). *The Respective Roles of User Participation and User Involvement in Information System Implementation Success*. University of North Texas, Denton.
- Kim, Y., & Lee, H. S. (2014, April). Quality, Perceived Usefulness, Use Satisfaction, and Intention to Use An Empirical Study of Ubiquitous Personal Robot Service. *Published by Canadian Center of Science and Education*, 10(11), 1-16.
- Landrum, Prybutok, Strutton, & Zhang. (2008). Examining The Merits of Usefulness Versus Use in an Information Service Quality and Information System Success Web-based Model. *Information Resources Management Journal*, 21(2), 11-17.
- Larcker, D., & Lessig, P. (1980). Perceived Usefulness of Information: a Psychometric Examination. *Decision Science*, 11(1), 121-134.
- Laudon & Laudon. (1998). *Essentials of Management Information System*. Prentice Hall. New Jersey.
- Laudon & Laudon. (2000). *Organization and Technology in The Networked Enterprise*. Management Information System, Six Edition, International Edition.
- Locke. (1976). *The Nature and Causes of Job Satisfaction*. M.Dunnette (Ed.). *Handbook of Industrial and Organizational Psychology*, 1297-1349.
- Lin, W., & Shao, B. (2000, September). The Relationship between User Participation and System Success: A Simultaneous Contingency Approach. *Journal Information and Management*, 37, 283-295.
- Livary, J. (2005). An Empirical Test of The DeLone-McLean Model of Information System Success. *Database for Advance in Information System*, 36(2), 8-27.
- Li, X., & Dasgupta, S. (2002). Measurement of User Satisfaction with Web-Based Information Systems: An Empirical Study. *Eighth Americas Conference on Information Systems*, 1149-1155.
- Lucas. (1978). *The Evaluation of an Information System: from Key-Man to Every Person*. Sloan Management Review.
- Lucas, Walton, & Ginzberg. (1988). Implementing Packaged Software. *MIS Quarterly*, 12(4), 537-549.
- Lwoga. (2014). Critical Success Factors for Adoption of Web-Based Learning Management Systems in Tanzania. *International Journal of Education and Development Using Information and Communication Technology*, 10(1), 4-21.
- Lyytinen, K. (1988). Expectation Failure Concept and Systems Analysts' View of Information System Failures: Results of an Exploratory Study. *Information and Management*, 14(4), 45-56.
- Mangin, Jean, Bourgault, & Guerrero. (2008). Modelling Perceived Usefulness on Adopting Online Banking Through the TAM Model in a Canadian Banking Environment. *Journal of Internet Banking and Commerce*, 16(1), 1-23.
- Mahmood, Burn, Gemoets, & Jacquez. (2000, April). Variables Affecting Information Technology End-User Satisfaction: a Meta-analysis of The Empirical Literature. *Journal Human Computer Studies*, 52(4), 751-771.
- Martin, et al. (1994). *Managing Information Technology, What Managers Need To Know*. MacMillan Publishing Company.
- Mason, R. O. (1978). Measuring Information Output: A Communication System Approach. *Information and Management*, 1(5), 219-234.
- McFadden, F. R., Hoffer, J. A., & Prescott, M. B. (1999). *Modern Database Management*. 5<sup>th</sup> Edition; Addison Wesley.
- McKeen, J. et al. (1994, December). The Relationship Between User Participation and User Satisfaction: An Investigation of Four Contingency Factors. *Journal MIS Quarterly*, 18(4), 427-451.
- McLeod, R. (1996). *Management Information System*. Simon and Schuster Pte, Ltd.
- McMahon, R. G. P. (2001). Business Growth and Performance and The Financial Reporting Practices Of Australian Manufacturing SMEs. *Journal of Small Business Management*, 39(2), 152-164.
- Meiryani. (2014). Influence of Top Management Support on the Quality of Accounting Information System and its Impact on the Quality of Accounting Information. *Research Journal of Finance and Accounting*, 5(11), 124-132.



- Miller & Doyle. (1987). Measuring the Effectiveness of Computer-Based Information Systems in The Financial Services Sector. *MIS Quarterly*, 11(1), 107-124.
- Miss, M. (2014). Information Systems User Satisfaction: A Survey of Postgraduate School Portal, University of Ibadan Nigeria. *Journal Library Philosophy and Practice*.
- Negash, S., Ryan, T., & Igbaria, M. (2003). Quality and Effectiveness in Web Based Customer Support Systems. *Information & Management*, 40(8), 757-768.
- Nolan, R.L., & Seward, H. (1974). Measuring User Satisfaction to Evaluate Information Systems. in R.L. Nolan (ed.), *Managing the Data Resource Function*. West Publishing Co., Los Angeles, 253-275.
- Norton, D., & McFarlan, F. W. (1975). *The Information Systems Handbook*. Dow Jones – Irwin, Homewood, IL.
- Olegas, V., Caplinskas, A., Wojtkowski, W., Wojtkowski, W. G., Zupancic, J., & Wrycza, S. (2005). *Information System Development (Advances in Theory, Practice, and Education)*. New York, Springer.
- Omar, M. H., & Lascu, D. N. (1993). Development of User Information Satisfaction Scale: An Alternative Measure With Wide Applicability. *Journal of Information Technology Management*, 4(2), 2-13.
- Ong, C.S., Day, M.Y., & Hsu, W. L. (2009). A Measurement of User Satisfaction with Question Answering Systems. *Information and Management*, 46(7), 397-403.
- Melone, N. P. (1990, January). A Theoretical Assessment of The User Satisfaction Construct in Information System Research. *Journal Management Science*, 36(1), 76-91.
- Park, Ciganek, & Lim. (2011). Examining success factors in the adoption of digital object identifier systems. *Electronic Commerce Research and Applications*, 10(6), 626-636.
- Peter, Mykytyn, & Gary. (1992). Effect of Computer Experience and Task Complexity on Attitudes of Manager. *Information and Management Journal*, 23, 263-278.
- Peterson, Kometzky, & Ridgway. (1993). Perceived Causes of Small Business Failure: A Research Note. *American Journal of Small Business*, 8(1), 15-19.
- Petter, S., DeLone, W., & McLean, E. (2008). Measuring Information Systems Success: Models, Dimensions, Measures, and Interrelationships. *European Journal of Information Systems*, 17(3), 236-263.
- Rai, A., Lang, & Welker. (2002). Assessing the validity of IS success models: An Empirical Test and Theoretical Analysis. *Information Systems Research*, 13, 50-69.
- Raymond, L. (1988). The Impact of Computer Training on The Attitudes and Usage Behavior of Small Business Managers. *Journal of Small Business*, 26(3), 8-13.
- Reich & Benbasar. (1990). An Empirical Investigation of Factors Influencing The Success of Customer – Oriented Strategic System. *Journal Information System Research*, 1(3), 325-347.
- Rittgen, P. (2010). Quality and Perceived Usefulness of Process Models. Published in *ACM Journal*, New York, Maret, 65-72.
- Robey & Farrow. (1982, January). Users Involvement And Information System Development A Conflict Model And Empirical Test. *Management Science*, 29(1), 73-85.
- Rockart, J. F., & Flannery. (1983, October). The Management of End-user Computing. *ACM Digital Library*, 26(10), 776-784.
- Rouibah, H., Hamdy, I., & Al-Enezi, M. Z. (2009). Effect of Management Support, Training, and User Involvement on System Usage and Satisfaction in Kuwait. *Journal Industrial Management and Data System*, 109(3), 338-356.
- Romney, Barry, & Paul. (1997). *Accounting Information System*. New York: Addison Wesley Longman, Inc.
- Ryall, J., & Kruthof, J. (2001). *The Quality System Handbook*. Published by Consensus Books, Australia.
- Schiffman, S. J., Meile, L. C., & Igbaria, M. (1992, April). An Examination of End-user Types. *Journal of Information and Management*. 22(4), 207-216.

- Seddon & Kiew. (1994). *A Partial Test and Development of the DeLone and McLean Model of IS Success*. In J.I. DeGross, S.L. Huff, and M.C. Munro (eds.), *Association for Information Systems*, 99–110.
- Seddon. (1997). A Respecification and Extension of The DeLone and McLean Model of IS Success. *Information System Research*, 8(3), 240-253.
- Sedera & Gable. (2004). *A Factor and Structural Equation Analysis Of The Enterprise Systems Success Measurement Model*. Proceedings of the 25th International Conference on Information Systems, Washington DC, USA.
- Shih & Huang, S. (2009). The Actual Usage of ERP System: An Extended Technology Acceptance Perspective. *Journal of Research and Practice in Information Technology*, 41(3), 263-276.
- Shannon, Claude, & Warren. (1949). *The Mathematical Theory of Communication*. University of Illinois Press. Urbana, IL.
- Slone, J. P. (2006). *Information Quality Strategy: An Empirical Investigation of The Relationship Between Information Quality Improvement and Organizational Outcomes*. UMI Microform.
- Sobel, M. E. (1982). *Asymptotic Confidence Intervals for Indirect Effects in Structural Equation Models*. In S. Leinhardt (Ed.), *Sociological Methodology*. Washington DC: American Sociological Association.
- Spargue, R. H., & McNurlin, B. C. (1986). *Information System Management in Practice-Hall*. Englewood Cliffs, HJ.
- Srinivisan, A. (1985). Alternative Measures of System Effectiveness: Association and Implications. *MIS Quarterly*, 9(3), 243-253.
- Steidl, Hummel, & Juergens. (2013). *Quality Analysis of Source Code Comments*. CQSE GmbH, Garching b. Munchen, Germany.
- Swanson, E.B. (1974). Management Information System: Appreciation and Involvement. *Management Science*, 21(2), 178-188.
- Szajna, B., & Scammell, R. W. (1993, December). The Effect of Information: System User Expectation on The Performance and Perception. *MIS Quarterly*, 17(4), 493-516.
- Tait, P., & Vessey, I. (1988, March). The Effect of User Involvement on System Success: A Contingency Approach. *Journal MIS Quarterly*, 12(1), 91-108.
- Theng, L. G., & Wang Boon, J. (1996). An Explanatory Study of Factors Affecting The Failure of Local Small and Medium Enterprises. *Asia Pacific Journal of Management*, 13(2), 47-61.
- Thompson, R. L., Higgins, C. A., & Howell, J.M. (1991). Personal Computing: Toward a Conceptual Model Utilization. *MIS Quarterly*, 25-143.
- Thong, Yap, & Raman. (1996). Top Management Support, External Expertise, and Information System Implementation in Small Businesses. *Journal Information System Research*, 7(2), 248-267.
- Urban, E., Rainen, R. K., & Potter, R. E. (2003). *Introduction to Information Technology*. New Jersey.
- Urbach, N., Smolnik, S., & Riepm, G. (2010). An Empirical Investigation of Employee Portal Success. *The Journal of Strategic Information System*, 19(3), 184-206.
- Walpole, Myers, Myers, & Ye. (2012). *Probability and Statistics for Engineers and Scientists* (ninth edition). Pearson.
- Weber, R. (1999). *Information System Control and Audit*. The University of Queensland, Prentice Hall.
- Whittaker, B. (1999). What Went Wrong? Unsuccessful Software Development Projects. *Information Management and Computer Security*, 7(1).
- Wichman, H. (1983). Accounting and Marketing Key Small Business Problem. *American Journal of Small Business*, 7(4), 19-26.
- Wilkinson, A. (1992). *Accounting and Information System*. John Wiley and Sons Inc.
- Young, J. (2008). Top Management Support: Mantra or Necessity. *International Journal of Project Management*, 26(7), 713-725.
- Zahedi, F. (1995). *Quality Information System*. Published by Boyd and Fraser, MA.
- Zviran, Levin, & Pliskin. (2005, March). Measuring User Satisfaction and Perceived Usefulness in The ERP Context. *Journal of Computer Information System*, 45(3), 43-52.

Zwikael, O. (2008). Top Management Involvement in Project Management. *International Journal of Managing Project in Business*, 1(4), 498-511.

# End-user satisfaction as an impact of the system quality, information quality, and top management support, upon the perceived usefulness of technology utilization

## ORIGINALITY REPORT

11%

SIMILARITY INDEX

12%

INTERNET SOURCES

13%

PUBLICATIONS

7%

STUDENT PAPERS

## PRIMARY SOURCES

1	<a href="http://www.ef.uns.ac.rs">www.ef.uns.ac.rs</a> Internet Source	1%
2	Submitted to Udayana University Student Paper	1%
3	<a href="http://www.cbmsbm.com">www.cbmsbm.com</a> Internet Source	1%
4	<a href="http://repository.unimal.ac.id">repository.unimal.ac.id</a> Internet Source	1%
5	<a href="http://pdfs.semanticscholar.org">pdfs.semanticscholar.org</a> Internet Source	1%
6	<a href="http://www.smith.umd.edu">www.smith.umd.edu</a> Internet Source	1%
7	<a href="http://www.pomlearning.org">www.pomlearning.org</a> Internet Source	1%
8	<a href="http://aisel.aisnet.org">aisel.aisnet.org</a> Internet Source	1%

9	Submitted to Caucasus University Student Paper	1%
10	eprints.usq.edu.au Internet Source	1%
11	Lee, Jung Sub, and Youngsun Kwon. "Exploring Key Factors of Application Software Services and Their Relationships for Organizational Success in SMEs", Journal of Small Business Management, 2013. Publication	1%
12	etds.lib.stu.edu.tw Internet Source	1%
13	managementjournal.info Internet Source	1%
14	journal.ugm.ac.id Internet Source	1%
15	ucheg.ru Internet Source	1%

Exclude quotes  Off

Exclude matches  < 1%

Exclude bibliography  Off