

The effect of information systems success factors on user satisfaction in accounting information systems

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ABSTRACT

The purpose of this study is to explore the impact of information systems (ISs) Success Factors the user of (AISs) satisfaction on the Kuwaiti governmental organizations. To achieve the objectives of the study, the researcher designed and developed a questionnaire for data collection from the study population and distributed (160) questionnaires. There were (149) retrieval for data analysis which was used for further analysis using SPSS v26. After an appropriate analysis, the study found no significant impact for the success factors (ISs) including the quality of information, the quality of the system and the quality of services on the user satisfaction (AISs).

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1. Introduction

The informational resource is considered an important part of the management's tasks in business organizations (Karimi et al., 2007); it is a vital aspect for the decision-making process since information has become the most significant feature during the last decades. In order to succeed, (ISs) rely on various factors. The quality of information will continue to be the first concern of modern businesses (Delone et al., 2003). However, if they achieve large successes in the field of quality previously, whether in the statistical control on the quality, putting the specifications and applicable procedures as well as means to improve the quality which is based on the users, still, they did not compliment their methods and means, which have become a competitive new means for excellence (Ferguson & Huston, 1998). In addition, the quality that is directed towards users is deemed as an important development that represent moving from focus on the requirements of the operative system to concentration on the user requirements (Delone et al., 1992). Moreover, they indicate a better response to the users' needs and expectations in such a way that achieves his satisfaction, and thus his loyalty. In this regard, the quality of information is the new form of concern with quality after the commodity and then the service (Sari et al., 2016). The concept of quality of service is used to indicate to a number of things; the study find some managers who use the concept to mean how to deal with the users, whereas others look at it a grand total but not a part that relates to the contact points with the user (Sartika et al., 2016). For the success of these processes, there should be complete information databases that provide the required information on the due time, with the appropriate quantity and through the use of the best devices and software (Delone et al., 1992) (Ferguson & Huston, 1998). Accordingly, this study investigates the effect of factor success of (ISs) on the satisfaction of (AISs) through a field study to examine the perspectives of a sample of employees in the Kuwaiti public entities that apply the system, to know their opinions regarding the variables of the study.

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2. Literature review

2.1 Factors for the success of ISs

The use of (ISs) has increased during the last two decades by the public and/ or private organization. Studies revealed that a number of these organizations have succeeded while the others failed (Hamdan, 2013). This cannot be attributed to the type of technology or system used, but it happened as a result for other factors that were not taken into account (Bruwer, 1984), (Delone et al., 2003). In this context, (Petter et al., 2012) stated that (ISs) may fail once there is a negligence towards the users' reactions by the system designers, the criteria for the success of (ISs) may vary from person to another, but there are general features that characterized any successful (ISs) (Urbach et al., 2012), namely: the accuracy and appropriateness of the system as well as the independence of the system which is used comprehensively by all users. Accordingly, these features support and improve the quality of the system (Bernroider, 2008; Wang et al., 2008).

2.2 Information Quality

It refers to the outputs of (ISs). They are featured by being easily understood, completeness, accuracy and appropriate time (Delone et al., 1992). In this regard, the quality of (ISs) is improved in the organizational culture through the systems of information technology, they are considered among the necessary tasks for the current organizations. In addition, the completeness of (ISs) increases the efficiency of the systems, which means the accuracy or information inserted in the system which play a significant role in the success of these systems (Petter et al., 2008), contribute in rationalization the decision-making process. The quality of information is measured by appropriateness and reliability, capability to be understood, completeness, accuracy, comparable and can be presented on the due time (Wang et al., 2008).

2.3 Service Quality

This refers to the type of service felt by the system user in terms of fast response and the technical competency (Petter et al., 2008). This kind of quality is achieved through knowing the time a customer shall wait until having the service and whether the service expires in the specific time? Is the same level of service available each time? Which means evaluating the level of excellence in the provision of information to the users. Moreover, customer satisfaction decides the extent of response to the efficient use of (ISs) (Wang et al., 2008). Various methods were used to measure user satisfaction, such as: the extent of the (ISs) to fulfill the users' needs, level of satisfaction for the equipment and software, the system's ability to complete the required work and its ability to increase production (Harati-Mokhtari et al., 2007).

2.4 System Quality

The system quality is measured in terms of easiness of use, flexibility, quality of data, easiness to transfer, completeness, relative significance and the technical components (Ramet et al., 2003). However, the quality of the system has a positive effect on the success of (ISs) as the quality of the system focuses on the desired features in the system itself. These can be measured by easy to learn and use, completeness and flexibility (Chevers et al., 2012). Afterwards, the successful (ISs) helps in raising the quality of the organization and the total quality of the management through the participation of each employee in the responsibilities; the administrative designer, user and worker as significant parts in the success of the Management of Information Systems (MIS), since they relate to the daily activities of the organization (Harati-Mokhtari et al., 2007). The failure of the system does not mean broken down, but as not used in an efficient way. This can be referred to problems in the design, costs, data and operation (Hamdan, 2017). On the other hand, success means that (ISs) have high quality and achieves all objectives and requirements of the user by covering all work procedures that are required currently and, in the future, not to forget working in an appropriate technical way without mistakes and to be easily repaired and developed, provided that the total moral and material benefits of the system shall be equal or more than the total costs.

2.5 Users of (AIS) Satisfaction

These aspects represent important factors to measure the used quality of (ISs). The concept for the quality of information defines the features of the useful accounting information or the basic rules that should be used in evaluating the quality of accounting information (Farhan & Hmdan, 2017). Consequently, defining such features helps officials in putting the accounting criteria, preparing the financial lists in order to evaluate the accounting information that result from applying alternative accounting methods and in distinguishing between what can be a necessary clarification and those which are not. In this vein, the benefit of accounting information shall be evaluated based on the objectives of the financial lists that focus on helping the customer take the decisions relevant to the organization. In addition, accountants shall pay attention to those customers and to prepare financial lists that help them take their decisions (Hamdan & Atallah 2015). Moreover, to give advice in a good way to process accounting data or the method of statement based on the benefits of the resulting information are not enough to those who shoulder the responsibility of such choice. It is necessary to decide and define the features that make this information useful in the decision-making process.

3. The proposed study

The model of the study consists of two parts, namely:

Part one: the independent variable which contains: the factors for the success of IS (quality of information, quality of the system and quality of the service).

Part two: the dependent variables which contain: accounting information systems.

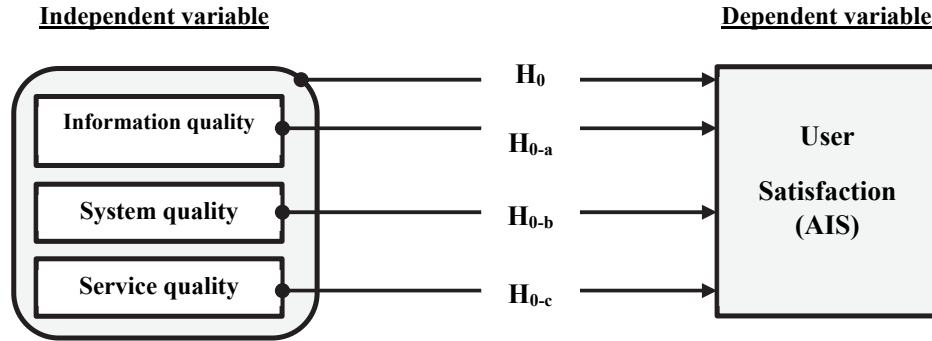


Fig. 1. The relationship between the variables of the study (while using information from DeLeone & McLean, 2008).

3.1 Hypothesis of the study

Based on the problem of the study, the following hypothesis were formulated:

H₀: there are no significant statistical effects for the factors of the (IS) (the quality of the system, quality of information, and quality of the service) on the satisfaction of (AISs) in the Kuwaiti public organizations.

H_{0-a}: There is no significant statistical effect for the quality of the system on the satisfaction of the users of the (AIS) in the Kuwaiti public organizations.

H_{0-b}: There is no significant statistical effect for the quality of the system on the satisfaction of the users of the (AIS) in the Kuwaiti public organizations.

H_{0-c}: There is no significant statistical effect for the quality of the system on the satisfaction of the users of the (AIS) in the Kuwaiti public organizations.

3.2 Methodology of the study

This is a quantitative one (Creswell & Creswell, 2017) that aims at examining the effect of the success factors of (IS) on the satisfaction of the (AIS) users. The researcher used the descriptive method in order to describe the general information of the respondents through transferring the non-quantitative data to measurable ones (Creswell & Creswell, 2017). This study was implemented in the real environment in which the system is applied, in addition to dealing with any restrictions that might be imposed by the authorities. Accordingly, this is a field study since the obtained data were taken directly from the respondents who work for the governmental organizations that apply (ISs). In addition, it is an analytical one that relied completely on the field survey of the population through its sample. The researcher used a questionnaire that was specially prepared for the purposes of the study and according to the hypothesis. In order to make the statistical analysis and to achieve the objectives of the study, the significance level ($\alpha \geq 0.05$) was used, compared with a confidence level (0,95) to explain the results of the test (Kuger et al., 2016).

3.3 Population and sample

The sample of the study consisted of (149) employees in the Kuwaiti governmental organizations under the titles: (department manager, deputy department manager, and head of division and deputy of head of division). The study was restricted within the employees and heads of divisions since they were the most appropriate ones to answer the questionnaire.

In this regard, the researcher distributed (160) questionnaires using the method of comprehensive limitation/ restriction; 155 questionnaires were returned and after reviewing them, it was noted that (6) of them are not appropriate for the statistical analysis. Accordingly, the sample consisted of (149) representing (93%) of the population that consisted of (160) participants. Fig. 1 shows the distribution of the sample according to the personal variables. From Fig. 1, it can be noted that the highest percentage for the sample distribution according to the variable of the current position/ job is (50,3 %) for the jobs (head of division/ deputy head of division), whereas the lowest percentage was (18,1 %) for the job (department manager). On the

other hand, the highest percentage for the distribution of the sample according to the academic degree was (42,3 %) “accounting” and (5,4 %) “for other specialties”.

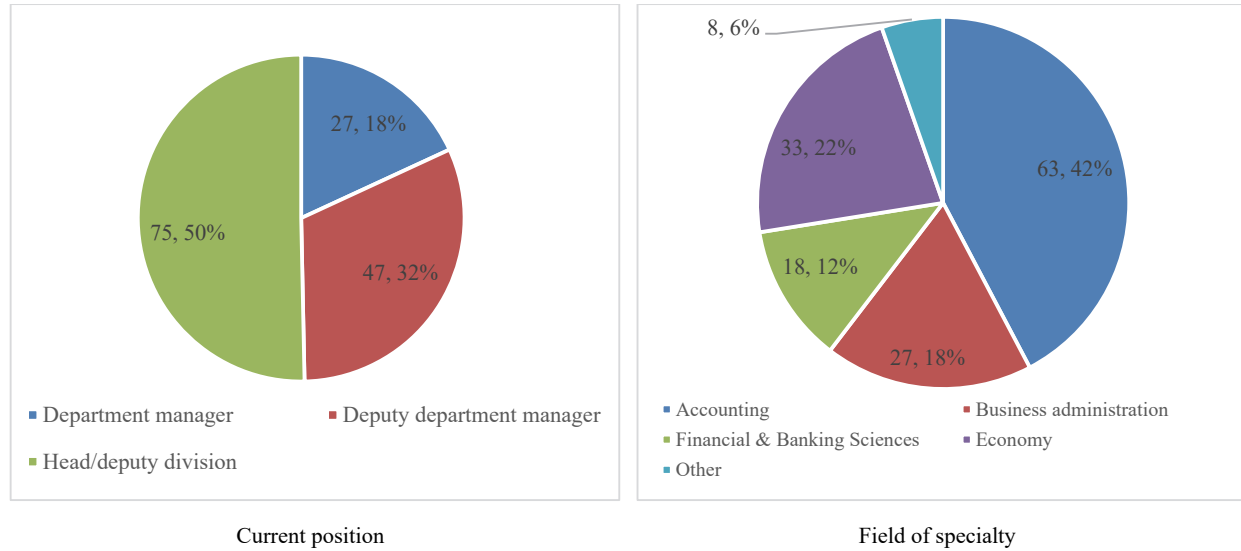


Fig. 1. Distribution of the sample according to the personal variables

3.4 The measure

For the analysis of data and to test the hypothesis of the study, the researcher used (Likert scale: five points) to answer the questions, as shown in Table 1.

Table 1
Testing the measure of the questionnaire

Degree	1	2	3	4	5
Level of agreement	Strongly do not agree	Do not agree	Neutral	Agree	Strongly agree

As for the limitation of the study upon commenting on the means of the variables stated in deciding the degree of agreement, the researcher decided three levels: (high, medium and low) which are based on the following equation:

$$\text{Length of the period} = (\text{the maximum limit of the alternative} - \text{the minimum limit of the alternative}) / \text{number of levels}$$

$$(5-1)/3 = 4/3 = 1,33$$

Consequently, the levels are clarified in Table 2 show the measure in deciding the level of appropriateness of the means to make use of it upon commenting on the means.

Table 2
Measurement for deciding the level of appropriateness of the means

Means	Degree of estimation
1- 2,33	Low
2,33- 3,67	Medium
3,68- 5	High

3.5 Questionnaire of the study (Creswell & Creswell, 2017)

The researcher developed the questionnaire after referring to the previous studies, or based on the reports published by the (Ministry of Finance, Vol.1) which was allocated to uncover the general information of the sample. This included: (the current position and academic qualifications), part 2: that was allocated for the terms relevant to the dependent variable and the dimension that deals with the fields of knowledge management.

3.6 Validity of the instrument (Kuger et al., 2016)

To ensure the validity and reliability of the instrument (the questionnaire), it was subject to various tests, most notably:

First: the surface validity: the instrument was presented to a number of specialized and experienced university professors. After informing them about its items, they provided valuable suggestions and recommendations on the wording. Accordingly,

the researcher made amendments until it seemed with their final form. Afterwards, they are piloted on a small sample other than the original one, in order to ensure the clearness of language formulation and correct response on the questionnaire. The corrected correlation factor was calculated as of (0,85 %).

Second: to ensure the reliability of the instrument, it was applied on a pilot sample consisting of (30) employees other than the original one. The researcher used (Cronbach Alpha) for all items of the dimensions and fields of the study. The value of Cronbach Alpha was (0,73) which is a good one for the purposes of the generalization of the results of the current study. The percentage accepted to generalize the results of such studies is (0.60) (Al Sharifain & Al Klan, 2007). Table 3 shows the reliability coefficients of the variables of the study.

Table 3

Reliability coefficients (Cronbach Alpha) for all items of the dimensions and the whole instrument

Field	No.	Dimension	Cronbach Alpha
	1	Quality of the system	0.74
	2	Quality of information	0.70
Factors of the success of IS	3	Quality of the service	0.83
Factors of the success of IS as a whole			0.74
User satisfaction on (AIS) as a whole			0.75
The instrument as a whole			0.75

4. Discussion of the results

This part presents the results of the study. This will take place through testing the study hypothesis. Here is a presentation for the results:

4.1 First: The results of the means of the answers of the respondents

Means and standard deviations were calculated for the respondents regarding the dimensions of the factors for the success of (IS). Table 4 shows thereof.

Table 4

Means and standard deviations were calculated for the respondents regarding the dimensions of the factors for the success of (IS) arranged decedently

Rank	No.	Dimension	Means	SD	Degree of evaluation
1	2	Quality of information	4.50	0.81	High
2	3	Quality of service	3.85	0.51	High
3	1	Quality of the system	3.74	0.37	High
Fields of the success factors of (IS) as a whole			4.05	0.38	High

From Table 4, it seems that the means of the answers of the respondents for the dimensions of success factors of (IS) ranged between (3,74- 4,50), with a high evaluation degree for all dimensions. The dimension (quality of information took the first rank (means: 4.50); the dimension "quality of the service" was second (means: 3,85), whereas the dimension "quality of the system" took the last/ third rank, with a means of (3.74). the means for the field "success factors of IS) as a whole was (4,05) "high".

4.2 Second: results relating to the hypothesis of the study

In order to ensure the effect of each of the success dimensions of (IS) on the satisfaction of the users of (AIS), the Multiple Linear Regression was used to know whether there were effects for the independent variables at ($\alpha \geq 0.05$), which required insuring the appropriateness of data for the hypothesis of the analysis of the Multiple Linear Regression. This was achieved through making some pre-tests (and testing the nature of each independent variable and the dependent one, as well as testing the moral and explanatory strength of the Multiple Linear Regression model used), prior to using the Multiple Linear Regression in order to test the sub-hypothesis of the study, as shown below:

- Ensuring the normality of the dimensions of the independent variable (quality of the system, quality of information and quality of the service). This was done through using (One- Sample Kolmogorov- Smirnov Test). Table 5 shows that.

Table 5

One- Sample Kolmogorov- Smirnov Test on the dimensions of the independent and dependent variables

Dimension	The value of One- Sample Kolmogorov- Smirnov Test	Statistical significance
Quality of the system	0.59	0.87
Quality of information	0.63	0.82
Quality of the service	0.81	0.53

From Table 5 above, it is clear that the statistical values of One-Sample Kolmogorov-Smirnov Test for the dimensions of the success factors of IS were higher than five percent. This means that the data – according to the normal distribution and based on the central tendency, which states that: if the size of the sample was more than (3) with a means of μ (and a variation of σ) - this means that the distribution of sampling on the means is close to the normal distribution.

In addition, the moral and explanatory strength for the Multiple Linear Regression model was tested through making the Linear Linkage test. This test intends to make sure that there is no high link between the independent variables, depending on the VIF and the admissible (Tolerance Test) for each independent variable. In this regard, the independent variables of the model shall be independent from each other. To ensure that objective, we would use such a test, provided that it is necessary that value (7) of VIF should not be exceeded. On the other hand, the tolerance test allowed shall be (0.05). When calculating the previous coefficients of all independent variable, the achieved results as shown in Table 6 as follows:

Table 6

VIF test and the Tolerance allowed for the variables of the study

Dimension	Tolerance	VIF
Quality of the system	0.99	1.01
Quality of information	0.96	1.05
Quality of the service	0.95	1.06

Table 6 shows that the test values of (VIF) for all independent variables are less than (10), which ranged between (1.01- 1.06), whereas the tolerance test values for all independent variables were more than (0.05) (ranged between 0.95- 0.99). Accordingly, it could be urged that there is no problem for a high link between the independent variables. In return, this enhances the possibility of using them all in the model. After inserting the independent variables in the Multiple Linear Regression, which is used to know the effects of the independent variables on the dependent one, as well as to know the percentage of that effect (if any). To insure the main and sub- hypothesis the Multiple Linear Regression equation was applied (Table 7).

Table 7

The results for applying the Multiple Linear Regression effect on the independent variable (quality of the system, quality of information and the quality of services) on the dependent variable (the satisfaction of AIS users)

Dimension	B	T	Statistical significance
Quality of the system	0.75	7.89	0.00
Quality of information	0.40	4.17	0.00
Quality of the service	0.19	1.93	0.07

$R = 0.88$ $R^2 = 0.77$ Adjusted R-Square = 0.74 $F = 28.96$ (0.000)

Table 7 shows that there is an effect for the success factors of (IS) together on the satisfaction of AIS users, as the value of link coefficient (R) was (0.88), which is statistically significant and shows significance between the whole independent variables and the dependent ones. In addition, (R- square) value was (0.77) which is statistically significant and explains the power of the success of (IS) in improving the level of satisfaction for the users of (AIS). In this regard, the success factors of (IS) explain about (77 %) of the change in the level of satisfaction of (AIS) users; F value (28,96) with a significant effect (0.00). This value is significant at ($\alpha \leq 0.05$) and shows a variation in the power of independent variables on the satisfaction of (AIS). Accordingly, we would accept the main hypothesis stating: “there is a significant statistical effect at ($\alpha \leq 0.05$) for the success factors of (IS) on the satisfaction of AIS users in the Kuwaiti public organizations. Fig. 2 shows the spread of the relationship between the dimensions of IS success factors on the dependent variable (user satisfaction of AIS).

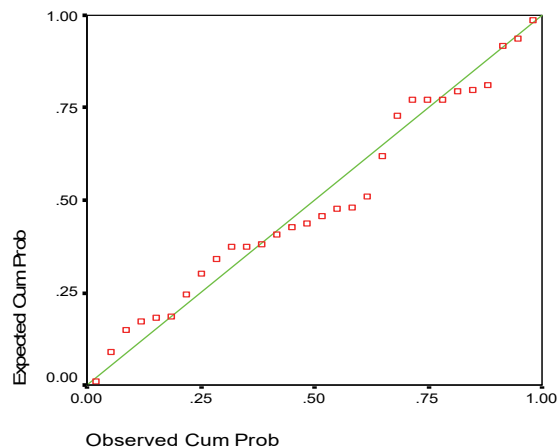


Fig. 2. The spread of the relationship between the dimensions of IS success factors on user satisfaction

According to the figure, the degree of relation between the dimensions of IS success together on the satisfaction of AIS users was strong but not complete or of a positive direction; there is a spread of the points around the straight line (Al Klan & Al Shrivng, 2007).

4.3 Regarding the sub-hypothesis, the study showed the following results

- **Results of the first sub-hypothesis:** the results showed a significant statistical effect at ($\alpha \leq 0.05$) for the quality of the system on the satisfaction of AIS users, as the values of (B, T) were (0.75; 7,80 respectively). These are positive and significant values. Accordingly, the first sub-hypothesis was accepted as stated.

- **Results of the second sub-hypothesis:** the results showed a significant statistical effect at ($\alpha \leq 0.05$) for the quality of information as the values of (B, T) were (0.40; 4,17 respectively). These are positive and significant values. Accordingly, the first sub-hypothesis was accepted as stated.

- **Results of the third sub-hypothesis:** the results did not show significant statistical effect at ($\alpha \leq 0.05$) for the quality of information as the values of (B, T) were (0.19; 1.93 respectively). These are positive values but not statistically significant. Accordingly, the first sub-hypothesis was accepted as stated.

In order to confirm the results of the sub-hypothesis, the researcher applied the uni- linear progression equation to study the predictability of each independent variable separately, while neglecting the link relations between the independent variables with each other. Table 8 shows that relation.

Table 8

Results of applying the Uni-Linear Regression to study the effect of each independent variable on the dependent variable

Dimension	R	R ²	T	Statistical Significance
Quality of the system	0.74	0.54	5.77	0.00
Quality of information	0.45	0.20	2.70	0.01
Quality of the service	0.20	0.04	1.07	0.29

From Table 8 above, it is clear that the results of the uni-progression analysis are consistent with the results of the multiple progression analysis as all independent variables affect the dependent variable, which enhances accepting the sub-hypothesis.

5. Conclusion

Based on data analysis for this study and after testing its hypothesis, the researcher concluded that there is an effect for the success factors of (IS) on the satisfaction of (AIS) users. This helps to raise the level of safety in keeping data and the provision of accurate timing of financial information, not to forget transparency and reliability in order to provide better services.

This can be explained by the quality of the system; the study showed a positive effect for the success of (IS) in general, as such quality focuses on the desired features that can be measured through easy learning and use and completeness. In addition, the quality of information is an important aspect for the success of the current organizations. The completeness of quality with (IS) will increase the efficiency of such systems, meaning the extent of true and accurate data inserted to the system. Moreover, the quality of the service plays an important role in the user satisfaction; to fulfill the user needs, achieve the required work and increase the productivity result in user satisfaction.

Finally, it could be urged that the concept of a successful information system will result in the success of the organization and concerned parties in achieving their objectives. As for the unsuccessful information system, it might cause a failure for the organization in achieving its objectives; the concept of a successful information system differs from one person to another and from an organization to the other and from one time to the other. This depends on the beneficiary body and the required target thereof. In conclusion, the success of an information system is represented in various components and dimensions through which it will be possible to judge the success or failure of the system.

References

- Bernroider, E. W. (2008). IT governance for enterprise resource planning supported by the DeLone–McLean model of information systems success. *Information & Management*, 45(5), 257-269.
- Bruwer, P. J. S. (1984). A descriptive model of success for computer-based information systems. *Information & Management*, 7(2), 63-67.
- Chevers, D. A., Duggan, E. W., & Moore, S. (2012). The contribution of process, people and perception to information systems quality and success: A Jamaican Study. *The Electronic Journal of Information Systems in Developing Countries*, 55(1), 1-22.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

- Farhan, A. I., & Hamdan, M. N. M. (2017, May). Evaluating performance of accounting information systems using a fuzzy logic approach. In *Proceedings of Business and Management Conferences* (No. 5207431). International Institute of Social and Economic Sciences.
- Ferguson, P., & Huston, G. (1998). *Quality of service: delivering QoS on the Internet and in corporate networks*. John Wiley & Sons, Inc.
- Chua, Y. P. (2013). *Spearman correlation test*; Book 3, basic research statistic, analysis of Likert scale data.
- DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: a ten-year update. *Journal of Management Information Systems*, 19(4), 9-30.
- DeLone, W. H., & McLean, E. R. (1992). Information systems success: The quest for the dependent variable. *Information Systems Research*, 3(1), 60-95.
- DeLone, W. H., & McLean, E. R. (2004). Measuring e-commerce success: Applying the DeLone & McLean information systems success model. *International Journal of electronic commerce*, 9(1), 31-47.
- Kuger, S., Jude, N., Klieme, E., & Kaplan, D. (2016). An Introduction to the PISA 2015 Questionnaire Field Trial: Study Design and Analysis Procedures. In *Assessing Contexts of Learning* (pp. 75-113). Springer, Cham.
- Karimi, J., Somers, T. M., & Bhattacharjee, A. (2007). The role of information systems resources in ERP capability building and business process outcomes. *Journal of Management Information Systems*, 24(2), 221-260.
- Hamdan, M. N. M. (2013). *Improving the performance of accounting information systems of commercial banks in Jordan by using the balanced scorecard approach* (Doctoral dissertation, Curtin University).
- Hamdan, M. N., & Hosban, A. (2015). The Role of the Auditor in Planning and Reduce the Risk of IT Environment in Commercial Jordanian Banks. *International Journal of Economics and Finance*, 7(11), 222.
- Hamdan, M. N. M. (2017). The Relationship between Network Security Policies and Audit Evidence Documentation: The Accounting Information Security Culture as a Mediator. *International Journal of Business and Management*, 12(12), 168-180.
- Harati-Mokhtari, A., Brooks, P., Wall, A., & Wang, J. (2007). AIS Contribution in Navigation Operation-Using AIS User Satisfaction Model. *TransNav, International Journal on Marine Navigation and Safety of Sea Transportation*, 1(3).
- Petter, S., DeLone, W., & McLean, E. R. (2012). The past, present, and future of "IS success". *Journal of the Association for Information Systems*, 13(5), 2.
- Sari, N. Z. M., SE, M., & Purwanegara, H. D. (2016). The effect of quality accounting information system in Indonesian government (BUMD at Bandung area). *Research Journal of Finance and Accounting*, 7(2).
- Sartika, C. D., Antoni, D., & Akbar, M. (2016). Influence of Organizational Culture, Competence and Quality User to User Satisfaction Information Systems.
- Urbach, N., & Müller, B. (2012). The updated DeLone and McLean model of information systems success. In *Information Systems Theory* (pp. 1-18). Springer, New York, NY.
- Wang, Y. S., & Liao, Y. W. (2008). Assessing eGovernment systems success: A validation of the DeLone and McLean model of information systems success. *Government Information Quarterly*, 25(4), 717-733.



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