



**Impact of Service Quality (SERQ) & Information Quality (IQ) towards Acceptance of Information system (IS): Case Study of Universities of Jamshoro**

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Received 16<sup>th</sup> July 2020 and Revised 20<sup>th</sup> May 2021

**Abstract:** The main object of this research is used to discover the impact of service quality (SERQ) & information quality (IQ) towards the acceptance of Information system: case study of universities of Jamshoro. In this study we used two most famous theories/models i-e Delone & McLean Model (D&M 2002-2003) and Technology Acceptance Model (TAM). In Current study a quantitative methodology has been used to examine the correlational routes. Cross-sectional survey method was used, & data was collected within universities of Jamshoro i-e (SU), (LUMHS) & (MUET). 350 questionnaires were distributed to above three mentioned universities. The higher variance clarified through the independent variable towards dependent variables ( $R^2=55\%$  in BI and  $R^2=46\%$  in PU. The higher significant route was between PU towards BI ( $\beta=0.56$ ) followed by service quality (SQ) towards PEOU ( $\beta=0.51$ ). Hypothetical relationships were examined through using of structural equation modeling (SEM) depend on analysis of moment structures (AMOS).

**Keywords:** Information system, Delone & Mclean, Technology Acceptances Model, Perceived usefulness, perceived ease of use, behavioral intention, Information quality, and Service quality

## 1. INTRODUCTION

Recently, the use of information technology as well as communication technology has gained important position in the world; this ICT is spread in every where in the human lives; therefore the societies are changed the ways to think, to feel, and to act as reported by Zhang and Benjamin(2007). The use of ICT in private and public organizations across the world to be emerged as discussed in many studies including Leidner and Jarvenpaa, (1993); Sandholtz *et al.*, Goldberg, (1997); Roblyer and Edwards, (2000) in Ifinedo, (2006).

Mostly, the organizations/institutions spent big amount on using information and communication technology (ICT) by raising their budgets even though the economic cost is potentially declined as discussed by Kanaracus, (2008). Conversely, poor economic situations along with rising competitions have created demands to cut costs. Consequently, organizations need to take certain measures for evaluating the costs and benefits of service quality and information quality. Not only this, but organizations should also understand the factor(s) that influence the success and effectiveness of newly developed IS.

Given that, if organizations are to make a return from their IS investment, the IS must be implemented and utilized effectively (Burton-Jones and Hubona, 2006). Peter *et al.* (2008) suggested that the impacts of ICT are often undirected and affected by various factors

such as, human, environmental, and organizational. Thus, measurement of IS success is complex and illusive phenomena which requires continuous exploration.

Presently, organizations in developing countries are facing dual pressures exerted due to the globalization to improve the economic condition by the use of effective and efficient use of IS, equally cutting cost of utilization of IS implementation.

Many studies including Venkatesh & Morris, (2000) and Venkatesh *et al.*, (2004) describe IS research is undertaken mostly in western countries including North America in line with the generalizability as well as reliability. However, in Pakistani context, a handful studies are conducted by Abbasi *et al.*, (2011), Chandio *et al.*, (2013), Naqvi *et al.*, (2016), and Chandio *et al.*, (2017) to find some merits.

In this scenario, researchers in information system literature are struggling to develop IS models (e.g., TAM, TAM2, TRA, DOI, TPB, UTAUT, D&M) that would not only serve their purposes to be adopted in various fields (e.g., e-Government, e-commerce, Health information Systems, Financial system, named few) across the cultures (e.g., Developing and Developed countries) but helps to reduce cost of implementation and individual's acceptance within specific context (Wang and Shih 2009).

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Keeping it at hand, this paper aims to examine impact of service quality and information quality towards IS acceptance. This study will develop an integrated model (TAM and D&M) of IS acceptance for determining success and effectiveness for newly developed IS for universities of Jamshoro.

## 2. RESEARCH MODEL AND HYPOTHESES

In this present research work, the authors have designed the model to understand the main objectives of

the quality in terms of service and information towards IS acceptance. This research work was developed using two most famous theories/ models-i.e TAM & D&M. Two constructs have been taken from D&M (2002-2003) model, and three constructs have been taken from TAM model. (Fig.1). indicates about the D&M (2002-2003); whereas; (Fig. 2) shows the TAM model.

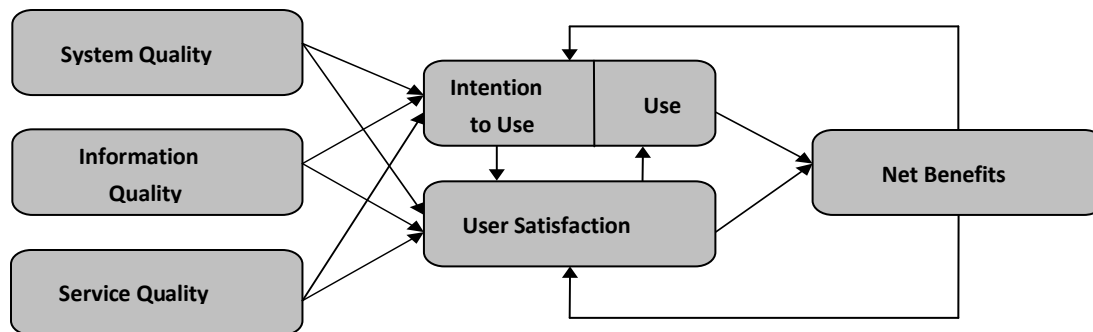


Fig. 1: Delone and Mclean Model 2002-2003

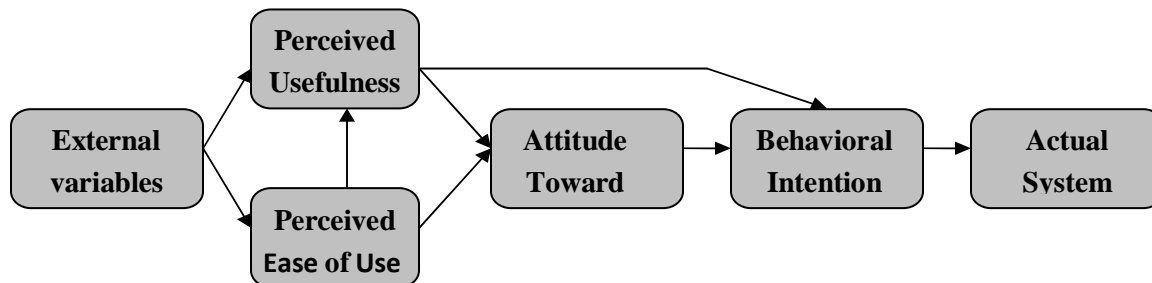


Fig. 2: The Original Technology Acceptance Model (Davis 1989)

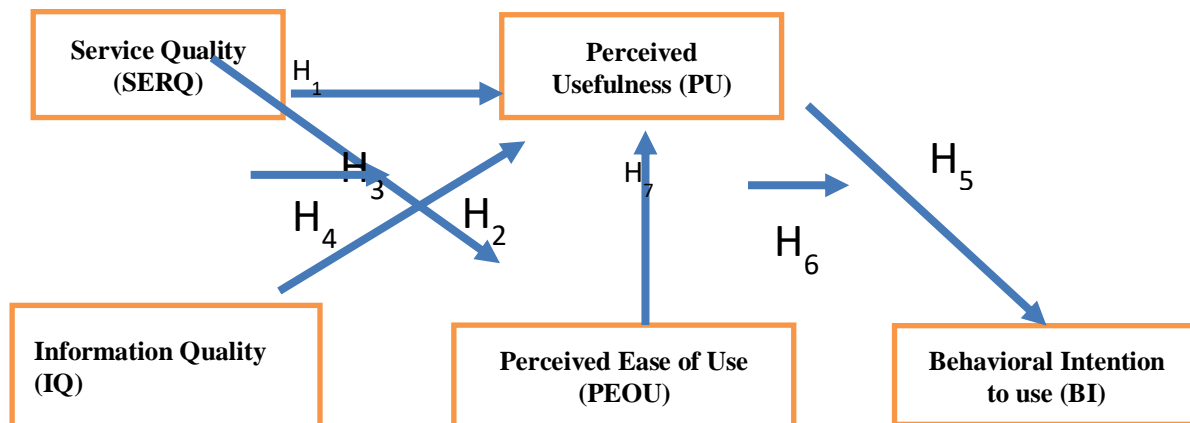


Fig.3: Proposed Model

- H1: Service quality has a positive and significant effect toward PU.
- H2: Service quality has a positive and significant effect toward PEOU.
- H3: Information quality has a positive and significant effect toward PU.
- H4: Information quality has a positive and significant effect toward PEOU.
- H5: Perceived usefulness has a positive and significant effect toward BI.
- H6: Perceived ease of use has a positive and significant effect toward BI.
- H7: Perceived ease of use has a positive and significant effect toward PU.

### 3. RESULT AND DISCUSSION

#### Structural equation modeling

The SEM is used frequently and persistently to describe the relationship among multiple variables. It has capability to be used for identifying interrelationship among independent & dependent more than one variable (Hair *et al.*, 2006). According to Anderson and Garbing (1988), two step approaches were admitted. In first step, for identifying interrelationship between observed & un-observed factors measurement model was specified. For measurement model, SEM software was used to perform (CFA). Now for second step, to validate the hypothesis structural model connected to dependent & independent variables were specified. The obtained result is given in table 3.1 and all the results above the requirements

**Table 3.1: Measurement Model Fit value**

	AGFI	GFI	CFI	NFI	RMSEA
Criteria	≥0.90	≥0.90	≥0.90	≥0.90	<0.05
Obtained	0.911	0.931	0.98	0.938	0.039

Note: AGFI, GFI, CFI, NFI, and RMSEA

#### Convergent validity

The convergent validity of factors/constructs is used to achieve required results; the authors specified a measurement model as shown in (Fig. 4) which is very important part of structural equation model (SEM). Two metrics i-e CR measure as well as AVE is used to check out the validity convergent of in the model. The following table shows that outcomes of result is greater than required value i-e CR value be greater than 0.7 and AVE be greater than 0.5 as reported in the study of Hair *et al.*, (2006).

**Table 3.2: Factors reliability and AVG values**

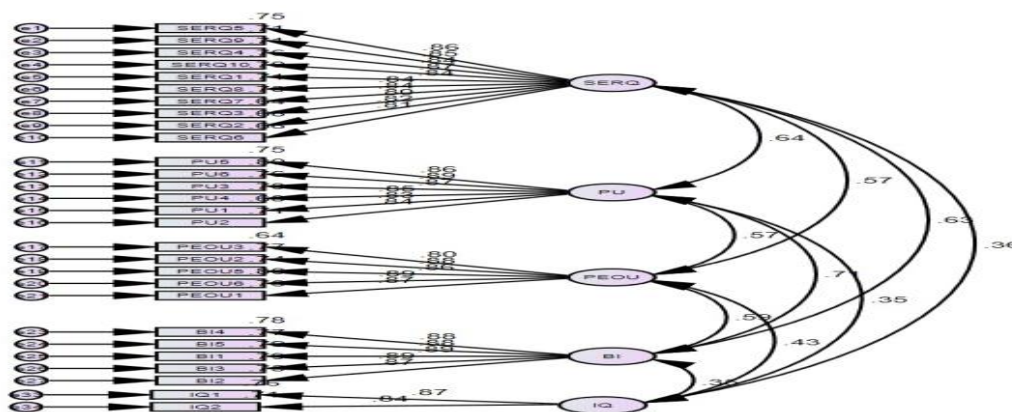
Factors	CR	AVE
Service quality	0.959	0.702
Information quality	0.847	0.735
Perceived usefulness	0.944	0.736
Perceived ease of use	0.935	0.743
Behavioral intention	0.946	0.778

#### Discriminant validity

The authors applied Discriminant validity for assessing the construct validity. The extent of this study shows that a construct can be distinguished from other constructs as reported by Hair *et al.*, (2006), Krathwohl, (1997) and Fornell & Larcker, (1981). The results in the following table show that every construct can be considered different as compared to the other constructs in terms of discriminant validity.

**Table 3.3: Discriminant validity**

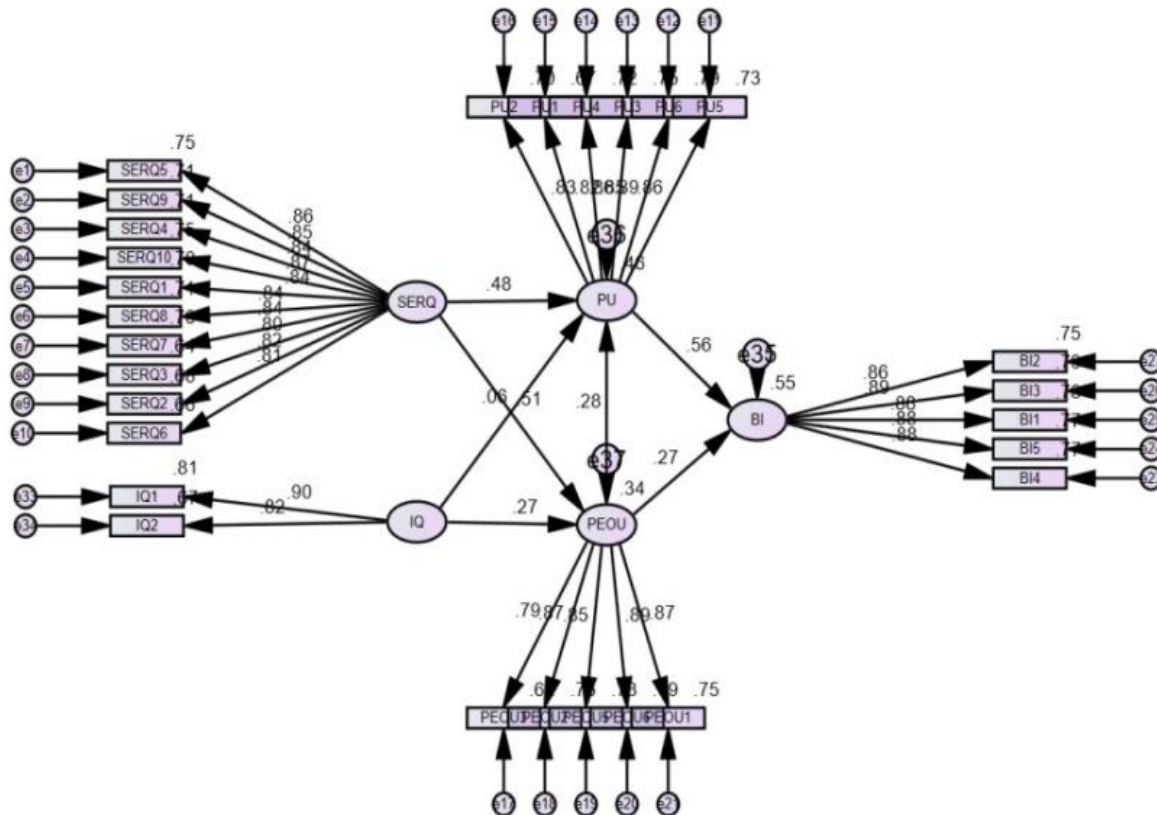
FACTORS	BI	SERQ	PU	PEOU	IQ
BI	<b>0.882</b>				
SERQ	0.627	<b>0.838</b>			
PU	0.714	0.642	<b>0.858</b>		
PEOU	0.593	0.569	0.574	<b>0.862</b>	
IQ	0.354	0.360	0.345	0.428	<b>0.857</b>



**Fig.4: Measurement Model (standard version)**

#### Hypotheses Testing

To check out the path and relationship between constructs/factors in the model, this research has used structural model 2<sup>nd</sup> phase of SEM as shown in figure 5 based on seven hypotheses used.



**Fig. 5: Standardized Structure Model**

Results are shown in **(Table 3.4)** which confirmed that out of seven hypotheses, six were positive and significant and only one hypotheses  $HQ < \dots PU$  was rejected. These results are very much encouraging to provide important insight the body of knowledge to impact of service quality and information quality towards acceptance of IS.

**Table 3.4: Hypotheses Testing Results**

Construct	Correlational	Code Name	Estimate	S.E	Critical ratio	P
PEOU	<---	SERQ	0.513	0.055	8.326	***
PEOU	<---	IQ	0.269	0.054	4.111	***
PU	<---	SERQ	0.481	0.058	7.643	***
PU	<---	PEOU	0.278	0.065	4.41	***
PU	<---	IQ	0.063	0.05	1.08	0.28
BI	<---	PEOU	0.27	0.063	4.862	***
BI	<---	PU	0.56	0.066	9.378	***

\*\*\* p<0.001; \*\*p<0.01; \*p<0.05

## 4. CONCLUSION

The prime goal of this research work was to investigate the impact of quality in service and information towards the IS acceptance domain. In this study, the authors have applied two commonly used theories/models including TAM and D&M. The overall, results suggested that there is good impact of service

quality and information quality towards acceptance of information system (IS) domain. It would help out for a policy makers to take decisions in future to implement IS easily. The limitation of this study is to use cross-sectional method (means data has been collected once a time) in future to carry out novel research using these models through longitudinal approach.

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