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FACTORS AFFECTING INTENTION TO USE MOBILE COMMUNICATION SYSTEMS IN LIBYA SCHOOLS

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ABSTRACT

Adoption of communication innovations that connect schools and families of school going children is suggested to encourage and facilitate active participation of parents in their children studies and ultimately lead to the improvement of academic performances and extra curriculum success of students. Mobile phone penetration in Libya has increased considerably. In fact, International Telecommunication Union reported that Libya currently has 121 mobile phone subscriptions per 100 inhabitants and boasts one of the cheapest broadband rate in the Middle East. Despite this growth, mobile communication systems (MCS) are not widely used to effectively resolve the issue of poor communication between schools and parents/guardians as requested by parents groups in Libya. At the moment the extant literature seems to overlook this important gap. As a result factors affecting the adoption of these technologies are misunderstood. This study aims to empirically test the influence of Relative Advantage, Compatibility, Complexity, Result Demonstrability, Perspective on Communication as well as public Trust on Internet on mobile communication systems adoption. The authors surveyed 541 parents of school going children as well as staff of twelve secondary schools in Libya. A structured equation modelling (SEM) technique was used to analyse the data. The result shows that Relative Advantage, Compatibility, Complexity, Result Demonstrability, Perspective on Communication and trust on Internet significantly influences intention to use mobile communication systems. This means that education authorities should educate both staff and parents/guardian about the benefits of using MCS, ensure them that MCS are compatible to their values, make the MCS easy to use, demonstrate the expected results of MCS and assure the users that Internet is free from any form of government manipulation. The empirical evidence provided by this study could be used by the policy makers, authoritative bodies and relevant stakeholders to formulate policies and guidelines in implementing and popularizing mobile communication systems usage among parents or guardians and the staff of Libya schools.

Keywords; *Mobile Communications Systems, Relative Advantage, Compatibility, Complexity, Result Demonstrability, Perspective on Communication, Trust on the Internet, Adoption, Libya*

1. INTRODUCTION

National Center for Family and Community Connections with Schools [1] reported the existence of a consistent and a strong connection between improvement of academic performance of school going children and active participation of their families in their children studies. They also posited that the roles that families play also have a major influence on other

important outcomes such as behavior and attendance which eventually influences overall academic and extra curriculum success. Children tend to do better in school when families of all backgrounds are engaged in their children's learning. Children turn to remain in school longer and aspire to even attain higher education. Therefore, children especially at risk of poor performance and failure could gain from the engagement and support those families and communities could give them. The Children's Partnership [2] advised school authorities about the need to invest in school technologies as well as the technology that connect the school and families and support learning environments at home for guardians or parents to support their children's learning. They also posited that using

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and remaining connected with these devices is paramount to remain informed and provide the necessary support that school going children requires.

Education has been identified to be the pillar of development of Libya .The efficient and proper education provisions in Libya has been hampered by factors such as lack of provision of important requirements to support quality education to the lack of using modern information technology. It is recognized that the vast majority of communications between parents/guardians and teachers should not require meetings and will instead be based verbal communication through modem mobile communication systems requiring minimal time.[3,4, 31]

Libyas Parents Association [32] complained that cureently there is poor communication between parents/ guardians and school authorities . Most often parents/ guardians do not receive information about their children academic performances, attendance, disciplinary issues and other significant information of their children in a timely manner [34].

Schools in Libya have not shown commitments and neither do they possess the tools to have interactive communication between families of the students and the schools [33].

As a result, parents/guardians are not fully involved in their children's academic welfare which is found to be important if students are to excel. Though higher number of Libyans are increasingly having access to mobile devices and internet, and numerous research finding that suggest positive links between parents/ guardians interactions with schools of their school going children leads to a better academic performances, research related to the development of Mobile communications systems to connect schools and parents/ guardians and factors influencing or motivating their adoptions are rare [3,4].

In fact, International Telecommunication Union reported that Libya currently has 121 mobile phone subscriptions per 100 inhabitants and boasts one of the cheapest broadband rate in the Middle East. Despite this growth, mobile communication systems (MCS) are not widely used to effectively resolve the issue of poor communication between schools and parents/guardians as requested by parents groups in Libya. At the moment the extant literature seems to overlook this important gap. As a result factors affecting the adoption of these technologies are misunderstood.

This study aims to empirically test the influence of Perceived Characteristics of mobile communication systems, (Relative Advantage, Compatibility, Complexity, Result Demonstrability) Perspective on Communication as well as public trust on Internet on mobile communication systems adoption.

Therefore this research will contribute towards, the current limited body of knowledge by providing evidence based information for schools, guardians, academics, policy makers and other stakeholders.

The main objectives of this research are:

RO1.To study how the perceived characteristics of mobile communication systems affect mobile communication adoption.

RO2. To study how trust on Internet affect Mobile Communication Systems Adoption.

RO3. To investigate if perspective on communication could affect adoption of mobile communication systems.

And to achieve the above mentioned objectives, the following research questions are formulated:

RQ1. How do perceived characteristics of mobile communication systems affect mobile communication systems adoption?

RQ2. How does trust on internet impact mobile communication systems acceptance?

RQ3. How does using mobile communication systems as a communication method affect adoption of mobile communication systems?

The remaining part of this paper consist of section 2 which discusses the literature review and section 3 which explains the research methodology. Section 4 presents the Analysis, while section 5 presents the findings and their implications. Section 6 provides the conclusion of the study.

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1.0. LITERATURE REVIEW

This section provides the definition of mobile communication systems, the definitions of the variables in the model.

2.1. Definitions of Mobile Communication Systems

Zaki [5] defined mobile communication system as "*a telecommunication infrastructure serving users that are on the move (i.e., mobile). The communication between the users and the infrastructure is done over a wireless medium known as a radio channel. Telecommunication systems have several physical components such as: user terminal/equipment, transmission and switching/routing equipment, etc"*.In other words it refers to the use of technology which facilitates communication with others in different locations without the use of any physical connection (wires or cables). Mobile communication makes our life easier, and it saves time and effort.

2.2. Definition of Antecedent Factors

This focus on using the model from Moore's and Benbasat's[14] PCI model and extended to incorporate perspective on communication construct by Aoun et al. [11] and trust on Internet.

Relative advantage is defined by Rogers [6] as "*the degree to which an innovation is perceived as being better than the idea it supersedes (p. 212*)." Rogers also emphasized that the variable of relative advantage needs the adopter of the innovation to analyze the costs and benefits of using it, that can be manifested economically, socially or in other forms.

Compatibility too is defined by Rogers [6] as "*the degree to which an innovation is perceived as consistent with the existing values, past experiences, and the needs of potentia*l (p. 224)." To evaluate compatibility the level of the adopter's socio-cultural values and beliefs, ideas that were introduced previously and the needs for innovation by the client are assessed.

Complexity is defined by Rogers as [6] *"the degree to which an innovation is perceived as relatively difficult to understand and use (p. 242)."* This variable analyses the level of mental or physical efforts that are required to use an innovation.

Result Demonstrability- Hussein et al. [7] defined result demonstrability as the extent to which the benefits of innovation are perceived to be sharable, communicable, tangible or observable.

Trust - Mayer et al., [8] defined trust as *"a willingness to be vulnerable to the actions of another person or people*". This is based on expectations that the other person will behave in a responsible manner [9] and will not take advantage of a dependence upon him or her [10].

Perspective on Communication- Aoun et al. [11] defined perspective on communication as *'the perception that users have regarding the medium of communication which serve them better than others'*. Hakken [12] and Straub et al. [13], argued that technology is an establishing factor of human communications and networks. Yet, online communication Systems does not allow the natural benefits of face to face communications [13].

Intention to Use- Straub et al. [35] defined use as "*the utilization of information technology, by groups or organizations*". Goodhue and Thompson[36] also conceptualized use as *"the behavior of employing technology in completing tasks". Usage of Information Systems indicates the level of Information Systems acceptance*[37,34]. Lee et al. [38], found that in TAM literature "use" was "usually measured using amount of time using, frequency of use, diversity of usage and actual number of usages. Intention to Use was used by Davis [39] as a substitution for "use". He also posited that usage behavior is determined by the intention to use a particular system.

2.2. Research Model

This research begins by selecting the elements of the model from previous studies which were well tested by other scholars: The purpose of this study is to empirically test the variables taken from Moore and Benbasat's [14] Perceived Characteristics of Innovation (PCI), perspective on communication construct by Aoun et al. [11] and trust on Internet.

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The resulting model was a combination of popular variables from well-established models to study their influence on mobile communication systems adoption in Libya. The first research question '*How do perceived characteristics of mobile communication systems affect mobile communication systems adoption?*' will be answered by investigating the PCI elements of the research model and their relation with intension to use Mobile Communication Systems. The second question *'How does trust on the Internet influence adoption?'* is answered by examining the hypothesized connection between trust that the guardian/ parents and the staff of the schools have on the Internet and their intention to use mobile communication systems. The third research question '*How does using mobile communication as a communication method affect acceptance of mobile communication systems?'* is addressed by studying the connection between perspective on communication and acceptance of mobile communication systems.

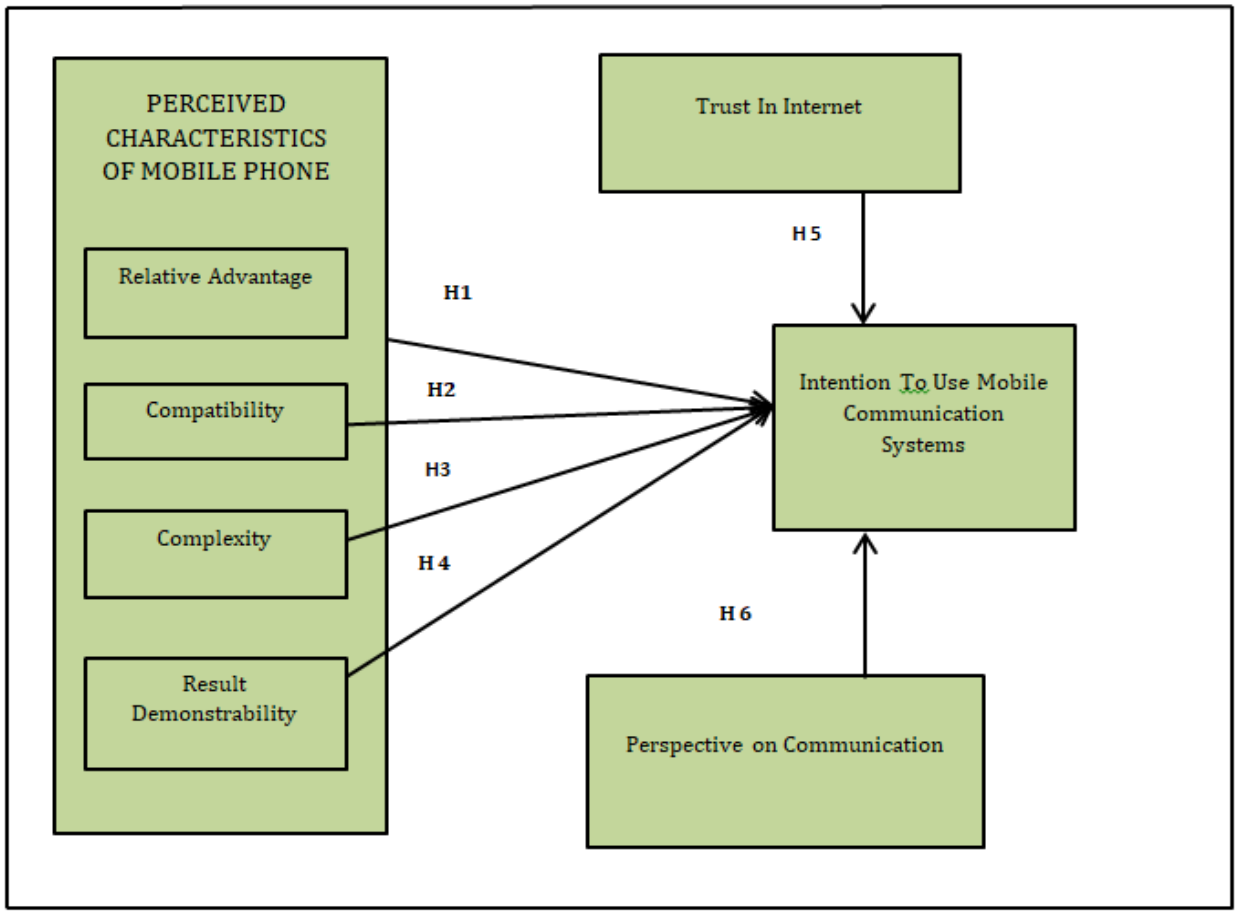

Figure 1 Research Model

The developed hypothesis based on the research model above are as follows:

H1: Relative advantage has a positive significant influence on intention to use mobile communication systems.

H2: Compatibility has a positive significant influence on intention to use mobile communication systems.

H3: Complexity has a negative significant influence on intention to use Mobile Communication Systems.

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H4. Result demonstrability has a positive significant impact on intention to use mobile communication system.

H5. Trust on the Internet has a positive significant influence on intention to use mobile communication system

H6: Perspective on communication has a negative significant impact on intention to use mobile communications.

3. RESEARCH METHODOLOGY

A quantitative approach was applied in this study to collect data from parents or guardians and staff of 12 Libyan Secondary Schools. The questionnaire was adapted from Abu Nadi [15].The first Section of the questionnaire probes the demographic characteristics of the participants. The second section of the questionnaire consisted of 4 sub-sections designed to measure the perceived characteristics of mobile communication, 'participant trust on Internet, perspective on communication and their intentions to use mobile communication systems. The total number of questions were 27 and the participants were asked to select one of the five-point Likert scales which ranges from (1) "strongly disagree" to (5) "strongly agree. The questionnaire were originally designed in English but translated in Arabic and manually distributed to parents/ guardians and staff of 12 secondary schools in Tripoli, Libya.

4. ANALYSIS

Convenient sampling was used to select participants from 12 secondary schools in Qaser Ben Gasher, Tripoli, Libya. Tripoli was chosen as it has a higher number of schools and greater percentage of population than any Libyan province. Besides, as a result of the civil war, Tripoli remains the most secured and peaceful part of Libya for one to conduct face to face survey. In this study 600 questionnaires were initially distributed to the respondents. Researcher received 541 of returned questionnaires. The total number of damaged and incomplete returned questionnaires were 29. In summary the total returned and usable questionnaires were rated with 85.3 %, which is an acceptable rate to continue the research tests with. It is illustrated in the table below:

Table 1:. Response Rates

Response Rate	
Questionnaires Distributed	600
Returned	541
Returned Unusable Questionnaires	29
Returned and Usable	512
Not Returned	59
Response Rate	90.2 %
Usable Response Rate	85.3%

To test the proposed model this research used sequential equation model (SEM) approach and the data was analysed using Smart PLS. Measurement model approach was used to gain information on the validity and reliability of the variables and the structural model measurement strategy was applied to gain the relationship between the constructs and test the hypotheses of this research Smart PLS is the software used to conduct this analysis. Smart PLS is very effective for the variance-based Structural Equation Modeling (SEM) using the partial least squares (PLS) path modeling method .The researchers used Smart PLS because it makes the statistical tests easier and more efficient and makes the tables and figures looks better in shapes and due to the adequacy of information provided. The main reason for the use of Smart PLS is the goodness in testing the study's hypotheses.

Table 2 provides the respondents profiles. The 74.3% of male participated in the survey while the Female participants were 25.7%. The age of the participants ranges from 21 yrs to 60 yrs with an average of about 23 years old. More than half of the participants were having bachelor's level of education 58.01% with n=297 and about 13.28% of them had Master level education. Over 80% of the participants owns mobile communication system device. And of this number, 91% of them indicates using internet few hours daily to few hours in a week . Most of the participants suggested having a sort of communication with the schools or with the parents/ or guardians of the students and with about 89% of the communication conducted once per semester and few times per year

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Table 2: Respondents Profile

Variable	Category	Frequency	Percentage
Gender	Male	380	74.3
	Female	132	25.7
Age	21-30 yrs	18	0.035
	31-40 yrs	64	0.125
	41- 50 yrs	189	0.369
	51- 60 yrs	193	0.377
	> 61 and above	48	0.094
Educational level	High school	18	3.52%
	Diploma	114	22.27
	Bachelor	297	58.01%
	Master	68	13.28%
	PhD	9	1.76%
	Other	6	1.17%
Mobile Communication Device Ownership	**Ownership**	**N**	**%**
	Yes	413	80.7%
	No	99	19.3%
Frequency of Internet usage	**Usage**	**N**	**%**
	Few times a year	6	1.17%
	Few times a month	34	6.64%
	Few times a week	95	18.55%
	Once a day only	103	20.12%
	Few hours daily	274	53.52%
Frequency of Communication		**512**	**100%**
	Communication	N	%
	Few times a year	355	69.34%
	Once in A semester	103	20.12%
	Once a Month	44	8.59%
	Once a week	7	1.37%
	Daily	3	0.59%
		512	100%

4.1. Normality Test

To avoid the assumption that samples are normally distributed without actually conducting a test to show that is really the case. And to test the normality of residuals obtained from linear regression and ensure the quality of the confidence intervals of parameters and predictors remains, normality test was conducted in this study. The

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variables in this study have acceptable values and they are as follows. The relative advantage Skewness = - 0.232 and Kurtosis = - 0.298; compatibility Skewness = - 0.980 and Kurtosis = 0.482; complexity Skewness = - 1.444 and Kurtosis = 1.874; result demonstrability Skewness = - 1.427 and Kurtosis = 2.504; trust on the Internet Skewness = - 0.237 and Kurtosis = - 0.329; perspective on Communication Skewness = - 0.086 and Kurtosis = - 0.28 and intention to use mobile communication systems Skewness = - 1.317 and Kurtosis = 1.801.

Table 3: Results of Skewness and Kurtosis for Normality Test

Constructs	Skewness	Kurtosis Statistic
Relative advantage	-.232	-.298
Compatibility	-.980	.482
Complexity	-1.444	1.874
Result demonstrability	-1.427	2.504
Trust in the Internet	-.237	-.329
Perspective on communication	-.086	-.028
Intention to use mobile communication systems	-1.317	1.801

4.2.1. Construct Reliability

The idea behind reliability test is to determine that meaningful results must be more than a one-time finding and intrinsically repeatable. Other researchers must be able to perform the same experiment under the same conditions and generate the same results. This will reinforce the results and ensure that the scientific community, in general, accepts the hypothesis. Reliability test is essential for a hypothesis to be established as accepted scientific truth.

For the current research, the Cronbach Alpha value was used to mearsure the reliability of the items that were used in the questionnaire for each variable. As shown in Table 4, the following conclusions were drawn based on the reliability test; the reliability test showed a great internal consistency among the relative advantage variable items. The Cronbach Alpha value for the relative advantage variable is 0.796; the reliability test showed a great internal consistency among the compatibility variable items. The Cronbach Alpha value for the compatibility variable is 0.815; the reliability test showed a great internal consistency among the complexity variable items. The Cronbach Alpha value for the complexity variable is 0.914; the reliability test showed a great internal consistency among the result demonstrability variable items. The Cronbach Alpha value for the result demonstrability variable is 0.810;the reliability test showed a great internal consistency among the trust on the Internet variable items. The Cronbach Alpha value for the trust on the Internet variable is 0.831; The reliability test showed a great internal consistency among the perspective on communication variable items. The Cronbach Alpha value for the perspective on communication variable is 0.818; the reliability test showed a great internal consistency among the intention to use mobile communication systems variable items. The Cronbach Alpha value for the intention to use mobile communication systems variable is 0.889.

Table 4: Cronbach's Alpha and Composite Reliability

Constructs	Cronbach's alpha (> 0.7)	Composite Reliability (> 0.7)
Relative advantage	0.796	0.834
Compatibility	0.815	0.887
Complexity	0.914	0.940
Result demonstrability	0.810	0.867
Trust on the Internet	0.831	0.828
Perspective on communication	0.818	0.888
Intention to use mobile communication systems	0.889	0.924

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4.2.2. Descriptive Analyst

Descriptive statistics are a summary of statistics that quantitatively delineate or outline the highlights of data collection. The following table 4.11 shows the results of the descriptive statistics and the it indicates that The minimum value for the independent variable of relative advantage was 1.00, while the maximum value was 5.00. The mean score for this variable was 3.1767, which means that most of the respondents agreed with the statements stated for the relative advantage items in the questionnaire. This also means that the respondents approve the role of relative advantage and its importance to the intention to use mobile communication systems. Besides that, the standard deviation for this independent variable was 0.70266.

The minimum value for the independent variable of compatibility was 1.00, while the maximum value was 5.00. The mean score for this variable was 3.8250, which means that most of the respondents agreed with the statements stated for the compatibility items in the questionnaire. This also means that the respondents approve the role of compatibility and its importance to the intention to use mobile communication systems. Besides that, the standard deviation for this independent variable was 0.80677.

The minimum value for the independent variable of complexity was 1.00, while the maximum value was 5.00. The mean score for this variable was 3.8075, which means that most of the respondents agreed with the statements stated for the complexity items in the questionnaire. This also means that the respondents approve the role of complexity and its importance to the intention to use mobile communication systems. Besides that, the standard deviation for this independent variable was 0.96652.

The minimum value for the independent variable of result demonstrability was 1.00, while the maximum value was 5.00. The mean score for this variable was 3.7875, which means that most of the respondents agreed with the statements stated for the result demonstrability items in the questionnaire. This also means that the respondents approve the role of result demonstrability and its importance to the intention to use mobile communication systems. Besides that, the standard deviation for this independent variable was 0.78927.

The minimum value for the independent variable trust on the Internet was 1.00, while the maximum value was 5.00. The mean score for this variable was 3.1467, which means that most of the respondents agreed with the statements stated for the trust in the Internet items in the questionnaire. This also means that the respondents approve the role of trust on the Internet and its importance to the intention to use mobile communication systems. Besides that, the standard deviation for this independent variable was 0.91541.

The minimum value for the independent variable perspective on communication was 1.00, while the maximum value was 5.00. The mean score for this variable was 3.5000, which means that most of the respondents agreed with the statements stated for the perspective on communication items in the questionnaire. This also means that the respondents approve the role of perspective on communication and its importance to the intention to use mobile communication systems. Besides that, the standard deviation for this independent variable was 0.73779.

The minimum value for the independent variable personal culture value was 1.00, while the maximum value was 5.00. The mean score for this variable was 3.8055, which means that most of the respondents agreed with the statements stated for the personal culture value items in the questionnaire. This also means that the respondents approve the role of personal culture value and its importance to the intention to use mobile communication systems. Besides that, the standard deviation for this independent variable was 0.36400.

The minimum value for the dependent variable intention to use mobile communication systems was 1.00, while the maximum value was 5.00. The mean score for this variable was 3.7775, which means that most of the respondents agreed with the statements stated for the intention to use mobile communication systems items in the questionnaire. This also means that the respondents approve the role of relative advantage, compatibility, complexity, result demonstrability, trust on the Internet, perspective on communication, and personal culture value in enhancing, improving, and developing the intention to use mobile communication systems.

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Besides that, the standard deviation for this dependent variable was 0.95406.

Table 5: Descriptive Statistics for Study Variables

	Minimum	Maximum	Mean	Std. Deviation
RA	1.00	5.00	3.1767	.70266
CP	1.00	5.00	3.8250	.80677
CX	1.00	5.00	3.8075	.96652
RED	1.00	5.00	3.7875	.78927
TI	1.00	5.00	3.1467	.91541
POC	1.00	5.00	3.5000	.73779
IMCS	1.00	5.00	3.7775	.95406

Relative advantage (RA); Compatibility (CP); Complexity (CX); Result demonstrability (RED); Trust on the Internet (TI); Perspective on communication (POC); Intention to use mobile communication systems (IMCS).

4.6.1 DIRECT EFFECT

The main effect model predicts the effect of the independent variables on the dependent variable directly. The main purpose of using the current test is to find out whether the hypotheses of the research are supported or not. The following table 6 below shows the results of the direct effect test for the current study. As illustrated in the table, relative advantage is found to have a positive and significant influence on the intention to use mobile communication systems. (R = 0.186) and a significant level of 0.000. It was also found that compatibility has a positive and significant influence on the intention to use mobile communication systems. (R = 0.012) and a significant level of 0.000. Result demonstrability too was found to have a positive and significant influence on the intention to use mobile communication systems. (R = 0.020) with a significant level of 0.000. Complexity was also found to have a positive and significant influence on the intention to use mobile communication systems. (R = 0.878) and at a significant level of 0.000. Besides, Trust on the Internet too has a positive and significant influence on the intention to use mobile communication systems. (R = 0.020) and a significant level of 0.000. While the Perspective on Communication too has a positive and significant influence on the intention to use mobile communication systems. (R = 0.039) and a significant level of 0.000.

Table 6: Summary of the Direct Effect

Hypothesis	Relationship	Std Beta	Std Error	t-value	p-value	Decision
H1	RA -> IMCS	0.186	0.022	2.164	0.000	Supported
H2	CP -> IMCS	0.012	0.037	3.094	0.000	Supported
H3	RED -> IMCS	0.020	0.014	2.377	0.000	Supported
H4	CX -> IMCS	0.878	0.018	2.815	0.000	Supported
H5	TI -> IMCS	0.020	0.021	6.953	0.000	Supported
H6	POC -> IMCS	0.039	0.016	4.355	0.000	Supported

Relative advantage (RA); Compatibility (CP); Result demonstrability (RED); Complexity (CX); Trust on the Internet (TI); Perspective on communication (POC); Intention to use mobile communication systems (IMCS);

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4.2.3. Structured Model

A Structured Model **is a** statistical approach to understanding social and natural phenomena by introducing latent variables that cannot be directly observed, and identifying causal relationships between latent and observed variables [16]. Structured Model enables us to measure and examine the relationships between constructs [17, 18, 19].A graphical representaion of the final Structural model is shown in Figure 2 below;

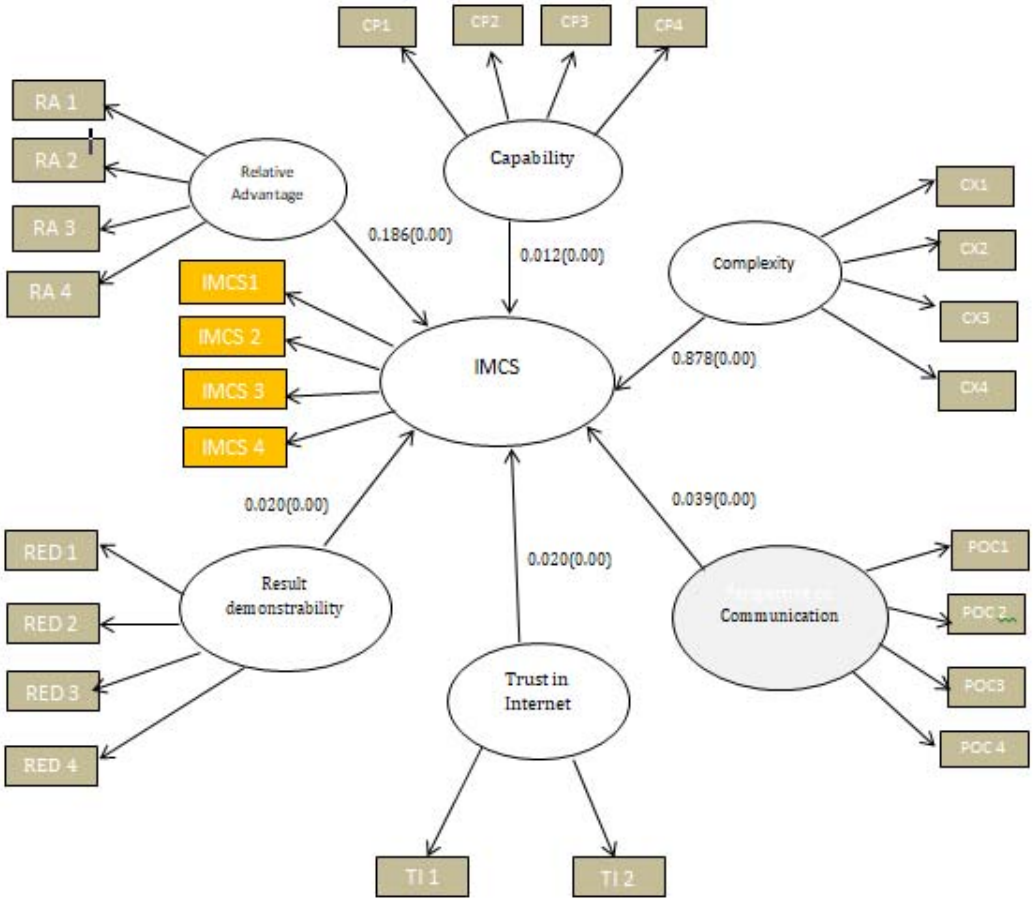

Figure 2. Structural Model

The endogenous latent variable showed that the intention to use mobile communication systems is estimated by 90.9 % by the current model. The following table 4.13 and the figures show the result.

4.2.4. FINDINGS AND PRACTICAL IMPLICATIONS

The first hypothesis (H1) *relative advantage* was found to have a positive and significant influence on the intention to use mobile communication systems. (R = 0.186) with a significant level of 0.000. This implies that,

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positive perception of the mobile communincsaatio systems would be formed if the policy makers, decision makers and other authoritative bodies highlight the benefits of mobile communication Systems such as its speed, efficiency, convenience and ease of communicating. Extant studies by Abu Nadi[15] Carter and Weerakkody [24] Sang et al. [25] and Ku et al. [27] support this hypothesis.

The second hypothesis (H2) *com.patibility* too was found to have a positive and significant influence on the intention to use mobile communication systems. (R = 0.012) and a significant level of 0.000. This too suggest that policy makers, decision makers and other authoritative bodies in the education sector should ensure that the mobile communication systems are compatible with the values of Libyan parents/ guardians and school staff. The study by Abu Nadi[15] Carter and Weerakkody [24] Sang et al. [25], Ku et al. [27] and Pereira et al. [28] support this hypothesis.

The third hypothersis (H3) *Complexity* was also found to have a positive and significant influence on the intention to use mobile communication systems. (R = 0.878) and a significant level of 0.000. This implies education authorities should ensure that the Mobile Communication systems are well understood and easy to use by both parents/ guardians and school staff. Attempt should be made to address the complexities. This hypothesis is also supported by Abu Nadi[15] Carter and Weerakkody [24], Sang et al. [25], Ku et al. [27] and .Baba et al. [22].

The fourth hypothesis (H4) *Result demonstrability* too was found to have a positive and significant influence on the intention to use mobile communication systems. (R = 0.020) and a significant level of 0.000. This shows that the ability of the mobile communication systems to demonstrate and share results should be shown to all users. The past studies that supported this study are, Abu Nadi [15], Kwak [23], Jaklič et al. [29] and Islam and Azad[30].

The *Trust on the Internet* hypothesis (H5)was found to have a positive and significant influence on the intention to use mobile communication systems. (R = 0.020) and a significant level of 0.000. This implies that ransparency, and assurance the Internet would be free from government manipulations could influence the number of Libyans who might like to use Mobile Communication system. Hence, the authorities should do well to assure citizens that the Internet is transparent and free from any form of manipulations by the government. This hypothesis too is supportd by Abu Nadi [15], Listina [20] Walid et Al [21] and Kurfalı et al. [26].

Finally, *Perspective on Communication* hypothesis too was found to have a positive and significant influence on the intention to use mobile communication systems. (R = 0.039) and a significant level of 0.000. This finding suggest that positive perception of mobile communication system usage in schools, would lead to more use.Simmilar findings were made by Aoun [11] and Abu Nadi [15] and support this hypothesis.

As the finding indicates, relative advantage, compatibility, complexity, result demonstrability, trust on the Internet and perspective on Communication significatly influences intention to use mobile communication systems.Awareness of these factors could facilitate the formulation of policies and practices that could lead to intension to use mobile communication systems

5. CONCLUSION

This study contributes to both academic research and education management. This article provides the theoretical understanding of factors influencing mobile communication systems adoption. A conceptual model was provided that consisted of factors from Perceived Characteristics Of Innovation, Perception on Communication and Trust on Internet to investigate their effect on Mobile communication adoption. It can serve as a very useful reference material for future researchers.

Finding from this study suggest that; (1) policy makers, decision makers and other authoritative bodies should highlight the benefits of mobile communication Systems such as speed, efficiency, convenient and ease of communicating , (2) policy makers, decision makers and other authoritative bodies in the education sector should ensure that the mobile communication systems to be implemented is compatible with the values of Libyan parents/ guardians and school staff, (3) they should ensure that the Mobile Communication

systems are well understood and easy to use by both parents/ guardians and school staff, (4) system ability to demonstrate and share results should be shown to all users, (5) Transparency, and assurance the Internet would be free from government manipulations could influence the number of Libyans who might like to use Mobile Communication system. Hence, the authorities should do well to assure citizens that the Internet is transparent and free from any form of manipulations by the government.

The empirical evidence from this study can serve as a very useful guide to policy makers, decision makers and other authoritative bodies from the education ministry that could facilitate formulating policies and educating staff and parents before the implementation of mobile communication systems so as to increase the prospect of adopting it.

The empirical finding shows that Relative advantage, Compatibility, Complexity, result demonstrability, Perspective on Communication and trust on Internet significantly influences intention to use mobile communication systems. This means that relevant authorities should ensure that mobile communication systems are compatible with the values of Libyans, they are well understood and easy to use, and shows the ability to demonstrate and share the desired results to all users. Also the authorities should do well to ensure citizens that the Internet is transparent and free from any form of manipulations by the government

The main limitation of this research is that data was collected from only the Tripoli region. Researchers should try to include respondents from all parts of Libya to take part of the survey. Besides, future researchers should increase the size of the sampling and cover wider part of the country to further strengthen the study. Future studies should include variables relating to demographic characteristics such as differences of gender, income groups, education levels and those living in the urban and rural areas of Libya that may influence Mobile Communication Systems adoption. The demographic characteristics too can be added as moderators or be assessed as independent determinants of adoption.

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REFERENCES:

[1]. National Center for Family and Community Connections with Schools "A New Wave of Evidence The Impact of School, Family, and Community Connections on Student Achievement",. *S E D L,* 2018. Retrieved from: https://www.sedl.org/connections/focus.html. on 10/02/2020.

[2]. The Children's Partnership "Empowering Parents Through Technology To Improve the Odds for Children", *Digital Opportunity for Youth* Issue Brief Number 7, 2010. Retrieved from http://www.childrenspartnership.org/wp-content/uploads/2016/06/Empowering-Parents-Through-Technology%E2%80%94To-Improve-the-Odds-for-Children_October-2010.pdf

[3]. Beleid, N. H. I., and Jaharadak, A. A. "Towards The Adoption Of Mobile Communication Systems In Libyan Secondary Schools". *International Journal of Business Society,* Vol 3, No. 3, 2019, pp. 1-16.

[4]. Beleid, N. H. I., and Jaharadak, A. A. "A Pilot Study On Adoption Of Mobile Communication Systems In Libyan Secondary Schools" *International Journal of Business Society*, Vol 3, No. 10, . 2019, pp. 49-57.

[5]. Zaki,Y "Future Mobile Communications", *Advanced Studies Mobile Research Center* Bremen , Springer Fachmedien 2013. DOI 10.1007/978-3-658-00808-6_2,

[6]. Rogers, E. M. "Diffusions of Innovations" (5th ed.). *New York: Free Press.* 2003.

[7]. Hussein, R., Mohamed, N., Ahlan, A. R., and Mahmud, M. "E-government application: an integrated model on G2C adoption of online tax". *Transforming Government: People, Process and Policy*, Vol 5, No. 3, 2011, pp. 225-248.

[8]. Mayer, R. C., Davis, J. H., and Schoorman, F. D.. An integrative model of organizational trust. *Academy of management review*, Vol *20, No.*3, 1995, pp. 709-734.

[9]. Pavlou, P. "Consumer Acceptance of Electronic Commerce: Integrating Trust and Risk with the Technology Acceptance Model". *International Journal of Electronic Commerce,* Vol 7, No.3, 2003, pp. 69-103.

[10]. Gefen, D., and Straub, D. "Managing user trust in B2C e-services".. *E-service Journal,* Vol 2, No 2, 2003, pp. 7-24.

[11]. Aoun, C., Vatanasakdakul, S., and Yu, C.. "Made in China: ERP Post-Implementation Performance in the Chinese Manufacturing Industry". *Paper presented at the Americas Conference on Information Systems (AMCIS),* San Francisco, California, 2009.

[12]. Hakken, D. "Culture-centered computing: social policy and development of new information technology in England and the United States". *Human Organization,* Vol, 50 No. 4, 1991.

[13]. Straub, D., Loch, K., and Hill, C. "Transfer of information technology to the Arab world: a test of cultural influence modeling". *Journal of Global Information Management*, Vol, 9, No 4, pp. 6-28.

[14]. Moore, G. C., and Benbasat, I. "Development of an instrument to measure the perceptions of adopting an information technology innovation". *Information systems research,* Vol 2, No 3, pp. 192-222.

[15]. Abu Nadi, I. K.. (2012). Influence of culture on e-government acceptance in Saudi Arabia (*Doctoral Dissertation). Griffith University.*

[16]. Kano, Y. Variable selection for structural models. *Journal of statistical planning and inference, Vol. 108, No 12,* 2002, *pp. 173-187.*

[17]. Toyota, S., Uchida, S., and Suzuki, M.. "Structural analysis of mathematical formulae with verification based on formula description grammar". *In International Workshop on Document Analysis Systems (pp. Springer, Berlin, Heidelberg,* 2006, pp. 153-163.

[18]. Al-Shuaili, S., Ali, M., Jaharadak, A. A., and Al-Shekly, M. An Investigate on the Critical Factors that can Affect the Implementation of E-government in Oman. *In 2019 IEEE 15th International Colloquium on Signal Processing & Its Applications (CSPA),* 2019, pp. 75-79.

[19]. Antono, Z., Jaharadak, A.A, and Khatibi, A. Analysis of factors affecting stock prices in mining sector: Evidence from Indonesia Stock Exchange. *Management Science Letters,* Vol 9, No.10, 2019, pp. 1701-1710.

[20]. Listiana, N. and Adam Jaharadak, A.A. "Blended Learning as Instructional Media: Literature Review." *In Journal of Physics: Conference Series,* Vol. 1167, No. 1, 2019. pp. 012-066.

[21]. Walid A.A. Muriati M and Ibrahim M. "The Impact Of Technology, Organizational, And Trust Factors On Social Commerce Adoption" *Theoretical and Applied Information Technology, Vol. 97. No 21, 2019, pp.2908-2921 Retrieved from:* http://www.jatit.org/volumes/ninetyseven21.php

[22]. Baba, N. M., Baharudin, A. S., and Alomari, S. "Determinants Of Users 'Intention To Use Smartwatch". *Journal of Theoretical and Applied Information Technology*, Vol *97, No.* 18, 2019,. pp. 4738-4750

[23]. Kwak, J. "What Influences The Adoption Of Innovative Products On E-Commerce? Focusing On Need For Power, Innovativeness And Implicit Self" *Theory. Journal of Theoretical and Applied Information Technology, Vol 97, No1,. pp. 4712-4722*Retrieved from *http://www.jatit.org/volumes/Vol97No17/19Vol97No17.pdf*

[24]. Carter, L., and Weerakkody, V. "E-government adoption: A cultural comparison." *Information systems frontiers,* Vol, 10 No.4, 2008, pp. 473-482.

[25]. Sang, S., Lee, J. D., and Lee, J. . "E-government adoption in ASEAN: the case of Cambodia". *Internet Research*, Vol 19, No.5, 2009, pp.517-534.

[26]. Kurfalı, M., Arifoğlu, A., Tokdemir, G., and Paçin, Y. (2017). Adoption of e-government services in Turkey. *Computers in Human Behavior*, *66*, 168-178.

[27]. Ku, H. J., Park, S. Y., and Kim, S. Y. (. Effects of the innovative attributes (relative advantage, compatibility, complexity, trialability, and observability), system quality, self-efficacy and subjective norm of the mobile learning on university students' innovation resistance and acceptance of mobile learning. *Journal of Agricultural Education and Human Resource Development*. Vol 28, No. 4, 2016, pp. 165-182.

[28]. Pereira, A. S., and Wahi, M. M "Course Management System's Compatibility with Teaching Style Influences Willingness to Complete Training". *Online Learning*, Vol 2 No 1, pp. 36-59.

[29]. Jaklič, J., Grublješič, T., and Popovič, A. The role of compatibility in predicting business intelligence and analytics use intentions. *International Journal of Information Managemen*t,Vol 43, No 12, 2018, pp 305-318.

[30]. Islam, A. and Azad, N. "Satisfaction and continuance with a learning management system: Comparing perceptions of educators and students ", *International Journal of*

ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195

Information and Learning Technology Vol. 32 No. 2, 2015, pp. 109-123

[31]. Rhema, A., and Miliszewska, I "Towards e-learning in higher education in Libya". *Issues in Informing Science and Information Technology,* Vol 7, No 1, 2010, pp. 423-437.

[32]. Libyas Parents Associations "Group Discussions", , 2018. *Retrieved from https://www.facebook.com/Libyas-Parent-Teachers-Association-132519770157561/*

[33]. Saleh, S. E. "Exploring EFL University Teachers' Conceptions of Learner Autonomy". *University Bulletin* –Vol. 2, No.18, 2016.

[34]. Bakon, K.A, and Elias N.F "Culture And Digital Divide Influence on E-government Success of Developing Countries: A Literature Review" *Theoretical and Applied Information Technology,* Vol. 98. No 09, 2020, pp. 1362-1378.

[35]. Straub,T.D. Limayem, M and Karahanna-Evaristo, E. "Measuring system usage:Implications forIS theory testing". *Management Science*, Vol 41, No 8,1995, pp.1328– 1342.

[36]. Goodhue, D.L and Thompson. R. "Task-technology fit and individual performance". *MIS Quarterly*, Vol 19, No 2 1995, pp. 213–236.

[37]. DeLone, W. H., and McLean, E. R. . "Information systems success measurement". *Foundations and Trends in Information Systems*, Vol *2*, No1, 2016, pp. 1-116.

[38]. Davis, F. D. "Perceived usefulness, perceived ease of use, and user acceptance of information technology". *MIS Quarterly*, Vol. 13, No 3,1989, 318–339.

[39]. Lee,Y,, Kozar, K. A. and. Larsen K. R. "The technology assessment model: Past, present and future". *Communications of the Association for Information Systems*, Vol 12, No 50, 2003; pp. 752–780.