KNOWLEDGE SHARING AND INFORMATION QUALITY AS MEDIATED BY MOBILE LEARNING SYSTEM USAGE OF SENIOR HIGH STUDENTS

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Abstract:

This study aimed to determine the mediating effect of mobile learning system-usage of Davao City National High School senior high students between knowledge sharing and information quality. A stratified random sampling method was adopted, with 319 students as respondents. The researcher collected the data using a Google form delivered to the respondents. The results of a non-experimental quantitative mediation analysis using a validated questionnaire, mean, regression techniques, and Pearson r revealed a significant relationship between knowledge sharing, information quality, and mobile learning system usage. The findings revealed that senior high students' level of knowledge sharing was high. Likewise, the level of information quality of senior high students was high. In addition, the Level of Mobile Learning System Usage suggested that the outcome was high. Since the mediating effect causal steps approach in this study revealed a non-significant relationship between knowledge sharing and information quality, there was a complete mediation on the effect of mobile learning system usage on the relationship between knowledge sharing and information quality. As a result, mobile learning systems influence students' knowledge sharing and information quality, and vice versa.

Keywords: library and information science, knowledge sharing, information quality, mobile learning system usage, Philippines

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1. Introduction

Poor information sharing quality like incompleteness or insignificance of information and incorrect information will decrease awareness of the specific thing, and the user cannot use this. Any information provided should be adjusted to make any potential customer understandable and ready to use (Krzesaj, 2019). Kalu et al. (2019) stated that some barriers to students' sharing knowledge are the fear of delivering erroneous information and being exposed as a liar. Students' ability to share knowledge is hampered by being viewed as a show-off, and so on. Take it a step further and incorporate the concept of social interactions. They claim that a lack of depth in student interactions contributes to knowledge-sharing hurdles. There are two impediments to social networking that have been identified; the difficulty in getting relevant knowledge and finding suitable colleagues to communicate with. According to some theories, these hurdles could have been generated by students' lack of social interactions.

Seemingly, Howard et al. (2011) said that the shared information quality is a crucial detriment to research performance. Thus, the weight of the information transmitted will depend on your research capability. Moreover, the accuracy of information profoundly influences research. Low-quality data would guarantee low-quality analysis. While information quality is considered to affect research substantially, the literature explains that poor quality information is apparent in the research community. Reasons for the existence of low-quality information have been presented, as have proposed remedies to this problem. It is critical for research to develop techniques for information acquisition and evaluation to systematically ensure high-quality information for the integrity of research and ethics for research users. Because the internet is so routinely and systematically used as a source of information, the quality of information acquired directly affects the quality of a study.

Moreover, information quality is the essential ingredient in knowledge sharing as a knowledge worker. It is the primary means to achieve adjustment, uniformity, and accuracy in getting the correct information in helping the organization achieve efficiency in exploiting the available resources successfully (Al Zoubi & Hashem, 2015). Searching on the web produces a lot of answers, but it is difficult to segregate the right ideas from the wrong ones, especially if the quality of the information is hard to measure.

Over the years, the importance of the development, sharing, and use of information and knowledge has been established in various studies. For this reason, the results of this study can be beneficial to educational institutions, particularly those that have senior high school offerings, and can contribute to the information quality, knowledge sharing, and mobile learning system usage. However, no researchers have come across a study investigating the relationship between the three variables. More importantly, no study has been done using these three variables focusing on the senior high school students in Davao Region. It is for these reasons that the researcher will conduct this study.

2. Research Objectives

This study determined the mediating effect of mobile learning system usage on the relationship between Knowledge Sharing and Information quality. Specifically, the study sought to answer the following objectives:

1. To describe the level of knowledge sharing of students in terms of:

    1.1 Willingness to share;

    1.2 Ability to share;

    1.3 Instructor support;

    1.4 Degree of competition;

    1.5 Technology availability; and

    1.6 Technology support.

2. To ascertain the level of information quality and in terms of:

    2.1 Relevance;

    2.2 Soundness;

    2.3 Process; and

    2.4 Infrastructure

3. To measure the level of mobile learning system usage.

4. To establish the significance of the relationship between:

    4.1 knowledge sharing and information quality

    4.2 knowledge sharing and mobile learning system-usage of senior high students;

    4.3 mobile learning system-usage and information quality; and

5. To determine the significance of mobile learning system usage mediation on the relationship between knowledge sharing and information quality.

2.1 Hypothesis

The following null hypotheses were formulated and tested at a 0.05 level of significance:

1. There is no significant relationship between:

    1.1 the knowledge sharing and information quality;

    1.2 knowledge sharing and mobile learning system-usage of senior high students; and

    1.3 the mobile learning system-usage and information quality.

2. Senior high students' mobile learning system usage has no mediating effect on the relationship between knowledge sharing and information quality.

2.2 Theoretical Framework

This study is anchored on Salloum et al. (2018) assertion that knowledge sharing is a necessary step in the facilitation and promotion of information systems that cover information quality. Also, they further assert that students' knowledge-sharing behavior has positive effects on technology using mobile learning. They also contended that by using mobile learning systems learners were quickly able to share knowledge, and their

social interaction would increase; hence, it has a positive influence on improving the learners' satisfaction.

This is supported by DeLone and McLean Information System Success Model (DL&ML) (Almaiah & Man, 2016), which is a powerful model for measuring IS success factors and hypothesized that the higher the information quality the more system is used. In other words, to embrace and utilize this technology, students needed a high-quality mobile learning system that meets their needs and expectations.

Moreover, the study is also anchored on the Theory of Mobile Learning (Sharples et al., 2005) that the relationships between mobile learning system-usage and knowledge sharing are suggestive that the communicative interaction between students affects their learning to share knowledge using mobile technologies. This theory aims to investigate the learning system enabled by people's mobility and technology, which allows students to practice new skills such as online file sharing and informal text communication, implying that traditional education must be rethought in response to the new world of global information and mobile technology.

Another theory that supports this study is the Theory of Planned Behaviour by Ajzen (1991) it expresses a person's desire to engage in certain behavior. This indicates that the greater the need for high-quality information, the more likely it is that knowledge will be shared. The aim should be clear and explicit since it is important to understand the direction in which the person wants to go and how that impacts the individual's behavior.

2.3 Conceptual Framework

The study's conceptual framework is shown in Figure 1 presents the study's variables. The independent variable of this research focuses on Knowledge Sharing which is measured in terms of willingness to share, ability to share, instructor support, degree of competition, technology availability and technology support. Willingness to Share refers to the desire of students to share ideas and information. Ability to share refers to the ability of students to provide knowledge. Instructor Support refers to the encouragement of Instructors to their students to share knowledge with their classmates. Degree of Competition refers to the students' sense of competing with their classmates when they share knowledge. Technology Availability refers to the IT tools available for sharing knowledge; and Technology Support refers to the easiness and accessibility of IT tools to share knowledge (Wangpipatwong, 2009).

The dependent variable of the study is Information Quality, which is depicted by the indicators namely: relevance, soundness, process, and Infrastructure. Relevance refers to the quality of information as to the comprehensiveness, conciseness, clarity and correctness of the content; Soundness refers to the content quality regarding the accuracy, consistency, applicability and timeliness of information; Process refers to the accessible quality of information based on traceability, maintainability, interactivity, and speed; and Infrastructure refers to the accessible quality of information as to the security, currency, accessibility and convenience (Jaklic et al., 2009)
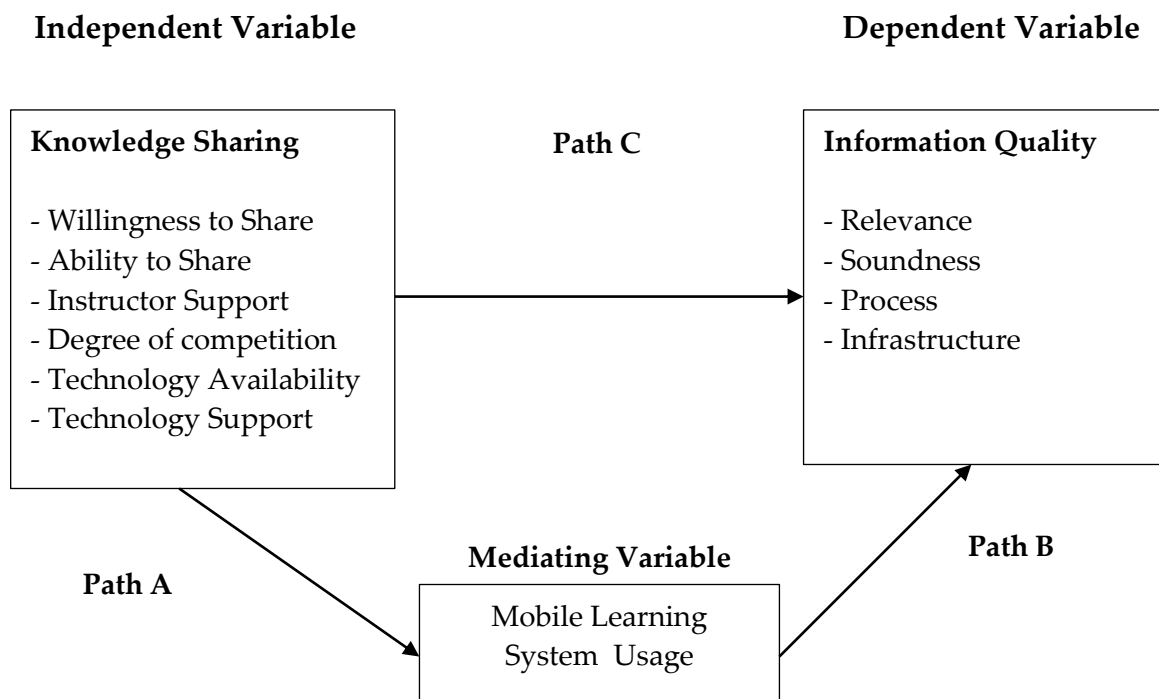
Independent Variable   **Dependent Variable**

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┌─────────────────────────────┐                            ┌─────────────────────────────┐
│ Knowledge Sharing           │         Path C             │ Information Quality         │
│                             │                            │                             │
│ - Willingness to Share      │ ─────────────────────────► │ - Relevance                 │
│ - Ability to Share          │                            │ - Soundness                 │
│ - Instructor Support        │                            │ - Process                   │
│ - Degree of competition     │                            │ - Infrastructure            │
│ - Technology Availability   │                            │                             │
│ - Technology Support        │                            │                             │
└─────────────────────────────┘                            └─────────────────────────────┘
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Mediating Variable

Path A

Path B

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┌─────────────────────────────┐
│ Mobile Learning             │
│ System  Usage               │
└─────────────────────────────┘
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Figure 1: Conceptual paradigm of the study

The mediating variable is Mobile Learning System-Usage. It refers to mobile technology devices utilized by the students in sharing knowledge, such as mobile phones and smartphones. A mobile-learning environment helps students access information more quickly, allows for collaborative learning, improves communication between students, and allows students to undertake study-related tasks from multiple locations (Alharbi & Drew, 2014).

3. Methods

3.1 Research Design
This study utilized a quantitative research design. This is used to create and implement a rigorous, objective, and systematic approach to obtaining knowledge about the world using numerical data (Burns & Grove, 2005). Furthermore, quantitative research is concerned with statistics, logic, and objectivity. It emphasizes numerical and static data, as well as thorough, convergent reasoning and the production of several ideas concerning a study subject. Its main characteristics are that data is usually collected using a structured research instrument, the results are based on larger sample sizes that are representative of the population, the research study can usually be replicated or repeated due to its high reliability, and the researcher uses research tools, such as a questionnaire or computer software, to collect numerical data (Barbie et al., 2010).

The descriptive-correlational design is particularly employed in order to describe the statistical association between two or more variables (Creswell, 2002). A correlational study is a quantitative research approach in which you have two or more quantitative

variables from the same set of participants and you're attempting to figure out whether the two variables have a connection (or covariation) (that is, a similarity in the pattern of scores between the two variables, not a difference between their means). In theory, any two quantitative variables from the same group of participants can be correlated (for example, midterm scores and final exam scores, or midterm scores and number of body piercings!) as long as you have numerical scores on these variables from the same participants; however, collecting and analyzing data when there is little reason to believe these two variables are related is usually a waste of time.

Mediation Technique was also used in this study. Mediation as cited by Kenny (2018) is a proposed causal chain in which one variable influences a second variable, which in turn influences the third variable. M, the intervening variable, acts as a mediator. It "mediates" between a predictor, X, and an outcome. In mediation, an intermediary variable known as the mediator is considered to assist explain how or why an independent variable effects an outcome. It is often of significant interest in the context of treatment research to discover and examine the processes by which an intervention achieves its impact.

Hence, the study determined the influence of mobile learning system-usage as a mediating variable on the relationship between Knowledge Sharing and Information Quality variables, it is appropriate that it used quantitative correlational descriptive design.

3.2 Research Locale

This research was done at Davao City National High School located at Florentino Torres St., Davao City known popularly as "City High". It is the biggest public school in Davao City and one of the largest in the Davao Region. Davao City National High School has been recognized to be the top public secondary school in Region XI.

The school has become a melting pot of secondary education in Davao City. Students from different parts of the City come to enroll at DCNHS because of the quality education it provides. It has become a prominent school in Science, Math, English and the Arts. It is an avenue for executing several thrusts and initiatives of DECS/DepEd. Currently, the school has been under the leadership and administration of Evelyn E. Magno, Principal IV.

There were more than 12,000 students in the overall total population, including Junior and Senior High. The Junior High school students hold the regular classes while the Senior High department offers regular and late afternoon sessions. Junior High has more than 10,000 students from grade 7 to 10 and more than 3,000 senior high students; in particular, grade 11 has 1,963 students, and grade 12 has 1,036 students as of 2020-2021. Out of 1,036 Grade 12 students, 300 were chosen as respondents.

Recently, most teachers and students have been pleased with the switch to online education, which has been made possible by the closure and lockdown of public schools worldwide due to the COVID-19 pandemic. Senior high school teachers have begun training and seminars to provide online instruction to their students. Faculty and staff

are learning how to use online learning tools simultaneously. Previously, they only used face-to-face instruction as a mode of delivery. However, the transition to online learning has prompted concerns about educational quality. It's been complicated for the students to choose the correct information due to the increased amount of online information.

3.3 Population and Sample

The research was conducted on Senior High School students. They are officially enrolled in Davao City National High School since the researcher is an administrative staff in the above academe. This study was participated in by 319 respondents. Only ages 18 and above per section were allowed in selecting the respondents. The target of this technique was to ensure that minorities of the population size were represented correctly in the study.

This study employed stratified random sampling. The academe has 24 sections. Thus, fifteen (15) students generated with 300 respondents were carefully selected from each section who answered the survey questionnaire.

Furthermore, the researcher was vigilant that the respondents who answered the questionnaire are 18 years old and above, and they are officially enrolled in the strands of ABM, HUMMS, STEM, and TVL only. However, students who were below 18 and not in the strands in the above mentioned were omitted. Moreover, respondents were given information about their right to withdraw their participation in the study. The researcher will give them free will and did not cost anything or impose a penalty.

3.4 Research Instruments

The study adapted and modified survey questionnaires from various researchers. This questionnaire was divided into three parts: Knowledge Sharing, Information Quality, and Mobile Learning System Usage. Furthermore, the survey questionnaires were routed to five experts for further suggestions and validation.

The first tool adopted and modified the 18-item survey questionnaire developed by Wangpipatwong (2009) to measure knowledge sharing. Knowledge sharing had six indicators: willingness to share, ability to share, instructor support, degree of competition, technology availability, and technology support. This questionnaire tested for reliability using Cronbach's alpha with a value of 0.70 to 0.90. Lastly, this questionnaire employed the five-point Likert scale identified five (5) as the highest and one (1) as the lowest.

This second tool is a 20-item survey questionnaire adapted from the study of Jacklic et al. (2009). The questionnaire measured the level of information quality of the Senior High School Students. Information quality had four indicators: relevance, soundness, process, and infrastructure. This questionnaire tested for reliability using Cronbach's alpha with a value of 0.70 to 0.90. Lastly, this questionnaire employed the five-point Likert scale identified five (5) as the highest and one (1) as the lowest.

The last tool adapted and modified the 33- item survey questionnaire developed by Alharbi and Drew (2014) to Mobile Learning System Usage. This questionnaire was

tested for reliability using Cronbach's alpha with a value of 0.70 to 0.90. Lastly, this questionnaire employed the five-point Likert scale identified five (5) as the highest and one (1) as the lowest.

3.5 Data Collection

The researcher underwent data gathering and analysis with an estimated 3- month maximum length, including manuscript writing. The following were the steps used in conducting the study: the researcher conducted a Pilot Testing using validated questionnaires. The result of the pilot testing was sent to the Statistician, who measured the validity and reliability of the questionnaires. The researcher personally administered the collection of data. First, the researcher asked the UM Graduate School for permission to conduct the study through a written letter. Second, the researcher secured an endorsement from UM Graduate School to the Schools Division Superintendent of Davao City. Third, the researcher personally forwarded the approved letter from SDS and endorsement to the principal. Fourth, the researcher informed the Curriculum Head to conduct data gathering in their area and the advisers from different sections and sent the google form questionnaires to their students online.

At this point, the researcher found it difficult to distribute the questionnaires since it was an additional load to the advisers, so the researcher asked the advisers for the personal contacts of their students to personally distribute the questionnaires, and it was granted. In the questionnaires, the Informed Consent Form (ICF) was included for the participants' assurance of the confidentiality of their provided information, and safety protocols were followed. Lastly, after the participants answered the questionnaire and submitted it successfully, the researcher encoded, tabulated, analyzed, interpreted, and formulated recommendations.

3.6 Statistical Treatment of Data

Statistical Tools used for a thorough and scientifically valid treatment of survey results. The statistical tools that the researcher employs as follows:

a. Mean

This was used to comprehend the characteristics of a specific dataset. In simple terms, a mean is just an average sum of all your measurements divided by the number of measures. In this study, the mean was used to determine the level of Knowledge Sharing, Information Quality, and Mobile Learning System Usage.

b. Pearson-r

The significant relationship between IV, DV, and MV was determined using this method. Correlation measures the strength of a pair of variables' linear connection. If the coefficient is significant, it is referred to as Pearson's correlation or simply as the correlation coefficient. If the relationship between the variables is not linear, the correlation coefficient does not accurately reflect the strength of the relationship. When it

is measured in the population, the sign "ǫ" is used, and when it is measured in a sample, the symbol "r" is used. In this study, Pearson r was used to investigate the relationship between variables and the strength of the association of the variables.

c. Regression Analysis

A method for which factors do without a doubt affect. Regression expresses the relationship in the form of an equation. In the mediation analysis, this study will employ regression analysis to determine the beta coefficients of the interrelationships of information quality, knowledge sharing, and mobile learning system usage.

d. Path Analysis

This was used to determine the mediating effect of mobile learning system usage on the relationship between knowledge sharing and information quality. Specifically, the study used Medgraph using Sobel z-test to test the mediation effect of mobile learning system usage between knowledge sharing and information quality of senior high students. Medgraph is software that will compute the result of the mediation among variables in a graphical form.

3.7 Ethical Considerations

The investigation was submitted to the University of Mindanao Research and Ethics Committee (UMERC) for review to guarantee that the quality of this research project was based on the researcher's ability to present valid argumentation to readers while giving a fair presentation of data. The researcher ensured the proper implementation in anonymizing the respondents since the study's findings are confidential. After which, the researcher complied with the recommendations or requirements set by the UMERC. Also, the researcher obtained informed consent from the survey respondents specifying their awareness and purposes of the study.

4. Results

Table 1: Level of Knowledge Sharing of Students

Indicator	SD	Mean	Descriptive Level
Willingness to Share	0.98	3.86	High
Ability to Share	0.87	3.39	Moderate
Instructor Support	0.80	3.62	High
Degree Competition	0.94	3.20	Moderate
Technology Availability	0.81	3.54	High
Technology Support	0.80	3.56	High
Overall	**0.60**	**3.53**	**High**

The level of knowledge sharing of students from Davao City National High – Senior High School department is High. Presented in Table 1 is the knowledge sharing of students with an overall mean of 3.53, described as High. It could be gathered from the data the

indicator with the highest mean rating of 3.86 or High is Willing to share. Followed by Instructor support with a mean rating of 3.62 or High, technology support with a mean rating of 3.56 or High, and technology availability with a mean rating of 3.54 or High. However, there are two indicators that fall into moderate level such as the ability to share with a rating of 3.39 and degree of competition with a rating of 3.20. Clearly, knowledge sharing is always evident among students.

Table 2: Level of Information Quality

Indicator	SD	Mean	Descriptive Level
Relevance	0.70	3.85	High
Soundness	0.71	3.64	High
Process	0.77	3.61	High
Infrastructure	0.76	3.59	High
Overall	**0.66**	**3.67**	**High**

The level of information quality of Senior High School students in Davao City National High School is elucidated in Table 2, with its corresponding indicators arranged as per item in the questionnaire. Each indicator was evaluated and interpreted in a basic way to offer readers a better understanding. The information quality of students in DCNHS had an overall mean rating of 3.67 or High. Exposed in this data is the mean scores among the indicators are all in the same category at a high level. The indicator with the highest mean rating of 3.85 is relevance. Following the soundness with a mean rating of 3.64, process with a rating of 3.61 and lastly the infrastructure with a mean rating of 3.59. This means the level of information quality is oftentimes evident.

Table 3: Level of Mobile Learning System Usage

Item	SD	Mean	Descriptive Level
Mobile learning seemed to be beneficial to me.	0.89	3.49	High
My study efficiency has improved as a result of mobile learning.	0.95	3.28	Moderate
My study time is made easier via mobile learning.	1.01	3.31	Moderate
Mobile learning lets me do study related tasks more quickly.	0.96	3.32	Moderate
Using mobile learning enhances my skills in studying.	1.00	3.24	Moderate
I find that using mobile learning is easy.	0.95	3.37	Moderate
Learning how to use mobile learning is fun.	0.87	3.40	High
My interaction with mobile learning is clear and understandable.	0.89	3.40	High
My parents support me in using mobile learning.	0.89	3.49	High
My friends encourage me to use mobile learning.	0.81	3.40	High
I intend to use the mobile learning system in the future.	0.89	3.35	Moderate

I am excited to use the mobile learning system.	0.90	3.31	Moderate
I plan to use the mobile learning system in the future.	0.89	3.38	Moderate
The mobile learning system provides information that is exactly what I need.	0.91	3.43	High
The mobile learning system provides information I need at the right time.	0.86	3.44	High
The mobile learning system provides information that is relevant to my course.	0.84	3.48	High
The mobile learning system provides sufficient information for personal purposes.	0.84	3.45	High
The mobile learning system provides information that is easy to understand.	0.88	3.48	High
The mobile learning system provides up-to-date information.	0.84	3.49	High
The mobile learning system provides information that appears readable, clear and well-formatted.	0.84	3.53	High
The mobile learning system provides complete information on time.	0.82	3.49	High
The mobile learning system provides information that is suitably concise.	0.82	3.49	High
The mobile learning system allows a high level of customization for different courses.	0.89	3.53	High
The mobile learning system provides personalized information presentation.	0.84	3.51	High
The mobile learning system is easy to use	0.86	3.48	High
The mobile learning system is user-friendly (easy to learn).	0.81	3.50	High
The mobile learning system provides a high of availability (access).	0.85	3.47	High
The mobile learning system provides an appropriate level of online assistance and guidance (user requirements).	0.85	3.46	High
The mobile learning system provides interactive features for an effective user experience (interactive).	0.89	3.49	High
The mobile learning system provides satisfactory support to users of the system (help and training)	0.87	3.45	High
The mobile learning system has features that support the needs of a range of different courses (flexibility).	0.82	3.50	High
The mobile learning system has a high level of reliability (reliable).	0.83	3.53	High
The mobile learning system provides high-speed information access (efficiency).	0.88	3.53	High
Overall	0.70	3.44	High

The level of mobile learning system usage consisting of 33-item statements was presented in Table 3. It can be gleaned from the table that the overall mean score is 3.44 or described as High. It can observe from the results that the item-statement with the highest mean rating is the mobile learning system provides information that appears readable, clear, and well-formatted; allows a high level of customization for different courses; Reliable and the Efficiency respectively, with a mean rating of 3.53 or High.

Likewise, the item statement with a mean rating of 3.51 or described as High is the mobile learning system that provides personalized information presentation. Similarly, other item-statements described as High with a mean rating of 3.5 are user-friendly and the flexibility of mobile learning systems, respectively. Followed by the item- statement mobile learning is useful; parents are supported using mobile learning; provides up-to-date information; provides complete information on time; provides information that is suitably concise; interactive also obtained a high mean with a rating of 3.49.

Also, the following item-statement got a high mean with a rating of 3.48: mobile learning system provides information that is relevant to my course, mobile learning system provides information that is easy to understand, and mobile learning system is easy to use. Next is the item mobile learning system provides a high of availability garnered a mean rating of 3.47 or High. The item statement mobile learning system provides an appropriate level of online assistance and guidance is in the 7th ranked that obtained 3.46 mean rating or High. Following this, the item-statement mobile learning system provides sufficient information for personal purposes, mobile learning system provides satisfactory support to users of the system garnered a High mean rating of 3.45. Lastly, the item statements got a High mean rating obtained 3.44, 3.43, and 3.4, respectively were the following: mobile learning system provides information needs at the right time, learning how to use mobile learning is fun, mobile learning is clear and understandable, and friends encouraged to use mobile learning.

Furthermore, item-statement described as Moderate are as follows: plan to use the mobile learning system in the future with a rating of 3.38, using mobile learning is easy got a rating of 3.37, intend to use the mobile learning system in the future obtained 3.35 rating, mobile learning let the study-related tasks more quickly with a high mean rating of 3.32, mobile learning improves study convenience garnered 3.31, as well as the item-statement excited to use the mobile learning system, obtained the same rating, mobile learning improves study efficiency got a high mean rating of 3.28, and finally, using mobile learning enhances skills in studying with a high mean rating of 3.21.

The mean results described as High showed that students used mobile learning systems as part of their academic learning oftentimes evident. Likewise, the mean score described as Moderate reveals that mobile learning system usage of students is seldom evident.

Table 4.1: Significance on the Relationship between
Knowledge Sharing and Information Quality

Information Quality Knowledge Sharing					
	Relevance	**Soundness**	**Process**	**Infrastructure**	**Overall**
Willingness to Share	.071	.189**	.255**	.253**	**.218****
	.207	.001	.000	.000	**.000**
Ability to Share	.202**	.253**	.320**	.300**	**.303****
	.000	.000	.000	.000	**.000**
Instructor Support	.198**	.263**	.324**	.309**	**.308****
	.000	.000	.000	.000	**.000**
Degree of Competition	.255**	.244**	.212**	.256**	**.270****
	.000	.000	.000	.000	**.000**
Technology Availability	.373**	.339**	.350**	.309**	**.384****
	.000	.000	.000	.000	**.000**
Technology Support	.432**	.401**	.467**	.434**	**.486****
	.000	.000	.000	.000	**.000**
Overall	**.355****	**.396****	**.452****	**.438****	**.461****
	.000	**.000**	**.000**	**.000**	**.000**

The results of the significance of the relationship between knowledge sharing and information quality were presented in Table 4.1. The overall coefficient or correlation is .461 with a $p \leq 0.05$ level of significance. Thus, the null hypothesis of no significant relationship between knowledge sharing and information quality was rejected. Furthermore, the indicators of knowledge sharing correlated with the information quality indicators yielded the following results: Willingness to Share associated with Relevance, Soundness, Process, and Infrastructure yielded an overall r-value of .218 at a $p \leq 0.05$. The Ability to Share correlated with Relevance, Soundness, Process, and Infrastructure yielded an overall .303 at a $p \leq 0.05$.

Similarly, Instructor Support correlated with Relevance, Soundness, Process, and Infrastructure yielded an overall .308 at a $p \leq 0.05$. Degree of Competition correlated with Relevance, Soundness, Process, and Infrastructure yielded an overall .270 at a $p \leq 0.05$. Technology availability correlated with Relevance, Soundness, Process, and Infrastructure yielded an overall .384 at a $p \leq 0.05$. Technology Support correlated with Relevance, Soundness, Process, and Infrastructure yielded an overall .486 at a $p \leq 0.05$. Moreover, the correlation test between the information quality indicators and knowledge sharing yielded the following: Relevance coordinated with Willingness to share, Ability to Share, Instructor Support, Degree of Competition, Technology Availability, and Technology Support yielded an overall .355 at a $p \leq 0.05$. Soundness linked with Willingness to share, Ability to Share, Instructor Support, Degree of Competition, Technology Availability, and Technology Support yielded an overall .396 at a $p \leq 0.05$. The process associated with Willingness to share, Ability to Share, Instructor Support, Degree of Competition, Technology Availability, and Technology Support yielded an overall .452 at a $p \leq 0.05$.

Lastly, Infrastructure correlated with Willingness to share, Ability to Share, Instructor Support, Degree of Competition, Technology Availability, and Technology

Support yielded an overall .438 at a p ≤ 0.05. These only show that knowledge sharing and information quality have a high positive relationship, meaning the high level of knowledge sharing of students indicates their high interest to share knowledge was comprised of the high-level quality of information. The good information quality in terms of relevance, soundness, process, and Infrastructure most likely students develop knowledge sharing in terms of their willingness, ability, gain support from their instructor, treating their classmates as a competitor would affect their academic performances, technology availability, and support.

Table 4.2: Significance on the Relationship between
Knowledge Sharing and Mobile Learning System Usage

Knowledge Sharing	Mobile Learning System-Usage
Willingness to Share	.332** .000
Ability to Share	.451** .000
Instructor Support	.400** .000
Degree of Competition	.452** .000
Technology Availability	.575** .000
Technology Support	.673** .000
Total	**.679** .000**

Table 4.2 shows the results of the significance of the relationship between knowledge sharing and mobile learning system usage. Knowledge sharing was correlated with mobile learning system usage yielded an overall r-value of .679 at a p≤ 0.05, which means the two variables are significantly related. So, the null hypothesis of no significant relationship between knowledge sharing and mobile learning system usage was rejected. Moreover, the data in the table shows that the indicators of knowledge sharing significantly correlate with mobile learning system-usage.
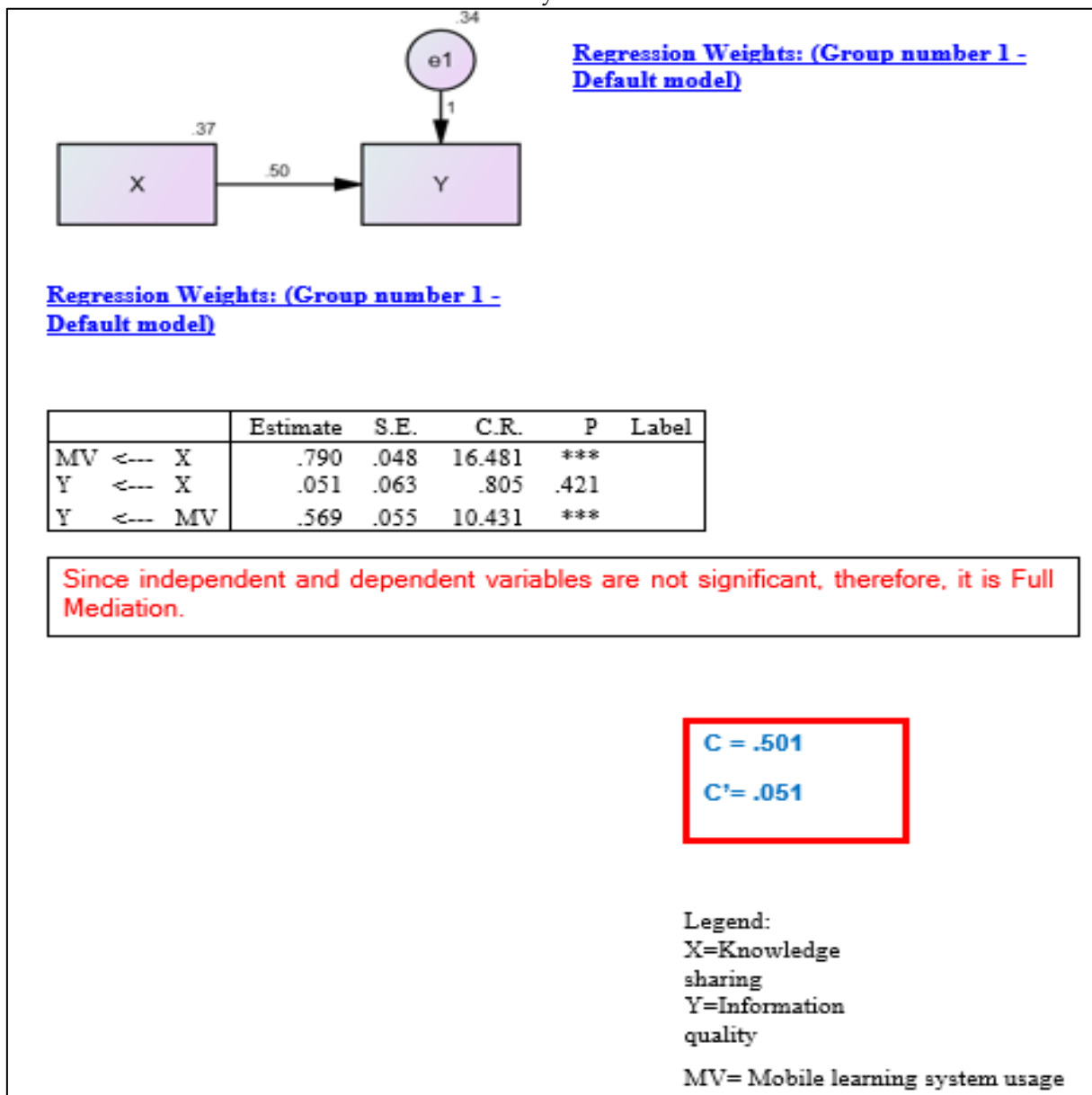
The indicators' willingness to share, ability to share, instructor support, degree of competition, technology availability, and technology support signify moderate relationships toward mobile learning system usage with total mean scores of .332,.451, .400, .452, .575, and .673, respectively. These imply that students are more interested in knowledge sharing when they are well-equipped with mobile learning system usage.

Table 4.3: Significance on the Relationship between
Mobile Learning System Usage and Information Quality

Information Quality					
Mobile Learning System Usage	Relevance	Soundness	Process	Infrastructure	Overall
	.562**	.564**	.587**	.578**	**.642****
	.000	.000	.000	.000	**.000**

The four indicators of information quality: relevance, soundness, process, and infrastructure, are significantly related to mobile learning system usage with a $p \leq 0.05$, with an r-value of .562, .564, .587, and .578, respectively. This correlation analysis result shows that when information quality increases, students' interest in mobile learning systems will also increase.

Table 5: Mediation Analysis of the Three Variables

Regression Weights: (Group number 1 - Default model)

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
MV	<---	X	.790	.048	16.481	***	
Y	<---	X	.051	.063	.805	.421	
Y	<---	MV	.569	.055	10.431	***	

Since independent and dependent variables are not significant, therefore, it is Full Mediation.

C = .501

C' = .051

Legend:
X=Knowledge sharing
Y=Information quality
MV= Mobile learning system usage

There are different studies and research discussions regarding mediation. In this study, the mediator, mobile learning system usage, explains how or why a relationship exists between the predictor, Knowledge sharing, and the dependent variable, Information quality.

The primary purpose of this step is to establish that there is an effect to mediate. If the effect is not satisfactorily significant, the analysis stops in the casual steps approach. If the effect of the IV on the DV becomes non-significant at the final step in the analysis, complete mediation will be achieved. It means all of the results were mediated by the mediating variable. If the regression coefficient is substantially reduced at the final step but remains significant, only partial mediation was obtained. It means the MV mediates part of the IV, but other factors are either direct or mediated by other variables not included in the model. In this case, the effect of the IV on DV was significantly lessened after controlling MV. Therefore, only partial mediation took place since the effect is still significant.

Presented in Table 5 is the mediation analysis of knowledge sharing, information quality, and mobile learning system usage. The computation of the effect size in the mediation test conducted among the three variables is shown in Figure 3. As presented in the table, three steps were met for the third variable (mobile learning usage) to be acting as a mediator. In the table, these are categorized as Steps 1 to 3.

In Step 1, knowledge sharing was found to significantly predict the knowledge sharing, the mediator, at 0.05 level of significance. In Step 2, the mobile learning system usage significantly predicts the information quality relationship with a 0.05 level of significance. In Step 3, knowledge sharing was found not significantly to predict information quality at a 0.05 level of significance.

Since Step 1 and 2 are significant and Step 3 is not significant, further mediation analysis through Medgraph is warranted. Furthermore, this implies that part of the independent variable (Knowledge sharing) and dependent variable (information quality) was fully mediated by the mediator (mobile learning system). Therefore, complete mediation occurred since the effect was found not significant at the 0.05 level. Furthermore, supported by Figure 3 which showed the effect size measures how much of the effect of information quality on knowledge sharing could be attributed to the indirect path. As shown in the figure, results revealed that the total effect size is .50, obtained by getting the sum of direct effect, which is .05, and indirect effect size (product of B and C), which is .37.

In inference, since it is complete mediation, it could be claimed that mobile learning system usage is one-factor influencing knowledge sharing and information quality and vice versa.

5. Discussions

5.1 Knowledge Sharing of Students

Students' high level of knowledge sharing resulted from respondents' high rating on willingness to share, ability to share, instructor support, degree of competition, technology availability, and technology support. These indicators resulted in a high rating rate given by the respondents. Among all indicators, willingness to share has the highest rating, which agrees with the study of Zhang and Jiang (2015) that when students are responsive and proactive, their motivation is triggered to share. Willingness to share is an essential factor of knowledge-sharing behavior between students since it is an innate attribute of individuals. Willing students are prepared to take the initiatives to motivate others to do the same. Therefore, it is a significant motivational factor contributing to students' exchange of ideas and information.

The second-highest rating is the instructor support which parallels to the study of Martin et al. (2018) that instructor's facilitation, as well as their support and presence, may help the students encouraged to engage more on higher levels of learning by responding to their timely questions and feedback on their assignments and lessons. For this reason, instructors must use different creative strategies and ways of communication to provide quick feedback.

The indicator technology support is the third high rating in line with the study of Yang and Baldwin (2020) students' engagement and motivation rise when there is an additional learning resource both in and outside the classroom provided by technology-supported cooperation and communication. Learners may participate in asynchronous and synchronous communication, work with a wide variety of media, in groups or independently, and for diverse reasons.

The item technology availability also obtained a high rating concerning Osman's et al. (2015) judgment that information and communication technology (ICT) might facilitate knowledge sharing. This might be done by decreasing the temporal and physical barriers between knowledge workers and boosting knowledge information availability. The availability of technology facilitates knowledge sharing across time and space. Digital learning technologies, such as computers and mobile devices, encourage student involvement and willingness to share knowledge, resulting in faster learning.

Ability to share indicator shown a moderate rating next to technology availability which is in line with the study of Rahab and Wahyuni (2013) that not all people have the ability to share but to some, sharing their knowledge with others derives from enjoyment because they consider sharing knowledge can give a positive contribution to the community. Furthermore, students' ability to share is a fundamental basis of relationship building. The individuals' competence in society upholds the relationship as an individual can interfere with a solution at any point in time. So, if the information needs the desires of the user are always fulfilled, that person's success will increase and entice them to see that sharing knowledge is a wise decision. That would then inspire them to

carry out their role or task by sharing what they learn during knowledge sharing (Boateng et al., 2017).

The item Degree of competition resulted in a moderate rating which is also in line with the study by Rahab and Wahyni (2013) entitled predicting knowledge sharing intention based on theory reasoned action framework, elaborated that every individual can compete. Still, individuals should realize that we have all personal obligations, gratitude, and trust to every individual. As contested by Osman et al. (2015), the degree of competition plays a significant role in influencing knowledge-sharing behavior among students.

5.2 Information Quality

Information quality findings are high due to the indicators described in relevance, simplified to provide more comprehensive discussions and explanations. Relevance got the highest mean score among other indicators, indicative of a high-level rating. It is said that relevance is crucial in choosing certain information necessary for the research. Students should know how to classify the information being gathered in a traditional or modern way of gathering information (Lachica et al., 2013). As a result, the relevancy of information is required to meet the requirements for the intended usage, resulting in high-quality content that meets and exceeds the expectations of students.

The second-highest rate indicator is soundness. Consequently, the accuracy and completeness of information are used to assess its soundness. It is also stated that access to up-to-date, accurate, and comprehensive information would help achieve the aims of openness and accountability, which are desired institutional principles. The assumption in government Websites/services is that the more extensive, up-to-date, and accurate information is, the more transparent the government becomes, and the more individuals trust the government (Alenezi et al., 2015).

The process is the third rank high rating, indicating that when the stored information is already overloaded, the information process should be necessary (Angel, 2011). Thus, data process such as data mining is highly recommended in gathering the information quality of specific data. Additionally, Oh (2013) showed that organizing personal information is divided into six stages, each of which involves different actions, thoughts, and decisions, and that various factors influence the process. It suggests that the social settings of participants have a significant impact on the organizing process, soundness, process, and infrastructure.

Lastly, infrastructure garnered a final high rating, which indicates the study of Ryan and Ryan (2016) that to safeguard the information infrastructure, managers of crucial information infrastructures want stronger risk management tools than the qualitative or compliance-based metrics that are currently used employed in critical infrastructure security. They looked at developing a performance-based metric for determining the security of information infrastructures in a quantifiable manner. The measure may be used to compare the security condition of several information infrastructures or to monitor security development within a single infrastructure. That is

why information infrastructure is necessary for developing science information services and library associations' frameworks. The user decides how to obtain the required skills according to information needs and awareness of the information environments (Stupkin, 2011).

5.3 Mobile Learning System Usage

The mobile learning system usage level got a high rating, and most of the items obtained a high descriptive level. These results show that the students saw the benefits of using a mobile learning system, following the study of Chaka and Govender (2017). They said that students at Nigerian education schools had a good attitude toward mobile learning and were thus willing to accept it. Furthermore, behavioral intention is strongly connected with performance anticipation, effort expectancy, social impact, and mobile learning settings.

Furthermore, it was discovered in Shorfuzzaman and Alhussein's (2016) study that students quickly integrate mobile technology into their learning systems, according to a higher education institution's viewpoint on modeling learners' readiness to accept mobile learning. Consequently, students support and incorporate mobile learning into their studies, preferring its flexibility over conventional classroom-based learning. As a result, mobile learning is the most useful, followed by effort expectation and peer influence.

5.4 Correlation between Variables

The study's findings revealed a significant relationship between mobile learning system usage and information quality. This finding supports Almaiah and Alismaiel (2019) said that learning material is the vital component that plays a crucial role in the success of mobile learning apps since it leads to students thoroughly engaging in the learning experience. Essentially, the quality of information is determined by the users' perceptions, so the mobile learning application must accommodate the students' learning content and format choices.

This is supported by DeLone and McLean Information System Success Model (DL&ML) (Almaiah & Man, 2016), which is a powerful model for measuring IS success factors and hypothesized that the higher information quality, the more system is used. In other words, students need a high-quality mobile learning system that will fulfill and meet their demands and criteria to adopt and utilize this technology.

5.5 Mediation Analysis of the Three Variables

The Baron and Kenny (1986) procedure were fully established, a regression analysis was employed to test the mediating effect using the casual steps approach for further analysis. In the study of mediation, the first step of Baron and Kenny's mediation guidelines (1986) procedure that there is a correlation between the independent variable, knowledge sharing, to the dependent variable, information quality, was established. Similarly, the second step was also found in this study since there is a significant relationship between

the independent variable, knowledge sharing, to the mediating variable, mobile learning system usage. Hence, testing the hypothesis in this study was also established due to the significance of the mediating variable, mobile learning system usage, to the dependent variable, information quality. Thus, this finding is under the theory studied by Salloum et al. (2018) claims that knowledge sharing is an important activity in enabling and promoting information systems that encompass information quality. They also claim that students' knowledge-sharing behavior has a favorable impact on technology while adopting mobile learning. They also said that by adopting a mobile learning system, learners would easily exchange information, and their social engagement would grow, increasing learner satisfaction.

This is confirmed by the DeLone and McLean Information System Success Model (DL&ML) (Almaiah & Man, 2016), a strong model for assessing IS success components that postulated that the greater the quality of the information, the more the system is used. In other words, to embrace and use technology, students demand a high-quality mobile learning system that meets their needs and expectations.

In this study, mobile learning system–usage has been found as a full mediator of knowledge sharing and information quality. Since Steps 1 and 2 are significant and step 3 is not significant, part of the independent variable (Knowledge sharing) is fully mediated by the mediator (mobile learning system usage). Therefore, complete mediation took place. This means mobile learning systems use one of the factors that students influence knowledge sharing and information quality, vice versa.

6. Conclusion

With consideration of the study's findings, conclusions were drawn in this section. The research findings and results proved that mobile learning system usage fully mediates knowledge sharing and information quality. The evidence revealed that knowledge sharing requires quality information. Knowledge sharing associated with mobile learning system usage of senior high students and mobile learning system usage of senior high students relates to information quality. Thereby, the respondents manifest a high level of knowledge sharing, a high level of information quality, and a high level of mobile learning system usage.

This high level of rating expressed that there is a significant relationship between knowledge sharing and information quality. There is also a significant relationship between knowledge sharing and mobile learning system usage of senior high students. Similarly, there is a significant relationship between mobile learning system usage and information quality. On the other hand, there is a full mediation effect on mobile learning system usage of senior high students between knowledge sharing and information quality.

In addition, the mediating effect causal steps approach in this study showed a non-significant relationship between knowledge sharing and information quality, indicating its full mediation effect on the variables. The result agrees with the theory of Baron and

Kenny (1986), which states that when the independent variable no longer influences the dependent variable after the mediator has been controlled, a full mediating effect takes place. Therefore, mobile learning system usage influenced knowledge sharing and information quality, vice versa.

Lastly, this research supports the assertion of Salloum et al. (2018) that knowledge sharing is an essential process in facilitating and promoting information systems that cover information quality. Also, they further assert that the knowledge-sharing behavior of students has positive effects on technology using mobile learning. They also contended that by using mobile learning systems, learners were quick to share knowledge, and their social interaction would increase; hence, it positively influences the learners' satisfaction.

7. Recommendations

Several recommendations are made based on the initial findings and conclusions: Since it was established that there is a high level of knowledge sharing, high level of information quality, and high level of mobile learning system usage. It is suggested that students maintain their skills through some techniques to coherently sustain the high levels of knowledge sharing, competent high level of information quality, and attainable level of mobile learning system usage.

To maintain the high knowledge sharing level, students may continue to take training and workshops to enhance their knowledge sharing skills, especially in this generation where much information is unreliable. Further, since degree competition got the lowest among indicators, this may improve to ensure knowledge sharing. To sustain a high level of knowledge sharing, students must always attend workshops specifically on knowledge sharing, which focuses on shared information. Another is that it is also important to participate in personality and psychological training and seminars to develop the behavior and inhibit sharing knowledge.

Further research should investigate actual knowledge transfer, possibly through video observations in learning communities. This could provide valuable insights into how students interact and share their knowledge, such as who they share knowledge with and what type of information they share.

Consequently, a high level of information quality means that students develop effective decision-making. Therefore, students may continue to improve their decision-making skills by attending seminars and workshops to enhance their critical thinking skills in identifying information quality.

On the other hand, the high level of mobile learning system means that mobile learning system is practical, reliable, flexible, provides help and training, interactive, meets user requirements, accessible, provides personalized information presentation, allows a high level of customization for different courses, provides suitably concise information, provides complete information on time, provides information that appears readable, clear and well-formatted, provides up-to-date information, provides information that is easy to understand, provides sufficient information for personal

purposes, provides information that is relevant to the course, provides information what exactly they need and at the right time, friends encourage to use, and parents support in using it. However, since the mobile learning system provides high-speed information access (Efficiency) got the last rank, this may be enhanced to ensure more accessible and faster access of information and learn whatever and whenever they want.

Additionally, complete mediation of mobile learning systems on the relationship between knowledge sharing and information quality suggests students may continue to enhance their skills to evaluate the accuracy of information and knowledge. Thus, emphasizing information quality, students' critical thinking, and skills. And discover other areas of development to attain proper handling of information.

Furthermore, it is also a good idea to focus on information quality to result in a positive outcome. This can help attain students' academic achievement and advancement of students' decision-making skills and be more confident when making decisions.

Lastly, future studies toward examining other variables not included in the survey that can be feasible to mediate the relationship between variables will be of utmost importance to the research community.

Conflict of Interest Statement
The authors declare no conflict of interest

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References

Acquisti, A., Brandimarte, L., & Loewenstein, G. (2015). Privacy and human behaviour in the age of information. Science, 347(6221), 509-514

Ajzen, I. (1991). The theory of planned behavior. Organizational behavior and Human Decision Processes, 50(2), 179–211.

Al-Emran, M., Elsherif, H. M., & Shaalan, K. (2016). Investigating attitudes towards the use of mobile learning in higher education. Computers in Human behavior, 56,93-102.

Al Zoubi, J. & Hashem, T. (2015). Information Quality and its Impact on the Marketing Performance in Industrial Jordanian Corporations-Field Study. International Journal of business, Humanities and Technology. 5, 5.

Alenezi, H., Tarhini, A., & Sharma, S. K. (2015). Development of quantitative model to investigate the strategic relationship between information quality and e-government benefits. Transforming Government: People, Process and Policy, 9(3), 324-351doi: http://dx.doi.org/10.1108/TG-01-2015-0004.

Alharbi, S. & Drew, S. (2014). Mobile learning system – usage: Scale development and empirical tests, integrated framework to measure students' behavioural intentions. International Journal of Advanced Research in Artifical Intelligence, 3, 11.

Almaiah, M. A., & Alismaiel, O. A. (2019). Examination of factors influencing the use of mobile learning system: An empirical study. Education and Information Technologies, 24(1), 885-909.

Almaiah, M. A., & Man, M. (2016). Empirical investigation to explore factors that achieve high quality of mobile learning system based on students' perspectives. Engineering science and technology, an international journal, 19(3), 1314-1320.

Angel, H. (2011). Identifying and prioritizing information quality dimensions for assurance in the pre-processing stage of data storage for business intelligence. Capstone Report: University of Oregon.

Atta, M. (2017). The Effect of Usability and Information Quality on Decision Support Information System (DSS). Arts and Social Science Journal. DOI: 10.4172/2151-6200.1000257.

Ayala, B. R. (2018). A grounded theory of information quality for web archives. Unpublished Dissertation: University of North Texas.

Ayoub, M. A. (2014). The Contribution of Information Technology Infrastructure in the Information Systems Success in E-government Agencies. International Journal of Research in Engineering, 2(5), 54-60.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of personality and social psychology, 51(6), 1173.

Boamah, E. (2018). Information culture of Ghanaian immigrants living in New Zealand. Global Knowledge, Memory and Communication, 67(8), 585-606. doi: http://dx.doi.org/10.1108/GKMC-07-2018-0065.

Boateng, H., Agyemang, F. G., Okoe, A. F., & Mensah, T. D. (2017). Examining the relationship between trustworthiness and students' attitudes toward knowledge sharing. Library Review.

Brouwer, J., & Jansen, E. (2019) Beyond grades: developing knowledge sharing in learning communities as a graduate attribute. Higher Education Research & Development, 38(2), 219-234. DOI: 10.1080/07294360.2018.1522619

Chaka, J. & Govender, I. (2017). Students' perceptions and readiness towards mobile learning in colleges of education: a Nigerian perspective. South African Journal of Education, 37, (1). doi: 10.15700/saje.v37n1a1282.

Chambo, F. F., Laizer, L. S., Nkansah-Gyekye, Y., & Ndume, V. (2013). Towards the development of mobile learning model for Tanzania secondary schools: Case study Kilimanjaro region. In 2013 Pan African International Conference on Information Science, Computing and Telecommunications (PACT) (pp. 127- 130). IEEE.

Conrad, D., Dierberger, G., & Isaacson, M. (2019). The management of knowledge-sharing in college business departments: A study of the perceptions of business department faculty regarding knowledge-sharing practices. American Journal of Management, 19(1), 48-59. https://search.proquest.com/docview/2250960664?accountid=31259

Dyson, L. E., Litchfield, A., Lawrence, E., Raban, R., & Leijdekkers, P. (2009). Advancing the m-learning research agenda for active, experiential learning: Four case studies. Australasian Journal of Educational Technology, 25(2).

Erickson, D. K. (2013). How affect influences investors' effort to process financial information (Order No. 3599116. https://search.proquest.com/docview/1461405351?accountid=31259

Freitas, A., Monteiro, G. & Costa, H. (2018). Assessing the quality of information technology infrastructure services. https://www.emerald.com/insight/content/doi/10.1108/IMDS-09-2017-0415/full/html.

Freeze, R. D., Alshare, K. A., Lane, P. L., & Wen, H. J. (2019). IS success model in e-learning context based on students' perceptions. Journal of Information systems education, 21(2), 4.

Friesl, M., Sackmann, S. A., & Kremser, S. (2011). Knowledge sharing in new organizational entities: The impact of hierarchy, organizational context, micro-politics and suspicion. Cross Cultural Management: An International Journal.

Galvao, M. C. B., Ricarte, I. L. M., Grad, R. M., & Pluye, P. (2013). The clinical relevance of information index (CRII): Assessing the relevance of health information to the clinical practice. Health Information and Libraries Journal, 30(2), 110-120. doi: http://dx.doi.org/10.1111/hir.12021

Gao, J., Zhang, C., Wang, K., & Ba, S. (2014). Understanding Online Purchase Decision Making: The Effects of Unconscious Thought, Information Quality, and Information Quantity. https://ssrn.com//abstract=2853899.

Ghadirian, H., Ayub, A. F. M., Silong, A. D., Bakar, K. B. A., & Zadeh, A. M. H. (2014). Knowledge sharing behaviour among students in learning environments: A review of literature. Asian Social Science, 10(4), 38.

Gikas, J., & Grant, M. M. (2013). Mobile computing devices in higher education: Student perspectives on learning with cellphones, smartphones & social media. The Internet and Higher Education, 19, 18- 26.

Gonzalez-Ibanez, R., & Shah, C. (2016). Using affective signals as implicit indicators of information relevance and information processing strategies. American Society for Information Science and Technology.Meeting.Proceedings of the...ASIST Annual Meeting, 53(1), 1- 10.doi: http://dx.doi.org/10.1002/pra2.2016.14505301050

Gupta, A., & Dhami, A. (2015). Measuring the impact of security, trust and privacy in information sharing: A study on social networking sites. Journal of Direct, Data and Digital Marketing Practice, 17(1), 43-53. doi: http://dx.doi.org/10.1057/dddmp.2015.32

Howard, G., Lubbe, S., & Klopper, R. (2011). The impact of information quality on information research. Management, Informatics and Research Design, 288.

Hu, Y., & Sundar, S. S. (2010). Effects of online health sources on credibility and behavioral intentions. Communication Research, 37(1), 105-132.

Huang, X., & Soergel, D. (2013). Relevance: An improved framework for explicating the notion. Journal of the American Society for Information Science and Technology, 64(1), 18-35.

Irwin, D., & Mandel, D. R. (2019). Improving information evaluation for intelligence production. Intelligence & National Security, 34(4), 503-525. doi: http://dx.doi.org/10.1080/02684527.2019.1569343

Jaklic, J., Coelho, P., & Popovic, A. (2009). Information quality improvement as a measure of business intelligence system benefits. WSEAS Transactions on Business and Economics, 6, 9.

Jinyang, L. (2015). Knowledge Sharing in Virtual Communities: A Social Exchange Theory Perspective. Journal of Industrial Engineering and Management, 5, 1. http://dx.doi.org/10.3926/jiem.1389.

Kalu, C. O., Usiedo, B. A. & Chidi-Kalu, E. I. (2019). Knowledge sharing behaviours and patterns among academic students: a case study of electrical engineering technology students of National Institute of Construction Technology(NICT), Uromi, Edo State. Library Philosophy and Practice. https://digitalcommons.unl.edu/libphilprac/4183.

Kang, M. Y., & Malmgren, R. (2017). Identifying Dimensions of Information Quality: Development of a Model to Support Information Flow in Malawi Health Information Systems.

Khosravi, A., & Ahmad, M. N. (2016). Examining antecedents of knowledge-sharing factors on research supervision: An empirical study. Education and Information Technologies, 21(4), 783-813. doi: http://dx.doi.org/10.1007/s10639-014-9354-4.

Kumbhar, S. S., & Pawar, R. R. (2014). Mobile based services: application and challenges. Proceed. Changing Trends Acad. Lib. Librarianship Digital Env. Shivaji University.

Krzesaj, M. (2019). Information Quality Problems on Websites. Zeszyty Naukowe. Organizacja i Zarządzanie/Politechnika Śląska, (136 Modernity of Industry and Sciences), 323-337.

Kwakye, E. & Nor, K. (2011). Individual factors and knowledge sharing. American Journal of Economics and Business Administration, 66-72.

Lachica, R., Karabeg, D., & Rudan, S. (2013). Quality, relevance and importance in information retrieval with fuzzy semantic networks. https://folk.uio.no/dino/KF/Lachica-Karabeg08.pdf.

Lee, J. (2018). The Effects of Knowledge Sharing on Individual Creativity in Higher Education Institutions: Socio-Technical View. Administrative Science. doi:10.3390/admsci8020021.

Leonardi, P. (2014). Social Media, knowledge sharing, and innovation: Toward a theory of communication visibility. Information Systems Research 25(4):796- 816. http://dx.doi.org/10.1287/isre.2014.0536.

Li, C. Y. (2013). Persuasive messages on information system acceptance: A theoretical extension of elaboration likelihood model and social influence theory. Computers in Human Behavior, 29 (1), 264-275.

Li, J., Zhang, P., Song, D., & Wu, Y. (2017). Understanding an enriched multidimensional user relevance model by analyzing query logs. Journal of the Association for Information Science and Technology, 68(12), 2743-2754.

Li, Y., & Xiao, F. (2018). Bayesian update with information quality under the framework of evidence theory. Entropy, 21(1), 5.

Li-Wei, W., & Lin, J. (2013). Knowledge sharing and knowledge effectiveness: Learning orientation and co-production in the contingency model of tacit knowledge. The Journal of Business & Industrial Marketing, 28(8), 672-686. doi: http://dx.doi.org/10.1108/JBIM-04-2011-0050

Liou, D. L., Chih, W. H., Hsu, L. C., & Huang, C. Y. (2016). Investigating information sharing behavior: The mediating roles of the desire to share information in virtual communities. Information Systems and e-Business Management, 14, 187–216. doi: 10.1007/s10257-015-0279-2

Ma, L., Zhang, X., & Xiao, Y. D. (2018). Social media users' share intention and subjective well-being. Online Information Review, 42(6), 784-801. doi: http://dx.doi.org/10.1108/OIR-02-2017-0058

Mansor, Z. D., Mustaffa, M., & Salleh, L. M. (2015). Motivation and willingness to participate in knowledge sharing activities among academics in a public university. Procedia Economics and Finance, 31(15), 286-293.

Marinagi, C., Trivellas, P., & Reklitis, P. (2015). Information quality and supply chain performance: The mediating role of information sharing. International Conference on Strategic Innovative Marketing, IC-SIM 2014, September 1-4, 2014.

Martin, F., Wang, C., & Sadaf, A. (2018). Student perception of helpfulness of facilitation strategies that enhance instructor presence, connectedness, engagement and learning in online courses. The Internet and Higher Education, 37, 52-65.

Mc Manus, P., Ragab, M., Arisha, A., & Mulhall, S. (2016). Review of factors influencing employees' willingness to share knowledge. In Proceedings of the 18th European Conference on Knowledge Management (ECKM).

McBeath, A., & Ball, P. (2012). Towards a framework for transferring technology knowledge between facilities. Strategic Outsourcing: An International Journal, 5(3), 213-231. doi: http://dx.doi.org/10.1108/17538291211291756.

Mohammed, A. A., Ahmad, A., & Ahmad, A. (2020). Exploring the critical challenges and factors influencing the E-learning system usage during COVID-19 pandemic. Education and Information Technologies.

Mubuke, F., Mayoka K., G., & Ogenmungu, C. (2016). A model to enhance students intention to adopt and use mobile learning in Ugandan Universities.

Nove, E. V. A., & Puspitasari, D. (2017). Knowledge sharing in libraries: A case study of knowledge sharing strategies in Indonesian university libraries. International Journal of Knowledge Management and Practices, 5(2), 1-6. https://search.proquest.com/docview/2024116732?accountid=31259

Oh, K. E. (2013). The process of organizing personal information (Order No.3606583). https://search.proquest.com/docview/1477248350?accountid=31259.

Osman, S., Kamal, S. N. I. M., Ali, M. N., Noor, J. M. M., WahiAnuar, M. A., & Othman, R. (2015). Mechanisms of knowledge sharing among undergraduate students in UiTM Johor. Procedia Economics and Finance, 31, 903-908.

Park, C. W. (2015). Information quality as a determinant of task-technology fit in using communication technology for simple task. Issues in Information Systems, 1(16), 189-199.

Popoola, B. A., Chinomona, R., & Chinomona, E. (2014). The influence of information quality, system quality and service quality on student's self-efficacy at institutions of higher learning in South Africa. Mediterranean Journal of Social Sciences, 5(27), 2-974.

Rahab & Wahyuni, P. (2013). Predicting Knowledge Sharing Intention Based on Theory of Reasoned Action Framework: An Empirical Study on Higher Education Institution. American International Journal of Contemporary Research, 3, 1.

Razak, N., Pangil, F., Zin, M., Azlina, N., Yunus, M., & Asnawi, N. (2016). Theories of knowledge sharing behavior in business strategy. Fifth international conference on marketing and retailing (5th Incomar) 2015.

Rodriguez, L., Moreno, P., & Toukoumidis, A. (2016). Dimensions and indicators of the information quality in digital media. Media Education Research Journal, 49, 14. doi: http://dx.doi.org/10.3916/C49-2016-09.

Ryan, J. J. C. H., & Ryan, D. J. (2016). How secure is our information infrastructure? Journal of Information Warfare, 15(3), 24-34. https://search.proquest.com/docview/1967813623?accountid=31259.

Salloum, S, Al-Emran, M. & Shaalan, K. (2018). The impact of knowledge sharing on information system: a review. Springer Nature Switzerland, 94-106. https://doi.org/10.1007/978-3-319-95204-8_9.

Samadi, I., Masrek, M. N., & Yatin, S. F. B. M. (2014). The effect of individual characteristics and digital library characteristics on digital library effectiveness: A survey at University of Tehran. World Applied Sciences Journal, 30(30), 214- 220.

Saracevic, T. (2016). The Notion of Relevance in Information Science: Everybody knows what relevance is. But, what is it really?. Synthesis lectures on information concepts, retrieval, and services, 8(3), i-109.

Shaari, R., Rahman, S., & Rajab, A. (2014). Self-efficacy as a determined factor for knowledge sharing Awareness. International Journal of trade, economics and finance, 5, 1. DOI: 10.7763/IJTEF.2014.V5.337.

Sharples, M., Taylor, J., & Vavoula, G. (2005). Towards a theory of mobile learning. In Proceedings of mLearn 1(1), 1-9).

Shikano, S., Stoffel, M. F., & Tepe, M. (2017). Information accuracy in legislative oversight: Theoretical implications and experimental evidence. Rationality and Society, 29(2), 226-254. doi: http://dx.doi.org/10.1177/1043463117700610.

Shonola, S. A., & Joy, M. (2014). Barriers to m-learning in higher education institutions in Nigeria. In A Proceeding of International Conference of Education, Research and Innovation (ICERI2014) (pp. 3324-32).

Shorfuzzaman, M. & Alhussein, M. (2016). Modelling learners' readiness to adopt mobile learning: a perspective from a GCC Higher Education institution. Hindawi pub. Corp. http://dx.doi.org/10.1155/2016/6982824.

Sihombing, S. (2011). Understanding knowledge sharing behavior: An examination of the extended model of theory of planned behavior. Journal the Winners, 12,(1), 24-39.

Smed, M., Salomo, S., Schultz, C., & Getz, K. A. (2012). Users ability to share knowledge when integrated in new product development-evidence from the pharmaceutical industry. In DRUID Academy Conference 2012.

Stupkin, V. (2011). Methods of the development of an integrated information infrastructure of library and information systems in science cities. Scientific and Technical Information Processing, 38(2), 113 118.doi: http://dx.doi.org/10.3103/S0147688211020146

Stvilia, B., Al-Faraj, A., & Yi, Y. (2009). Issues of cross-contextual information quality evaluation—The case of Arabic, English, and Korean Wikipedias. Library & Information Science Research, 31(4), 232-239.

Suanpang, P. (2012). The integration of m-learning and social nework for suporting knowledge sharing. Creative Education, 3, 39.

Tabor, S. W. (2016). Making mobile learning work: Student perceptions and implementation factors. Journal of Information Technology Education: Innovations in Practice, 15, 75-98.

Traxler, J. (2009). Learning in a mobile age. International Journal of Mobile and Blended Learning (IJMBL), 1(1), 1-12.

Trialih, R., Wei, H. L., & Anugrah, W. (2017). Knowledge sharing behavior and quality among workers of academic institutions in Indonesia. International Journal of Business and Society, 18(S2), 353-368.

Utulu, S., & Alonge, A. (2012). Use of mobile phones for project based learning by undergraduate students of Nigerian private universities. International Journal of Education and Development using ICT, 8(1), 4-15.

Wangpipatwong, S. (2009). Factors influencing knowledge sharing among university students. Proceedings of the 17th International Conference on Computers in Education [CDROM]. Hong Kong: Asia-Pacific Society for Computers in Education.

Wei, C. C., Choy, C. S., Chew, G. G., & Yen, Y. Y. (2012). Knowledge sharing patterns of undergraduate students. Library Review, 61(5), 327–344. doi: 10.1108/00242531211280469

Wiese, J., Kelley, P. G., Cranor, L. F., Dabbish, L., Hong, J. I., & Zimmerman, J. (2011). Are you close with me? Are you nearby? Investigating social groups, closeness, and willingness to share. In Proceedings of the 13th international conference on Ubiquitous computing (pp. 197-206).

Williams, P. W. (2009). Assessing mobile learning effectiveness and Acceptance (Doctoral dissertation, The George Washington University).

Wu, Y., & Zhu, W. (2012). An integrated theoretical model for determinants of knowledge sharing behaviours. Kybernetes.

Yang, D. & Baldwin, S. J. (2020). Using technology to support student learning in an integrated STEM learning environment. International Journal of Technology in Education and Science (IJTES), 4(1), 1-11.

Zaheer, N., & Trkman, P. (2017). An information sharing theory perspective on willingness to share information in supply chains. International Journal of Logistics Management, 28(2), 417-443. doi: http://dx.doi.org/10.1108/IJLM-09-2015-0158.

Zhang, X., & Jiang, J. Y. (2015). With whom shall I share my knowledge? A recipient perspective of knowledge sharing. Journal of Knowledge Management, 19(2), 277–295. https://doi.org/10.1108/JKM-05-2014-0184.