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ASSESSMENT OF THE DEVELOPED ALUMNI TRACKING SYSTEM USING TECHNOLOGY ACCEPTANCE MODEL AND ISO 25010 SOFTWARE QUALITY CHARACTERISTICS

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Abstract: An Alumni Tracking System developed through XAMPP development framework, and the software development methodology has been made available for the intended stakholders of the Licerio Antiporda Sr. National High School – Dalaya Extension. This paper aimed to determine the extent of compliance of the ATS to the software quality standards of ISO 25010 and the Technology Acceptance Model.The descriptive research design was employed. A total of 65 participants from the school officials, students, and alumni as well as IT experts evaluated the deployed system using Google forms and survey-questionnaire. Results revealed that

Keywords: alumni, software development methodology, information system

I. INTRODUCTION

One of the rapidly changing and existing areas of education today is the development of the computers-based learning facilities. These technologies offer students and teachers access to materials never before. Through the condensed storage capabilities of computers, multimedia can deliver large amounts in many ways (Columna and Laurete, 2008).

The alumni are considered as the best evidence of a program's effectiveness in terms of employment and positions held. Moreover, they are a good source of feedback regarding the program's relevance in the current labor market. There are four reasons to get involved with Alumni Associations: Networking Opportunities; Career building tools; Benefits; and Give Back.

At the most basic level, an information system (IS) is a set of components that work together to manage data processing and storage. Its role is to support the key aspects of running an organization, such as communication, record-keeping, decision making, data analysis and more. Companies use this information to improve their business operations, make strategic decisions and gain a competitive edge. Information systems typically include a combination of software, hardware and telecommunication networks. Information System's goal and main objectives acccording to Javier(2019), is to achieve efficiency, effectiveness and productivity of individuals within an organization.

According to R. Reix (2002), an information system plays a key role in organizations, and its design has an impact on the design of the organization, individual roles and management process. An organization can be characterized by various parameters at different levels of detail:

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its borders (and relationships with other organizations), its structure (division into units arrangement of these units), its particular properties relating to the specialization, the degree of formalization, the distribution of power (centralization-decentralization), modes of coordination, the general processes that take place (process communication, decision. organization is a process that is both differentiated and integrated to achieve a common objective.

On a Graduate International Insight Review Article (2009), It is stated that an alumni tracking system will supply the nucleus information for edifice and refinement alumni dealings, plan, guarantying a consistent move towards uninterrupted betterment. The survey is an alone trailing mechanism for establishments committed to understanding the results, calling patterned advance and contemplations of their alumni both international and domestic. The Our Lady of Fatima University reveals their aims in making an alumna tracking system on their intelligence page saying. “Establishing construction for overall coordination of Alumni Homecoming Events and other alumna sponsored or related activities care of a cardinal database on alumnus contact information including engagement in Alumni Tracking plans in concurrence with the Research and Development Center. Establish Alumni Card System. Establish plan for Outstanding Alumni Recognition and Establish Alumni Scholarship Program”. This lone proves that alumna tracking system is truly needed on an establishment. The University of the East Philippines used their alumni system to develop close ties among the alumni of the university with their on-line web site and tracking system. They have a login signifier, an enrollment and a keepsake store where they can acquire their keepsakes on the site.

An Alumni Tracking System developed through XAMPP development framework and the software development methodology has been made available for the intended stakholders of the Licerio Antiporda Sr. National High School – Dalaya Extension. This paper aimed to determine the extent of compliance of the ATS to the software quality standards of ISO 25010 and the Technology Acceptance Model. Specifcially, the study generally aimed to find answers to the following:

1.What is the extent of compliance of the develop system project, Alumni Tracking System of Licerio Antiporda Sr. National High School-Dalaya Extension, to the software quality standards of the ISO 25010 in terms of: Accuracy, Efficiency, Reliability, Security, and User-Friendliness?

2. What is the assessment of the participants on the developed and deployed web project based on the Technology Acceptance Model in terms of:

a. Usefulness
b. Esase of Use
c. Attitudes towards using the system
d. behavioral intention to use the system

3. Is there significant differences in the assessment of the participants of the systems’ extent of compliance to ISO 25010 in terms of: Accuracy, Efficiency, Reliability, Security, and User-Friendliness?

II. METHODOLOGY

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This study made use of the descriptive research design. The development of the Alumni Tracking System employed a software development methodology. Since the focus of the paper is describing the assessment of the evaluators on the extent of compliance to ISO 25010 software quality standards and the Technology Acceptance Model, the descriptive methods included weighted means and post-hoc analysis of variance.

As of 2020, there are a total of 702 alumni or graduates of the Licerio Antiporda Sr. National High School-Dalaya Extension. While the study documents status of all alumni or graduates of the school in the past sixteen years, the alumni participants detailed below were those tapped to volunteer in the assessment of the developed system. In the table below, shows the distribution of those who assessed the system. Consent were sought of the participation and involvement in this study.

Table 1: Distribution of Participants

Participants	Frequency	Percentage
School Head/Faculty	10	15.38
Alumni	45	69.23
IT Experts	10	15.38
Total	65	100

The questionnaire used in the assessment follows the standards of ISO 25010 as well as the statements modified based on the technology acceptance model. It uses a 4-point Likert scale from not useful to very useful. The questionnaire has been piloted first, reviewed and revised by content and IT experts prior its final use in this study. Weighted means and post-hoc analysis was commonly used to treat and analyze the responses made.

III. RESULTS AND DISCUSSION

Assessment of the developed Alumni Tracking System of Licerio Antiporda Sr. National High School-Dalaya Extension

Accuracy

Table 2 shows the assessments of evaluators on the developed alumni tracking system for Licerio Antiporda Sr. National High School-Dalaya Extension in terms of its accuracy. The table reveals that the system shows the exact details of alumni (3.77); the system presents the correct list of learners/alumni. (3.77) and the system provides records without error encountered (3.77). The overall weighted mean of 3.76 with a descriptive value of excellent indicates that the system provides accuracy. This finding implies that the system is able to deliver its accuracy.

Table 2: Assessment of the evaluators on the proposed alumni tracking system of LASNHS-Dalaya in terms of its accuracy

Indicators (Accuracy)	**Faculty**		**Alumni**		**IT Experts**		**Overall**	
	WM	**DV**	**WM**	**DV**	**WM**	**DV**	**WM**	**DV**

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1. The tracking system presents the correct list of learners/alumni.	4.00	E	3.80	E	3.40	E	3.77	E
2. The tracking system shows the exact details of alumni.	3.90	E	3.82	E	3.40	E	3.77	E
3. The tracking system provides records without error encountered.	3.70	E	3.80	E	3.60	E	3.75	E
Overall Weighted Mean	**3.87**	**E**	**3.81**	**E**	**3.47**	**E**	**3.76**	**E**

Legend:
WM – Weighted Mean; DV – Descriptive Value
3.25-4.00 >> Excellent (E) *1.75-2.49 >> Fair (F)*
2.50-3.24 >> Very good (VG) *1.00-1.74>> Poor (P)*

Reliability

Presented in table 3 is the assessment of the evaluators on the developed Alumni Tracking System of the Licerio Antiporda Sr. National High School-Dalaya Extension in terms of its reliability. Data shows that the three reliability criterions were rated by the evaluators as excellent with their respective means of 3.78 for showing efficient procedure; gives valuable result (3.85) and the system works without fear of data loss (3.77). The overall weighted mean for the evaluators of 3.80 with the descriptive value of excellent indicates that the system on alumni tracking system is reliable.

Table 3: Assessment of the evaluators on the proposed alumni tracking system of LASNHS-Dalaya in terms of its reliability

Indicators (Reliability)	**Faculty**		**Alumni**		**IT Experts**		**Overall**	
	WM	**DV**	**WM**	**DV**	**WM**	**DV**	**WM**	**DV**
1. The system shows the efficient procedure for alumni tracking.	3.80	E	3.84	E	3.50	E	3.78	E
2. The tracking system gives valuable result in general	4.00	E	3.87	E	3.60	E	3.85	E
3. The tracking system works without fear of data loss.	3.90	E	3.80	E	3.50	E	3.77	E
Overall Weighted Mean	**3.90**	**E**	**3.84**	**E**	**3.53**	**E**	**3.80**	**E**

Legend:
WM – Weighted Mean; DV – Descriptive Value
3.25-4.00 >> Excellent (E) *1.75-2.49 >> Fair (F)*
2.50-3.24 >> Very good (VG) *1.00-1.74>> Poor (P)*

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Security

Apparent in table 4 is the assessment of evaluators on the developed alumni tracking system for LASNHS-Dalaya Extension in terms of its security. The table reveals that the system is under the control of an authority managing the operations of the tracking system (3.83); that the system prevents unauthorized use and access to the data. (3.80); that the system shows it secures the information of each alumnus (3.85); that it has a control mechanisms like login account details, authentications, are made available in the system (3.91) and the website is generally secured evidenced by SiteLock (3.83). This finding means that the overall security mean of 3.84 complies with an excellent to security standards.

Table 4: Assessment of the evaluators on the proposed alumni tracking system of LASNHS-Dalaya in terms of its security

Indicators (Security)	**Faculty**		**Alumni**		**IT Experts**		**Overall**	
	WM	**DV**	**WM**	**DV**	**WM**	**DV**	**WM**	**DV**
1. The system is under the control of an authority managing the operations of the tracking system.	3.90	E	3.89	E	3.50	E	3.83	E
2. The tracking system prevents unauthorized use and access to the data.	3.90	E	3.82	E	3.60	E	3.80	E
3. The system shows that it secures the information of each alumnus.	3.90	E	3.89	E	3.60	E	3.85	E
4. Control mechanisms like login account details, authentications, are made available in the system.	4.00	E	3.91	E	3.80	E	3.91	E
5. The website is generally secured evidenced by SiteLock.	4.00	E	3.87	E	3.50	E	3.83	E
Overall Weighted Mean	**3.94**	**E**	**3.88**	**E**	**3.60**	**E**	**3.84**	**E**

Legend:
WM – Weighted Mean; DV – Descriptive Value
3.25-4.00 >> Excellent (E) *1.75-2.49 >> Fair (F)*
2.50-3.24 >> Very good (VG) *1.00-1.74>> Poor (P)*

Functionality

The assessment of the evaluators on the developed alumni tracking system for LASNHS-Dalaya Extension in terms of its functionality is presented in table 4. Data reveals that the developed alumni tracking system performs well without any errors/problems encountered (3.75); the button/s or icons and networks of the system links work well and effectively (3.78); and if errors occur, the system will display errors committed by the user (3.83). This finding means that the overall functionality of 3.79 complies with an excellent standard being functional.

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Table 5: Assessment of the evaluators on the proposed alumni tracking system of LASNHS-Dalaya in terms of its functionality

Indicators (Functionality)	Faculty		Alumni		IT Experts		Overall	
	WM	**DV**	**WM**	**DV**	**WM**	**DV**	**WM**	**DV**
1. The tracking system performs well without any errors/problems encountered.	3.90	E	3.78	E	3.50	E	3.75	E
2. All the button/s or icons and links work well and effectively.	3.90	E	3.80	E	3.60	E	3.78	E
3. If errors occur, the system will display errors committed by the user.	4.00	E	3.82	E	3.70	E	3.83	E
Overall Weighted Mean	**3.93**	**E**	**3.80**	**E**	**3.60**	**E**	**3.79**	**E**

Legend:
WM – Weighted Mean; DV – Descriptive Value
3.25-4.00 >> Excellent (E) *1.75-2.49 >> Fair (F)*
2.50-3.24 >> Very good (VG) *1.00-1.74 >> Poor (P)*

Portability

Table 6 presents the assessment of evaluators on the developed tracking system for LASNHS-Dalaya Extension in terms of its portability. The table reveals that the system works in different platform, and across different browser without fear of technical issues (3.78); that the system allows intended users to be easily installed with minimal or no technical assistance. (3.80) and it is operated using either laptop or smartphones with ease (3.80). The finding means that the overall portability of 3.79 complies with an excellent standard being portable.

Table 6: Assessment of the evaluators on the proposed alumni tracking system of LASNHS-Dalaya in terms of its portability

Indicators (Portability)	Faculty		Alumni		IT Experts		Overall	
	WM	**DV**	**WM**	**DV**	**WM**	**DV**	**WM**	**DV**
1. The system is works in different platform, and across different browser without fear of technical issues.	3.90	E	3.78	E	3.70	E	3.78	E
2. The system allows intended users to be easily installed with minimal or no technical assistance.	3.80	E	3.84	E	3.60	E	3.80	E

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3. The system is operated using either laptop or smartphones with ease.	3.90	E	3.80	E	3.70	E	3.80	E
Overall Weighted Mean	**3.87**	**E**	**3.81**	**E**	**3.67**	**E**	**3.79**	**E**

Legend:
WM – Weighted Mean; DV – Descriptive Value
3.25-4.00 >> Excellent (E) *1.75-2.49 >> Fair (F)*
2.50-3.24 >> Very good (VG) *1.00-1.74 >> Poor (P)*

Usability

Evident in Table 6 is the assessment of evaluators on the developed tracking system for LASNHS-Dalaya Extension in terms of its usability. The table shows that the three indicators (the system is easy to operate and control (3.75); facilitates the user's retrieval and data entry with ease or hassle-free (3.83) and the system processes are easy to understand thus allows any user to use with little or no support (3.85) with a descriptive value as excellent reveals that the system is usable.

Table 7: Assessment of the evaluators on the proposed alumni tracking system of LASNHS-Dalaya in terms of its usability

Indicators (Usability)	**Faculty**		**Alumni**		**IT Experts**		**Overall**	
	WM	**DV**	**WM**	**DV**	**WM**	**DV**	**WM**	**DV**
1. The tracking system is easy to operate and control.	3.90	E	3.78	E	3.50	E	3.75	E
2. The system facilitates the user's retrieval and data entry with ease or hassle-free.	3.90	E	3.87	E	3.60	E	3.83	E
3. The system processes are easy to understand thus allows any user to use with little or no support.	3.90	E	3.87	E	3.70	E	3.85	E
Overall Weighted Mean	**3.90**	**E**	**3.84**	**E**	**3.60**	**E**	**3.81**	**E**

Legend:
WM – Weighted Mean; DV – Descriptive Value
3.25-4.00 >> Excellent (E) *1.75-2.49 >> Fair (F)*
2.50-3.24 >> Very good (VG) *1.00-1.74 >> Poor (P)*

Maintainability

Table 8 presents the assessment of evaluators on the developed tracking system for LASNHS-Dalaya Extension in terms of its maintainability. The table reveals that the system can find errors easily when it occurs (3.80); the system works well when updates or revisions are made in the process (3.82) and the system could be easily maintained with less or minimal technical

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support (3.82). This finding means that the system can be easily maintained as reckoned by its overall weighted mean of 3.81. This implies that the system can be repaired or enhanced.

Table 8: Assessment of the evaluators on the proposed alumni tracking system of LASNHS-Dalaya in terms of its maintainability

Indicators (Maintainability)	Faculty		Alumni		IT Experts		Overall	
	WM	**DV**	**WM**	**DV**	**WM**	**DV**	**WM**	**DV**
1. The system can find errors easily when it occurs.	3.90	E	3.82	E	3.60	E	3.80	E
2. The system works well when updates or revisions are made in the process.	3.80	E	3.87	E	3.60	E	3.82	E
3. The system could be easily maintained with less or minimal technical support.	3.90	E	3.87	E	3.50	E	3.82	E
Overall Weighted Mean	**3.87**	**E**	**3.85**	**E**	**3.57**	**E**	**3.81**	**E**

Legend:
WM – Weighted Mean; DV – Descriptive Value
3.25-4.00 >> Excellent (E) *1.75-2.49 >> Fair (F)*
2.50-3.24 >> Very good (VG) *1.00-1.74 >> Poor (P)*

Efficiency

The assessment of evaluators on the developed voting system for LASNHS-Dalaya Extension in terms of its efficiency is presented in table 8. The data reveals that the system provides efficient instructions for a user-friendly step by step process (3.85); that the system provides convenience in tracking the alumni (3.83); and minimal time is needed in tracking alumni (3.83) with descriptive value of excellent. This implies that the system complies in terms of its efficiency features.

Table 9: Assessment of the evaluators on the proposed alumni tracking system of LASNHS-Dalaya in terms of its efficiency

Indicators (Efficiency)	Faculty		Alumni		IT Experts		Overall	
	WM	**DV**	**WM**	**DV**	**WM**	**DV**	**WM**	**DV**
1. The system provides efficient instructions for a user-friendly step by step process.	4.00	E	3.87	E	3.60	E	3.85	E
2. The system provides convenience in tracking the alumni.	3.90	E	3.87	E	3.60	E	3.83	E

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3. Minimal time is needed in tracking alumni.	3.90	E	3.87	E	3.60	E	3.83	E
Overall Weighted Mean	**3.93**	**E**	**3.87**	**E**	**3.60**	**E**	**3.84**	**E**

Legend:
WM – Weighted Mean; DV – Descriptive Value
3.25-4.00 >> Excellent (E) *1.75-2.49 >> Fair (F)*
2.50-3.24 >> Very good (VG) *1.00-1.74 >> Poor (P)*

Assessment of the developed Alumni Tracking System of Licerio Antiporda Sr. National High School-Dalaya Extension based on the Technology Acceptance Model

Perceived Usefulness

Table 10 presents the assessment of evaluators on the developed tracking system for LASNHS-Dalaya Extension based on Technology acceptance model in terms of its perceived usefulness. The table reveals that the system helps an alumnus update about the school (3.76); the system makes it easier for the school to track other alumni (3.76); Using the system, the school will be able to monitor whereabouts of its alumni (3.64); the system is very useful in providing updates both to the alumni and the school (3.73) and the system developed is useful for the school (3.78). This finding means that the system can be very useful as reckoned by its overall weighted mean of 3.73. This implies that the system is very useful. Like most information systems developed for an organization, the users find the system to be useful associated to its user-friendliness (

Table 10: Assessment of the alumni on the proposed alumni tracking system of LASNHS-Dalaya based on technology acceptance model in terms of its perceived usefulness

Statements	Weighted Mean	Descriptive Value
1. Using the alumni tracking system helps me updated about the school	3.76	Very useful
2. Using the alumni tracking system makes it easier for the school to track other alumni	3.76	Very useful
3. Using the system, the school will be able to monitor whereabouts of its alumni	3.64	Very useful
4. The system is very useful in providing updates both to the alumni and the school	3.73	Very useful
5. Overall, I think the system developed is useful for the school	3.78	Very useful
Overall Weighted Mean	**3.73**	**Very useful**

Legend:
3.25-4.00 >> Very useful *1.75-2.49 >> Somewhat useful*
2.50-3.24 >> Useful *1.00-1.74 >> Not useful*

Perceived Ease of Use

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Table 11 presents the assessment of evaluators on the developed tracking system for LASNHS-Dalaya Extension based on Technology acceptance model in terms of its perceived ease of use. The table reveals that it is easy for an alumnus to become skillful using the Tracking System (3.56); that the alumni find navigating the system very easy (3.56); All links and parts of the Alumni Tracking System is easily readable and understandable (3.64); that they find the system easy to use (3.73) and Overall, The Alumni Tracking System is easy to use. (3.78). This finding means that the system can be ease of use as reckoned by its overall weighted mean of 3.60. This implies that the system is ease of use.

Table 11: Assessment of the alumni on the proposed alumni tracking system of LASNHS-Dalaya based on technology acceptance model in terms of its perceived ease of use

Statements	**Weighted Mean**	**Descriptive Value**
1. It is easy for me to become skillful using the Alumni Tracking System	3.56	Very easy
2. I find navigating the Alumni Tracking System very easy	3.56	Very easy
3. All links and parts of the Alumni Tracking System is easily readable and understandable.	3.64	Very easy
4. I find the system easy to use	3.71	Very easy
5. Overall, The Alumni Tracking System is easy to use.	3.56	Very easy
Overall Weighted Mean	**3.60**	**Very easy**

Legend:

3.25-4.00 >> Very easy	*1.75-2.49 >> Somewhat easy*
2.50-3.24 >> Easy	*1.00-1.74 >> Not easy*

Attitudes towards Using the System

Table 12 presents the assessment of evaluators on the developed tracking system for LASNHS-Dalaya Extension based on Technology acceptance model in terms of its attitudes towards Using the System. The table reveals that an alumnus like to use the system (3.71); that the alumni like the idea of using the web-based tracking system (3.69); Updating the whereabouts of the alumni thru the Alumni Tracking System is a good idea (3.67); that the system makes an alumnus towards using the system (3.69) and overall, an alumnus like working with the Alumni Tracking System (3.64). This finding means that the system can be very positive as reckoned by its overall weighted mean of 3.68. This implies that the system is very positive of their attitudes toward using the system.

Table 12: Assessment of the alumni on the proposed alumni tracking system of LASNHS-Dalaya based on technology acceptance model in terms of their attitudes toward using the system

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Statements	Weighted Mean	Descriptive Value
1. I like to use the Alumni Tracking System	3.71	Very positive
2. I like the idea of using the web-based tracking system	3.69	Very positive
3. Updating the whereabouts of the alumni thru the Alumni Tracking System is a good idea	3.67	Very positive
4. I am positive toward using the Alumni Tracking System.	3.69	Very positive
5. Overall, I like working with the Alumni Tracking System	3.64	Very positive
Overall Weighted Mean	**3.68**	**Very positive**

Legend:

3.25-4.00 >> Very positive *1.75-2.49 >> Somewhat positive*

2.50-3.24 >> Positive *1.00-1.74 >> Negative*

Behavioral Intention towards Using the System

Table 13 presents the assessment of evaluators on the developed tracking system for LASNHS-Dalaya Extension based on Technology acceptance model in terms of its behavioral intention towards using the system. The table reveals that an alumnus use the Alumni Tracking System if needed to update his/her profile (3.62); that an alumnus would want to use the Alumni Tracking System if required to update his/her whereabouts (3.62); an alumnus hopes other alumni will use the system (3.71); that the system would like to use the Alumni Tracking System in the future for updating his/her whereabouts (3.71) and If the school would ask to use it, an alumnus would use the Alumni Tracking System (3.73).This finding means that the system can be very positive in the behavioral intention towards using the system as reckoned by its overall weighted mean of 3.68. This implies that the system is very positive of their behavioral intention towards using the system.

Table 13:Assessment of the alumni on the proposed alumni tracking system of LASNHS-Dalaya based on technology acceptance model in terms of their behavioral intention towards using the system

Statements	Weighted Mean	Descriptive Value
1. I would use the Alumni Tracking System if needed to update my profile	3.62	Very positive
2. I would want to use the Alumni Tracking System if required to update my whereabouts	3.62	Very positive
3. I hope other alumni will use the Alumni Tracking System	3.71	Very positive
4. I would like to use the Alumni Tracking System in the future for updating my whereabouts	3.71	Very positive

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5. If the school would ask to use it, I would use the Alumni Tracking System	3.73	Very positive
Overall Weighted Mean	**3.68**	**Very positive**

Legend:

3.25-4.00 >> Very positive *1.75-2.49 >> Somewhat positive*

2.50-3.24 >> Positive *1.00-1.74 >> Negative*

Comparison of the Assessments of the Evaluators on the Proposed Alumni Tracking System of Licerio Antiporda Sr. National High School-Dalaya Extension

Difference on Accuracy

Table 14 disclosed the comparison on the assessments made by the groups of evaluators relating to accuracy. As seen, there exist a significant difference between and within groups, particularly students as against faculty members. Post-hoc analysis using LSD revealed the mean difference revealing 0.401 significance.

Table 14: Results of the comparison test between the assessments of the evaluators on the proposed alumni tracking system of LASNHS-Dalaya on its accuracy

Sources of Variation	Sum of Squares	df	Mean Square	F-value	Prob.	Statistical Inference
Between Groups	1.079	2	0.539	3.585	0.034	Significant
Within Groups	9.328	62	0.150			
Total	10.407	64				

Post-hoc Analysis using LSD

Group	Mean	S.D.	Mean Differences	
			Faculty	Alumni
Faculty	3.87	0.23		
Alumni	3.81	0.41	0.060	
IT experts	3.47	0.42	**0.401***	**0.341***

Cells with asterisks (*) and in boldfaced fonts are significantly different

Tested at 0.05 level of significance

Difference on Reliability

In terms of reliability, table 15 presents the comparison on the assessments made by the groups of evaluators. With Post-hoc analysis results of 0.367, there exist a significant difference between and within groups, particularly IT experts as against faculty members. The results is associated to the level of technical experiences between groups on handling web projects as compared to teachers.

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Table 15: Results of the comparison test between the assessments of the evaluators on the proposed alumni tracking system of LASNHS-Dalaya on its reliability

Sources of Variation	Sum of Squares	df	Mean Square	F-value	Prob.	Statistical Inference
Between Groups	0.874	2	0.437	3.211	0.047	Significant
Within Groups	8.440	62	0.136			
Total	9.314	64				

Post-hoc Analysis using LSD

Group	Mean	S.D.	Mean Differences	
			Faculty	Alumni
Faculty	3.90	0.23		
Alumni	3.84	0.39	0.063	
IT experts	3.53	0.39	**0.367***	**0.304***

Cells with asterisks (*) and in boldfaced fonts are significantly different

Tested at 0.05 level of significance

Difference on Security

Table 16 presents the comparison on the assessments made by the groups of evaluators relating to security. As presented, there exist a significant difference between and within groups, particularly faculty members as against IT experts and students. Post-hoc analysis using LSD values 0.340 and 0.276 respectively revealed the significant differences. In the previous tables, compliance to security standard have been rated excellent, though significant difference has been revealed in this study.

Table 16: Results of the comparison test between the assessments of the evaluators on the proposed alumni tracking system of LASNHS-Dalaya on its security

Sources of Variation	Sum of Squares	df	Mean Square	F-value	Prob.	Statistical Inference
Between Groups	0.732	2	0.366	4.410	0.016	Significant
Within Groups	5.147	62	0.083			
Total	5.879	64				

Post-hoc Analysis using LSD

Group	Mean	S.D.	Mean Differences	
			Faculty	Alumni
Faculty	3.94	0.19		
Alumni	3.88	0.29	0.064	
IT experts	3.60	0.37	**0.340***	**0.276***

Cells with asterisks (*) and in boldfaced fonts are significantly different

Tested at 0.05 level of significance

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Difference on Functionality

In terms of functionality, table 17 disclosed the comparison on the assessments made by the group of evaluators relating to functionality. As seen, there is no significant difference between and within groups. The results show that there is convenience and functionality to use between and within the groups.

Table 17: Results of the comparison test between the assessments of the evaluators on the proposed alumni tracking system of LASNHS-Dalaya on its functionality

Sources of Variation	Sum of Squares	df	Mean Square	F-value	Prob.	Statistical Inference
Between Groups	0.570	2	0.285	1.848	0.166	Not Significant
Within Groups	9.562	62	0.154			
Total	10.132	64				

Tested at 0.05 level of significance

Difference on Portability

In terms of functionality, table 18 disclosed the comparison on the assessments made by the group of evaluators relating to portability. As seen, there is no significant difference between and within groups. The results show that there is convenience and manageability to use between and within the groups.

Table 18: Results of the comparison test between the assessments of the evaluators on the proposed alumni tracking system of LASNHS-Dalaya on its portability

Sources of Variation	Sum of Squares	df	Mean Square	F-value	Prob.	Statistical Inference
Between Groups	0.222	2	0.111	0.725	0.489	Not Significant
Within Groups	9.509	62	0.153			
Total	9.731	64				

Tested at 0.05 level of significance

Difference on Usability

In terms of functionality, table 19 disclosed the comparison on the assessments made by the group of evaluators relating to usability. As seen, there is no significant difference between and within groups. The results show that the developed system is a user-friendly to use between and within groups.

Table 19: Results of the comparison test between the assessments of the evaluators on the proposed alumni tracking system of LASNHS-Dalaya on its usability

Sources of Variation	Sum of Squares	Df	Mean Square	F-value	Prob.	Statistical Inference

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Between Groups	0.546	2	0.273	2.495	0.091	Not Significant
Within Groups	6.786	62	0.109			
Total	7.332	64				

Tested at 0.05 level of significance

Difference on Maintainability

Table 20 presents the comparison on the assessments made by the evaluators relating to its maintainability. There is no significant difference between and within groups. The results show that the system can be repaired or enhanced between and within groups.

Table 20: Results of the comparison test between the assessments of the evaluators on the proposed alumni tracking system of LASNHS-Dalaya on its maintainability

Sources of Variation	Sum of Squares	df	Mean Square	F-value	Prob.	Statistical Inference
Between Groups	0.702	2	0.351	2.979	0.058	Not Significant
Within Groups	7.300	62	0.118			
Total	8.001	64				

Tested at 0.05 level of significance

Difference on Efficiency

In terms of functionality, table 21 presents the comparison on the assessments made by the group of evaluators. With Post-hoc analysis results of 0.334, there exist a significance difference between and within groups, particularly IT experts as against faculty members.

Table 21: Results of the comparison test between the assessments of the evaluators on the proposed alumni tracking system of LASNHS-Dalaya on its efficiency

Sources of Variation	Sum of Squares	df	Mean Square	F-value	Prob.	Statistical Inference
Between Groups	0.695	2	0.348	3.343	0.042	Significant
Within Groups	6.448	62	0.104			
Total	7.143	64				

Post-hoc Analysis using LSD

Group	Mean	S.D.	Mean Differences	
			Faculty	Alumni
Faculty	3.93	0.14		
Alumni	3.87	0.31	0.067	
IT experts	3.60	0.47	**0.334***	**0.267***

Cells with asterisks (*) and in boldfaced fonts are significantly different

Tested at 0.05 level of significance

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The study hypothesized that there is significant difference in terms of accuracy, reliability, security, functionality and efficiency between the assessments of the evaluators on the developed voting system. This finding means that the developed system needs to monitor and check the accuracy, level of experiences handles, security and functionality of the system and its efficiency. It should be monitored and checked by the teacher-in-charge in using developed system.

Thus, there is no significant difference also in terms of portability, usability, and maintainability. As the table reveals that there is no significant difference on the assessment based on the criterion of ISO 25010. This finding means that the developed system is user friendly and ready to use in the tracking of alumni at LASNHS-Dalaya Extension.

IV. CONCLUSION AND RECOMMENDATIONS

Generally, the developed alumni tracking system was found compliant to an excellence as to accuracy, reliability, security, functionality, portability, usability, maintainability and efficiency. There were significant differences in the assessments in the 8 criterion of the ISO 25010:2011 from between and among groups tested. Also, Technology Acceptance Model were utilized on the evaluation of system.

The developed Alumni Tracking System was generally perceived very useful, and we're generally very easy to use. Generally, a very positive attitudes and behavioral intention towards using the system surfaced based on the assessments using the Technology Acceptance Model.

The Alumni Tracking System complied with excellence on the ISO standards. The system is a potential technological tool in tracking instead of using the manual Tracking. It shows that the designed system positively influences learners and teachers in terms of tracking, data collection and data monitoring during tracking of alumni and therefore a contributing technology to the school. The developed Alumni Tracking System was generally perceived useful and easy to use which affected the very positive attitude and behavioral intention towards using the system.

Based on the findings, the following recommendations are drawn:

1. Having found effective on tracking, collection and monitoring, the system should be implemented in the school. The different systems in the school that relates to students including the tracking system may be made available in one working website for holistic usage.
2. The school should allot a fund for the web hosting and domain fee every year for the sustainability of the system. The school should assign a trained staff to maintain the system.
3. The researcher should include the Data Privacy Act 2012 on the use of the system to have comprehensive and strict privacy legislation to protect the fundamental human right of privacy, of communication while ensuring free flow of information to promote innovation and growth of the study.
4. For the future researchers and programmers, it is recommended that converting the coding structures into more advanced web programming to have more advanced web-based site. The system should be updated from time to time for better performance, security of data and meet the standards of tracking alumni of the school.

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