



IMPLEMENTATION OF MODERN E-LEARNING IN UNIVERSITY OF FEZZAN: FACULTY MEMBERS' ATTRIBUTES

Hamdi Almuslih

ALrqiba, Fezzan University.

ABSTRACT

The research on the E-learning system is becoming more popular because of its formalized teaching method with the help of multimedia resources, lower costs of training for large groups, quicker context delivery potentiality, and lower environmental impact. With the advancement of technology in communication and education, the E-learning system became the backbone of the higher education system and skills in developing centers. The study aims to test the factors that will affect the successful implementation of E-learning. The study model consists of one external factor that is divided into three sub-factors, which serve as the (IV) independent variables, (the faculty members 'attributes as the main factor, and (faculty members' attitudes, control of technical equipment, teaching style all of them as sub-factors) and the internal variable as the (DV) dependent variable (the successful implementation of E-learning). Additionally, the researcher tests the influence of institutional support as a moderating variable between the independent and dependent variables to achieve the research aim. The data collection process employs a quantitative approach using Exploratory Factor Analysis (EFA) and Multiple Linear Regression Analysis through the SPSS program Version 23. The study population represents the faculty members at the Fezzan University of Libya. The results obtained in the study showed that all the tests to direct and indirect effects to variables had a positive effect on the successful implementation of E-learning. However, the results of the indirect impact test were greater.

Keywords: The faculty members' characteristics, E-learning, implementation of E-learning, Institutional Support, technology.

1.1 Introduction

Though the E-learning system became popular all over the world, but for the lack of technological advancement in arab countries like Libya, it is spreading slowly. Researchers all over the have done empirical research on the E-learning system for various countries, but a few numbers of researchers have found to propose E-learning system in Libya, for higher educational organizations, where Libya is totally new with the term E-learning system. This research analysed the faculty members 'attributes that affected the successful implementation of E-learning in fezzan university as well as tried to improve the ideas that, how successfully the E-learning system can be applicable in higher education systems in Libya. By the side of analysis, this research also tried to increase the knowledge of the E-learning system and its rapid improvement. In this



research an empirical understanding method was conducted to find the proper reasons for the phenomenon within the Libyan environment.

There are lots of eliminating factors and challenges which are encumbering the E-learning system to achieve its goals and benefits in Libya. Researchers have found various faculty members' attributes and proposed their concepts, which are implemented in higher education systems of various developed countries (Al-Mahmoodi, M. A., & Al-Asfour, E. (2022).), Al-Habib, M. S., & Al-Araj, N. (2022). However, Studies have shown that despite policymakers in institutions proposing and applying E-learning initiatives, they largely neglect faculty members' concerns quaintly, faculty members develop concerns about the effectiveness of top-down initiatives on learning which could lead to a considerable gap between policy and practice. However, every research used proposes based on particular environments and situations.

In this research, the analysis has been done on academic and practical studies that involved faculty members, for more comprehensive research development. To do so, the faculty members' attributes were addressed which are involved with the faculty members' attitudes and behaviours. Also, it was observed that the other faculty members' attributes are directly or indirectly involved with the faculty members and how they are related to the successful implementation of the E-learning system. In addition, previous studies focused on the technological aspect of E-learning and ignored other dimensions of E-learning such as human and individual characteristics such as the attitudes of faculty members and the control of the use of technology equipment, content and design and the administrative and guidance aspects, which include support and assistance.

In higher educational institutions, the educational process used to take into consideration the nature of learners and the learning societies as well as the nature of key players like faculty members and technology in this digital era, where the E-learning system should be considered as one of the essential key elements in the Libyan education system. But, unfortunately, the development is stopped because of a lack of proper study and proper support from institutions. Only institutional support has the authority to work as a moderator and can bring change in the education system towards an E-learning environment.

On the other hand, the majority of the research has largely focused only on the perceptions of faculty members, and the effect of demographics as moderation on factors without referring to institutional support as a moderate variable affecting the success of the implementation of e-learning, Moreover. The absence of institutional support and its implications, absence of a clear vision and strategy, insufficient ICT infrastructure support, lack of adequate internet connectivity, and lack of technical and administrative support. In short, the institution has a moderate effect on faculty members' attitudes to implement the E-learning system successfully.

Some researchers already identified institutional support as one of the key moderators and also selected as one of the main faculty members' attributes in their research, where they proposed that, to implement an E-learning system the nature of the institution must be positive towards the improvement of the educational environment



(Selim, 2007; Sun et al., 2008; Al-Harbi, 2010; Hammoud, 2010; Al-Fadhli 2011; Ali and Ahmad, 2011; Musa and Othman, 2012). So, it is also important to find out the relation between the faculty members' attitude and the implementation of a successful E-learning system while institutional attitude acts as moderator.

1.2 Problem Statement

- Fill a gap for the lack of previous studies in Libya about E-learning because Libya is one of the developing countries and Libya has limited technology of limited.
- Libya is a very large Arabic country, Distribution of the population is largely centered in areas. large distances and the distance lack of time which make academic education delivery difficult
- Students find difficult to choose and apply for the suitable faculty because of the geography locations and distances between these cities
- After the events of the 2011 revolution and the spread of many weapons that made a lot of people lost their limbs. Therefore doubled numbers of amputees and physical handicap and my studies help some of them.

1.3 Objectives of the Research

The research was aimed to answer the research questions as proclaimed and achieve the following objectives:

1. To understand and select the faculty members' attributes impacting the E-learning system implementation in Fezzan University.
2. To understanding the relationship between the faculty members' attributes and successful implementation of e-learning

1.4 Questions of the Research

This research has followed the particular questions:

1. What are the faculty members 'attributes and factors affecting the successful implementation of the E-learning system in Fezzan University?
2. Is there a relationship between the faculty members' attributes and successful implementation of e-learning?

1.5 Significance of the Research

The importance of this study contributions, if any academic research in all institutions of Libya and particularly in the Fezzan University, which might make this research a valuable addition to the field of E-learning implementation in Fezzan University

There are few papers which discuss E-learning in Libya, but none of those reviews have discussed the investigation of factors that impact on successful



implementation of e-learning, or takeout the barriers of the E-learning system. The research findings revealed some of the issues that might be affecting the implementation success of E-learning in Fezzan University and seeking to investigate how to accomplish and evaluate the implementation success of E-learning systems and establishing and select a group of faculty members' attributes for implementing E-learning systems in Fezzan University in the Libyan higher education context and being a step forward in applying the benefits of E-learning systems.

2. Method

2.1 Population and Sample of the Research

The total population of faculty members , they filled out the questionnaire in the 7 faculties of the university 90 faculty members during the academic year 2023. In deciding on the number of participants for this stage, it was decided to choose a sample size that would allow the use of factor analysis. Factor analysis is a statistical method used to testify to the construct validity (Straub et al., 2004). A successful factor analysis needs at least 90 participants (Brace, Kemp, & Snelgar, 2012).

2.2 Research Instrument

The quantitative research methods were originally developed within the natural sciences to study natural phenomena. This approach of study mainly emphasises the use of measurement to describe objects and relationships under study (Saunders, M., Lewis, P., and Thornhill, A. (2007)). Furthermore, quantitative researchers are often independent of the context of study, and they aim for large numbers of context stripped data and seek statistical significance. Therefore, the survey adopted is considered the most convenient technique in this research. The questionnaire was developed using a Likert type scale, ranging from (1) strongly disagree to (5) strongly agree. A pre-testing of the questionnaire was conducted to ensure that there was no ambiguity in the questions and that the respondents felt no difficulty in understanding them.

In addition, this study the researcher uses Statistical Package for the Social Sciences (SPSS) version 23.0 for statistical analysis and a significant level of $p < 0.05$ was adopted for the study. Descriptive analysis was performed using SPSS and Analysis of Multiple Linear Regression, correlation Coefficient Analysis.

3. Proposed Conceptual Model

This study is proposing conceptual model of developing E-learning method integrated with faculty members 'attributes of E-learning system and Institutional support variable as moderation to research the validity of the proposal in Libyan education curriculum as well as arab region. a number of research suggested that without a proposer E-learning system.



This section of proposed method for implementing E-learning are followed by the steps: it proposed to follow on the research faculty members 'attributes to provide a conceptual model for E-learning implementation and also examine the existing models those are contain faculty members 'attributes and claimed to have vast impact on E-learning system. The E-learning system or their faculty members 'attributes components need to identify the limitation of the system and their contribution to E-learning implementation. At the end the model has to apply with the proposed conceptual method by describing the model and giving definition with proper drawing of E-learning implementation in Fezzan University .

These results are generally consistent with research on the impact of faculty members' attributes on E-learning (Al- Fadhli 2009; Goi and Ng, 2009; Ferdousi, 2009; Friedrich and Hron, 2010; Malik, 2010), which concludes that faculty members' attributes are an important contributor to the success of E-learning implementation. Furthermore, Mosakhani and Jamporzmay (2010); Teo (2011); FitzPatrick (2012) reviewed the faculty members' attributes that impacting in E-learning and concluded that in any E-learning environment, faculty members' attributes can be assumed to be an important factor in E-learning and must be taken into consideration when implementing and developing successful and efficacy E-learning.

Table 1 below shows the sub-factors related to lectures' characteristics that impacting e Learning and considered explains the summary of the aforementioned.

Table 1: The faculty members' attributes factor impacting E-learning
FACTOR **SUB-FACTOR**

FACTOR	SUB-FACTOR
FACULTY MEMBERS' ATTRIBUTES	ATTITUDE OF FACULTY MEMBERS TOWARDS E-LEARNING TEACHING STYLE CONTROL OF TECHNICAL EQUIPMENTS

Institutional support in E-learning means supporting the administrative departments of the university, including university administration, administration of faculty members, postgraduate administration, management of theology, management of scientific affairs, and other departments, The support is usually the material, moral and technical support at

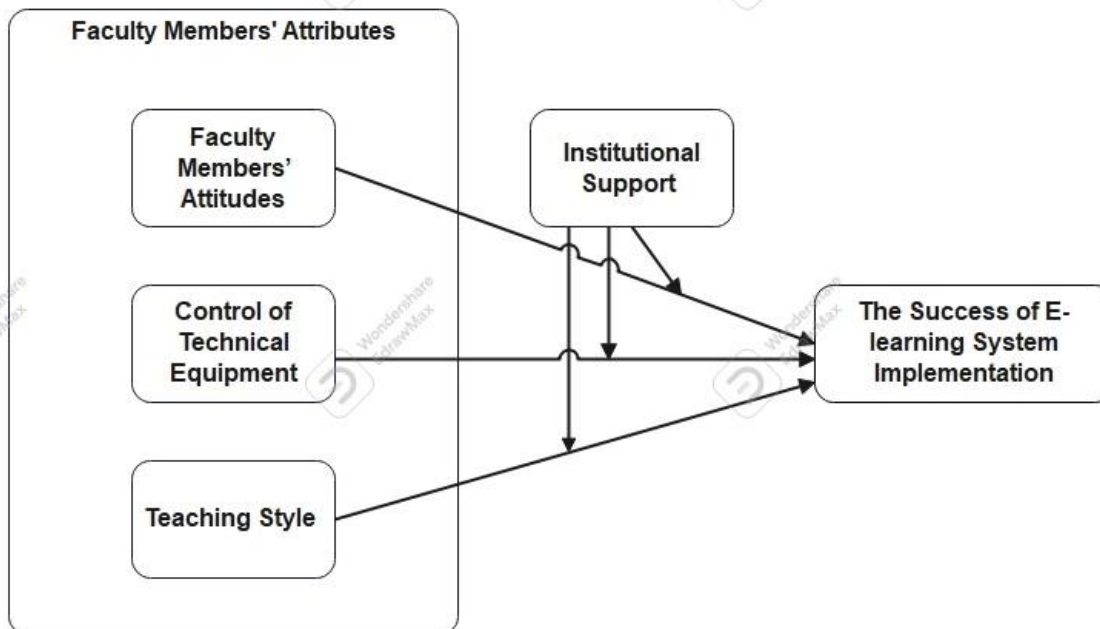
the university level based on the proposal by (selim.,2007a)) institutional policies and support, and how these could affect the successful implementation of E-learning.

The implementations were classified into stages, with some displaying how they were targeted for implementation. Other implementation strategies did not display any model or underlying philosophy upon which implementations were based.

That research study proposed a model named as conceptual model, which aimed to develop a successful E-learning method in Fezzan University, Libya following previous studies. Figure 1 shows the proposed conceptual model having the one main factor of identification, those are The attributes of faculty members.

The factor also has sub-factors identified and separated according to the main factors. Where it also shows that institutional support works as the moderation factor on all main factors.

Figure1: Research Conceptual Model



1. Establishing hypotheses and Conceptual Model Developed for the Study

H1 -There is a significant relationship between faculty members' attributes and the successful implementation of e-learning.

H1a - There is a significant relationship between teachers' attitudes towards E-learning and successful E-learning implementation.

H1b - There is a significant relationship between (teaching style) and the successful implementation of the E-learning system.



H1c - There is a significant relationship between control of technical types of equipment and the successful implementation of e-learning.

H1d Institutional support will moderate the significant relationship of faculty members' attributes on the successful implementation of E-learning.

H1e Institutional support will moderate the significant relationship between the attitude of faculty members for the successful implementation of the E-learning system.

H1f Institutional support will moderate the significant relationship of (teaching style) for the success of E-learning *system implementation*.

5- The results of the study:

5.1 Multiple Linear Regression analysis with direct effect

Regression analysis is a statistical technique to determine the linear relationship between two or more variables. It can test variables directly with more than two independent variables on dependent variables.

- **Prove the Hypothesis (H1):**

Regression analysis for Faculty Members' Attributes factor (attitude of faculty member dimension control of technical equipment dimension, teaching style dimension) and successful implementation of e-learning

The regression analysis result is shown in the following tables:

Table 2 shows that the R Square value is .404, which indicates that 40.4% of successful implementation of E-learning can be explained by the Faculty Members' Attributes factor.

Table 2 Regression analysis result of (R) value related to Faculty Members' Attributes.

Model	R	R Square	Adjusted R Square
1	.635	.404	.399

Table 3 shows the value of [$F(3,196) = 45.167, P < .000$] which indicates that the regression model is significant and we can assume that there is a linear relationship between the variables in our model. *Hence*, the model is acceptable.

Table 3 ANOVA table for regression analysis related to Faculty Members' Attributes

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	116.654	3	38.885	45.167	.000
Residual	158.228	196	.807		
Total	274.882	199			

Table 4 shows the regression coefficient results: Control of technical equipment had the strongest significant relationship on successful implementation of E-learning

($\beta=.283$). Teaching style also had a strong significant relationship with the successful implementation of E-learning ($\beta=.239$). However, the Attitude of faculty members ($\beta=.213$) had a significant relationship with the successful implementation of E-learning. Hence, hypotheses H1a, H1b, and H1c were supported.

Table 4 the regression coefficients results related to Faculty Members' Attributes

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
DV	IV	B	Std. Error	Beta		
Successful Implementation of E-learning	(Constant)	.884	.195		4.544	.000
	Attitude of Faculty Member	.210	.076	.213	2.751	.002
	Control of technical equipments	.276	.088	.283	3.139	.002
	Teaching style	.884	.195	.239	3.047	.003

In the summary of proving hypothesis H1: There is a significant relationship between faculty members' attributes on the successful implementation of e-learning referring that faculty members' factor has a significant relationship with the successful implementation of e-learning, Thus hypothesis H1 is achieved through hypotheses H1a H1b and H1c.

5.2 Multiple Regression analysis with indirect effect

Prove the Hypothesis(H1a):

Regression analysis to gauge the moderating effect of Faculty Members' Attributes factor (attitude of faculty member dimension, control of technical equipment dimension, teaching style dimension) and successful implementation of e-learning

The regression analysis result is shown in the following tables:

Table (5) shows that the R Square value is .476, which indicates that 47.6% of successful implementation of E-learning can be explained by the Faculty Members' Attributes factor with the moderating effect of institutional support.

Table 5 Regression analysis result of (R) value related to Faculty Members' Attributes.

Model	R	R Square	Adjusted R Square
1	.690	.476	.521

Table 6 shows that the value of [$F(4,195) = 48.462, P < .000$] which indicates that the regression model is significant and we can assume that there is a linear effect relationship between the variables in our model means the moderating effect Faculty Members' Attributes factor (attitude of faculty member dimension, control of technical equipment



dimension, teaching style dimension) on successful implementation of e-learning. Hence, the model is acceptable.

Table 6 ANOVA table for regression analysis related to Faculty Members' Attributes with moderating of institutional support.

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	111.883	4	33.971	48.462	.000
	Residual	162.999	195	.836		
	Total	274.882	199			

The hypothesis that Institutional Support moderator the effect of the three dimensions of the faculty members' attributes on the successful implementation of E-learning was assessed as described below Table (7) shows the regression coefficients results: control of technical equipment had the strongest significant relationship on successful implementation of E-learning ($\beta=.512$); Teaching style had also a strong significant relationship on successful implementation of E-learning ($\beta=.294$). However, the Attitude of Faculty Members ($\beta=.368$) had a significant relationship with the successful implementation of E-learning. Hence, hypotheses H1d, H1e, and H1f were supported. However, this indicates that institutional support has moderating effects.

Table 7 the regression coefficients results related to Faculty Members' Attributes with moderating of institutional support

Model			Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Dependent Variable	Moderate	Independent Variable	B	Std. Error	Beta		
Successful Implementation of E-learning	Institutional Support	(Constant)	.750	.375		1.998	.000
		Attitude of Faculty Members	.070	.075	.368	4.936	.003
		Control of technical equipments	.402	.077	.512	6.193	.000
		Teaching style	.268	.078	.294	3.419	.001

In the summary of hypotheses H1d, H1e, and H1f: Institutional support will moderate the significant relationship of faculty members' attributes on successful implementation of E-learning referring to institutional support has moderating effects, Thus hypothesis H1 achieved Through hypotheses H1d, H1e, and H1f.

6. Discussion and Conclusions



The analysis of the survey result portion proclaimed that it is highly important to know how The attributes impact the faculty members on E-learning system implementation. It was heavily influenced by the attitude of faculty members, good skills in technology, ability to work in the learned environment, and capability of teaching new things to the students for successful implementation of the E-learning system.

According to the research, the attitude of faculty members towards the E-learning system affects the intention of proper implementation. Again, the attitude of faculty members and acceptance of technology used to make a better teaching method also affect the implementation of E-learning (Ferdousi, 2009). Though the attitude of faculty members was affected, it was also found that the positive attitude toward using technology in education can provide a positive vision to adopt and combine the technology for a better educational environment. The survey also found that the attitude of faculty members acted as the most significant and noteworthy factor in E-learning implementation. Most of the contributors agreed that the attitude of faculty members is the most noteworthy matter during the E-learning setup.

The possible reason can be concluded with this possible description: The key players are the faculty members in the teaching and learning process. From the literature we have found, most of the people confirmed that constructive learning is the most important. At the same time, it is combined or equipped with the facilities of technology to encourage the role of faculty members to help the learning process through continuous provision, providing better information and proper training rather than unaided broadcasting the knowledge. In this E-learning process we have seen that the faculty members should produce a realistic, evocative and reliable education environment which can fulfill the requirements of students and provide authentic facilities to understand their capability and develop their knowledge. This research portion of the result is almost similar with the result of Selim (2007) as described in the literature section. Furthermore, it can say that the amended attitude of faculty members with proper E-learning system usage and development, have the ability to bring the success of implementation of E-learning system in higher education

6.1 Determination of the Significant Factors

This discusses the factors. The results of this study have shown that many hypotheses have significantly affected the e-learning system among universities in Libya. The findings indicated that the main hypotheses including faculty members' attributes, technology and design with content had significantly and positively affected E-learning system implementation among faculty members in Fezzan University. The regression weights of main hypotheses including faculty members' attributes, in predicting the E-learning system were 0.635, 0.640 and 0.633 respectively and $p < 0.05$.

Additionally, the sub-hypotheses consisting of (a) Attitude of faculty members, (b) Control of technical equipment, and (c) Teaching style, significantly influenced E-learning system implementation by Fezzan University in Libya. The regression weights of sub-hypotheses were 0.231, 0.283, and 0.239 respectively, and $(p < 0.05)$.



The reason why these hypotheses of the study were supported can be attributed to some factors. For example, faculty members at Fezzan University have awareness and knowledge about the benefits and advantages of the E-learning system in the universities compared to other institutions.

From the researcher's point of view, faculty members in Libya consider these factors: (a) Attitude of faculty members, (b) Control of technical equipment, and (c) Teaching style are essential elements to implement an E-learning system compared to other factors. Furthermore and most importantly, the E-learning system is still in its infancy among faculty members in Libya, and also the pool of adopters is still very small while the number of actual users of E-learning is limited.

6.2 Effect of faculty members' attributes on the Implementation E-learning system

The first objective aims to explore the current condition of E-learning implementation among faculty members of Fezzan University in Libya. The main focus of this research is the e-learning system adoption which is the fundamental factor that plays a pivotal role in employees' actual use of e-learning.

Although a few respondents used an E-learning system, the findings indicated that faculty members of Fezzan University in Libya had higher E-learning implementation in their work. It is clear that almost 3.86 or 77% of respondents at least agreed on the E-learning system. This result can be drawn from the calculated mean from the mean, which was equal to 3.86 out of a maximum of 5 and made up 77%. This is because most of the respondents could already be Internet users and most of them had been users for several years, which means that Internet usage by faculty members of Fezzan University could encourage them to implement an E-learning system in Libya. These results have the support of numerous past studies, which maintained that the E-learning system is an important factor, especially in developing countries such as Libya Alhmali, R. (2007). Buabeng-Andoh, C. (2012). Al-Homod, S., and Shafi, M.M. (2013) United Arab Emirates (Salem, 2005). The findings also indicate that faculty members in Libya are generally and positively encouraged to implement E-learning upon realizing the benefits of such technology compared to current practices.

The attributes impact of the faculty members on E-learning system implementation is huge. It was heavily influenced by the attitude of faculty members, good skill in technology, ability to work in a learned environment, and capability of teaching new things to the students for successful implementation of an E-learning system.

6.3 Effect of Institutional Support as Moderation

The moderating effects of institutional support play a significant role in the research field of social science (Al-Ghawail, E. A., Al-Saadi, M. M., & Al-Zawawi, M. M. (2022). The study findings indicated institutional support has a significant moderating impact on the success of the E-learning system among faculty members at Fezzan University. The hypothesis that Institutional Support moderators the effect of variables of the faculty members' attributes on the successful implementation of the E-learning system was assessed as described in Table 1.



The results of the study found the path coefficients and p-values for moderator (institution support) between faculty members' attributes and successful implementation of E-learning were significant and positive effects ($\beta = 0.690$, $p = 0.000$) respectively.

Thus, there is a need for adequate support from the University. To effectively increase E-learning implementation and enhance the faculty members' learning performance, the University should provide its university academics with the necessary resources and facilities to use e-learning.

The institutional support at the university supports the attitude to E-learning of the faculty members also to accept the idea of successful application of the E-learning system (Al-Khodary, M. A., & Al-Haddad, A. (2022)). The result is in agreement with those reported in earlier studies (Jabir, S. A., & Al-Akhras, A. A. (2022)).

As noted from this finding, the faculty members in Fezzan University think that the institutional support is supporting the widespread use of E-learning and most of the educational institutions in higher education welcome the E-learning system.

In addition, the academic staff in Libya believes that institutional support is technically capable of receiving and operating E-learning systems in terms of modernization and maintenance. In addition, they think that institutional support is not enough financially to support E-learning projects at universities the moderating effect is important to implement with the help of educational institution support.

This research shows that the educational institutions' support has a significant role in faculty members' attributes while implementing successful implementation of the E-learning system. So, the moderating effect is important to implement with the help of educational institution support. To increase E-learning capability and adoption it is important to improve the IT sector effectively and the institutions should provide the necessary amount of facilities and equipment to proceed successful implementation of the E-learning system.

The moderating effects of institutional support play a significant role in the research field of social science (Aguinis, 2004). The moderating effects is a constant examining process of moderating the variables depending on the importance of the advancement and practice (Al-Rifai, A., & Al-Zawi, A. (2021)). The one and two questions in this article have been completed with the moderating effects method of institutional support on the relationship of three determinants of faculty members' attributes, i.e., the attributes of university faculty members, modern for implementing E-learning system successfully (Venkatesh, 2003). In this research, it was proposed that the support of the institute or university could have a subsidiary effect on the successful implementation of the E-learning system by moderating the internal connection in between the faculty members' attributes and the development of the E-learning system. The moderation method with institutional support may help to understand deeply about the implementation of the system and help to make better decisions while implementing the different sectors of the faculty members' attributes improvement.

This method can alter the strategies of each faculty member's attributes which can help to improve the capability of implementing E-learning successfully.



This research shows that the educational institutions' support has a significant role in faculty members' attributes while implementing successful implementation of the E-learning system. So, the moderating effect is important to implement with the help of educational institution support. To increase E-learning capability and adoption it is important to improve the IT sector effectively and the institutions should provide the necessary amount of facilities and equipment to proceed successful implementation of E-learning systems. To support university faculty members' teaching attitude toward implementing E-learning personality by providing equipment support and sufficient training to adapt to the equipment, which is agreed upon or studied by Al-Mahmoodi, M. A., & Al-Asfour, E. (2022).). The speedy internet access and connectivity with Fezzan of the university campus idea also helped the implementation process. Furthermore, agreed to some research a help desk solution should be provided (Al-Radhi, H. A., & Al-Akhras, A. A. (2022), and constant supervision is highly important from time to time, because every system requires maintenance and fast recovery while urgent problem arise while adopting new Al-Shorbaji, E., & Al-Shehhi, A. (2022). However, if the equipment quality is standard also, for the lack of maintenance support it may cause failure of proper implementation (Nanayakkara, 2005).

6.4 Limitations of the study

This study has numerous limitations that can be addressed in future research. First, this study focused on a few factors of faculty members' attributes to implementing an E-learning system but ignored other factors such as the organizational factors, environmental factors, student factors, design factors, self-efficacy, compatibility, motivation, culture, and others. Second, this study focused on only faculty members in Libyan universities. As such, the findings of this study are not generalizable to the attitude of other sectors such as schools or other institutions.

The second limitation of this study is that its scope is confined to one public university in the south of Libya, a geographical area that is different in its population and some cultural aspects from the other more homogeneous and conservative areas in the country

6.5 Recommendation for Future Research

Several recommendations are made based on the findings of this study. The majority of Libyan academics are not users and are unaware of the many benefits of E-learning adoption and the promotion of this awareness through information and training programs is thus necessary. Therefore, the government has the responsibility to develop the IT infrastructure and widen IT education in high schools and universities. Moreover, the government should reduce the barriers to E-learning systems by supporting universities via the creation of a special fund to finance E-learning adoption projects. As the implementation of E-learning in Libya, academia is still in its infancy phases, further research in this area is needed. In light of this research, there are several possible avenues for future research. the addition of other variables, such as direct factors influencing intention or moderators, can extend our understanding of the factors important to the



adoption of e-learning. The Libyan government should improve the legal infrastructure like designing E-learning content and materials and knowledge acquisition law. It can also help educational institutions by ensuring a better Internet infrastructure and help to encourage non-users to adopt E-learning systems. This ensures that universities will be more efficient and thus help to increase Fezzan University's competition environment. Moreover, the study suggests that the government should increase awareness by educating faculty members, employees, and university students about the innovative potential of new technology such as E-learning systems. Furthermore, foreign investors will be more willing to invest in a country if it is making use of E-learning technology in its teaching

7. Conclusion

In conclusion, the research objectives in this study have been realized as demonstrated in the preceding chapters. This study examined the factors of e-learning system implementation among faculty members in Libya, using multiple regression. The results of this study show that faculty members' attributes (attitude of faculty members, control of technical equipment, teaching style) are significant predictors of E-learning implementation by faculty members in Libya.

Furthermore, no study was found to have been performed in the Libyan context or even in African countries or the Middle East, highlighting the importance of faculty members' attributes factor on the implementation of E-learning by faculty members. Thus to fill the theoretical gap of technological aspects, this study includes all the nine innovation variables and attempts to investigate their influence on E-learning system adoption in Libyan universities.

Finally, the findings of this thesis support the importance of beliefs held by essential faculty members and educational institutions regarding the adoption of the E-learning system. It is hoped that the findings of this research will enlighten E-learning policies at the university.

6. References

- Al-Ghawail, E. A., Al-Saadi, M. M., & Al-Zawawi, M. M. (2022). *The impact of e-learning on faculty members' performance in Libyan universities. International Journal of Advanced Trends in Computer Science and Engineering, 11(1), 48-53*
- Al-Radhi, H. A., & Al-Akhras, A. A. (2022). *Factors affecting the implementation of e-learning in Libyan universities: a faculty perspective. International Journal of Emerging Technologies in Learning, 17(4), 1-1*
- Nanayakkara, C., & Whiddett, D. (2005). *A model of user acceptance of e-learning technologies: A case study of a polytechnic. Proceedings of the Fourth International Conference on Information Systems Technology and Application in New Zealand.*
- Al-Khodary, M. A., & Al-Haddad, A. (2022). *Faculty members' perceptions of the challenges of e-learning implementation in Libyan universities. International Journal of Educational Technology in Higher Education, 19(1), 1-11*



- Jabir, S. A., & Al-Akhras, A. A. (2022). *The challenges of e-learning implementation in Libyan universities: a faculty perspective. International Journal of Education and Development, 11(1), 1-12.*
- Al-Rifai, A., & Al-Zawi, A. (2021). *The challenges of implementing e-learning in Libyan universities: a faculty perspective. International Journal of Educational Technology and Research, 10(2), 1-12.*
- Al-Mahmoodi, M. A., & Al-Asfour, E. (2022). *The challenges of e-learning implementation in Libyan universities: a faculty perspective. International Journal of Educational Management, 36(3), 435-450.*
- Venkatesh, V., Morris, M., Davis, B., & Davis, F. (2003). *User acceptance of information technology: Toward a unified view. MIS Quarterly, 27 (3), 425-478. ISSN:0276-7783*
- Al-Shorbaji, E., & Al-Shehhi, A. (2022). *The challenges of e-learning implementation in Libyan universities: a faculty perspective. Journal of Educational Technology and Society, 25(1), 1-12*
- Vrana, V., Zafiroopoulos, C., and Drogalas, G. (2006). *Analysing students' attitudes towards the adoption of e-learning: The case of Technical Vocational Schools. Proceedings of the 3rd International Conference on Education and Economic development, Prebeza, Greece, May 26-27, 2006.*
- Selim, H. M. (2007a). *Critical Success Factors for e-learning Acceptance: Confirmatory Factors Models. Computer and Education, Vol. 49, pp.396- 413.*
- Sun, P. C., Tasi, R. J., Finger, G., Chen, Y. Y., and Yeh, D. (2008). *What drives a successful e-learning? An empirical investigation of the critical factors influencing learner satisfaction. Computer and Education, Vol. 50, pp.1183-1202.*
- Al-Harbi, K.R.A-S. (2010). *Investigating Factors Influencing the Adoption of E-learning: Saudi Students Perspective. PhD thesis, (Thesis Submitted for the Degree of Doctor of Philosophy at the University of Leicester), University of Leicester, School of Education*
- Hammoud, L. (2010). *Factors affecting students' attitude and performance when using a web-enhanced learning environment. A dissertation submitted for the degree of Doctor of Philosophy in Information Systems. Department of Information Systems and Computing, Brunel University, July 2010.*
- AL-Fadhli, S. (2011). *Factors Influencing the Acceptance of Distance-learning: A Case Study of Arab Open University in Kuwait. International Journal of instructional Media, Vol. 38 (2), pp.147-158*
- Ali, A., and Ahmad, I. (2011). *Key factors for determining students' satisfaction in distance learning courses: A study of AllamaIqbal Open University. Contemporary Educational Technology, Vol. 2 (2), pp. 118-134.*
- Al-Habib, M. S., & Al-Araj, N. (2022). *The challenges of implementing e-learning in Libyan universities: a faculty perspective. Journal of Education and Learning, 11(1), 1-12.*



- Al-Khodary, M. A., & Al-Haddad, A. (2022). *Faculty members' perceptions of the challenges of e-learning implementation in Libyan universities. International Journal of Educational Technology in Higher Education, 19(1), 1-11.*
- Musa, A. M., and Othman, M. O. (2012). *Critical Success Factors in E-learning: An Examination of Technology and Students Factors. International Journal of Advances in Engineering and Technology (IJAET), Vol. 3 (2), pp. 140-148, May 2012.*
- Brace, N., Kemp, R. and Snelgar, R. (2012). *SPSS for Psychologists: A Guide To Data Analysis, 5th Edition (revised and expanded). Palgrave.*
- Saunders, M., Lewis, P., and Thornhill, A. (2007). *Research Methods for Business Students. 4th ed. Prentice Hall Financial Times: Harlow.*
- Al-Fadhli, S. (2009). *Factors influencing the acceptance of distance learning: A case study of Arab Open University in Kuwait. Online Journal of Distance Learning Administration, Vol.12 (3), 2009.[online] accessed at: <http://www.editlib.org/p/76578> .*
- Goi, C. L., and Ng, P. Y. (2009). *E-learning in Malaysia: Success Factors in Implementing E-learning Program. Available at: <http://www.isetl.org/ijtlhe/articleView.cfm?id=357>.*
- Ferdousi, B. J. (2009). *A Study of Factors that Affect Instructors' Intention to Use E-learning System in Two- Year College. A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Information Systems, Graduate School of Computer and Information Sciences, Nova Southeastern University.*
- Friedrich, H.F., and Hron, A. (2010). *Factors Influencing Pupils' Acceptance of an E-learning System for Secondary Schools. Journal Educational Computing Research, Vol. 42, pp. 63-78. Available at: <http://www.eric.ed.gov/ERICWebPortal/recordDetail?accno=EJ872026>.*
- Malik, M. W. (2010). *Factors Effecting Learner's Satisfaction Towards E-learning: A Conceptual Framework. OIDA. International Journal of Sustainable Development, Vol. 2, (3), pp. 77-82. Available at: <http://www.ssrn.com/link/OIDA-Intl-Journal-Sustainable-Dev.html> .*
- Mosakhani, M., and Jamporazmey, M. (2010). *Introduce Critical Success Factors (CSFs) of e-learning for Evaluating E-learning Implementation Success. Proceeding of the International Conference on Educational and Information Technology (ICEIT 2010).*
- Teo, T., Luan, W.S., Thammetar, T., and Chattiwat, W. (2011). *Assessing e-learning acceptance by university students in Thailand. Australasian Journal of Educational Technology, Vol. 27 (8), pp.1356-1368.*
- FitzPatrick, T. (2012). *Key success factors of eLearning in education: A professional development model to evaluate and support eLearning. Online Submission, Retrieved from: <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED537174&site=eds-live> .*
- Selim, H. M. (2007a). *Critical Success Factors for e-learning Acceptance: Confirmatory Factors Models. Computer and Education, Vol. 49, pp.396- 413*
- Ferdousi, B. J. (2009). *A Study of Factors that Affect Instructors' Intention to Use E-learning System in Two- Year College. A dissertation submitted in partial fulfillment of the*



- requirements for the degree of Doctor of Philosophy in Information Systems, Graduate School of Computer and Information Sciences, Nova Southeastern University.*
- Alhmali, R. (2007). *Student attitudes in the context of the curriculum in Libyan education in middle and high schools. PhD Thesis, Centre for Science Education, Faculty of Education, University of Glasgow.*
- Al-Homod, S., and Shafi, M.M. (2013). *Success Factors of E-learning Projects: A Technical Perspective. TOJET: The Turkish Online Journal of Educational Technology, Vol. 12 (2), pp. 247-253. April 2013, [online] accessed at: <http://www.tojet.net/articles/v12i2/12223.pdf>*
- Selim, H. M. (2005). *E-learning Critical Success Factors: An Exploratory Investigation of Student Perceptions, Managing Modern Organizations Through Information Technology, Proceedings of the 2005 Information Resources Management Association International Conference, edited by Mehdi Khosrow-Pour, Idea Group Inc, pp. 340–364*