

## Investigation of Lecturer' Attitudes towards E-Learning According to Demographic Variables

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### Abstract

E-learning is an imminent method that used technology to assist student learning. It is one of the tools that has emerged from information and communication technology and has been integrated in many universities. A lecturer is one of the most important stakeholders for integration of e-learning. The purpose of this research was to investigate the influence of lecturers demographic factors on their attitudes towards integration of e-learning in a Institution on higher education in Macedonia. In this study 49 teachers teaching in two major faculties in University of Tetovo, Macedonia were analyzed. In this paper was used questionnaire to collect data. Several statistical techniques were used for analyses of data using SPSS, including t-tests, one-way ANOVA, and correlation analyses. The result revealed that lecturers' have high attitude towards e-learning and their attitude scores did not differ significantly with their personal variables: gender, faculty and age, but have significantly differences with factors teaching experience and e-learning experience. The reported findings might be of interest to academics, administrators, and decision-makers involved in planning, developing and implementation of future e-learning strategies in Macedonia and similar developing countries.

**Keywords:** Lecturers' attitudes, gender, age, faculty, teaching experience, e-learning experience.

### Introduction

In the last years, the use of e-learning has been increasing rapidly and has become an important system offered by most colleges and universities all over the world. This comes as the result of the innovative transfer of knowledge and learning which has been influenced by the advent of the Internet and other Information and Communication Technology (Qureshi, 2012). This change has had a significant impact on the higher education system, the methodology of teaching and learning processes. E-learning presents an opportunity to enhance learning as to create environments where students and teachers can share knowledge. However, the adoption of this technology as a tool for teaching and learning in

Macedonia higher education is still in its early stage, where most universities in Macedonia are still struggling to incorporate e-learning into teaching and learning process. In addition, the developing countries often lack the ability to implement advanced educational practices on their own (Andersson & Grönlund, 2009).

For the implementation of e-Learning in educational institutions to be successful, factors determining the readiness to integrate e-learning system need to be established and dealt with adequately before the implementation process commences (Lumumba, 2007). To successfully initiate and implement educational technology in teaching and learning process depends strongly on the lecturers' support and attitudes. However, teachers are the key stakeholders of all formal education, their attitudes towards e-learning have a significant impact on their decision of whether to accept or reject it (Rogers, 2003). Since, successful implementation of e-learning in education relies much on lecturers' attitudes towards it (Salmon 2011; Teo 2011; Teo & Ursavas 2012). Understanding lecturers characteristics is especially crucial when need to implement e-learning system. According to Schiler (2003), personal characteristics of academics staff such as educational level, age, gender, educational experience, experience with the computer for educational purpose and attitude towards ICT can influence the adoption of a technology. Also, the literature associates teachers' attitudes by their personal characteristics such as gender (Dong & Zhang, 2011), years of teaching experience (Karaca, Can, & Yildirim, 2013; Onasanya, Shehu, & Shehu, 2010), exposure to computers, (Karaca, Can, & Yildirim, 2013; Krishnakumar & Kumar 2011), and academic qualification (Rahimi & Yadollahi, 2011). Research has shown that lecturers' attitudes towards technology influence their acceptance of the usefulness of technology and its integration into teaching (Huang & Liaw, 2005).

This research investigate the influence of lecturers' demographic factors (gender, age, teaching program, teaching experience and e-learning knowledge) on their attitudes toward integration e-learning in teaching and learning process in University of Tetovo (UT). The issue of ICT use in higher education and the demographic factors influencing the integration of E-Learning by lecturers in University of Tetovo have not been extensively investigated before.

### **Research objective and research hypothesis**

- The objective of this study is to investigate and to assess if there are significant differences of demographic factors of UT lecturers on attitudes towards integration of e-learning.
- The hypotheses for this study are as follow:
- The first hypothesis (H1): There are no statistically significant differences in lecturers' attitudes towards e-learning integration according to gender.
- The second hypothesis (H2): There are statistically significant differences in lecturers' attitudes towards e-learning integration according to faculty.
- The third hypothesis (H3): There are significant differences in attitudes towards e-learning integration according to teaching experience.
- The fourth hypothesis (H4): There are significant differences in attitudes towards e-learning integration according to age.

- The fifth hypothesis (H5): There are significant differences in attitudes towards e-learning integration according to e-learning knowledge.

### Research methodology

The purpose of this paper is to analyse the influence and differences of lecturers' demographic factors on their attitude towards e-learning integration in higher education. Determining lecturers' attitude towards e-learning represents an important step in predicting the adoption of technology. In this paper, a questionnaire was used to collect data and to prove the hypotheses. The population for this study was 49 lecturers of the University of Tetovo. These 49 lecturers are from two faculties of the university and the sample included males and females and with different ages.

The data was analyzed using SPSS software. Descriptive statistics were used to summarize and describe the data collected from the lecturers. In addition, the one-way analysis of variance (ANOVA) and T-test were used to reveal the relationship between lecturers' attitudes towards e-learning integration and their demographic characteristics (gender, age, faculty, teaching experience, e-learning experience). The survey instrument consisted of two sections. While the first section includes 5 items of demographic characteristics of lecturers: gender, age, faculty, teaching experience, e-learning experience. The second part consists of 11 items of lecturers' Attitude towards integration of E-learning, each rated on a 5-point Likert scale running from (1=Strongly disagree, 2=Disagree, 3=Undecided, 4= Agree, and 5= Strongly Agree). The research instrument's reliability was assessed using Cronbach's alpha ( $\alpha$ ). Alpha values for the two constructs exceeded the 0.70 lower limit of acceptability.

### Data analysis and results

#### Descriptive statistics

Demographic Characteristics	Category	Frequency & Percentage in the Study	
		N	%
	Male	30	61.2
	Female	19	38.8
Gender	Natural Science and Mathematics	35	71.4
	Economics	14	28.6
Faculty	0 - 5 years	5	10.2
	6 - 10 years	6	12.2
Teaching Experience	11 - 15 years	13	26.6
	Over 15 years	25	51.0
Age	23 - 30 years	11	22.45
	31 - 40 years	12	24.50
	41 - 50 years	15	30.60
	Over 50 years	11	22.45
Use E-learning as Learning Tool	No	31	63.3
	Yes	18	36.7

In this research for analysis data was used Statistical Package for Social Science (SPSS) software. For each factor and also for the variable students' attitude toward integration of e-learning was done Descriptive statistics. data was collected from 49 lecturers. The frequency

and percentage distributions were used to represent the demographic characteristics of the lecturers (gender, faculty, teaching experience, age and use e-learning as learning tool) which are presented in the table 1.

*Table 1. Lecturers demographic characteristics*

In the table 2 are present the descriptive statistics related to the scale of lecturers' attitudes towards integration of e-learning in higher education. Results shows that lecturers' attitudes towards integration of e-learning were positive. The mean of attitude scores was 39.33 from minimum 22 and maximum 52, which is closest to the maximum. In general all lecturers participants in the study has positive attitudes towards integration technology and e-learning. They feel confident in the use of computers, enjoy the use of ICTs in teaching, believe in the benefits of e-learning and are interested in developing e-learning courses in their teaching process.

<i>Units</i>	<i>Value</i>
<i>Minimum</i>	22.00
<i>Maximum</i>	52.00
<i>Mean statistic and Standard error</i>	39.3265 .75277
<i>Standard deviation</i>	5.26936
<i>Variance</i>	27.766
<i>Coefficient Skewness (CS) and CS Standard error</i>	-.356 .340
<i>Coefficient Kurtosis (CK) and CK Standard error</i>	1.461 .668

*Table 2. Descriptive statistics of students' attitudes toward e-learning*

Reliability test for construct attitudes

The reliability analysis measured the internal validity and consistency of items used for each construct. In this study for the construct students' attitude towards e-learning was used to measure the reliability. Coefficient Cronbach's alpha tested the factor reliability. This measures the internal consistency by indicating how a set of items are closely related as a group (Moolla and Bisschoff, 2012). Recommended by Dunn-Ranking (2004) that a Cronbach alpha value of 0.7 is acceptable, with a slightly lower value might sometimes be acceptable. Cronbach's alpha values for factor attitude is above 0.70 (see Table 3) indicating that all measures employed in this study demonstrate a satisfactory internal consistency. Therefore, the questionnaire is considered a reliable measurement instrument.

<i>Construct</i>	<i>Cronbach Alpha</i>	<i>Number of Items</i>
<i>Attitude toward e-learning</i>	0.724	11

*Table 3: Cronbach Alpha Coefficients for Construct Attitude*

### Hypothesis Testing

The one-way ANOVA and T-test were employed to identify the effects of demographic variables on the students' attitudes towards e-learning. Therefore, the significant differences between demographic factors of lecturers and their attitudes toward integration of e-learning were analyzed.

Variable difference in attitude towards e-learning based in lecturers gender	Gender	N	Mean	Std.	Df	(t) value	(Sig.) Level	Mean difference.	F
	F	30	39.00	6.06	4	19.733	.000	1.388	.293
	M	19	39.84	3.79	8				

95% Confidence Interval of the difference \*sig (p<005)

Table 4: Results from testing hypothesis 1(H1)

Results in table 4 shows the mean of attitude scores for male and female lecturers is found to be 39.00 (SD =6.063) for male and 39.84 (SD = 3.79) for female. This indicate that both male and female lecturers in University of Tetovo have high attitude towards e-learning although results indicate little differences between male and female lecturers. T-Value is found to be (t = 19.733) at significance level of (0.000) which is statistically significant . From results conclude that, the first hypothesis (H1) is supported. Thus, There are no statistically significant differences in attitude towards e-learning integration, between UT lecturers based on gender (f= .293). In this study, two faculty members have been investigated as shown in Table 5. The mean of attitude scores for lecturers of Faculty of Natural Science and Mathematics is found to be 38.80 (SD = 5.62) and for lecturers of Faculty of Economics 40.64 (SD=4.16) respectively. Results indicate that there is no significant difference in the attitudes towards e-learning with the different faculty lecturers (F: 1.22, p: 0.273). Therefore, the second hypothesis was rejected. Table 5 shows the mean scores for all faculty lecturers. Finding indicates that lecturers from different faculty faced a high level of attitudes towards e-learning, where the highest mean score recorded by Lecturers of Faculty of Economics and the lowest mean score have lecturers of Faculty of Natural Science and Mathematics.

Variable difference in attitude towards e-learning according to faculty	Faculty	N	Mean	Std.	Df	(t) value	(Sig.) Level	Mean difference.	F
	Natural Science and Mathematics	3	38.80	5.62	4	19.718	.000	1.286	1.222
	Economics	4	40.64	4.16	8				

95% Confidence Interval of the difference \*sig (p<005)

Table 5: Results from testing hypothesis 2

In this study, four teaching experience groups of lecturers have been investigated as shown in Table 6. The results indicates that there is a significant differences in the attitudes towards e-learning among teaching experience of lecturers in higher education (F: 2.446, p: 0.076). Therefore, the third hypothesis (H3) was accepted. Findings in the table 6 indicates that lecturers with difference number of years of experiences faced a high level of attitudes towards e-learning where the mean scores ranged from 36.50 to 42.20. The highest mean

score recorded by those who have teaching experience between “ 1-5 ” and the lowest mean score is 36.50 for the those who have teaching experience between “ 6-10 “ which still considers high attitudes faced by instructors in the university.

Variable difference in attitude towards e-learning according to teaching experience	Teaching experience	N	Mean	Std.	Df	(t) value	(Sig.) Level	Mean differ.	F
	1-5	5	42.20	3.19					
	6 - 10	6	36.50	8.07					
	11 - 15	13	41.62	4.77	48	21.979	.000	3.184	2.446
	Over 15	25	38.24	4.59					

Table 6: Results from testing hypothesis 3

This study was investigate four age groups of lecturers as shown in Table 7. Results indicates there is no significant difference in attitudes towards e-learning among the different age groups of lecturers (f: .676, p: 0.571). Therefore, the hypothesis was rejected. Table 7 shows the mean scores for all age groups of lecturers. All the age groups in terms of attitudes towards e-learning recorded high scores. Findings in the table 7 indicates that the age group of lecturers between 31-40 faced a high level of attitudes towards e-learning with the mean scores of 40.75, than age group between 41-50 years, and the lowest mean score is 37.64 for the those age group over 51 years.

Variable difference in attitude towards e-learning according to age	Age	N	Mean	Std.	Df	(t) value	(Sig.) Level	Mean differ.	F
	23-30	11	39.09	6.74					
	31-40	12	40.75	4.55					
	41 - 50	15	39.60	4.89	48	16.370	.000	2.531	.676
	Over 50	11	37.64	5.07					

Table 7: Results from testing hypothesis 4

In order to test this hypothesis, a t-test was performed to determine the significant differences among the mean scores of the independent groups. The results are shown in Table 8.

Variable difference in attitude towards e-learning according to e-learning experience	e-learning experience	N	Mean	Std.	Df	(t) value	(Sig.) Level	Mean differ.	F
	Po	18	42.06	3.67					
	Jo	31	37.74	5.45	48	23.464	.000	1.633	8.885

Table 8: Results from testing hypothesis 5

Findings in Table 8 indicate that there is significant difference in terms of lecturers' attitudes towards e-learning between those with e-learning experience and those without e-learning experience ( $f= 8.885$ ,  $p= .005$ ). Therefore, the null hypothesis was supported. Table 8 also shows the mean scores for the two groups (lecturers with e-learning experience and those without any e-learning experience). In addition, the result indicated that lecturers who have e-learning experience recorded the highest mean score 42.06, while those who have no e-learning experience recorded the lowest mean score 37.74.

## Findings

The demographic profiles of lecturers have been found to play an important role on attitudes towards integration e-learning in higher education. In this study has conducted differences of lecturers on attitudes towards e-learning according to their demographic variables. Some demographics of lecturers that have been selected for this study included gender, age, faculty, teaching experience, e-learning experience.

The findings of this research paper revealed that there is no significant difference between male and female lecturers views regarding the attitudes towards e-learning that effect the implementation of e-learning. In the current research, female lecturers faced more attitudes than lecturers male. This may be due to female lecturers taking these attitudes into consideration when deciding whether or not to implement e-learning into their teaching. In term of faculty, the findings revealed that there no significant differences between the lecturers' views from different faculty regarding the attitudes towards integration of e-learning. With regards to teaching experience, the result revealed that there is significant differences for attitudes towards e-learning with different teaching experience groups. These findings suggested that teaching experience affects the integration of e-learning in higher education. In terms of age, the results also showed that the age of lecturers has no significant difference with attitudes towards e-learning. Finally, In terms of e-learning experience, the lecturers recorded significant difference between the e-learning experience and the attitudes towards of integration e-learning. In other words, the findings revealed that lecturers with e-learning experience faced more attitudes towards e-learning than those without any e-learning experience. The results of the analysis made with the lecturers of the University of Tetovo, attitudes towards e-learning correspond to Mean score of 39.33, with minimum 22 and maximum 55. This shows that attitudes of the UT lecturers towards e-learning are positively at a good level.

## Conclusion

In conclusion, this study has found that the influence of gender, faculty, teaching experience, age and e-learning experience are statistically significant. This study shows that e-learning is providing significant opportunities for higher education institutions (HEIs) and also provides an analysis of the influences of lecturers demographic factors on e-learning integration into higher education. Since, UT lecturers' attitude towards e-learning has found to be very high for all groups, it is expected that the lecturers will accept to integrate the E-Learning strategy during teaching in university. In generally, attitude towards technology indicates in a certain degree the possibility of adopting certain behaviors. Talking about an e-learning system, a favorable and positive attitude of lecturers towards it suggests a greater probability that they will accept it to integrate in the teaching and learning process in higher education.



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