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Determining the Contribution of Factors Affecting Faculties' Satisfaction with E-learning in Islamic Azad University- Virtual Branch

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Abstract

The online instructors' satisfaction is very important in education, because it affects the quality of education and students achievements. It is important to understand the factors affecting faculties' satisfaction which lead to success in effective e-learning. However, this study aimed to investigate the factors affecting Faculties' satisfaction with E-learning and determine their contribution in Islamic Azad University- Virtual Branch. The population consisted of faculties who cooperated in Virtual Branch of Islamic Azad University in 2015-2016 (N=600) and experts of e-learning (N= 10). Using Kerjsy & Morgan table and simple random sampling method, 234 faculty were selected as sample. A researcher made questionnaire with 85 questions in 5-degree Likert scale (Very high= 5, High= 4, No idea= 3, low= 2, Very low= 1) was used as research tool. The face and content validity of questionnaire was confirmed by e-learning experts, supervisor professor, and advisor professors. The descriptive and inferential statistics was used for analyzing the data. The findings showed that the highest standard coefficient (load factor) belonged to legal infrastructure (management and leadership) (0.99) which explained 97% of variance in faculties' satisfaction. Therefore, it had the greatest impact on satisfaction of faculty with e-learning in Islamic Azad University- virtual branch. The lowest standard coefficient (load factor) belonged to environmental (cultural, social, and value) infrastructure (0.44) which explained 19% of variance in good academic management. Therefore, it had the lowest impact on satisfaction of faculty with e-learning in Islamic Azad University- virtual branch.

Keywords: E-learning, factors affecting faculties' satisfaction, Islamic Azad University, Virtual Branch.

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Introduction:

Since the success of any organization depends on efforts and job satisfaction of employees in organization, the recognition of factors affecting job satisfaction may increase the satisfaction of faculty members and motivate them to do useful research and educational activities. The universities are the most important centers of education and research activities in all countries. In this regard, the faculties are the most important components of education system and the most basic elements of development in any country. If the faculty members of different academic disciplines in all countries provide best quality services, the development of these countries will be accelerated (Safi, 2010).

As a component of education system and one of the key pillars of university structure, the faculty members play an effective and essential role in promotion and improvement of education system. Therefore, it is important to determine the factors which increase the effectiveness of faculty members' performance. The available evidence suggests that the motivational factors of job satisfaction are fundamental factors in this regard (Ranjbar & Vahid Shahi, 2007).

In the third millennium, the world has entered a new society known as information society with the development of information and communications technology and it impacts on all aspects of human life. Considering the increasing need for educated people in many societies, the traditional methods of teaching are no longer enough. Therefore, the technology is used to create educational democracy. As a new paradigm in modern education which its impact on global learning process is growing over the last decade, the e-learning not only has manifested in different forms in all aspects of teaching, but also it has revolved many areas of education and has caused paradigm shift in understanding of learning. In fact, the e-learning is an integral and comprehensive part of higher education (Ossian Nilsson, 2011).

Greg Priest defined e-learning as: it is dynamic, its content is fully up to date, the experts are the best available sources in this continuous education system, it is collaborative and comprehensive, and it provides educational materials from diverse sources.

Cisco Systems officials stated that e-learning is an online learning which includes providing materials in several forms, managing training and students' network, and involves a number of developers and experts (Farhadi, 2005).

Geith and Vignare (2008) noted that online learning allows higher education institutions to extend their geographical area; therefore, they may recruit and provide student services to a larger physical area. In fact, the geographic flexibility of online learning may allow online education institutions to conduct their programs internationally (Appana, 2008 Lei & Govra, 2010).

Many studies have emphasized on importance of support and participation of faculty members in online education for future development of online learning (D. Davis, 2009, T Green et al. 2009, Moloney & Oakley, 2010, Orr, Williams and Pennington, 2009, Styron, Wang and Styron Jr, 2009, Wasilik & Bolliger, 2009). For example, Irr and colleagues (2009) found that motivation of faculty members is important for the success of Institute's efforts to develop online education. T. Green and colleagues (2009) suggested that for success of online education programs, it is crucial that higher education institutions have programs for faculty member recruitment, especially part-time professors. Similarly, Wasilik & Bolliger (2009) claimed that faculty member satisfaction is very important to overall success of online training programs. Korn (2010) goes even further and argues that faculty members are essential

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for innovation in online education. In online training management report, K.Green (2010) stated that the indifference of faculty members prevents from acceptance of online education.

Yagoubi and colleagues (2008) conducted a study entitled: (The desirable features of faculty members and students in e-learning in higher education in Iran). They evaluated the satisfaction of faculty members and students. The findings indicated that the most important factors of faculties' satisfaction with e-learning include management, promotion, encouragement, virtual interaction, support of students, electronic commitment, interactive environment, and a positive attitude towards e-learning. The virtual students' satisfaction factors include self-confidence and accountability, participation and creativity, IT skills, and motivational factors.

University of Texas in America (2012) conducted a study entitled (perceptions &satisfaction of higher education faculty members with e-learning) to investigate the promotion and preventive factors of higher education faculty members' satisfaction with e-learning. The findings showed that the factors affecting faculty members'' satisfaction include personality dimensions, individual level, personal living conditions, personality,educational demographic,online learning environment, learning environment, business area, perceptions of jobs, and changes in working conditions.

The satisfaction of faculty members is an important factor in offering high quality online courses (Allen & Seaman, 2012). The faculty member satisfaction is so important that (Sloan Consortium, 2006) is named it as one of the five pillars of online education framework. Since the faculty members are e-learning success tools, the faculty member satisfaction is an important scale for evaluation of learning programs effectiveness (Allen & Seaman, 2012). Since the faculty members are the means of success in e-learning, this study aims to investigate the factors affecting Faculties' Satisfaction with E-learning and determine their contribution in Islamic Azad University- Virtual Branch.

Methodology:

This was applied descriptive research. The population consisted of faculty members who cooperated in Virtual Branch of Islamic Azad University in 2015-2016 (N=600) and experts in e-learning (N= 30). Using Morgan & kerjsy table and simple random sampling method, 234 faculty members were selected as sample. A researcher made questionnaire with 85 questions in 5-degree Likert scale (Very high= 5, High= 4, No idea= 3, low= 2, Very low= 1) was used as research tool. The face and content validity of questionnaire was confirmed by e-learning experts, supervisor professor, and advisor professors. The descriptive and inferential statistics was used for analyzing the data. The Cronbach's alpha showed that the reliability of questionnaire was 0.976.

Findings:

The Explanatory Factor Analysis (Principal Component Analysis) was used to determine the dimensions and components of faculty members' satisfaction. Five key factors were determined and are provided in table below.

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Table 1: Dimensions identified by major components analysis and loaded components on them

Dimensions of faculties' satisfaction promotion	Components
1. Pedagogical (educational) infrastructure	Style of teaching and evaluation
	Content and Learning Tools
	Internal and external skills
2. Technological (IT and technical) infrastructure	Professional master of teachers in using technology tools
	Hardware infrastructure
	Software infrastructure
3. Structural (administrative and support) infrastructure	Security system
	Accountability system
	Advisory system
4. Legal (leadership and management) infrastructure	Encouragement and support system
	Knowledge-based management
	Financial, executive, and appointment laws
5. Environmental (cultural, social, and value) infrastructure	Acceptance of learning paradigm shift
	Universalism approach
	Attention to values and ethics

The structural equation modeling analysis results based on standard coefficients, t statistics, significance level, and approval or disapproval of coefficients are summarized in following table. If an index has high load factor, it will has large contribution in structure measurement.

Table 2: Results of measuring faculty members' satisfaction promotion model (first-order factor loadings)

Hidden variables	Evident variables	Factor loading	Error	statistics t	R^2	sig	Conclusion
Technological (IT and technical) infrastructure	Professional master of teachers in using technology tools	0.83	-	-	0.69	<0.05	Significant
	Hardware infrastructure	0.69	0.061	10.44	0.47	<0.05	Significant
	Software infrastructure	0.79	0.063	11.93	0.63	<0.05	Significant
Pedagogical (educational) infrastructure	Style of teaching and evaluation	0.75	-	-	0.56	<0/05	Significant
	Content and Learning	0.65	0.079	7.79	0.42	<0/05	Significant

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	Tools Internal and external skills	0.72	0.089	8.09	0.51	<0/05	Significant
Environmental (cultural, social, and value) infrastructure	Universalism approach	0.80	-	-	0.63	<0/05	Significant
	Acceptance of learning paradigm shift	0.63	0.067	8.80	0.39	<0/05	Significant
	Attention to values and ethics	0.83	0.078	10.11	0.68	<0/05	Significant
Legal (leadership and management) infrastructure	Knowledge-based management	0.52	-	-	0.28	<0/05	Significant
	Encouragement and support system	0.48	0.085	5.70	0.23	<0/05	Significant
	Financial, executive, and appointment laws	0.56	0.081	6.35	0.32	<0/05	Significant
Structural (administrative and support) infrastructure	Advisory system	0.87	-	-	0.76	<0/05	Significant
	Accountability system	0.83	0.065	15.25	0.69	<0/05	Significant
	Security system	0.79	0.061	14.31	0.63	<0/05	Significant

The table above shows the factor loading of factors affecting satisfaction of faculty members.

Among the components of technological (IT and technical) infrastructure, the (Professional master of teachers in using technology tools) has the highest load factor (0.83). Therefore, it has the highest contribution in measuring technological (IT and technical) infrastructure. Based on the calculated determination coefficient (R^2), 69% of variance in technological infrastructure is explained by (Professional master of teachers in using technology tools). The (software infrastructure) component has a factor load (0.79); the (hardware infrastructure) has the lowest load factor (0.69) in this dimension.

Among the components of pedagogical (education) infrastructure, the (Style of teaching and evaluation) has the highest load factor (0.75). Therefore, it has the highest contribution in measuring pedagogical (education) infrastructure. Based on the calculated determination coefficient (R^2), 56% of variance in pedagogical infrastructure is explained by (Style of teaching and evaluation). The (Internal and external skills) component has a factor load (0.72); the (Content and Learning Tools) has the lowest load factor (0.65) in this dimension.

Among the components of environmental (social, cultural, and value) infrastructure, the (attention to values and ethics) has the highest load factor (0.83). Therefore, it has the highest contribution in measuring environmental (social, cultural, and value) infrastructure. Based on the calculated determination coefficient (R^2), 68% of variance in environmental infrastructure is explained by (attention to values and ethics). The (Universalism approach) component has a factor load (0.80); the (Acceptance of learning paradigm shift) has the lowest load factor (0.63) in this dimension.

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Among the components of legal (management and leadership) infrastructure, the (Financial, executive, and appointment laws) has the highest load factor (0.56). Therefore, it has the highest contribution in measuring legal (management and leadership) infrastructure. Based on the calculated determination coefficient (R^2), 32% of variance in legal infrastructure is explained by (Financial, executive, and appointment laws). The (Knowledge- based management) component has a factor load (0.52); the (Encouragement and support system) has the lowest load factor (0.48) in this dimension.

Among the components of structural (administrative and support) infrastructure, the (Advisory system) has the highest load factor (0.87). Therefore, it has the highest contribution in measuring structural (administrative and support) infrastructure. Based on the calculated determination coefficient (R^2), 76% of variance in structural infrastructure is explained by (Advisory system). The (Accountability system) component has a factor load (0.83); the (Security system) has the lowest load factor (0.79) in this dimension.

Using the results of structure part of model, the impact of each dimension on promotion of faculties' satisfaction with e-learning in virtual branch of Islamic Azad University is determined. The structural equation modeling analysis results based on standard coefficient, t- statistics, significance level, and approval or disapproval of each dimension's coefficient are summarized in table below.

Table 3: Results of structure part of faculties' satisfaction promotion model (second-order factor loadings)

Variable	Dimensions	Factor loading	Error	Statistics t	R^2	sig	Conclusion
Faculties' satisfaction promotion	Technological (IT and technical) infrastructure	0.73	0.075	9.76	0.54	<0.05	significant
	Pedagogical (educational) infrastructure	0.46	0.083	5.77	0.21	<0.05	significant
	Environmental (cultural, social, and value) infrastructure	0.44	0.079	5.55	0.19	<0.05	significant
	Legal (leadership and management) infrastructure	0.99	0.13	7.79	0.97	<0.05	significant
	Structural (administrative and support) infrastructure	0.96	0.070	13.71	0.92	<0.05	significant

According to above table, it is concluded that:

Highest standard coefficient (factor load) belongs to legal (leadership and management) infrastructure (0.99) which explains 97% of variance in faculties' satisfaction. Therefore, it has the greatest impact on promotion of faculties' satisfaction with e-learning in Islamic Azad University-virtual Branch.

The structural (administrative and support) infrastructure (0.96) explains 92% of variance in faculties' satisfaction.

The technological (technology and technical) infrastructure (0.73) explains 54% of variance in faculties' satisfaction.

The pedagogical (educational) infrastructure (0.46) explains 21% of variance in faculties' satisfaction.

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Lowest standard coefficient belongs to environmental (cultural, social, and value) infrastructure (0.44) which explains 19% of variance in good academic governance. Therefore, it has the lowest impact on promotion of faculties' satisfaction with e-learning in Islamic Azad University-virtual Branch.

Conclusion:

The findings showed that among the components of technological (IT and technical) infrastructure, the (Professional master of teachers in using technology tools) has the highest load factor (0.83). Therefore, it has the highest contribution in measuring technological (IT and technical) infrastructure. Based on the calculated determination coefficient (R^2), 69% of variance in technological infrastructure is explained by (Professional master of teachers in using technology tools). The (software infrastructure) component has a factor load (0.79); the (hardware infrastructure) has the lowest load factor (0.69) in this dimension. Among the components of pedagogical (education) infrastructure, the (Style of teaching and evaluation) has the highest load factor (0.75). Therefore, it has the highest contribution in measuring pedagogical (education) infrastructure. Based on the calculated determination coefficient (R^2), 56% of variance in pedagogical infrastructure is explained by (Style of teaching and evaluation). The (Internal and external skills) component has a factor load (0.72); the (Content and Learning Tools) has the lowest load factor (0.65) in this dimension. Among the components of environmental (social, cultural, and value) infrastructure, the (attention to values and ethics) has the highest load factor (0.83). Therefore, it has the highest contribution in measuring environmental (social, cultural, and value) infrastructure. Based on the calculated determination coefficient (R^2), 68% of variance in environmental infrastructure is explained by (attention to values and ethics). The (Universalism approach) component has a factor load (0.80); the (Acceptance of learning paradigm shift) has the lowest load factor (0.63) in this dimension. Among the components of legal (management and leadership) infrastructure, the (Financial, executive, and appointment laws) has the highest load factor (0.56). Therefore, it has the highest contribution in measuring legal (management and leadership) infrastructure. Based on the calculated determination coefficient (R^2), 32% of variance in legal infrastructure is explained by (Financial, executive, and appointment laws). The (Knowledge- based management) component has a factor load (0.52); the (Encouragement and support system) has the lowest load factor (0.48) in this dimension. Among the components of structural (administrative and support) infrastructure, the (Advisory system) has the highest load factor (0.87). Therefore, it has the highest contribution in measuring structural (administrative and support) infrastructure. Based on the calculated determination coefficient (R^2), 76% of variance in structural infrastructure is explained by (Advisory system). The (Accountability system) component has a factor load (0.83); the (Security system) has the lowest load factor (0.79) in this dimension.

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