THE RELATIONSHIP BETWEEN DEMOGRAPHIC CHARACTERISTICS OF HUMAN FACTORS WITH INFORMATION TECHNOLOGY ACCEPTANCE AMONG STAFF OF YOUTH AND SPORTS DEPARTMENT IN KERMANSHAH

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Abstract. This study aimed to examine the relationship between demographic characteristics and information technology acceptance among staff of Youth and Sports Department in Kermanshah. The population consisted of staff of Youth and Sports Department in Kermanshah in 2015. Using Cochran formula, the sample size was determined to be 120 subjects. The research tools included demographic questionnaire and Davis' Technology Acceptance Model questionnaire. Using SPSS software, the Kolmogorov-Smirnov test, Pearson correlation, and regression were used for analyzing the data. The significant level was determined to be 0.01. The findings showed that there was no significant relationship between gender and level of education. There was a significant relationship between age and technology. The education did not impact on technology. The increased employment history led to increased information and technology knowledge score. The increased skill level of people in software led to increased use of other software. The age did not impact on using software. An increase in age led to increase in using technology. The gender had no effect on ease of use of technology. Also, the gender had no effect on skill of using IT.

Keywords: Information Technology, Youth and Sports Department's staff.

1. Introduction

In informational developed countries, the use of information technology in education system aims to diversify teaching methods and create proper grounds for deepening education and training. For this reason, these countries use various facilities of information technology as a complement to traditional training to increase the richness and quality of education. On the other hand, the informational developing countries use information technology as a means to extend public education and make closer the physical distances, especially in rural and remote areas. In Iran, however, the information technology is notable in both perspectives: increasing the richness of education (access quality) and increasing access to learning environments (access quantity) (Masoudi, 2012). As a way to train healthy human resources, the development of physical education and sport is considered to be a part of national development plans. Thereby, the creation of necessary conditions to facilitate exercise and training, development of community vitality and health, and provision of spaces for using information technology are inevitable to achieve research and service objectives for all (Gerssion & Anderson, 2004). In recent decades, there have been an increase in role of information technology in organizations, especially in universities; however, the resistance to deployment of advanced information technology is significantly high (Ali Ahmadi, 2002). Today, the changes are far more fundamental than the transformations and changes in industrial revolution era. So, the organizations have to use the late technology achievements to survive in competitive and changing environment and achieve the highest level of their abilities (Shahi Beigi, 2005). The increased market competitions have caused the organizations use new technologies to remain in competition; the IT is one of these technologies. In today's dynamic business environment, the information technology is widely used. While the managers might ignore and avoid from IT-related decisions in the past, this is today impossible in most industries. This high dependence on IT indicates the vulnerability of business which is due to IT nature. The information technology not only has the ability to support the existing business strategies, it may also formulate new strategies. In other words, the information technology is a success factor for continuance of business and also a feature for differentiation and competitive advantage of organization (Van Garm Bergen, 2009). Spacy, Goulding, and Murray (2004) investigated the features of public library staffs which influenced their attitudes towards internet. They examined the effects of gender age, computer skills, experiences in the field of information and communication technologies, and subjective norms. The findings suggested that the job position of employees impacted on their perception of ease of use of internet. Most employees had computer skills, perceived using internet as easy, often worked with it, and had the intention of re-using computers and Internet.

2. Methodology

This was cross-sectional descriptive- analytic study. The population consisted of staff of Youth and Sports Department in Kermanshah in 2015. Using Cochran formula, the sample size was determined to be 120 subjects. The research tools included demographic questionnaire and Davis' Technology Acceptance Model questionnaire. Davis's Technology Acceptance Model had five sections: 1) demographic information, 2) employees' subjective perception of usefulness of using information technology which included questions about efficiency, effectiveness, and usefulness of information technology, 3) six questions on employees' perceived ease of use of information technology which included ease of use, ease of interaction with system, and easy learning of technology, 4 and 5) six questions on employees' attitude towards information technology and using information technology. The Likert scale was used to convert qualitative values to quantitative values: 1, 2, 3, 4, and 5 for strongly agree, agree, no comment, disagree, and completely disagree, respectively. The descriptive (tables and graphs) and inferential statistics were used for analyzing the data. Using SPSS software, the Kolmogorov-Smirnov test was used to test the normality of data distribution and Pearson correlation and regression were used to test the hypotheses. The significant level was determined to be 0.01.

3. Findings

According to table 1, the sample consisted of 120 subjects. However, 49 (40.8%) and 71 (59.2%) subjects are female and male, respectively.

Table 1. Distribution of subjects in terms of gender

Gender	Frequency	Percentage
Male	49	40.8
Female	71	59.2
Total	120	100

According to table 1, 49 and 71 subjects are female and male, respectively.

Table 2. Distribution of subjects in terms of age (years)

	Frequency	Mean	Standard deviation	Minimum	Maximum
Age	120	33.78	0.886	18	62

According to Table 2, the average age of subjects is 33.78 years old (SD= 0.886). The youngest and oldest subjects are 18 and 62 years old, respectively.

Table 3. Frequency distribution of participants in terms of education level

	Frequency	Percentage
Diploma	28	23.3
Associate	46	38.3
Bachelor	27	22.5
Graduate	16	13.3
PhD	3	2.5
Total	120	100

According to table 3, 23.3, 38.3, 22.5, 13.3, and 2.5% of participants had diploma, associate, bachelor, graduate, and PhD degrees, respectively; most of the participants had associate degree.

Table 4: Individuals' years of service

N	Valid	120
	Missing	0
Mean		7.48
Std. Error of Mean		0.669
Median		5
Mode		2
Std. Deviation		7.327
Minimum		1
Maximum		30
Sum		897

According to table 4, the average of participants' years of service is 7.48 years.

The lowest and highest of years of service is 1 and 30 years, respectively. The highest frequency dedicates to people with 2 years of service.

The following table shows the number of times that people use IT knowledge. As it can be seen, most use of IT knowledge is by those who use 2-3 times a month on average.

Table 5: Frequency of using IT knowledge

		Frequency	Percentage	Percentage points	Cumulative frequency percentage
Valid	Less than once a month	5	4.2	4.2	4.2
	2-3 times a month	36	30	30	34.2
	Once a week	33	27.5	27.5	61.7
	2-3 times a week	9	7.5	7.5	69.2
	once a day	16	13.3	13.3	82.5
	Several times a day	21	17.5	17.5	100
	Total	120	100	100	

According to table 5, the use of technology knowledge at least once a day is 13.3 percent. And the people who use it less than once a month is 4.2 percent.

Table 6: Using technology knowledge in related jobs

		Frequency	Percentage	Percentage points	Cumulative frequency percentage
Valid	Library services	2	1.7	1.7	1.7
	Finance and Budget	2	1.7	1.7	3.3
	Guidance and control activities	2	1.7	1.7	5
	Communication with others	6	5	5	10
	Searching for Information	18	15	15	25
	Orders	13	10.8	10.8	35.8
	Reporting	13	10.8	10.8	46.7
	Writing letters	18	15	15	61.7

	Store and restore	17	14.2	14.2	75.8
	Decision making	15	12.5	12.5	88.3
	Data analysis	3	2.5	2.5	90.8
	Forecasting and planning	6	5	5	95.8
	Analyzing problems	5	4.2	4.2	100
	Total	120	100	100	

According to table 6, the highest use of technology is in letter writing and searching for information area (=15%) and the lowest use level is in library services, finance, and controlling and directing activities (=1.7%).

The level of skill in using electronic tools and technology is specified in Table 7.

Table 7: Skill in using electronic tools and technology

		Frequency	Percentage	Percentage points	Cumulative frequency percentage
Valid	Library software	3	2.5	2.5	2.5
	Online communication	7	5.8	5.8	8.3
	Word processors	28	23.3	23.3	31.7
	Data bases	13	10.8	10.8	42.5
	Graphics software	19	15.8	15.8	58.3
	Statistical software	21	17.5	17.5	75.8
	Programming language	6	5	5	80.8
	Applied and expertise software	1	0.8	0.8	81.7
	World Wide Web	12	10	10	91.7
	Email	10	8.3	8.3	100
	Total	120	100	100	

As it can be seen, 2.5 percent of people use library software and 5.8 percent use online communication.

The highest use of electronic tools is in word processing and typing text areas (=23.3%).

The lowest usage is in applied and specialized software area.

The participants' use of various electronic software is provided in following table.

Table 8: Number of software used in technology

		Frequency	Percentage	Percentage points	Cumulative frequency percentage
Valid	One software	9	7.5	7.5	7.5
	Two software	48	40	40	47.5
	3-5 Software	29	24.2	24.2	71.7
	6-10 Software	16	13.3	13.3	85
	More than 10 software	18	15	15	100
	Total	120	100	100	

According to table 8, 7.5 percent of individuals use one software, 40 percent use two software, and 15 percent use more than 10 software.

According to table, the correlation coefficient between age and technology score is 0.4; this shows that there is weak correlation between these two variables. Also, the significant level of 0.00 indicates that there is a correlation between variables.

Test of independence between dependent and independent variables:

In the following, the independence or dependence of subscales is investigated.

Correlation between gender and education level of subjects:

According to table 9, the significant level of 0.44 implies that there is no significant relationship between gender and level of education.

This means that gender and education act independently and do not impact on each other.

Table 9: Correlation between gender and education level of subjects

		Education level of subjects					Total
		Diploma	Associate	Bachelor	Graduate	PhD	
Gender of subjects	Male	9	20	13	7	0	49
	Female	19	26	14	9	3	71
Total		28	46	27	16	3	120

Table 10: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.733	4	0.443
Likelihood Ratio	4.827	4	0.306
N of Valid Cases	120		

Correlation between age and technology knowledge score:

According to table 11, the significant level of 0.01 implies that there is a significant relationship between age and technology.

This means that an increase in age leads to increase in technology score.

Table 11: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1171.790	1020	0.001
Likelihood Ratio	436.722	1020	0.000
Linear-by-Linear Association	19.644	1	0.000
N of Valid Cases	120		

Correlation between education level and technology knowledge score:

According to table 12, the significant level of 0.349 implies that there is no significant relationship between education level and technology.

This means that education level and technology score act independently and do not impact on each other.

Table 12: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	141.816	136	0.349
Likelihood Ratio	136.523	136	0.471
N of Valid Cases	120		

Correlation between service years and technological knowledge in related jobs:

According to table 13, the significant level of 0.01 implies that there is a significant relationship between service years and technology.

This means that the increase of employment history increases information and technology knowledge score.

Table 13: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	344.883	264	0.001
Likelihood Ratio	175.987	264	1
N of Valid Cases	120		

Correlation between skill of using electronic software and number of used software:

According to table 14, the significant level of 0.047 indicates that there is significant correlation between skill of using software and number of used software.

This means that people with high skill of using software use more software.

Table 14: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	51.319	36	0.047
Likelihood Ratio	46.087	36	0.121
N of Valid Cases	120		

Correlation between age and using software;

According to table 15, the significant level of 0.886 indicates that there is no significant relationship between age and using software.

This means that age and using software are independent and not influenced by each other; people in all ages work with any software.

Table 15: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	242.314	270	0.886
Likelihood Ratio	199.135	270	1
N of Valid Cases	120		

Correlation between age and positive attitude to IT knowledge:

According to table 16, the significant level of 0.01 indicates that there is significant correlation between age and positive attitude to technology knowledge.

This means that the positive attitude to technology increases with age.

Table 16: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	392.253	330	0.010
Likelihood Ratio	223.025	330	1
Linear-by-Linear Association	19.008	1	0.000
N of Valid Cases	120		

Correlation between age and usability of technology knowledge:

According to table 17, the significant level of 0.00 indicates that there is significant correlation between age and usability of technology knowledge.

This means that the usability of technology increases with age

Table 17: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	433.446	300	0.000
Likelihood Ratio	239.113	300	0.996
Linear-by-Linear Association	17.364	1	0.000
N of Valid Cases	120		

Correlation between gender and ease of using technology:

According to table 18, the significant level of 0.579 indicates that there is no a correlation between gender and ease of using technology knowledge.

This means that gender has no effect on ease of using technology.

Table 18: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.516	10	0.579
Likelihood Ratio	8.705	10	0.560
N of Valid Cases	120		

Correlation between gender and skill of using technology knowledge:

According to table 19, the significant level of 0.589 indicates that there is no correlation between gender and skill of individuals in using technology knowledge.

This means that gender has no effect on skills of using technology knowledge.

Table 19: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	7.462	9	0.589
Likelihood Ratio	7.902	9	0.544
N of Valid Cases	120		

Correlation between education level and positive attitude to technology knowledge:

According to table 20, the significant level of 0.034 indicates that there is significant correlation between education level and positive attitude to technology knowledge.

This means that education has a significant impact on positive attitude toward technology knowledge.

Table 20: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	62.604	44	0.034
Likelihood Ratio	55.253	44	0.119
N of Valid Cases	120		

4. Conclusion

There is a significant relationship between demographic characteristics and acceptance of ICT knowledge. The significant level of 0.01 implies that there is a significant relationship between age and technology. The significant level of 0.589 indicates that there no relationship between gender and skill of individuals in using communication technology knowledge. This finding is consistent with research results of Mohammadi, Shams, and Parvin (2008) who showed that the gender has no effect on acceptance of technology. The significant level of 0.349 indicates that there is no significant relationship between education and technology. The significant level of 0.01 implies that there is a significant relationship between service years and technology. This means that by increasing of service years, the information technology knowledge score increases.

There is significant correlation between demographic characteristics and technology acceptance model and IT knowledge acceptance. The significant level of 0.01 indicates that there is a significant relationship between age and positive attitude to technology. This means that the positive attitude to technology increases with age. The significant level of 0.579 shows that there is no relationship between gender and ease of using technology knowledge. The significant level of 0.034 indicates that there is a significant relationship between education level and positive attitude to technology knowledge. This means that education has a significant impact on positive attitude towards technology knowledge.

References

1. Masoudi, Z.: *Investigating the internal and external factors of performance to formulate strategies.* Master's thesis. Islamic Azad University, Science and Research branch, 2012.
2. Al-gahtani, S., Geoffrey S., Hubona, Jijie W.: *Information technology (IT) in Saudi Arabia: Culture and the acceptance and use of IT*", Information & Management, 2007, 44, 681-691.
3. Bayir, S., Keser, H.: *Information and communication technologies coordinator teachers' evaluations of computer working environments in terms of ergonomics*", Procedia Social and Behavioral Sciences, 2009, 1, 335-341.
4. Chang, K. M., Cheung, W.: *Determinants of the intention to use internet / www at work: a confirmatory study*, information and management, 2001. 39 (1), 1-14.
5. Davis, F. D.: *Perceived Usefulness, Perceive Ease of Use, and User Acceptance of Information Technology*", MIS Quarterly, 1989. 13, 319- 339.
6. Davis, F.D., Bagozzi, R.P., Warshaw, P.R.: *User Acceptance of Computer Technology: A Comparison of Two Theoretical Models*", Management Science, 1989, 35, 982-1003.
7. Dillon, A., Morris, M. G.: *User acceptance of information technology: theories and models*. Annual review of information science and technology, 1996. 31, 3-32.
8. Fishbein, M., Ajzen, I.: *Belief, attitude, intension and behavior: An introduction to theory and research*. Addison-Wesley. Reading / MA, 1975.
9. Halawi. L., McCarthy, R.: *Measuring students, Perception of Blachbord using the technology acceptance model: a PLS approach.* Issues in information systems 2007. 11, 95 - 102.
10. Lin, F., Fofanah, S.S., & Liang D.: Ass*essing citizen adoption of e-Government initiatives in Gambia: A validation of the technology*, 2011.
11. Rao, A.S.: *Technology Acceptance Model for Complex Technologies in a Period of Rapid Catching-Up*, 2007.
12. Rose, G., Straub, D.: *Predicating general IT use: Applying TAM to the Arabic world.* Journal of Global Information Management, 1998. 6 (3), 39-46.
13. Schneider, G.: *Business strategies.* Andy Pickering, Boston. Thomson Course Technology, 2006.
14. Taylor, W. J., Zhu, G. X., Dekkers, J., and Marshall, S.: "*Factors affecting home internet use in central Queensland*". Informing Science Journal. 2003a, 6, 573-588.
15. Thrane, K. *Adoption of ICT in Norwegian teenage homes"*. Available on: http://www.telenor.com/rd/pub/rep03/R_20_2003.pdf, 2003.
16. Venkatesh, V., Davis, Fred D., *A theoretical extension of the technology acceptance model: Four longitudinal field studies*, Management Science, 2000, 46, 2, 186-204.
17. Wang, Y. S., Lin, H. H. & Luarn, P., *Predicting consumer intention to use mobile service*, Information Systems Journal, 2006, 16, 2, 157-179.
18. Mumtaz, S.: *Factors affecting teachers' use of information and communications technology: a review of the literature*. Journal of information technology for teacher education, 2000. 9 (3), 319-342.
19. Legris, P., Ingham, J., Collerette, P. *Why do people use information technology? A critical review of the technology acceptance model.* Information & management, 2003. 40 (3), 191-204.
20. Turner, M., Kitchenham, B., Brereton, P., Charters, S., & Budgen, D.: *Does the technology acceptance model predict actual use? A systematic literature review*. Information and Software Technology, 2010. 52 (5), 463-479.