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Information Anorexia and Application of Information Technology: A Correlation Analysis

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Abstract

Information anorexia can be defined as lack of or reduced absorption of information, especially information which necessary for everyday life and work. This research tries to investigate the correlation between application of information technology and information anorexia in a higher education setting. This survey was conducted among higher education students in “Shahid Bahonar University of Kerman” (Iran). Data collected from 343 higher education students through cluster sampling. Findings revealed that there was a direct relationship between expected performance and the expected effort in information technology and information anorexia; and a direct relationship between information technology and information anorexia. Also, there was an inverse relationship between social influence and facilitators in information technology and information anorexia. The



results of this study showed that despite the abundance of information and the advancement of information technology in the present era, the unawareness of the proper utilization of these facilities had led to a massive baseless information- without scientific authority. This is an important factor in the creation and growth of information anorexia toward authoritative information.

Keywords: Information anorexia, Information technology, Social influence, Information diet, Information overload, Application of information technology.

1. Introduction

In the modern world, acceptance and utilization of information technology has not only accelerated the growth and development of countries (Kathuria and Oh, 2018), but has become a source of power in organizations and a key factor in the creation and maintenance of organizational learning (Tanis and Barker, 2017). Therefore, organizations lacking information technology are real losers in a competitive world.

The use of information technology in everyday affairs has expanded since the 1990s. People with shorter working hours provided more productivity, and gradually, offices moved to less use of paper (Martins, Oliveira and Popovič ,2014). Today, the relevance of the growth of science and access to information makes the importance of information technology more and more important, so that one of the important factors in assessing the progress of countries is access to information and how to use it (Huang et al., 2012). In today's world, the use of ICT -which collects, organizes, stores, and distributes information by voice, image and text using computer and telecommunication tools- is a source of power in countries and it is an important factor in creating and maintaining organizational learning (Tanis and Barker, 2017). Various studies have been conducted to investigate the application of information technology in different societies and from different perspectives. Akhavan et al. (2010) presented four dimensions of information technology application including expected performance, expected attempts, social influence, and facilitator that were used as the basis of this study.

Unlimited access to information has led to much prosperity of talents and hence human development which in turn has led to development of novel technologies and higher quality of social life. No community can achieve sustainable development without its people's mental maturity. Moreover, mental maturity may not be realized unless information is correctly produced, processed, stored and protected and purposefully used (Toprakci, 2006). Real-time availability and accessibility of information in routine life is a fact that cannot be denied or expected to lose its speed or disappear (Serrano-Puche, 2017). In other

words, the exponential growth of information has introduced significant changes to the information society. “In this environment, the volume of user needs information is expanding rapidly and the forms of user needs are becoming diversified” (Ma et al. 2017). However, increase in information and information resources is a major consequence of current age and how to access appropriate information with high quality is among issues that can be investigated in information behavior area of study. Today, information is not attached to a particular group or it’s not transformed through a particular channel anymore, rather it may be found through various channels and methods. Information provided by media and various tools such as television, internet and cell phones which is not obligatory to be used or owned; therefore, they lead to confusion instead of providing comfort and hence they lead to information anorexia.

In a study titled “information anorexia”, Brown (2015) has investigated this concept and explained it’s structure and causes. Moreover, factors leading to information anorexia and some opinions and measures about individual and professional dimensions to deal with it are introduced.

Increasing the unintentional use of information and its adverse effects are associated with the predisposition to information bulimia and information obesity. Some believe that overwhelming and futile consumption of information can lead to some kind of information bulimia. In order to prevent this information bulimia, we need to think about strategies for information nutrition. One of the ways in which access to and use of information, especially Internet information, is common, is to follow the principles of the "information regime" (Fernández-Luque and Bau, 2015). Just as eating too much of low-quality foods can make a person obese and out of the ordinary, in the information world, the user will be overwhelmed by some form of bulimia or information obesity that will have a huge negative impact (Brown, 2015). The abundance of information and how to access appropriate, adequate and quality information are among the issues that can be explored in the field of information behavior. On the other hand, the lack of effort to obtain healthy and relevant information in today's societies illustrates the dominance of information anorexia and its associated scales (Syed-Abdul et al., 2013).

Brown (2015) conceptualizes information anorexia as constant and intentional tendency to avoid information and limit information absorption at the expense of destroying information validity. He believes that main manifestation of information anorexia is reduced absorption of information. In other words, information anorexia can be defined as lack of or reduced absorption of information, especially information which are necessary for life and work, which its cause has its main roots in information disorder. The causes of information absorption include: persistent lack of time, fatigue or heavy load of

information, sense of concern or in some cases psychological trauma, mental damage, lack of energy required for absorption of information which eventually can be a reaction to heavy load of information (Brown, 2015). However, one of the main reasons for information overload can be found in flaring growth of Information and Communications Technologies (ICT) which in turn has led to information explosion.

It is in such an environment that the issue of correct consumption of information and in some senses, information diet arises. Serrano-Puche (2017) believes that one of the ways to create such a culture is to use the technology itself. In an interesting metaphor, Serrano-Puche (2017) analogizes the space for using information as human nourishment ambience and introduces concepts such as ecosystem, healthy information habits, information disorder and et.; he subsequently suggests an appropriate diet which he believes will lead to more effective consumption of information.

On a daily basis, we deal with a wide range of information which plays a crucial role in our work. A way to overcome this condition which we are facing constantly is merely to block or reduce input stream. This type of blockage can even occur for sources which provide qualitative or required information.

Symptoms of information anorexia include: 1) Serious limitation of information absorption, 2) Deep concern about information, 3) Avoiding information absorption, 4) Justifying lack of information absorption, 5) Consuming only particular safe sources, and 6) Providing a complete set of information for others but avoiding information absorption (MayoClinic, 2014). Given the above factors and the fact that students, especially in higher education, now face expectations to perform more research, use more tools and technologies (Pinto et al. 2018), and also considering serious influence of information technology on one hand and information anorexia on the other hand, surveying this concept can present new insights on dominant atmosphere in information community.

Despite the high importance of proper and correct application of information and also tendency to use information, today we are witnessing student community disinclination toward scientific and valid information and sound application of available information. Definitely, interested student who is more inclined to use information will learn more and hence serve the community better in the future. Information anorexia in students may leads to several information disorders (Rahimi and Bigdeli, 2010). Therefore, investigating the relationship between information technology application and information anorexia in students is necessary with respect to above problems. Accordingly, the present study aims to investigate the relationship between application of information technology and information anorexia in higher education students in Shahid Bahonar University of Kerman (SBUK). In order to do this, the dimensions of information technology application

introduced by Akhavan et al. (2010) have been considered. According to the above, this research investigates the following hypotheses:

1. There is relationship between expected performance in information technology and information anorexia in higher education students in SBUK.
2. There is a relationship between expected attempts in information technology and information anorexia in higher education students in SBUK.
3. There is a relationship between social influence in information technology and information anorexia in higher education students in SBUK.
4. There is a relationship between information technology facilitator and information anorexia in higher education students in SBUK.

2. Research Methodology

The method of this study is survey. The research population consists of 3514 higher education students from Shahid Bahonar University of Kerman (SBUK). Using cluster sampling method, 343 students were selected as sample size. Questionnaires used in this research include:

1. Information anorexia questionnaire. The following steps are fulfilled to prepare this tool:

A tool with 20 items in 5 Likert scale from “totally disagree” to “totally agree” was designed through investigation and analysis of literature. After a revision, this tool was checked in terms of items’ consistency and formal validity by seven experts in Information Science. In this tool, eight questions measure information anorexia and twelve questions measure information bulimia. As scoring method, participants’ appetite for information was obtained by deducting average score of information bulimia from average score of information anorexia. Obtained validity for this questionnaire is 0.82 for information bulimia and 0.80 for information anorexia. Cronbach’s alpha test is used to determine reliability which is measured 0.85 for information bulimia and 0.86 for information anorexia.

2. Information technology questionnaire by Akhavan et al. (2010) consists of 16 questions in four dimensions of information technology including expected performance (4 questions), expected attempts (4 questions), social influence (4 questions) and facilitator (4 questions). Cronbach's alpha coefficient was used to determine reliability, which was calculated as 87%, 85%, 82%, and 86% for four dimensions of technology application, respectively.

3. Results

Distribution of studied items in variables of information technology (expected performance, expected attempt, social influence and facilitator), and information anorexia is presented in Table 1. The results of this table indicated that skewness and kurtosis for variables were between +2 and -2 which show the favorability of variables for performing parametric tests.

Table 1. Distribution of the subjects' scores in the research components

Variable	Dimensions	Mean	Standard deviation	The least	The most	Skewness	Kurtosis
Information technology	Expected performance	4.31	0.60	2.25	5	-1.15	-1.9
	Expected attempt	3.5	0.59	2.25	4.75	-0.69	-0.27
	Social influence	3.86	0.78	1.5	5	-1.11	1.64
	Facilitator	3.34	0.70	2	5	-0.19	-0.81
	Total	3.98	0.60	2	5	-0.56	1
Information anorexia	-----	2.48	0.31	1.95	3.05	-0.71	1.15

Research hypotheses

Normality of research variables are investigated before research hypotheses. Single-sample Kolmogorov–Smirnov test was used to determine the normality of research variables. The result of this test is presented in Table 2. As it can be seen in Table 3, significance level for all research variables is higher than 0.05. Therefore, the condition of normality is true and parametric tests can be used to analyze data.

Table 2. Kolmogorov–Smirnov test results to investigate normality proposition

Variable	Dimensions	Sample size	Test statistic	Significance	result
Information technology	Expected performance	343	0.68	0.27	normal

	Expected attempt	343	0.85	0.42	normal
	Social influence	343	0.94	0.38	Normal
	Facilitator	343	0.88	0.47	Normal
	Total	343	0.90	0.33	Normal
Variable	Dimensions	Sample size	Test statistic	Significance	result
Information anorexia	Total	343	0.89	0.56	Normal

Table 3 presents the results of correlation matrix analysis between research variables. Correlation coefficients show that variables in this research have appropriate correlation; in other word, information technology components have significant relationship with information anorexia variables, and however, this correlation is direct in some cases and negative in others. It means that as students' scores increases in information technology components, information anorexia is decreased; and conversely as students' scores decreases in information technology components, the scores about students' information anorexia increases.

Table 3. Correlation matrix between research variables

Variable	Dimensions	Expected performance	Expected attempt	Social influence	Facilitator	Information technology	Information anorexia
Information technology	Expected performance	1					
	Expected attempt	0.43**	1				
	Social influence	0.60**	0.36**	1			
	Facilitator	0.20**	0.08	0.37**	1		
	Total	0.70**	0.55**	0.49**	0.10	1	
Information anorexia	----	0.63**	-0.07	-0.39**	-0.61**	0.51**	1

Significance level *0.01 **0.05

Research hypotheses are investigated in the following.



1. There is a relationship between expected performance in information technology and information anorexia in higher education students in SBUK.

Pearson Correlation are used to investigate the relationship between expected performance in information technology and information anorexia in higher education students among SBUK (normal and quantitative data). The results of this test are presented in Table 4.

Table 4. The results of correlation coefficients between expected performance in information technology and information anorexia

Variable	Expected performance in information technology			Sig.	Type of relationship
	Correlation				
Information anorexia	Pearson			Yes	Direct
	correlation	P	Number		
	0.63**	0.001	343		

*significant at 0.05

The results of Pearson test indicate that there is a significant relationship between expected performance in information technology and information anorexia in higher education students in SBUK ($p < 0.05$), and Pearson correlation is 0.63 respectively. this relationship is direct, meaning that as the score of expected performance in information technology increases, the score of information anorexia in higher education students of SBUK increases as well; therefore, null hypothesis is denied and the other hypothesis is expected that There is a relationship between expected performance in information technology and information anorexia in higher education students in SBUK.

2. There is a relationship between expected attempts in information technology and information anorexia in higher education students in SBUK.

Pearson correlation coefficient is used to investigate the relationship between expected attempts in information technology and information anorexia in higher education students in SBUK (quantitative and normal data). The results are presented in table 5.

Table 5. Correlation coefficients between expected attempts in information technology and information anorexia

Variable	Expected attempt in information technology			Sig.	Type of relationship
	Correlation				
Information anorexia	Pearson			No	-
	correlation	P	Number		
	-0.07	0.142	343		

**significant at 0.05

The results of Pearson test indicate that there is no relationship between expected attempts in information technology and information anorexia ($p > 0.05$) and Pearson correlation is -0.07, respectively; therefore, null hypothesis is approved and the hypothesis is denied that there is a relationship between expected attempts in information technology and information anorexia in higher education students in SBUK. It can be said that null hypothesis is accepted with 95% confidence, and there is no relationship between expected attempts in information technology and information anorexia in higher education students in SBUK.

3. There is a relationship between social influence in information technology and information anorexia in higher education students in SBUK.

Pearson correlation coefficient is used to investigate the relationship between social influence in information technology and information anorexia in higher education students in SBUK (quantitative and normal data). The results are presented in table 6.

Table 6. Correlation coefficient between social influence in information technology and information anorexia

Variable	Social influence in information technology			Sig.	Type of relationship
	Correlation				
Information anorexia	Pearson			Yes	Reverse
	correlation	P	Number		
	-0.39**	0.001	343		

*Significant at 0.05

The results of Pearson correlation test indicate that there is a significant negative relationship between social influence in information technology and information anorexia in higher education students in SBUK ($p < 0.05$), and Pearson correlation is -0.39 , respectively. It means that as the score of social influence in information technology increases, the score of information anorexia in higher education students in SBUK decreases; on the other hand, as higher education student's score of social influence decreases, their score of information anorexia increases.

4. There is a relationship between information technology facilitators and information anorexia in higher education students in SBUK.

Pearson correlation coefficient is used to investigate the relationship between information technology facilitator and information anorexia in higher education students in SBUK (quantitative and normal data). The results are presented in table 7.

Table 7. Correlation coefficient between facilitators in information technology and information anorexia

Variable	Social influence in information technology			Sig.	Type of relationship
	Correlation				
Information anorexia	Pearson			Yes	Reverse
	correlation	P	Number		
	-0.61^{**}	0.001	343		

*Significant at 0.05

The results of Pearson correlation test indicate that there is a significant negative relationship information technology facilitator and information anorexia in higher education students in SBUK ($p < 0.05$), and Pearson correlation is -0.61 , respectively. This relationship is converse. It means that as the score of facilitators in information technology increases, the score of information anorexia in higher education students in SBUK decreases; on the other hand, as the score of students' facilitators' decreases, their score of information anorexia increases.

4. Discussion and Conclusion

The main aim of the present study was to investigate the relationship between information technology and information anorexia among higher education students in SBUK, Iran. Generally, the results indicated that the weakness in information technology was due to the lack of proper utilization among students. Lack of awareness about how to use these technologies has led to encounter with many unfounded information without scientific sources which in hence causes improper application of information and their opposite effects which is a significant factor in development of information anorexia. When students encounter information overload which they do not discriminate valid information from unfounded information, and do not search for their scientific sources, they will suffer from knowledge delusion and they will think that all they read in cyberspace is valid; as a result, they severely react to any opposite opinion. Since a significant part of information is received without scientific foundation, mind will face with impasse in scientific discussions which require logical reasoning.

In such situation, scientific encounter will become dogmatic solidity in which opinion exchange replaces with controversy leading to lack of dynamism and growth since public opinion is easily manipulated by media propaganda and in fact make the ground for disseminating seemingly scientific but unfounded content and cause information anorexia. The result of present study is consistent with the works carried out by Farajollahi, Moeini and Abbasi (2013), Valdes (2005) and Toprakci (2006) who considered this factor to be effective in low adoption of information technology. These researchers found that lack of software and poor access to internet prevent from proper application of technology in learning process; therefore, it can be said that universities must train the students with optimal application of information technology and improve their information literacy and also knowledge management in universities must be specially taken in account. Therefore, as Aharony and Gazit (2018) state, universities should stress the importance of information literacy as a set of essential skills for students in higher education.

Moreover, findings indicate that social influence and its improvement significantly decrease information anorexia, since in prosperous countries it is shown that access to internet and social network must be within defined framework, and government rules must be equal for security, health, environment and business opportunities which are all among social influence factors. Therefore, social influence encourages people and organizations to use information technology optimally so that they can secure the information required by experts, organizations, industries and finally people in various sectors of society within minimum time which can minimize information anorexia.

Factors known as facilitator play a significant role in reducing information anorexia in students. Findings indicate that the supporting services provided by universities and increasing information literacy improve the application of novel technologies; in other words, they build culture and guide the students to proper application of technology. This way, students will not get confused in confrontation with massive information and they can validate the information through cross checking with scientific resources. The results were consistent with works carried out by Farajollahi, Moeini, and Abbasi (2013), and Toprakci (2006). These researchers found that lack of skills and specialization, and lack of awareness about how to use information technology prevents from proper application of technology in learning process.

Generally, the results are consistent with works carried out by Rahimi and Bigdeli (2010) and Brown (2015). They indicated that one of the main drawbacks of advanced technology is the prevalence of rich but unfounded literacy, because in such atmosphere, people are repeatedly faced with massive amount of data and they lose the opportunity to think and analyze about evolution of phenomena. In other words, most users are mere receivers in this situation; they will receive many different items without any analysis and assessment. This information gradually is internalized in audiences' minds and they think that they enjoy significant literacy. In fact, this type of literacy is memorized items without well-founded, reasoned scientific background, on the other hand, in such information turbulence; there is little effort for understanding.

Nobody will be hungry due to lack of knowledge in twenty-first century, unless librarians and experts cannot produce a balance between technology and human's reaction (Bundy, 2000). Accordingly, it is suggested that universities increase students' information literacy and provide required instruction for proper application of information technology; they should also put special emphasis on knowledge management in universities and higher education institutions.

It seems that students' information technology competence skills should be seen as critical factors in the integration of information technology in educational sector (Omotunde and Omotunde, 2019). Furthermore, it is recommended that a set of modified laws and regulations is codified for application of information technologies and production of scientific content in cyberspace. Moreover, it seems that using experiences gained by developed countries and information exchange with them can be a good solution in this respect.

Further research in this area (information anorexia) will open new intellectual and scientific horizons (Tajedini, Aazami and Sadatmoosavi, 2018). Consistent with the results of present study, it seems that conducting research regarding the reasons of information

anorexia among students in various universities, investigating the relationship between information anorexia and knowledge sharing, the incentive factors effective on information anorexia in various universities and investigating the role played by libraries in reducing information anorexia can lead to valuable and applied results.

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