International Journal of Information Science and Management
Vol. 22, No. 4, 2024, 107-121
DOI: https://doi.org/10.22034/ijism.2024.1983012.1007 / DOR: https://dorl.net/dor/20.1001.1.20088302.2024.22.4.7.0

Original Research

An Analysis of the Criteria of the Faculty Members of Shahid Bahonar Kerman University for Evaluating Information as an Asset

Adel Soleimani Nezhad
Associate Prof., Department of Knowledge and Information Science, Shahid Bahonar University of Kerman, Kerman, Iran.
Corresponding Author: a.solimani@uk.ac.ir
ORCID iD: https://orcid.org/0000-0002-9757-6836

Mozhdeh Salajeghe
Associate Prof., Department of Knowledge and Information Science, Shahid Bahonar University of Kerman, Kerman, Iran.
msala@uk.ac.ir
ORCID iD: https://orcid.org/0000-0002-6540-3754

Zynab Farmanesh
M.A. of Knowledge and Information Science, Department of Knowledge and Information Science, Shahid Bahonar University of Kerman, Kerman, Iran.
z.far93@gmail.com
ORCID iD: https://orcid.org/0000-0003-1414-8260

Received: 24 December 2022
Accepted: 13 January 2024

Abstract

This research analyzes the criteria of academic staff members of Shahid Bahonar University for valuing information as an asset. The research method is a descriptive survey, and the statistical population of the research is the faculty members of the Shahid Bahonar University of Kerman. The data collection tool was a researcher-made questionnaire, and the validity of the questionnaire was confirmed by experienced professors and experts from Cronbach's alpha, which was calculated as 0.764. Data was analyzed using SPSS version 23 software descriptive statistics and one-sample t-tests, and Friedman was used. The findings showed that in the Shahid Bahonar University of Kerman, the criteria of the number of scientific productions leading to the development of knowledge, the number of scientific productions leading to the development of the organization's goals, and the number of scientific productions leading to effectiveness using the value of productivity, the criterion of paying the subscription fee to use Databases are valued with the information use value index. No measures of information are valued with the exchange value index. Based on the Friedman test, the criteria of "value of paying a fee to meet information, educational and research needs," "credit value of paying a fee to meet information, educational and research needs," and "value of paying a fee in influential databases to meet information needs, Educational and Research" are in the first to third categories respectively. What is obtained from the results of this research is that in three important and influential areas of productivity, use of information, and exchange value of information, faculty members pay the most attention to the issues related to the production of information for the development of knowledge and organization, as well as the cost of information consumption and the value of information. They are aimed at payment.

Keywords: Information Valuation, Efficiency-Driven Value, Information Usage Value, Information Exchange Value, Faculty Members, Shahid Bahonar University of Kerman.

Introduction

Today, information is considered one of the national reserves of any country, and its related activities are considered to be the basis of any planning, policy, management, and basic condition of economic, social, and cultural growth and development. Ensuring access to relevant and appropriate information for information sharers is considered a critical factor in producing information and knowledge in various societies for social growth and development (BasirianJahromi, 2018). Information is an intangible asset with characteristics related to having service potential and the ability to provide economic benefits to its owner. The Hawley Committee (1994) identified some information or assets in organizations. They were market and customer information, product information, information and specialized knowledge for operations in a specific field, business process information, management information, human resources information, supplier information, and responsive information (Englesman, 2007). Information has no intrinsic value. The value of information depends on the conditions and its use by specific users in specific situations. Its value cannot be determined in advance, and it is also difficult to predict how the value will change over time (Rowley, 2009). Valuing information is a concept proposed by Philip Nelson. Valuing practical information is complicated because information is a product of experience; to estimate its value, a person must experience this product (Lester and Koehler, 2010). According to Ahitov and Newman, the information does not have a universal and absolute value and depends on who uses it, when, and in what situation. In this way, information has a relative value based on comparing the results obtained from different sets of information (Alidousti, 2007).

Information researchers consider the criteria for evaluating the quality of valuable information to include: scope, documentation, realism, accuracy, up-to-dateness, completeness, reliability of the source, availability, quality of usefulness, and usability (Davis and Shaw, 2014). Repo (1986) believes that the criteria for determining the value of information are derived from the process of using and searching for it. Also, it states that there are criteria for using information, such as credibility, quality, ease of use, and the degree of appropriateness between the information provided and the environment in which it is stored. It is sought (Norton, 2005).

The value of information is divided into two main categories, including 1-philosophical or intrinsic value and 2-practical or usable value, in which practical value is divided into use value and exchange value. The purpose of value in use is the value of the actual impact of information on results and work. The subject of the value of information use is individual opinions of the value of information during use, which is for information products and services from the point of view of use. The value of information exchange is the comparison of the value of information channels, services, and products. In other words, exchange value is an economic concept with an entirely different role in the value of information or simply information products. The value of information exchange refers to information production and exchange value in marketing. (Repo, 1986).

Information, as an element of business, is a commodity, but in general, there are no accepted economic and accounting theories about information. Economists tend to treat information in the same way as physical assets. However, no academic discipline has provided us with an accepted model for such treatment, although there are similarities in this respect. There are many. Collecting and providing information requires large investments and human labor.

Besides the cost of offering, the cost of information for management should also be considered.

As with physical assets, information is subject to quality control inspection before it can be distributed. Like physical inventory, information is subject to just-in-time requirements. Putting information on its own may lose its value.

In this research, the meaning of valuing information is information that, from their results, new formats of research works, products, technology, and services can emerge under the name of research and development. This research is based on a new approach from Repo's article (1986) under the title of dual approaches of information value: an evaluation of the use value and exchange value of information. Academic staff members are one of the most important components of the scientific system of the countries and one of the most essential elements of any country's scientific development and progress. The thoughts of the faculty members, known as experts, have value. Since they produce and provide information, measuring the value of information according to the pricing system is complicated. Valuing information is not a straightforward and one-step process. Information goes through many steps before becoming valuable to anyone. Before anyone realizes it is information, it exists in a hidden state, waiting for the proper perspective. Then, raw and unorganized data can be helpful for some purposes. We collect it and organize it.

We analyze and get results from it. Both our information and our results can be discussed. Only when the information is understood can we value and respond to it—a definition of actual value. Information can only be raised in this final stage. Information in itself has no value; the value of information is derived from its understanding and subsequent and future use. Before this final stage, we cannot do more than what is expected from estimating the value of information. society values only the product and result of information. Considering the importance of the scientific productions of faculty members in advancing academic goals and creating more productivity, although they have the primary indicators of information valuing, here they mean research valuing that becomes a product in the open format of new productions or new technologies. Although various efforts are made to measure information, to decide what kind of value information has, and to determine how valuable it is, it is necessary to examine the criteria for valuing information from the perspective of faculty members. The science of Mode University has not been seriously assessed and evaluated; this research tries to measure the scientific information production of faculty members of the Shahid Bahonar University of Kerman in specific fields by applying a particular time frame based on the value of use and exchange value of information.

Literature Review

By reviewing the information sources, researching the conducted research, and searching reliable Persian and Latin databases regarding the issue of information valuation, it was found that the research conducted in Iran in this regard is very few and insignificant compared to those abroad. Here are the most important backgrounds. The available link is given.

The research of Chen et al. (2021) drew a model of information valuation based on quality from the two dimensions of measuring quantity and accuracy of information. With case studies based on the IEEE 30-bus system, the effectiveness of the proposed paradigm and method was confirmed. Another research study with a pluralistic approach to valuing information was conducted by Dakova, Antunes, and Chiu (2018) to understand the different views on the value of information. A model for the information valuation framework was proposed from a

pluralistic perspective, and its application brings challenges. Batini, Castelli, Viscusi, Cappiello, and Francalanci (2018) are looking for a model to evaluate the value of information based on information capacity, usefulness, and management costs. Still, in the end, they do not reach a consensus on what factors determine the value of information. Macdonald, Wilson, Martinez, and Toossi (2011) proposed and investigated a conceptual framework that evaluates service quality characteristics, process quality, and use value by customers as customer objectives of evolution to evaluate use value. Use value is defined as the result, goal, or customer goal achieved through the service. Moody and Walsh (1999) also concluded that there currently needs to be a generally accepted method for measuring the value of information. Because the nature of information as an economic commodity is not well understood, significant obstacles exist in measuring information. Alidousti (2007) considers it appropriate to present the model of the information space to determine the value of scarcity and utility as the main elements of value to determine the value in neoclassical economics. They have been done so far regarding the presentation of the model and conceptual framework for the valuation of information.

Regarding the evaluation of data value, Li, Ni, Gao, and Cai (2019) consider the review of data value to be directly related to the management of data assets, and this is affected by factors such as complexity, diversity, and heterogeneity of data, which cause the development of new forms and new service industries in the data industry. Adler, Stringer, and Yep's (2016) five methods (cost-plus pricing, price evaluation criteria, sales price estimation based on buyers' budget, access rights auction, and adaptive valuation) are used to value and price information assets. Glazer (1993) presented a method to measure the value of information in the organization. The critical feature of this information evaluation method is the possibility of analysis on two levels based on the actual current value of information and the possible value of information. He says more successful organizations are less focused on technology and rely more on information. These studies have been done.

In other research, Gunnarsson and Stinason (2004) state that the value of information is not a function of the information itself. Still, it is one of the measurable characteristics of information, including relevance, up-to-dateness, accessibility, comparability, objectivity, quality, validity, accuracy, and correctness. Oppenheim, Stenson, and Wilson (2001) examine the information assets identified by the Hawley Committee in 1994. These assets were: market and customer information, product information, knowledge and expert information for operating in a specific area, business process information, and management information. Human resource information, supplier information, and responsive information. Repo (1986) examines information from a philosophical and practical perspective; that the practical value includes the evaluation of the value of use and the value of information exchange and also states that it is impossible to measure the value of the total information and instead the value of use and exchange of information can be suggested. The value of use is in terms of the use of information by users, and the value of information exchange is the comparison of the value of the information channel, services, and products, in general, there is no method to count the total value of information. When an organization measures the value of information, it is about information needs and the content of information value for users. The value of using information is often a helpful method now, and the efficiency of information products services, and systems is considered an exchange value in information marketing. In determining the value of intangible assets in companies listed on the Tehran Stock Exchange, the importance of

specific corporate characteristics, corporate governance, ownership, and capital structure were identified (Mashayekhi & Beirami, 1993).

What was obtained from the results of the reviewed backgrounds is that the value of information cannot be easily measured. The information does not have intrinsic value, and its value depends on its context and user. Each research study looks for methods and techniques based on new technologies and ideas to create a provable method for valuing information that has not achieved this goal so far. Each research study examined a part of this valuation based on its goals and reached specific results. Based on theoretical foundations in determining the value of information as an asset, the present research seeks to identify the criteria of academic staff members of the Shahid Bahonar University of Kerman in valuing information to achieve product production and productivity from the results.

Materials and Methods

The current research is applied and uses a descriptive survey method. The statistical population is active faculty members at the Shahid Bahonar University of Kerman. The reasons for choosing this statistical population are the appropriate number, high volume and variety of scientific productions, and members' availability. According to the information obtained from the university website, there are 650 people. Based on Morgan's table, 242 were selected by random and cluster sampling among faculty members of agriculture, architecture and art, basic sciences, physics, technical and engineering, mathematics and computer, economics and management, and literature and humanities. Two hundred nineteen people answered the questions. Data were collected using a researcher-made questionnaire with 25 questions based on the Likert scale using the Repo method (1986) with dual approaches of information value: evaluating the use value and exchange value of information with Cronbach's alpha reliability, which was calculated as 0.764. To check the reliability in a preliminary study on 30 people from the statistical sample, the reliability of the questionnaire (Table 1) was calculated using Cronbach's alpha, and considering that Cronbach's alpha values were higher than (0.7), the reliability of all components was confirmed. The amount of these statistics shows that the questionnaires have high reliability.

Table 1
Reliability of the Research Components Questionnaire

Component	Cronbach's Alpha	Number Of Questions Per Dimension
Productivity value	0.823	5
Value of use	0.847	13
Exchange value	0.937	7
Total	0.764	**25**

SPSS version 23 software was used to analyze the data. Descriptive statistics and inferential statistics (one-sample t-test and Friedman test) with a significance level of 0.05 have been used to investigate the research questions.

This research seeks to answer the following questions:

- Do the Shahid Bahonar University of Kerman faculty members value information using

productivity-oriented value?

- Do the faculty members of Shahid Bahnerkerman University value information with the criterion of using information?

- Do the faculty members of Shahid Bahnerkerman University value the information with the exchange value criteria?

Results

According to the data analysis, the demographic information of the statistical population (Table 2) has been obtained.

Table 2
Demographic Information of the Statistical Population

	Gender		Educational records		Academic Rank			
	Male	Female	MA	PHD	Lecturer	Assistant Professor	Associate Professor	Professor
Number	169	50	18	201	16	113	68	22
Percent	77.2	22.8	8.3	91.7	7.3	51.5	31.1	10.1

In this part of the research, using descriptive statistics and Friedman and one-sample T-tests, information valuation criteria of faculty members of the Shahid Bahonar University of Kerman are analyzed. As shown in Table 3, the variables of productivity value, use value, and exchange value have been measured at a lower average at Shahid Bahonar University of Kerman.

Table 3
Descriptive Statistics of Research Variables

Variable	Number	Average	Standard Deviation	Min	Max
Productivity value	186	2.93	0.69	1.2	5.00
Use value	186	2.34	0.42	1.23	3.54
Exchange value	186	1.71	0.44	1.00	3.00

Do the Shahid Bahonar University of Kerman faculty members value information use productivity-oriented value?

The results of the t-test in Table 4 show that, among the 219 faculty members of Shahid Bahonar University of Kerman, the criteria of the number of scientific productions leading to the development of knowledge (t=57.2), the number of scientific productions leading to the development of the organization's goals (t= 90.2) and the amount of the scientific output leading to effectiveness (t=7.1), the calculated t values are more significant than the critical t value. Also, the substantial value obtained is less than the minimum acceptable value (P<0.05). As a result, these three components have been evaluated using the productivity value of the axes. While the criteria of the amount of scientific production leading to a new product (t = -25.7) and the amount of the scientific output leading to the reproduction of information (t = -3.65), the calculated t values are lower than the critical t value. Also, the significant value obtained exceeds the minimum acceptable value (P<0.05). They have not been able to be valued using

productivity-oriented value.

Table 4
The Amount of Valuation of The Introduced Criteria Using the Productivity-Oriented Value Criterion from the Point of View of Experts

Criterion	Theoretical average = 3.00			
	Average	Standard deviation	T statistic	P-value
The amount of scientific production leading to a new product	2.48	0.97	-7.25	1.00
The amount of scientific output leading to the development of knowledge	3.16	0.83	2.57	0.01
The amount of scientific production leading to the development of the organization's goals	3.18	0.84	2.90	0.00
The amount of scientific production leads to the effectiveness	3.06	0.75	1.07	0.14
The amount of scientific output leading to the reproduction of information	2.78	0.80	-365	1.00

Friedman's test was used to rank productivity value criteria. According to the results of Table 5, in Shahid Bahonar University of Kerman, the criterion of "the amount of scientific production leading to the development of the organization's goals" has the highest rank among the studied criteria, and the criteria of "the amount of scientific production leading to the development of knowledge" and "the amount of production Science leading to effectiveness" are in the second and third ranks, respectively (p-value <0.05).

Table 5
Ranking of Introduced Criteria Using Productivity-Based Value Criteria

Criterion	Average rank	Rank	Chi-square statistic
The amount of scientific production leading to a new product	2.12	5	**-7.25**
The amount of scientific output leading to the development of knowledge	3.50	2	**201.978****
The amount of scientific production leading to the development of the organization's goals	3.56	1	
The amount of scientific production leads to the effectiveness	3.22	3	
The amount of scientific production leading to the reproduction of information	2.60	4	

**Significant at the 0.01 level, *Significant at the 0.05 level

Do the faculty members of Shahid Bahonar University value information with the criterion of using information?

The one-sample t-test was used to examine the above question. According to the results of Table 6, in Shahid Bahonar University of Kerman, only the criterion of paying the subscription fee for using databases (t = 52.4), the calculated t values are more significant than the critical t value. Also, the substantial value obtained is less than the minimum acceptable value (P<0.05). As a result, this component has been valued using the value of using information. In other introduced criteria, because the calculated t values are lower than the critical t value. Also, the significant value obtained exceeds the minimum acceptable value (P<0.05). As a result, these components have not been valued using the value of using information.

Table 6

The amount of Valuation of the Introduced Criteria Using the Criteria of the Value of Using Information from the Point of View of Experts

Criterion	Theoretical average = 3.00			
	Average	Standard deviation	T statistic	P-value
The value of resources and information available in academic or research libraries	19.2	75.0	-74.14	1.00
The value of resources and information available in the library of other organizations	18.2	87.0	-73.12	1.00
The value of information and information resources of personal websites of colleagues	77.2	62.0	-09.5	1.00
The value of information and information sources of search engines	88.1	82.0	-68.18	1.00
Paying the subscription fee to use the databases	37.3	10.1	52.4	1.00
The value of the information resources shared by the organization	13.2	58.0	-45.20	1.00
The relevance of information resources available in university libraries	25.2	80.0	-58.12	1.00
Easy access to information sources in databases and information centers	44.2	98.0	-78.7	1.00
Accuracy of information in information sources available in university libraries	14.2	62.0	-69.18	1.00
Confidence in information in information sources in databases	03.2	49.0	-95.26	1.00
Up-to-date information resources needed in libraries and information centers	31.2	90.0	-35.10	1.00
Quick access to information sources in databases and information centers	38.2	88.0	-65.9	1.00
Comprehensive and complete access to information sources related to research works	39.2	86.0	-52.9	1.00
Accuracy of information in information sources available in university libraries	14.2	62.0	-69.18	1.00
Confidence in information in information sources in databases	03.2	49.0	-95.26	1.00

Criterion	Theoretical average = 3.00			
	Average	Standard deviation	T statistic	P-value
Up-to-date information resources needed in libraries and information centers	31.2	90.0	-35.10	1.00
Quick access to information sources in databases and information centers	38.2	88.0	-65.9	1.00
Comprehensive and complete access to information sources related to research works	39.2	86.0	-52.9	1.00

Friedman's test was used to rank the value criteria of using information. According to the results of Table 7, in Shahid Bahonar University of Kerman, the criterion of "paying the subscription fee to use databases" has the highest rank among the criteria studied. The criteria of "value of information and information resources of colleagues' websites" and " Easy access to information sources in databases and information centers" are in the second and third categories, respectively.

Table 7
Ranking of Introduced Criteria Using Information Valuation Criteria

Criterion	Average rank	Rank	Chi-square statistic
The value of resources and information available in academic or research libraries	35.6	9	**492.444****
The value of resources and information available in the library of other organizations	31	10	
The value of information and information resources of personal websites of colleagues	49.9	2	
The value of information and information sources of search engines	21.5	13	
Paying the subscription fee to use the databases	51.10	1	
The value of the information resources shared by the organization	36.6	8	
The relevance of information resources available in university libraries	64.6	7	
Easy access to information sources in databases and information centers	20.7	3	
Accuracy of information in information sources available in university libraries	16.6	11	
Confidence in information in information sources in databases	81.5	12	
Up-to-date information resources needed in libraries and information centers	78.6	6	
Quick access to information sources in databases and information centers	05.7	5	
Comprehensive and complete access to information sources related to research works	11.7	4	

**Significant at the 0.01 level, *Significant at the 0.05 level

Do the faculty members of Shahid Bahnerkerman University value information with the criteria of exchange value?

The one-sample t-test was used to examine the above question. According to the results (Table 8), the calculated t values are lower than the critical t value. Also, the significant value obtained is more than the minimum acceptable value (P<0.05). All of the criteria introduced in Shahid Bahonar University have yet to be valued using the exchange value.

Table 8

Valuation of the Criteria Introduced Using the Exchange Value Criterion from the Experts' Point of View

Criterion	Theoretical average = 3.00			
	Average	Standard deviation	T statistic	P-value
The value of paying to meet informational, educational, and research needs	02.2	77.0	-33.17	00.1
Credit value in paying for informational, educational, and research needs	83.1	54.0	-50.29	00.1
The value of paying for influential databases to meet informational, educational, and research needs	74.1	46.0	-08.37	00.1
The value of paying for the updating of information in databases	55.1	54.0	-52.36	00.1
The value of completeness of information in paying the cost to meet informational, educational, and research needs	61.1	55.0	-41.34	00.1
The value of the ease of access in paying the fee to meet informational, educational, and research needs	60.1	55.0	-55.34	00.1
The value of access speed in paying the fee to meet information, educational, and research needs	60.1	56.0	-96.33	00.1

Friedman's test was used to rank the exchange value criteria. According to the results of Table 9, in Shahid Bahonar University of Kerman, the criterion of "value of paying a fee to meet information, educational and research needs" has the highest rank among the studied criteria, and the criteria of "credit value of paying a fee to meet information needs, Educational and research" and "The value of paying for effective databases to meet information, educational and research needs" are in the second and third categories, respectively.

Table 9
Ranking of the Introduced Criteria Using the Exchange Value Criterion

Criterion	Average rank	Rank	Chi-square statistic
The value of paying to meet informational, educational, and research needs	85.4	1	**047.183****
Credit value in paying for informational, educational, and research needs	41.4	2	
The value of paying for influential databases to meet informational, educational, and research needs	20.4	3	
The value of paying for the updating of information in databases	55.3	7	
The value of completeness of information in paying the cost to meet informational, educational, and research needs	67.3	4	
The value of the ease of access in paying the fee to meet informational, educational, and research needs	66.3	5	
The value of access speed in paying the fee to meet information, educational, and research needs	65.3	6	

**Significant at the 0.01 level, *Significant at the 0.05 level

Discussion

According to the results of Table 4, in Shahid Bahonar University of Kerman, the criteria of the number of scientific productions leading to the development of knowledge, the number of scientific productions leading to the development of the organization's goals, and the number of scientific productions leading to effectiveness have been valued using the value of productivity. The criteria of the amount of scientific output leading to a new product and the amount of scientific production leading to the reproduction of information using the value of productivity have not been able to be valued. It is possible that creating suitable fields for acquiring new knowledge and producing new information is one of the main goals of the university. Research is one of the primary activities of the university and has a more extended history than educational activities. With this description, research is one of the crucial goals of the university that needs special attention. In this, the role of university professors is undeniable, because any university's scientific credibility is measured by its faculty members' ability to carry out scientific and research activities. The task of educational centers, including universities, is to improve the scientific level in the country. Examining how to fulfill this task is one of the main concerns of the country's research community. Also, the criterion of the number of scientific productions leading to the development of the organization's goals has the highest rank, the requirements of the number of scientific productions leading to the development of knowledge and the number of scientific productions leading to effectiveness in the second and third ranks, respectively, among the studied criteria. The results of this research are consistent with those of Batini et al. (2018) and Oppenheim et al. (2001). Adler et al. (2016) state that the valuation and price of information assets are usually very unique and do not have

appropriate price criteria. The use of information is the criterion for valuing information. Mashayikhi and Birami (2013) use artificial neural networks to identify influential factors in determining the value of intangible assets. Oppenheim et al. (2001) discuss the information assets identified by the Hawley Committee in 1994: market and customer information, product information, knowledge, and expert information for operating in a specific area, business process information, management information, and resource information. Human, provider information, responsive information.

According to the results of Table 5, in Shahid Bahonar University of Kerman, the criterion of paying the subscription fee for the use of databases has been valued with the index of the value of information used. Other criteria introduced in the university have yet to be evaluated using this criterion. Probably because databases have reliable and valuable sources, and the valuable criteria of information and information sources of colleagues' personal websites and comprehensive and complete access to information sources related to research works are in the second and third categories, respectively. Also, it is possible that the information sources of the colleagues' websites are subjective, may be invalid, and lack value. The criterion of paying the subscription fee for using databases has the highest rank among the studied criteria, and the criteria of valuable information and information resources of colleagues' websites and easy access to information resources in databases and information centers are in the second and third ranks, respectively. If we treat the provision of information as a private good, we can assume that the user or consumer of the information will pay all the costs of the information. These costs will include the total costs of producing and using information and accessing it. If we want to determine the value of information by the scale of its usefulness or application, it is often impossible to obtain and use the information.

On the other hand, producing goods requires expenditure; That is, the costs determine the price of the produced goods. Receiving the cost of information services becomes important because wherever money is received for the costs, the accounting system can calculate the net share of each part of the service from the total budget, but when the costs of information are considered as a part of public costs, the accuracy Less is done in determining service costs. For this purpose, in information retrieval systems, payment of subscription fees for using databases, the value of information and information resources of colleagues' websites, and comprehensive and complete access to information resources related to research works are among the things that should be considered by researchers, especially professors and faculty members. It should be taken so that the costs of using information are spent correctly and in the right direction.

The criterion of paying the subscription fee for using databases has the highest rank among the studied criteria, and the criteria of valuable information and information resources of colleagues' websites and easy access to information resources in databases and information centers are in the second and third ranks, respectively. The results of this question are consistent with the findings of Chen & et al. (2021), Lee, Sung & Jeon (2019), Dakova & et al. (2018), Genarason and Stinason (2004), Engelsman (2007), and McDonald et al. (2011). Added value, created by an investment in an asset, is the difference between its economic value and cost. The best representation of the problem-solving or decision-making process of expertise is that the actual value of use can be identified if the role of information for knowledge can be traced. In determining the value of information in justifying decision support systems, Alidousti (2007) refers to the difficulties and obstacles in determining the economic value of information as an output for decision support systems. Quantifying these values is the cause of such problems.

Genarason and Stinason (2004) concluded by examining the valuation approach that it is more difficult to measure the value of information than other assets, which can be partly related to the difference in their characteristics. Moody and Walsh (1999) also point out in the discussion of measuring the value of information that information has only a conceptual value. Almost all articles on the financial value of information systems are focused on technology, not information content. Glazer's research (1993) tries to measure the value of information by using the possibility of analysis method at the level based on the current actual value of information and the level based on the possible value of information. This is done concerning the scholarly process (for example, a research project) so that the expected value of using users' interests should be found first. Decided whether to use this information (subjective expectations of use value). Macdonald, Wilson, Martinez, and Toossi (2011) state that changes depend on customer goals in their research on evaluating the value of information use. The customers' goals change in different relationship stages and affect their valuation. Repo (1986) states that the value during the use of information in practice is determined only by individuals (group work working on a problem or a difficult task).

According to the results of Table 6, in Shahid Bahonar University of Kerman, no measure of information has been valued with the exchange value index. Because if information is valuable, it should be paid for, since the value of information exchange is dependent on the value of using information, researchers and professors must pay attention to what kind of credit they intend to pay to meet their information needs. Also, is it valuable enough to pay for the information needs, and if so, how much of this information will be able to satisfy their information needs? In principle, the price of information should accurately reflect the time and expertise used to meet users' information needs. Also, the criterion of paying the cost to meet the information, educational, and research needs has the highest rank among the studied criteria, and the valuable criteria of the validity of the information in paying the cost and paying the price in influential databases are in the second and third ranks, respectively. The results are consistent with Adler et al.'s (2016) and Repo (1986) findings. Measuring the total value of information is usually only possible sometimes. The effect of information on results indicates the purpose of the objective value of using information. Objective value is rarely defined and even seldom measured. We can calculate the exchange value of information products and services at the societal level. Engelsman (2007) in the research of information assets and their value, concludes that there is still no framework in which information assets can be identified and used as a valuation basis. Based on this, value considerations are real through the processes of knowledge. The use of information is expected by the subjective use value, and by the use of the subjective information use value, the work is carried out, remains, or is stopped. It shows the effect of information on work results and then the objective value during the use of information**.**

Conclusion

What is obtained from the results of this research is that in the three important and influential areas of productivity, use of information, and exchange value of information, the academic staff members of the Shahid Bahonar University of Kerman, in the first place, pay the most attention to the issues related to the production of information for the development of knowledge and organization. They put the cost of the information consumed and the value of the information to pay the fee as their next priority. The criteria of the number of scientific

productions leading to the development of knowledge, the number of scientific productions leading to the development of the organization's goals, and the number of scientific productions leading to effectiveness have been valued using the value of productivity. It has been valued. No measures of information are valued with the exchange value index.

Recommendations

Based on the findings of the study, the following recommendations are considered appropriate;

1. Research centers and institutions must purchase, subscribe to, or extend the subscription of databases according to the basic needs of academic staff members.
2. Presentation of a model or information valuation framework by the trustees of educational and research centers
3. The use of specialized software to measure scientific productions and their related efficiencies.

References

Alidousti, S. (2007). Determining the value of information in justifying decision support systems. *Journal of Library and Information Sciences*. 10(2), 309-336. [in Persian]

Adler, R., Stringer, C. & Yap, M. (2016). The valuation and pricing of information assets. *Pacific Accounting Review*, 28(4), 419-430. https://doi.org/10.1108/PAR-02-2016-0023

Batini, C., Castelli, M., Viscusi, G., Cappiello, C. & Francalanci, C. (2018). Digital information asset evaluation. *ACM SIGMIS Database: the DATABASE for Advances in Information Systems*, 49(3), 19-33. http://dx.doi.org/10.1145%2F3242734.3242737

BasirianJahromi, R. (2018). *Marketing in libraries and information centers*. Tehran: Chapar.

Chen, L., Wu, Z., Wang, J., Yu, M., Yu, Y., Li, G. & Zhou, M. (2021, July). Toward future information market: An information valuation paradigm. In *2021 IEEE Power & Energy Society General Meeting (PESGM)* (pp. 1-5). IEEE.

Davis, Ch. & Shaw, B. (2014). *An introduction to information science and technology*. Translated by Alireza Rostami Gome. Tehran: Chapar. [in Persian]

Dakova, J., Antunes, P. & Chiu, Y. T. (2018). A Pluralistic Approach to Information Valuation. *PACIS*, 116.

Engelsman, W. (2007). Information assets and their value. In *Proceedings of the 6th Twente student conference on IT*. Enschede, Netherlands: University of Twente.

Glazer, R. (1993). Measuring the value of information: The information-intensive organization. *IBM Systems Journal*, 32(1), 99-110. https://doi.org/10.1147/sj.321.0099

Gunnarsson, G. & Steinarsson J, M. (2004). Approaching Information Valuation For clinical research information. Master's thesis in Informatics. IT University of Göteborg Göteborg University and Chalmers University of Technology, Sweden.

Hawley, D. (1994). How long do international school heads survive? *Part 1. The International Schools Journal*, 14(1), 8.

Lee, S. W., Sung, H. J. & Jeon, H. M. (2019). Determinants of continuous intention on food delivery apps: Extending UTAUT2 with information quality. *Sustainability*, 11(11), 3141. https://doi.org/10.3390/su11113141

Lester, J. & koehler, W. C. (2010). *Basics of information studies: Understanding information and its environment*. Translated by Mohsen Nokarizi. Tehran: Chapar. [in Persian]

Li, Z., Ni, Y., Gao, X. & Cai, G. (2019, March). Value evaluation of data assets: Progress and enlightenment. In *2019 IEEE 4th International Conference on Big Data Analytics (ICBDA)* (pp. 88-93). IEEE. https://doi.org/10.1109/ICBDA.2019.8713240

Macdonald, E. K., Wilson, H., Martinez, V. & Toossi, A. (2011). Assessing value-in-use: A conceptual framework and exploratory study. *Industrial Marketing Management*, 40(5), 671-682. https://doi.org/10.1016/j.indmarman.2011.05.006

Mashayekhi, B., Beirami, H. & Beirami, H. (2015). Valuation of intangible assets by using of artificial neural network. *Journal of Empirical Researches in Accounting*, 4(4), 223-238. 10.22051/jera.2015.1911

Moody, D. L. & Walsh, P. (1999). Measuring the value of information - An asset valuation approach. In *Proceedings of the 7thEuropean Conference on Information Systems* (pp.496-512).

Norton, M. G. (2005). *Basics of information science*. Translated by Javad Bashiri and Mohsen Azizi. Tehran: Ketabdar. .[in Persian]

Oppenheim, C., Stenson, J. & Wilson, R. M. (2001, August). The attributes of information as an asset, its measurement, and its role in enhancing organizational effectiveness. In *Proceedings of the 4th Northumbria Conference on Performance Measurement in Library and Information Services (Association of Research Libraries, Washington, 2001)* (pp. 197-202). Retrieved from https://www.libqual.org/documents/admin/4np_secure.pdf

Repo, A. J. (1986). The dual approach to the value of information: An appraisal of use and exchange values. *Information Processing & Management*, 22(5), 373-383. https://doi.org/10.1016/0306-4573(86)90072-5

Rowley, J. (2009). *Information marketing*. Translated by Maryam Asadi. Tehran: Chapar. [in Persian]