

Knowledge Sharing of Yemeni Academic Librarians and the Improvement Delivery of Information Services

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Abstract— This study investigates the knowledge sharing perception of the Yemeni academic libraries by librarians to improve the delivery of information services. As the scope of the knowledge sharing is wide, this study was confined only to the sharing processes of knowledge management. Data were collected from 289 librarians of twenty-nine libraries in the Yemeni universities using self-administered questionnaires and were analyzed using the Social Sciences Statistical Package (SPSS) and Structural Equation Modeling (SEM). The study found that the positive effective of knowledge sharing on the improvement in the delivery of information services indicates a good atmosphere of confidence and mutual relationship. Also, the results showed that the positive effect between knowledge creation process and knowledge sharing process on librarians' attitude indicates their concern of their status and image. Furthermore, the study found that the high level of confidence of librarians that their expertise will only be used properly and for the benefit of each other. It also indicates that they can depend on each other when they are looking for new knowledge or need help. In terms of the theoretical contribution, the study integrates both knowledge management processes and organizational climate perspectives to develop a theoretical model that explain the concept of the improvement in the delivery of information services. From the practical contribution perspective, fills the gap in literature on knowledge management process particularly in academic institution in Yemen.

Keywords—Knowledge Sharing; Information Services; Yemen; Academic Libraries; librarians

I. INTRODUCTION

An academic library is part and parcel of an educational institution and offers sources of academic references to high quality standards for all disciplines. The academic library is a main source of knowledge within the academic community, and therefore the continuous dynamic development of librarianship is necessary in order for knowledge to flourish. Therefore, in order to manage and keep up with the ever-changing information climate, academic libraries must become versatile organizations to adapt to the current reality [1]. Academic libraries will build an environment that promotes the adoption of knowledge sharing, including the creation of strategies to push the process forward with constructive responses to changes in the field. Since the success of the library and information depends mainly on qualified librarians, the training of librarians is therefore extremely necessary to develop their skills and knowledge in order to survive and compete [1]. It is noted that, in order to remain viable over time in this rapidly changing information environment, all organizations, whether public or private, small or large, profit or non-profit, and regardless of their location and/or activities, must engage in knowledge

management practices [2-3]. In fact, rapid changes in the world's economic and social environment have had major effects on library services. This is because the philosophy of the librarianship is to provide services and/or sources that are relevant to the needs of users. To this end, librarians will continue to struggle in the collection and organization of printed and other forms of recorded knowledge materials to satisfy both current and future users of library services [4]. According to Rokhman [4], the usefulness of a library as a source of learning is determined by its ability to provide the user with the knowledge it needs. The library will better serve its purpose by following a strategy of continuous self-assessment to meet the changing needs of its users. Library services include access to books and other information such as counseling provided by the library to the users [5]. Juanatas [6] argued that the library would include librarians in the development of a mission statement. The frontline librarians have the most direct contact with the customer. They can provide valuable input on service policies, procedural issues, possibilities and limitations of the library. Saleh's [7] study aimed at the developing programs for the administrative performance of knowledge management at Sana'a University. It also examined the barriers to the

implementation of knowledge management at Sana'a University, from the point of views administrative and academic leaders. According to the results, leadership (administrative and academic) was recognized as an important component of management performance in the context of the knowledge management portal with all its components. Al- Mamary, Shamsuddin and Nor Aziati [8] attempted to the factors that have contributed to the positive implementation of Management Information Systems (MIS) in Yemeni's organization. The researchers also investigated the relationship between technological factors (system quality, information quality, and service quality), organizational factors (top management support, and user-training), and human factors (computer self-efficiency, and user experience) and organizational performance, that focus on people who are associated with (MIS) in their job. This study found that there are positive correlations between system quality, information quality, service quality, top management support, user-training, computer self-efficacy, and user-experience with organizational performance at Sabafon Company in Yemen. Al-Zamany [9] Total Quality Management (TQM) is still a new issue for Yemeni organizations. Such organizations need to develop a new quality management strategy that focuses on the challenges and barriers to the introduction and implementation of the (TQM) in such a community. The researcher draws on two-case study organizations and the practices suggested by the European model of excellence to exemplify TQM. Time was spent describing these tasks to the people involved, followed by a discussion of the difficulties. Ultimately, the researcher identified a range of points to be considered for each operation in order to strengthen knowledge management organizations in Yemen and to embark on the implementation of the TQM. This requires government technical support and understanding of the benefits of the TQM and its willingness to bring about change in the organizational culture. This requires government technical support and understanding of the benefits of the TQM as well as its willingness to bring about change in the organizational culture.

II. Literature Review

Knowledge sharing practices are very important for individuals looking to develop their efficiency and employment in an organization that seeks to accomplish its goals and ensure sustainability. The practice of knowledge sharing manifests itself in the social interaction between individuals for the exchange of information, expertise, experience, skills, concepts, thoughts, opinions, perspectives, ideas, etc. [10]. Zhou et. al [11] emphasized that organizations should take appropriate action and tools to ensure the best practice in knowledge sharing. These tasks and resources shall include meetings, discussions,

brainstorming, trainings, apprenticeship, seminars, conferences, workshops, communities of practices, focus groups, artifacts, blogs, wikis, documents, manuals, internet and web pages, data warehouses, databases, and document management tools. In an academic environment such as universities, management should create a culture of knowledge sharing by providing the necessary activities and resources. This will support and inspire scholars to share and exchange knowledge, knowing that they have a vital role to play in disseminating knowledge and generating new knowledge. Rapid changes in the economic and social environment have had a major impact on library services. The philosophy of librarianship is based on the concept of a library service and on the provision of relevant materials for users. To this end, qualified librarians continue to struggle with the compilation and arrangement of printed and other sources of stored knowledge materials in order to satisfy both current and future users [12- 14].

A. Type of knowledge sharing

Knowledge sharing is a social interaction between librarians acting individually or collectively in the university to exchange and/or share information, knowledge, experience, ideas, etc. [15]. Practice involves the use of appropriate activities and tools, such as meetings, discussions, trainings, seminars, conferences, workshops, communities of practices, focus groups, artifacts, documents, manuals, internet and web pages, data warehouses, databases, and document management tools [16].

- 1) *Explicit knowledge* is tangible possessions of librarian's; knowledge that can be codified in words or other ways such as documents, records, books, manuals, etc. It is formal, easy to express and communicate [17] and it can be communicated through a medium of communication and interaction. Furthermore, empirical knowledge is related to philosophy, mind and reason and is extracted from texts, databases and other tools [18]. Explicit knowledge of librarians includes scientific documents and publications [19].
- 2) *Tacit knowledge* is an intangible possession of knowledge, such as ideas, insights, concepts, thoughts, beliefs, opinions, skills, and experience. It is personal, difficult to articulate and share; yet it can be shared only through action, practice and simulation [18] In addition, it is subjective knowledge that is generated and acquired through experience, expertise, practice and interaction with others [17].

B. Knowledge Sharing Practice

Knowledge sharing activities are very important for individuals looking to develop their efficiency and

employment in an organization that seeks to accomplish its goals and ensure sustainability. The practice of knowledge sharing manifests itself in the social interaction between individuals for the exchange of information, knowledge, experience, skills, concepts, thoughts, opinions, insights, ideas, and so on [20]. Mehrotra [21] stressed that organizations should take effective steps and tools to ensure the best practice of information sharing. These tasks and resources shall include meetings, discussions, brainstorming, trainings, apprenticeship, seminars, conferences, workshops, communities of practices, focus groups, artifacts, blogs, wikis, documents, manuals, internet and web pages, data warehouses, databases, and document management tools. In an academic setting such as universities, management can create a culture of knowledge sharing by providing the requisite activities and resources. This would help and encourage scholars to share and exchange knowledge, knowing that they have a major role to play in disseminating knowledge and creating new knowledge. Management should not only emphasize the importance of knowledge sharing in the university environment, but should also follow high standards of research and development in order to enhance knowledge activities [22; 23; 24].

C. Knowledge Sharing Behavior

Understanding human behaviors is essential for the implementation of knowledge sharing, as an organization depends on its human resources, to ensure the success of knowledge sharing strategies. Kurniawan [25] argued that knowledge sharing is a human activity, and understanding human behavior is a very important first step in successfully supporting such a project. Knowledge sharing can therefore be investigated as any other intentional individual behavior. Rumanti [18] described the conduct of knowledge sharing as an individual's activity that is voluntary, not specifically or expressly acknowledged and that facilitates the successful functioning of the organization as a whole. However, Ananda et al. [26] viewed knowledge sharing behavior as the behavior in which an individual provides others with access to his or her knowledge and experience. It is measured by the time spent on sharing knowledge and by conducting and participating in knowledge sharing activities [27]. According to the Theory Planned Behavior (TPB), the behavior of academic knowledge sharing is mainly predicted by academic behavioral intentions, which in turn are collectively determined by attitudes towards knowledge sharing, subjective norms, self-efficacy and controllability.

D. Knowledge Sharing in Yemen

The concept of sharing knowledge is still in its infancy in Yemen. It is because so little information is accessible on the

application of knowledge sharing in Yemen. The lack of knowledge sharing activity in any country shows its backwardness in terms of intellectual discourse. Consequently, the focus of this study on the knowledge sharing process is increasingly important because it affects the quality of the services provided. Yemeni academic libraries have faced persistent challenges in meeting the requirements of a rapidly changing environment, such as an increase in the use of modern technologies and a demand from users for new services to be provided by libraries. This has generated the demands for the level of competence of the staff of the library [28]. In response to developments in the sector, efforts have been made in Yemeni academic libraries to address these challenges in terms of knowledge sharing practices. As they require strategic planning, such as the creation of upgrade positions for new librarian graduates and the creation of librarian as a high social status instead of the current low status [29].

E. Delivery of Information Services

Access to materials and information, as well as advice and assistance offered by librarian, gives users the ability to assimilate what is learned by individuals, teams to improve processes, and enhance librarian knowledge and learning [30]. Academic libraries must provide information services to users in a changing environment. Academic librarians need to communicate with their users, faculties and schools to promote productive teaching, learning and study at university [31]. As the market demands of universities are changing in terms of improving student learning outcomes, this has a direct impact on university libraries and their delivery of services. Modern teaching is rapidly growing in the construction of learning environments due to social and technological developments [32]. Students engage in adaptive learning processes through more indirect communication with teachers and resources [33]. Moreover, teaching and learning practices have evolved towards greater modularization and focus on self-directed, independent study and student-centered learning [34].

III. Theoretical Model

The researcher adopted the TPB theory as research models Ajzen [61] which explain that intention leads to behaviors. The models were conceptualized based on the studies of Lee and Choi [62] and Choi et al. [63]. One of the objectives of, this research was to examine the influence and support of the top management, the ICT, librarian skills and trusted employees when it comes to attitude towards knowledge sharing as motivating factor. At the same time, improved organizational climate shows that a library can be ready for knowledge sharing and implementation to some extent. The organizational climate can provide a conducive

environment for librarians to implement knowledge sharing [25]. Therefore, it is believed that the organizational climate may positive intention of a librarian to be involved in the knowledge sharing. This is because it is essential for an initiation of knowledge sharing and implementation to come from the librarians [27]. Thus, the willingness (intention) to be involved in the knowledge sharing should be investigated to know the level of commitment [31]. The involvement of librarians in the knowledge sharing is to have a significant impact on the quality and improvement in the delivery of information services of the library. Nevertheless, this process needs to be in place or cultivated strongly for the knowledge management implementation to be successful. Figure I show the developed conceptual framework of the research indicating the independent variables (IVs) which are the organizational climate, including: top management support, ICT use, librarian's skills and trust employees, dependent variables (DV) that are the delivery of information services in library, and mediating variables (MV) which are the knowledge management sharing.

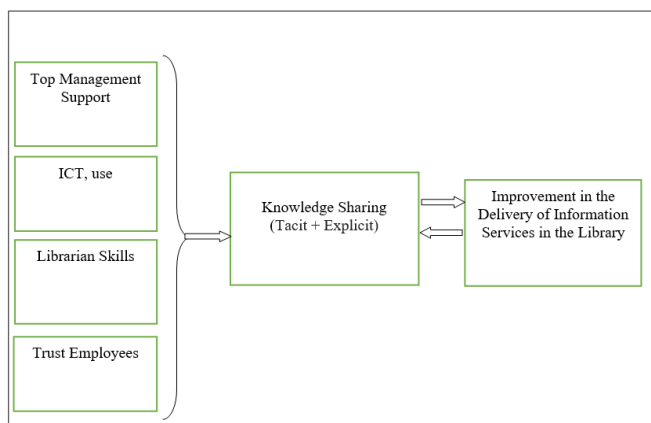


Fig 1. The Conceptual Framework

IV. HYPOTHESES

Based on the literature review, the hypotheses are proposed"

- H1: There is a significant positive relationship between organizational climate and knowledge sharing
- H2: There is a significant positive relationship between knowledge sharing and improvement in the delivery of information services
- H3: Knowledge sharing can positively mediate the relationship between the organizational climate and the improvement in the delivery of information services in a library.

V. METHODOLOGY

The study was designed to assist the researcher in the understanding and interpretation of the results. In order to

do so, the researcher used a survey method to measure knowledge sharing processes that could improve the delivery of information services in the research model [35]. The survey method enables the collection of large numbers of data and the correct numerical formulae to be used to test the proposed relationship between knowledge sharing and improved delivery of information services [36]. The study uses a quantitative research approach, since primary data consists of number or categorical variables that can be coded. This type of research typically consists of simple questions that generate numerical results and allows the research to make valid interpretations by comparing those numbers [37]. According to Wiersma and Jurs [37] quantitative research is related to positivism and is typically structured on its fundamental. There is little, if any, variance from the design of the research. The survey allows a significant amount of data to be collected from a large population, it is noted that the preference for the survey method could be attributed to issues of convenience, cost, time and accessibility [38]. According to Bryman [39] the survey approach is the most favorable method used to understand the individual's perspective while the case study is best suited to the organizational perspective. The researcher used a cross-sectional survey to measure the constructs in the research model. In other words, the researcher used the survey questionnaire to collect the data from the respondents. With regards to the library budget and operational expense, not all libraries of Yemeni universities had separate budget allocation for their library's management, except for library resources such as books, local periodicals, and other resources [40]. Al-Fadli [40] argued that the library has little leverage over its own finances and has no funds or surpluses to fund new initiatives. Typically, such knowledge is seldom stated in the literature of the library. All of the private universities in Yemen had medium-sized libraries. Each of the science and technology universities and the Al-Quran and Islamic sciences had two main central libraries, one for males and the other for females (www.mothers-portal.academy). Random sampling enables the researcher to ensure the most representativeness possible [41]. As such, any changes observed with random sampling would apply to the large population [42]. Since this research is aimed at examining the behavior of 289 librarians in 29 private and public academic libraries.

VI. Data analysis

This paper explains the data analyses for data collected. The analyses include descriptive statistics. The profile of the respondents is also provided in this paper. Reliability and validity tests followed by Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA).

A. Descriptive Statistics

1. Demographics Profile

The demographic characteristics of the respondents are shown in TABLE 2. Depending on the demographic categories specified in the questionnaire. These categories are gender, qualifications, occupation, specialization, years of academic experience and the distribution of respondents by type of university.

- Gender: As shown in TABLE I, female represented 181 (62.6 %) librarians' respondents in Yemeni universities. The males, however, were 108 (37.4%) of the respondents.
- Qualification: As far as education is concerned, the majority of staff in libraries has a Bachelor's degree. It represents approximately 168 (58.1 %) respondents in the sample population. Nevertheless, some of the respondents were in high school and less than 29 (10 %) out of 289. Moreover, the results show that 69 (23.9%) of the respondents had Diploma qualifications and 23 (8%) had Master degrees.
- Occupation: In terms of the occupation of respondents, the majority of respondents were librarian 232 (80 %), respondents and deputy librarian 8.3 % of the sample or 24 respondents. This is followed by the head of department, who was 23 (8 %). In comparison, the results indicate that the smallest group of respondents was the chief librarian with 10 or (3.5%) respondents.
- Specialization: It is notable that only less than one-quarter of the 60 (20 %) of respondents obtained

library and information science qualifications. The majority; almost; three-quarters, 229 (79%) of respondents obtained other qualifications. It cannot be said that Yemeni university libraries have a sufficient number of qualified librarians, mainly 229 (79 %) of whom have no qualifications in library and information science.

TABLE I
DEMOGRAPHIC PROFILE OF RESPONDENTS

Category	Item	Frequency (N=289)	Percentage (%)
Gender	Male	108	37.4
	Female	181	62.6
Qualification	High School and Less	29	10
	Diploma	69	23.9
	Bachelor	168	58.1
	Master	23	8
Occupation	Chief Librarian	10	3.5
	Deputy Librarian	24	8.3
	Head of Department	23	8
	Librarian	232	80
Specialization	Library & Information	60	20.8
	Others	229	79.2
Work Experience	Less than 5 Years	134	46.4
	5-10 Years	130	45
	11 Years and Above	25	8.7

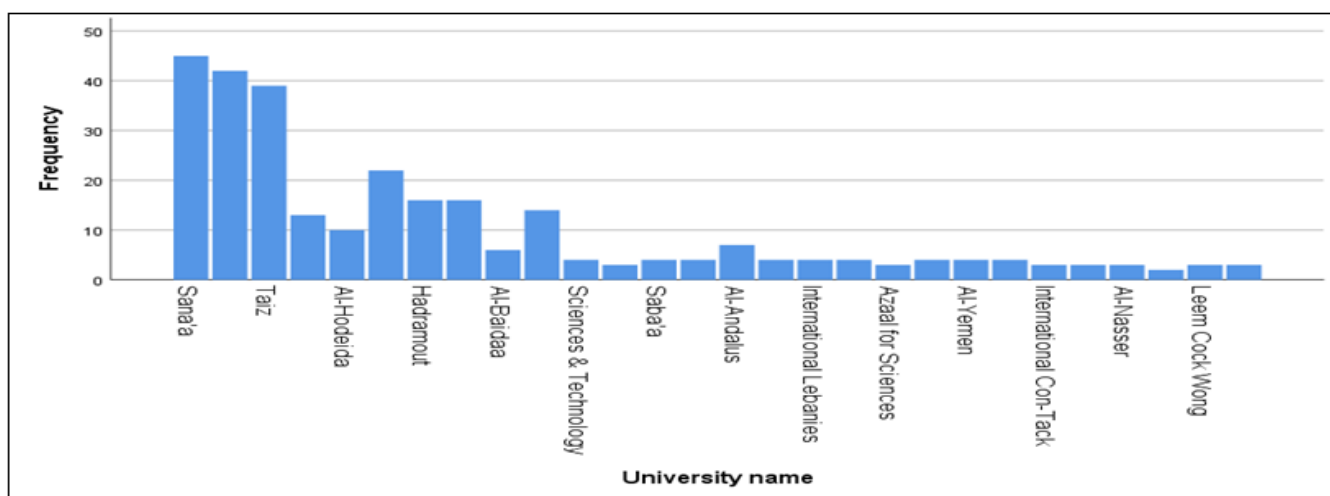


Fig. 2 Distribution of Respondents by University Name

- Work Experience: In terms of years of work experience, the majority of respondents are less than 5 years old and between 5 and 10 years old, with 134 and 130 respondents (46.4%) and (45%)

respectively. However, only 25 (8.7%) of the respondents had more than 10 years of experience.

- **Distribution of Respondents by Type of University:** In terms of university name, Sana'a, Aden, Taiz universities represented for about half of the respondents, with 45, 42, 30 respondents (15.65%), (14.5%) and (13.5%) representing the largest public university in Yemen. In addition, the remaining 25 public and private universities represent of 163 (56.4%) of the 289 respondents. The FIGURE II shows the distribution of respondents by university name.

B. Exploratory Factor Analysis (EFA)

With the development of a few new items, it is important to use the Exploratory Factor Analysis (EFA) to determine the underlying structure of the proposed constructs. Version 19 of the SPSS was used to constructs the EFA. The suitability of the data was first performed in order to conduct the EFA. Factor analysis was used to test the underlying structure among of items [43]. The EFA was conducted to reduce the number of items and to detect the structure of the relationship between items. The method used to conduct factor analysis was the main components extraction method based on varimax rotation [43]. The EFA was conducted on organizational performance in this paper. The EFA process consists of two stages: the extraction factor to make a decision on the number of factors underlying the measurement variables of the asset and the varimax rotation factor to facilitate the interpretation of the extraction result factor. Kaiser-Meyer-Olkin (KMO) and Bartlett's sphericity tests were used to ensure that the data had a sufficient correlation to conduct the EFA and to determine the variables had to decrease.

1. Adequacy of Sample Size

In order to perform a factor analysis, an adequate sample size is required and there are several opinions on the correct sample size. While Hair et al. [44] suggest that the sample size should be 100 or more cases, Tabachnick and Fidell's [45] suggest that there should be at least 300 cases. In addition, Comrey and Lee [46] provide a thumb rule for the assessment of sample size, where 100-200 is poor, 200-300 is fair, 300-500 is good, 500-1000 is very good, and 1000 or more is excellent. The size of the sample of this research (N = 289) is acceptable and good.

1. Kaiser-Meyer-Olkin Index and Bartlett's Test of Sphericity of Knowledge sharing

The KMO sampling adequacy measure reflects a score of .745 well above the recommended 0.50 level [47], and the

Bartlett's test of sphericity is significant at $p < 0.001$ levels. Based on the criteria that loadings for items should be higher than 0.5. In addition, the test value of chi-square 2215.327 is significant [48]. However, for the EFA to proceed, Bartlett's test of sphericity should be significant that is $p < 0.01$ [49]. TABLE II shows the result of KMO and Bartlett's test.

TABLE II.
KMO AND BARTLETT'S TEST OF KNOWLEDGE SHARING

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.802	
Bartlett's Test of Sphericity	Approx. Chi – Square	693.681

2. Total Variance Explained

There are many methods for extracting factors, the most widely used being Principal Component Analysis (PCA) and Principal Axis Factoring (PAF). In order to choose the best extraction method, a number of issues should be taken into consideration. If the researcher is interested in an empirical summary rather than a theoretical solution [45], the minimum factors needed for the maximum portion of variance seen in the original set of variables (Hair et al., 2010), or wishing to establish preliminary solutions in EFA [50] are required, and the PCA method is recommended. Therefore, this research used the PCA method for factor extraction. According to Hair et al. [44] the factor loading value at 0.5 is statistically significant. In addition, Costello and Osborne [51] note that items with factor loading at 0.5 or more are desirable and indicate a solid factor. Thus, the item loading at 0.5 and higher was regarded as significant in this paper. The rest of the items were loaded on the five factors. Table 3 shows the results of the varimax rotation with the items loadings of knowledge sharing.

TABLE III
TOTAL VARIANCE EXPLAINED OF KNOWLEDGE SHARING

F	Eigenvalue	% Variance	% Cumulative
1	4.633	30.889	30.889
2	2.086	13.905	44.794
3	1.648	10.984	55.779
4	1.495	9.968	65.747
5	1.432	9.547	75.294

Five among the factors explain about 75% of the variance in total; factor 1 has the largest eigenvalue of 4.63 and explains 30.8% of variance (see Table 4)

TABLE IV
TOTAL VARIANCE EXPLAINED OF IMPROVEMENT IN THE DELIVERY OF INFORMATION SERVICES

Factor	Eigenvalue	% Variance	% Cumulative
1	3.207	64.131	64.131

Table 5 presents that one dependent factor explain about 64% of the variance with eigenvalue of 3.207 and explains 64.13% of variance.

3. Factor loading

Factor loading is basically the correlation coefficient for the variable and factor. The rest of items loaded on the five factors. TABLE VI shows the results of the varimax rotation with the knowledge sharing items loaded. Factor 1 consists of four items KST24-KST27 with loads ranging from .750 to .905 and was labeled "Knowledge Sharing Tacit". Factor 2 comprises of three items KSP20-KSP22 with loads ranging from .753 to .922 and was labeled "Knowledge Sharing Practice". Factor 3 comprises of four items KSP15-KSP18 with loads ranging from .731 to .778. Factor 4 comprises of two items KSE28 and KSE30 with loads ranging from .917 to .924 and was labeled "Knowledge Sharing Excipit". Factor 5 comprises of two items KSE30-KSE31 with loads ranging from .851 to .856.

TABLE V
ITEMS LOADINGS FOR KNOWLEDGE SHARING

	Component				
	1	2	3	4	5
KST26	.905				
KST25	.872				
KST27	.855				
KST24	.750				
KSP21		.922			
KSP20		.887			
KST22		.753			
KSP15			.778		
KSP16			.748		
KSP17			.743		
KSP18			.731		
KSE29				.924	
KSE28				.917	
KSE30					.856
KSE31					.851

The factor analysis for all variables indicated 5 factors with a value greater than 1. They are: (F1) including 4 items (KST24 - KST27), (F2) consisting of 3 items (KSP20 - KSP22), (F3) including 4 items (KSP15 - KSP18), (F4), involving 2 items

(KSE28 and KSE30), (F5) including 2 items (KSE30 - KSE31). On the basis of the proposed research model and literature review, 15 items were extracted from this paper.

C. Confirmatory Factor Analysis (CFA)

The construction validity should be measured in the light of the convergence validity and the discrimination validity for the CFA validation of the measurement model. According to Hair et al. [44] and Newkirk and Lederer [52] the normal loading factor for the constructions must be at least 0.50. Therefore, the use of the CFA in this analysis to determine the fitness of the proposed measurement models with the data surveyed and to test the convergent validity of the data is justified. CFA contains several functions; including [test the factor loading in each variable], [estimate the measurement error in the framework] and [confirm that the methods are related to the latent variables].

1) Internal Consistency

Tavakol and Dennick [53] note that the instrument cannot be valid unless it is reliable'. Cronbach's alpha is a standard reliability index that measures the internal consistency of the scale and is estimated to be between 0 and 1.0. Internal consistency "describes the extent to which all items" measure the same concept or term [53]. An exploratory internal consistency assessment using Cronbach's alpha was also performed on all items at this point in order to determine overall reliability.

TABLE VI
CRONBACH'S ALPHA FOR KNOWLEDGE SHARING

Cronbach's Alpha	N of Items
.856	18

The Cronbach alpha value for the factor is 0.856, considered to be good. In addition, the internal consistency values for the variables ranged and the variables showed average reliability values.

TABLE VII
CRONBACH'S ALPHA FOR IDIS

Cronbach's Alpha	N of Items
.867	8

The alpha value of Cronbach's for the factor is 0.867, considered to be good. Moreover, the internal consistency values for the variables ranged and the variables scored average reliability values.

1. Confirmatory Factor Analysis (CFA) of Knowledge Sharing

A) The results of the knowledge sharing measurement model (Base model) suggest that the model fits indices such as CFI= .883 do not fit perfectly and RMSEA = .104 more than 0.08. The basic for knowledge sharing measurements model did not fit in this case. MI is the total amount of χ^2 and MI has shown a high degree of covariance between the items. The researcher found that some covariance values between some error terms are high. Additional error correlation based on the MI was created to improve the model fit for the measurement model. In fact, if there was a high MI between the items and their loading was low, these items would become candidates for deletion to develop model fit. The next step, therefore, is to revise and develop these fit. Since the values of the fit indices were not excellent, a series of measurement model modifications were made to improve the fitness of the model. One item with low loading and high error using MI to achieve Goodness of Fit (GOF) was omitted in order to enhance the basic measurement model fit for the first and second knowledge sharing order.

B) First Order Model of Knowledge Sharing (Revised Model)

The results of the revised measurement model for knowledge sharing of the first order (Revised Model) show that the model fit indices, such as the normed χ^2 value, were 2.743 less than 5, indicating sufficient fit. In addition, CFI=.936, which explains that the model used in this research was a good fit for data. The findings indicate that RMSEA = .078 as shown in FIGURE III.

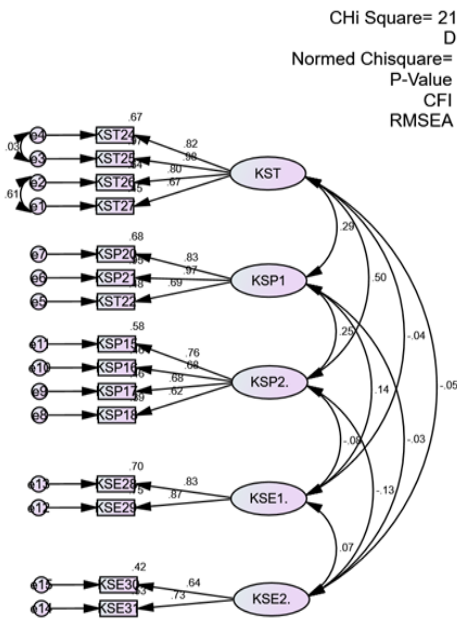


Fig. 3 First Order Model of Knowledge Sharing (Base Model)

C) Second Order Model of Knowledge Sharing (Revised Model)

The results of the revised measurement model for knowledge sharing of the second (Revised Model) order show that the model fits indices, such as the normed χ^2 value, were 2.743 less than 5, indicating sufficient fit. Also, CFI=.935, which explains that the model used in this research was a good fit for data. The results indicate that RMSEA = .076 as shown in FIGURE IV.

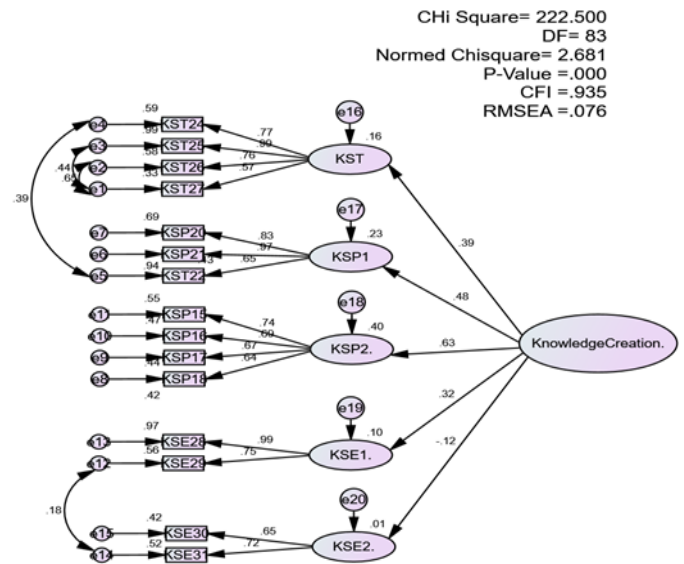


Fig. 4 Second Order for Knowledge Sharing (Revised Model)

2. Confirmatory Factor Analysis (CFA) for Improvement in the Delivery of Information Services (IDIS)

A) First Order Model of IDIS (Base Model)

The results of the basic measurement model for IDIS show that the model fits indices such as CFI=888 and do fit perfectly with RMSEA = .231, more than 0.08. In this case, the IDIS measurement model does not fit. Modification Indices (MI) are the amount of the overall χ^2 and MI showed a high degree of covariance between the items. The researcher found that certain covariance values between certain error terms are high. Additional error correlation based on the MI was created to develop the model fit for measurement model. In fact, if there was a high MI between the items and their loading was low, these items would become candidates for deletion to improve the model fit. The base measurement model for IDIS. The next step was to revise and develop these fit indices. In order to enhance the IDIS base measurement model, some of the items were excluded from high error using MI to achieve GOF.

B) Second Order Model of IDIS (Revised Model)

The final IDIS measurement model consists of 5 items which were retained for subsequent analysis. The final IDIS measurement model consists of 5 items which have been retained for further analysis. The results of the IDIS revised model of measurement of the second order show that the model fit indices such as the normed χ^2 value was 0.932 Less than 5 indicates sufficient fit. Moreover, CFI=1.000 explains that the model employed in this paper was a good fit for data. In addition, the RMSEA parsimonious index becomes a better measurement as shown in figure 5.

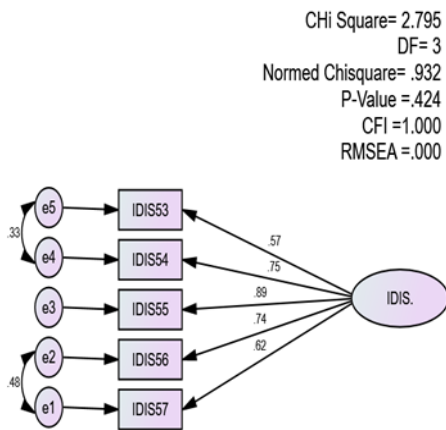


Fig. 5 Second Order Model of IDIS(Revised Model)

5. Mediating Relationship Assessment

The Sobel test is a method to test the significance of a mediation effect. In mediation the relationship between the independent variable and the dependent variable is considered to be an indirect effect that exists due to the influence of a third variable (mediator). The Sobel test is basically a specialized t- test that provides a tool for evaluating whether the reduction in the impact of the independent variables, after including the mediator in the model, is a significant reduction and thus whether the mediation effect is statistically significant [54;55].

H: Knowledge Sharing can positively mediate the relationship between organizational climate and Improvement in the Delivery of Information Services (IDIS) The magnitude of standardized indirect (mediate) effect: knowledge sharing on the relationship between organizational climate and IDIS is 0.2703 (0.53*0.51). It is statistically significant based on the Sobel test: t-statistics (2.474) at level of the probability of 0.0133. Figure 6 displays the Sobel test online for this paper hypothesis.

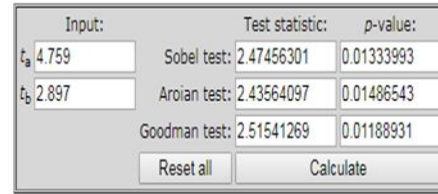


Fig 6. The Sobel Test Online for Knowledge Sharing as Mediation between OC and IDIS

VII. HYPOTHESES TESTING

H1: organizational climate has a significant positive influence on librarians' knowledge sharing ($\beta = 0.530$, C. R= 4.759, $P \leq 0.01$). Thus, H1 is supported.

H2: knowledge sharing has a significant positive influence on improvement in the delivery of information services ($\beta = 0.509$, C. R= 2.897, $P \leq 0.01$). Thus, H2 is supported.

H3: the magnitude of standardized indirect (mediate) effect: knowledge sharing on the relationship between organizational climate and IDIS is 0.2703 (0.53*0.51). It is statistically significant based on the Sobel test: t-statistics (2.474) at level of the probability of 0.0133. Figure 4.18 displays the Sobel test online for this research hypothesis.

VIII. DISCUSSION

The results showed that there is a good extent of knowledge sharing practice among the academics surveyed in the twenty-nine targeted public and private universities in Yemen. The majority of respondents agreed with the normal percentages of statements given to their knowledge management activities. The findings also showed that there is a relatively medium level of sharing between the two types of knowledge, both explicit and tacit, among the librarians surveyed. Moreover, the findings have shown that knowledge sharing by librarians is significantly influenced by their intention to share knowledge and its determinants.

1. Level of Sharing Explicit and Tacit Knowledge

The need to expand the extent of knowledge sharing, i.e., explicit and tacit is particularly important in the development of knowledge in academic institutions. In particular, the tacit knowledge of libraries constitutes their intellectual property, which leads to the accumulation of knowledge in academic institutions that represent a valuable asset. In order to investigate the level to which libraries share the two types of knowledge in public and private universities in Yemen, they were asked to indicate their level of agreement on a number of statements that measure the sharing of different types of knowledge. The results showed that the majority of the libraries surveyed agreed on the statements indicating a reasonably low level of explicit knowledge sharing and a normal level of tacit

knowledge sharing. As noted above, libraries are more likely to share tacit knowledge than explicit knowledge. These results contrast with the literature review, where the authors indicated that it is better to communicate explicit knowledge than tacit knowledge as it is conveyed, reported and disseminated. Whereas tacit knowledge is difficult to communicate and document as it is part of the individual's values, skills, attitudes and expertise. This makes people more likely to share explicit knowledge than to share tacit knowledge. However, the findings of current research are somewhat similar in some respects with the findings of Hara and Hew [59] in the context of health and Jain et al. [60] in the academic context. For example, Hara and Hew [59] have found that nurses share much more practical knowledge of the know-how than they share knowledge of the books. On the other hand, Jain et al. [60] found that academics share lecture notes, power point slides, and other resources more than they share tacit knowledge. In general, the results show that libraries share all types of knowledge. However, this research adds more to the methods used by libraries to share explicit and tacit knowledge, particularly in the academic context. For example, libraries share the basic knowledge contained in the documents and materials they receive from the various knowledge sharing activities and tools. They often exchange tacit knowledge on the basis of experience and expertise by talking and asking for knowledge.

2. *Identify the relationship between organizational climate and improvement in the delivery of information services in a library.*

This paper also looked at the effect of a variety of factors on knowledge sharing through some of its predictors. Based on a comprehensive literature review, the paper concluded that ICT, use and librarian skills had an effect on librarians' attitude to knowledge sharing activities, while lack of trust and aspects for top management support had an effect on librarians' controllability. Results have shown that ICT, use and librarian skills have a positive and significant impact on knowledge sharing, while lack of trust between employees and top management support have a negative and significant impact on academic power.

3. *The mediating relationship influence of knowledge sharing on the effect of the organizational climate and the improvement of the delivery of information services of the Yemeni academic libraries.*

Knowledge sharing has been shown to be a moderating factor. The effects of ICT use, librarian skills, trusted employees and top management support for sharing on knowledge management practice is average in the Yemeni academic libraries. This means that the providing of more ICT

facilities and practical support would result in higher knowledge management practice. Similarly, an increase in the performance of knowledge creation practices will enhance the perspective of knowledge management practices. In addition, these findings suggest that knowledge creation should be considered by policy makers in the library when making strategic decisions, particularly on ICT-related factors. Likewise, the possible enhancement in job efficiency as a result of the participation of librarians in the knowledge management process should also be made clear in order to get the most from librarians to the knowledge management process.

IX. CONCLUSION

Knowledge sharing is a key enabler of knowledge management that needs deep understanding to sustain it. The findings of this research add to previous studies which have explained the complex nature of the knowledge sharing process. The significance and multitude of benefits of knowledge sharing for both organizations and individuals are vital to the success and sustainability of organizations, regardless of their size, as well as the success and performance of individuals and professionals. As a result, individuals and practitioners need to be motivated, encouraged and supported to understand the value of knowledge sharing at both the individual and the organizational level.

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