Using Electronic Information Resources Centers by Faculty Members at University Education: Competencies, Needs and Challenges

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ABSTRACT

This study aimed at investigating the factual situation of electronic information resources centers to faculty members at university education. Competencies that faculty members should possess regarding this issue were determined. Also their needs for (scientific research skills and teaching) were assessed. In addition, problems that hinder their use of electronic resources centers were identified. Data obtained were analyzed statistically using SPSS in measuring reliability of instruments. Participants of the study were **(655)** faculty members at Saudi Universities (**412** males & **243** females). Results indicated that there were significant differences between male and female at **($\alpha \leq 0.05$)** level. Results also revealed significant differences between members of different ranks at **($\alpha \leq 0.05$)** level, and between academic areas of specializations at **($\alpha \leq 0.05$)** level. Significant differences were also found between faculty members in terms of years of experience in using electronic information resources centers at **($\alpha \leq 0.05$)** level. This study recommends that most Saudi Universities are in need of establishing electronic information resources centers and offering training courses to provide technical support in a way to solve some of faculty members' problems.

Keywords: electronic information resources; faculty members; competencies; needs; challenges**.**

INTRODUCTION

Quality of education offered to students is the success key of any educational institution. Since every student need to be provided by ways to facilitate the essential responses for learning, the educational environment should consist of knowledge, competencies, abilities, motives, teaching methods etc. These aspects are related and greatly affect the whole environment. Thus, the use of electronic information resources centers is a high level individual activity initially assures the provision of many of faculty members needs at universities and help them achieve their competencies.

Surveying the educational developments shows that a number of policies are set to maintain that educationalists need to get along with innovations in the field **(Fahad et al. 2013)**. However electronic information resources centers witnessed many changes until reaching the current level, making development of these centers a continuous process. The history of these centers goes back to classroom library then universities libraries that were developed to include media and non-printed materials where they used to be called comprehensive libraries. Finally, the electronic information resources centers that include all resources and the focus they make to the learning process rather than the teaching process.

Electronic resources centers are characterized by the electronic material they contain which allows access to the biggest possible number of periodicals, reports and statistics in academic fields. They also allow continuous updating to these materials **(Hughes 2013)**. Searching electronic information centers is much easier for faculty members as they enable them to be in continuous contact with the international databases around the world.

Thus, these centers offer a service that facilitates gaining information in a few moments unlike traditional methods that used to take weeks and in some cases months **(Hostager 2014)**. Not only in terms of time, these centers facilitate the direct access to the materials by printing, downloading or sending them by email. Electronic information recourses centers offer a big number of digital information for their users quicker than doing this manually through printed materials **(Andrews and Eade 2013)**. Furthermore, electronic searches help discovery of some information that could not be obtained through traditional methods. The field of scientific research makes good use of these electronic ways as they help facilitate continuous communication among researchers and gain updating to new discoveries **(Taffs and Holt 2013)**. Also, the use of electronic information resources centers improves many learning and teaching processes in addition to extra curricula activities.

Currently educational processes face many problems and challenges due to the so many continuous and competitive developments we witness today. These led to the need of establishing electronic information resources centers to help educationalists get along with new developments. Use of these centers help improve teaching and learning processes in a way to prepare a generation able to face challenges, find solutions using scientific ways based on new and multiple resources. More important, these centers offer better ways of how to employ educational technology effectively to achieve educational goals as they consider learners to be participants unlike traditional methods that consider them only receivers (**Davids et al. 2014**).

The current study considers investigating the use of electronic information centers in universities and institutions of higher education and finding solutions to problems theat may suffer as prerequisites for distinction in all fields of knowledge. The study investigates also the way faculty members use electronic information centers in conducting scientific research and in their teaching. In addition to the identification of problems that may hinder their effective use of these centers and their needs for better practice. These are for the purpose of developing a framework for helping the faculty members to obtain competencies that maintain their effective use of these centers. This framework will offer electronic educational environment that allow opportunities for practicing self-learning skills and reinforcing research and discovery skills that help faculty members to employ modern ways in designing, developing, implementing and evaluating the courses they teach (**Akaichi 2014**).

This study seems important in helping faculty members in identifying competencies they need to posses in order to effectively use electronic information resources centers. It will help also identifying types of electronic information resources centers that could be of benefit to the educational process. The current study tries to orient those in charge of Saudi universities towards the importance of establishing electronic information centers in terms of faculty members needs. This study will provide those in charge of electronic information resources centers with challenges that hinder the use of electronic information resources centers (**Solomou et al. 2015**).

The current study matches the contemporary focus all over the world on the use of electronic information resources centers in universities and all educational institutions. The study tries to identify the way faculty members use these centers at Saudi Universities in conducting their scientific research and in their teaching. The study identifies types of electronic information resources that help faculty members to practice self-learning skills that support research and discovery skills.

Given the important role electronic information resources centers play in improving the work of faculty members (**Wang 2014**), this study asks the following main research question:

What is the factual situation of the use of faculty members at Saudi universities to electronic information resources centers?
This entails a number of sub-questions that can be summarized as follows:
1- What are the competencies faculty members at Saudi universities should posses in order to be able to use electronic information resources centers?
2- What are the needs of faculty members to use electronic information resources centers for?
3- What are the challenges that hinder faculty members at Saudi university from using electronic information resources centers?

HYPOTHESES OF THE STUDY
1- There are significant differences at ($α ≤ 0.05$) level regarding the use of faculty members at Saudi universities to electronic information resources centers in terms of gender.
2- There are significant differences at ($α ≤ 0.05$) level regarding the use of faculty members at Saudi universities to electronic information resources centers in terms of academic rank.
3- There are significant differences at ($α ≤ 0.05$) level regarding the use of faculty members at Saudi universities to electronic information resources centers in terms of academic area of specialization.
4- There are significant differences at ($α ≤ 0.05$) level regarding the use of faculty members at Saudi universities to electronic information resources centers in terms of number of years of experience.

AIMS OF THE STUDY
1- Identifying competencies faculty members should possess in order to be able to use electronic information resources centers.
2- Identifying how far faculty members' needs are fulfilled regarding the use of electronic information resources centers.
3- Identifying the challenges that might hinder the use of faculty members in these centers.

REVIEW OF LITERATURE

Electronic information resources centers enable faculty members to use multiple resources at the appropriate environment provided by the university. The use of these centers helps faculty members to better attracting students' attention and increasing their interest during learning **(Yessad et al. 2011)**. These centers offer a modern economic model different from traditional one in terms of offering an alternative to provide all classrooms with educational technology. They also contribute to organizing and classifying learning resources which facilitate access of staff members to them **(Thompson et al. 2014)**.

Use of electronic information resources centers helps faculty members in planning and implementing their teaching activities. They allow faculty members access to use them whenever they find appropriate and search for the needed materials without any restrictions. They help to shift from the traditional schedule into a more flexible one in terms of time, teaching methods and media.

Electronic information resources centers aim at the following:
Supporting study course with related electronic materials. **(Hockings et al. 2012)**
- Developing research skills and helping faculty members to encourage research and problem solving skills to their students.
- Supporting students with skills and tools that enable them to adapt with and make use of the quick competitive development in the field of information system**. (Lau et al. 2015)**
- Helping faculty members to use varied teaching methods.
- Helping staff members to exchange their experience for the purpose of developing study courses.
- Allowing opportunities for self-learning.
- Catering for individual differences and meeting students' needs.
- Identifying real attitudes, preferences and aptitudes and potentials of faculty members.
- Helping staff members to guide their students on better ways to obtain information from multiple resources **(Chang et al. 2012)**.

Types of electronic information resources:
First: electronic information resources in terms of coverage and objective manipulation: classified as:
- Electronic information resources related to particular areas of specialization
- Electronic information resources of comprehensive specialization or sometimes known as non-specialized **(Leibowitz 2009)**.
- Electronic information resources general (news, political, informative and televised)

Second: electronic information resources in terms of institution concerns, may be classified as following:
- Electronic information resources belong to commercial institutions **(Hani et al. 2013)**.
- Electronic information resources belong to non-commercial institutions (universities, scientific centers, international and national organizations and projects financed by government or other bodies) **(Tripp 2003)**.

Third: electronic information resources in terms of type of information classified as follows **(Lim et al. 2007)**:
- Bibliographical database.
- Textual numeric database (online, CD-ROMs- magnetic tapes).

Competencies of using electronic information resources centers:
- Identifying electronic information database needed in terms of areas of specialization of faculty members (general and specialized research engines to search websites of publishing of database of electronic information – visiting the location of a university library to view the list of database of electronic information) **(Levy et al. 2011)**.
- Identifying the differences between database of electronic information and the traditional ones: method of setting research variables- identifying number of variables used by faculty members for research- methods of presenting research findings-identifying if the documents are numerated within the database or not-method of presenting summaries of documents **(Al-Busaidi 2013)**.
- Identifying methods of entering database of electronic information according to the following use of acronyms; abbreviated names- of database- use of the term databases and full address of electronic databases- entering websites of universities libraries.
- Identifying the main page of databases of electronic information: name of database- searches-advanced searches- glossary of terms used in storing documents and in giving commands **(Noguerón-Liu 2014)**.
- Identifying strategies of research in electronic information databases: identifying the type of research in electronic database, selection of research terms, typing the research terms in the appropriate columns- choosing the right conjunctions for research terms-choosing the field of research from the list-selecting the date of publication to the needed document-selecting the language of the document-identifying the

needed electronic information about the document- selection of the type of document- selections of other options and identifying type of pictures and needed drawings **(Moreno et al. 2009)**.

- Evaluating results of researching electronic information resources
- Centers: reviewing literature and researching using new terms-
- Quick viewing to titles of articles in order to decide how far they are related to the topic under investigation-saving and printing research results and sending them via email.
- Authorization of references obtained on line: this could be through understanding the abbreviations used in quoting- understanding abbreviations that point to the title of the document under investigation, name of author, date of publication and type of source.
- The ability to use the technical support via the internet and use the guidebook of topics **(Cornelius & Gordon 2009)**.
- Referring to the bibliography in order to select a new document and start searching using different strategy.
- Referring to the main page to perform a new search and using different variables to reach the target information.

Needs of faculty members to use electronic information resources centers:

There are a number of needs and motives that make faculty members use electronic information resources centers. These needs and motives differ from one user to another in terms of the type of electronic information needed **(Abouel enein 2016)**. Needs could be for educational or research purposes, or could be personal or resulting from the surrounding environment. Examples of these needs are: coping with modern developments taking place in academic fields- solving problems regarding academics and conducting scientific research, **(Davids et al. 2015)**. Also, publishing articles - supporting teaching and learning –participation in forums and conferences**.** There are also professional needs related to taking decisions related to work besides personal needs related to learning or entertainment **(Norman & Siminitus 2006)**.

Reasons for establishing electronic information resources centers

There are a number of tasks for electronic information resources centers some of these are: providing electronic information resources related to educational needs, they are useful in developing thinking skills to faculty members and students **(Fahad et al. 2013)**. They are also helpful for faculty members and students as they facilitate reaching required information inside or outside their universities **(Basha et al. 2013)**. Appropriate use of electronic information resources centers acts as a guide to faculty members to help them select and use needed resources **(Dalveren 2014)**.

Factors affecting the use of electronic information resources centers

There are a number of aspects affecting the use of electronic information resources centers. Some of these are: their use, surrounding environment and faculty members. Results from research identified factors affecting the use of these centers related to faculty members as follows: they provide for electronic information and facilitate access to it **Park et al. (2010)**. They allow access to updated information and provide for multi forms of information. There are also some personal factors affecting the use of these centers by faculty members in terms of age, academic rank, area of specialization, years of experience and professional needs **(Cegarra-Navarro and Rodríguez 2012)**.

In sum to what has been mentioned above, there are a number of factors affecting the use of electronic information centers which can be classified into two categories. First, factors related to the use of electronic information resources centers. Second, factors related to the personal traits of the user and surrounding environment **(Korobili et al. 2006)**.

A) **Factors related to the use of electronic information resources centers these are:**
- The availability of using electronic information resources centers and the range of their modernity (simple or complex- available or unavailable- inside the center or via network- traditional or electronic) **(Pineda-Herrero et al. 2011)**.
- Form of electronic information in the electronic resources centers and easiness of use.
- Cost of using electronic information resources centers.
- Increase of electronic information centers as a result of the revolution of published knowledge **(Hartnett & Koury 2012)**.
- Time: information requires long time to obtain its value.
- Faculty members rely on the ability of these centers to get information and retrieve it afterwards.

B) **Factors related to faculty members (personal factors) (Adnan 2014) These are as follows:**
- Age,
- Academic discipline,
- Academic rank,

- Number of years of experience,
- Desire to use electronic information resources centers,
- Problems hindering the use of electronic information resources centers, and
- Ability, comprehensiveness and appropriateness for conducting deep research (**Marković and Jovanović 2012**).

Challenges that hinder use of electronic information resources centers

There are a number of problems hindering faculty members from using electronic information resources centers. Some of these challenges and problems are: lack of well-prepared electronic environment (**Sidgreaves et al. 1987**); lack of cadres of trainers who can train faculty members on using electronic information resource; the rare electronic material that server the university; there is no updating system that could inform about changes and development if different area of specializations; some tools cannot work using Arabic language and require specialized people in language; lack of sills of using electronic information resources centers; lack of electronic information resources centers in most Saudi governmental universities, lack of sufficient time for researching electronic information resources centers, lack of electronic information in Arabic and lack of incentives that encourage faculty members to use electronic information resource centers. In addition, lack of appropriate places for conducting scientific research activities, lack of technicians who can provide support to faculty members, lack of needed electronic information (**Dalveren 2014**), on line information cannot be guaranteed to be there all time and slow downloading is expected (**Abel et al. 2004**).

Research methods and procedures
Population

Population consisted of a group of male and female faculty members in some Saudi universities. Participants included professors, associate professors, assistant professors, lecturers and demonstrators. Questionnaires were administered to (721) faculty members from governmental Saudi Universities. Out of this (66) participant were eliminated as they provided incomplete data. Final number of participants was (655) faculty members from governmental Saudi universities (412) males and (243) females who were selected from different areas of academic disciplines (medical sciences, applied science and humanities) and from different academic ranks. Data collection lasted for one academic year 2015. Numbers of years of experience was also a factor considered in selecting population as shown in the following tables.

Table 1: *Distribution of population in terms of gender and academic rank.*

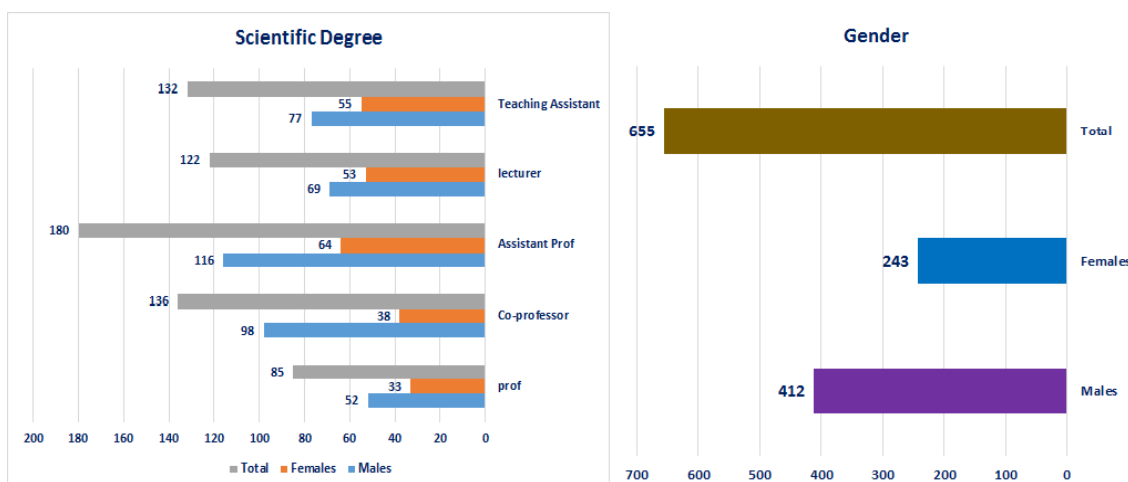| Scientific Degree							
Gender	**prof**	**Co-professor**	**Assistant Prof**	**lecturer**	**Teaching Assistant**	**Total**	**%**
Males	52	98	116	69	77	412	%62.91
Females	33	38	64	53	55	243	%37.09
Total	85	136	180	122	132	655	%100
%	%12.98	%20.76	%27.48	%18.63	%20.15	%100	**%**

Figure 1. Distribution of population in terms of gender and academic position.

Table 2: *Distribution of population in terms of area of academic specialization and number of years of experience*

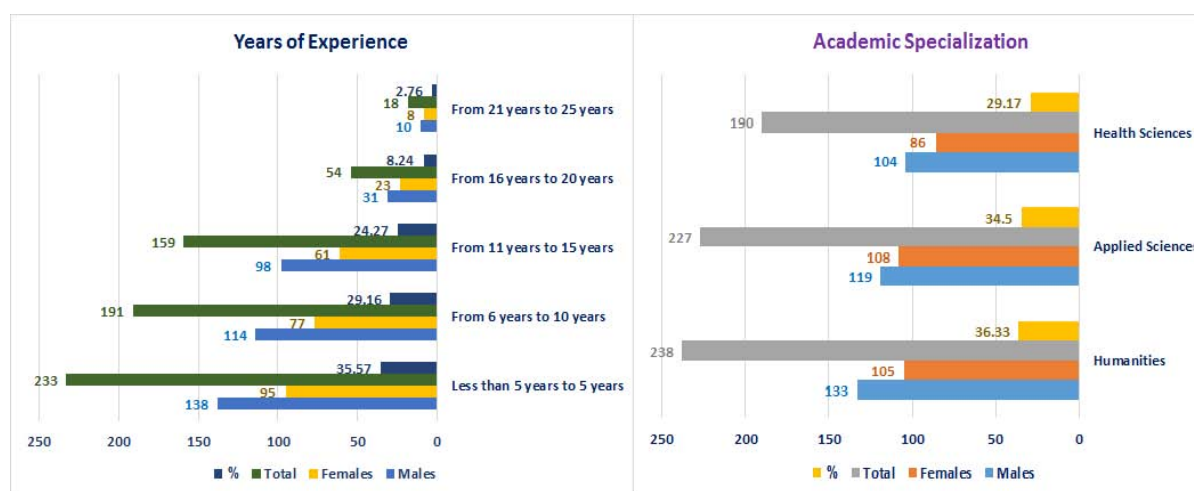|	Years of Experience							Academic Specialization					
Gender	Less than 5 years to 5 years	From 6 years to 10 years	From 11 years to 15 years	From 16 years to 20 years	From 21 years to 25 years	Total	%	Gender	Humanities Sciences	Applied Sciences	Health Sciences	Total	%
Males	138	114	98	31	10	391	%59.69	Males	133	119	104	356	%54.35
Females	95	77	61	23	8	264	%40.31	Females	105	108	86	299	45.64%
Total	233	191	159	54	18	655	%100	Total	238	227	190	655	%100
%	35.57	29.16	24.27	8.24	2.76	%100		%	36.33	34.5	29.17	%100	

Figure 2. Distribution of population in terms of area of academic specialization and number of years of experience.

RESEARCH METHOD

Descriptive analytic method was used to obtain data from research related to the problem of the current study. This is for the purpose of investigating the factual situation of electronic information resources centers in Saudi universities and identifying problems facing them.

RESEARCH INSTRUMENT

Procedures of preparation of a questionnaire of investigating the factual situation of the use of faculty members of electronic information resources centers at Saudi universities.

- Review of literature related to electronic information resources centers and types of electronic information in general.
- Review of findings of research from international journals and conference related to electronic information resources centers in particular.
- Interviewing a number of faculty members in the field of educational technology and electronic learning in order to obtain their views on types of electronic information, problems, competencies, roles, needs of faculty members and affecting factors. In terms of these steps a questionnaire was developed under three categories as follows:
- **Category one:** dealt with competencies that should be possessed by faculty members to use electronic information resources centers. These competencies were phrased in (10) items with brief explanatory details. Reponses were guided by a scale of five options (strongly agree, agree, neutral, disagree and strongly disagree).
- **Category two:** Dealt with assessing needs of staff members of using electronic information resources centers, these were phrased in (23) items. Reponses were guided by a scale of five options (often, always, sometimes, rarely, never).

- **Category three:** This part dealt with the problems that hinder faculty members from using electronic information resources centers phrased in (11 items). Reponses were guided by a scale of five options (often, always, sometimes, rarely, never).

Validity of the questionnaire was measured, procedures are as follows

- **Face validity:** the questionnaire was presented to (23) faculty members specialized in educational technology in some Saudi universities to obtain views on appropriateness and any required modifications.
- Reliability of the questionnaire was measured in terms of a number of procedures as follows. The questionnaire was administered to a group of (23) male and female faculty members in some Saudi universities. Alpha Crookback formula was calculated and reliability reached (0.88).
- **Application of the questionnaire:** it was administered to (655) faculty members from some governmental Saudi Universities.
- **Statistical analysis:** the researcher used SPSS program to measure (mean scores- frequencies- deviations from mean scores- standard of error estimate- differences between mean scores) and Alpha Crookback formula and (Chi square) variables of (gender, degree- number of years of experience- academic areas of specializations) were considered.

DATA ANALYSIS
The viewpoints of research population from faculty members of some Saudi universities were investigated through the use of a questionnaire in order to verify hypotheses of the research and answer its questions.

First: presentation of data: This study aimed at verifying a number of hypotheses through statistical analysis to data obtained from participants. Views of participants around most important competencies needed by faculty members to use electronic information resources centers, how far faculty members are in need for these centers in their teaching and problems hindering the use of these centers were investigated. Results in terms of the research hypotheses are as follows:

First hypothesis: there is a significant difference at $(\alpha \leq 0.05)$ level in the use of faculty members of electronic information resources centers at Saudi universities in terms of gender.

Results related to the first research question 'What are the competencies faculty members at Saudi universities should posses in order to be able to use electronic information resources centers?

In order to answer the first question, statistical data analysis for mean scores, standard deviations and variance for (10) main competencies. Views of participants (412 males and 243 females) were investigated regarding the importance of competencies of using electronic information resources centers through a five scale identifying their responses to questionnaire items. This included (strongly agree- agree- neutral- disagree- strongly disagree).

Table 3:*Shows mean scores and standard deviations for competencies of faculty members in using electronic information resources centers.*

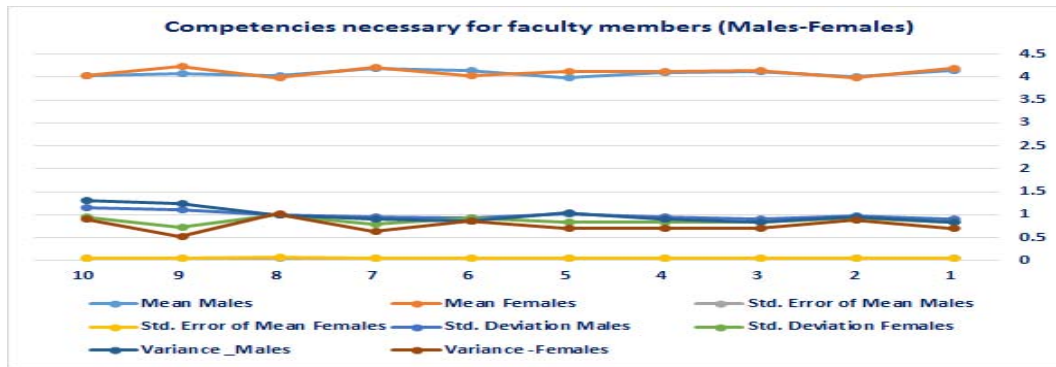| Competencies : Male & Female												
Male & Female			**1.**	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**	**8.**	**9.**	**10.**
Males	**N**	**Valid**	412	412	412	412	412	412	412	412	412	412
	Mean		4.135	4.017	4.114	4.092	3.990	4.143	4.186	4.029	4.080	4.031
	Std. Deviation		.910	.980	.911	.949	1.015	.931	.954	1.000	1.114	1.148
	Variance		.828	.961	.831	.901	1.032	.868	.911	1.002	1.242	1.320
Females	**N**	**Valid**	243	243	243	243	243	243	243	243	243	243
	Mean		4.181	3.987	4.148	4.131	4.323	4.020	4.205	3.983	4.142	4.024
	Std. Deviation		.833	.933	.839	.837	.8339	.9290	.7917	1.0003	.7291	.9488
	Variance		.694	.872	.705	.702	.695	.863	.627	1.008	.532	.900

Figure 3. Shows mean scores and standard deviations for competencies of faculty members in using electronic information resources centers.

Results indicated that mean scores of females were (4.110) with standard deviation of (1.113) and a range of variance of responses at (1.241) in terms of the total score of responses. This revealed that there are significant differences **(α ≤ 0.05)** level in favor of females. Variance came in favor of females as results of variance were low regarding males. The competency of setting strategies of researching electronic databases was considered the most important one followed by authorization of references obtained on line, then using specialized research engines for searching electronic information resources centers. Degree of variance in males responses were higher than females responses.

Results related to the second question: 'What are the needs of faculty members to use electronic information resources centers?'

In order to answer this question, views of participants (412 males and 243 females) on the needs of faculty members for using electronic information resources centers were investigated through (23) questionnaire items requiring respondents to choose out of five scale measuring system (often- always- sometimes- rarely- never).

Table 4: *Shows mean scores and standard deviations for the needs of faculty members to use electronic information resources centers.*

| Needs : Male & Female		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.
Male & Female																								
Males	N Valid	412	412	412	412	412	412	412	412	412	412	412	412	412	412	412	412	412	412	412	412	412	412	412
	Mean	3.735	3.708	3.679	3.684	3.689	3.895	3.939	3.919	3.808	3.788	3.898	3.9903	4.0097	3.8519	3.7354	3.7621	4.0146	4.1214	4.1092	4.1044	4.1311	4.2087	4.186
	Std. Deviation	1.202	1.191	1.166	1.248	1.246	1.079	1.007	1.016	1.039	1.101	1.034	.92539	.94104	1.0670	1.1716	1.1906	1.0532	.97153	.92556	.9339	.90272	.84871	.913
	Variance	1.44	1.419	1.362	1.560	1.553	1.164	1.016	1.03	1.080	1.213	1.070	.856	.886	1.139	1.373	1.418	1.109	.944	.857	.872	.815	.720	.834
Females	N Valid	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243
	Mean	4.032	4.123	4.057	4.197	4.292	4.045	3.995	3.658	3.271	3.234	4.024	4.053	4.032	4.070	4.152	4.362	4.316	4.242	4.222	4.053	4.131	4.160	4.123
	Std. Deviation	.948	.798	.785	.740	.6174	.858	.860	1.103	1.276	1.294	1.075	1.037	.9743	.8902	.9433	.7219	.8346	.8046	.9181	.9366	.9040	.8689	.9052
	Variance	.900	.638	.617	.548	.381	.738	.740	1.218	1.628	1.676	1.156	1.076	.949	.793	.890	.521	.697	.647	.843	.877	.817	.755	.819
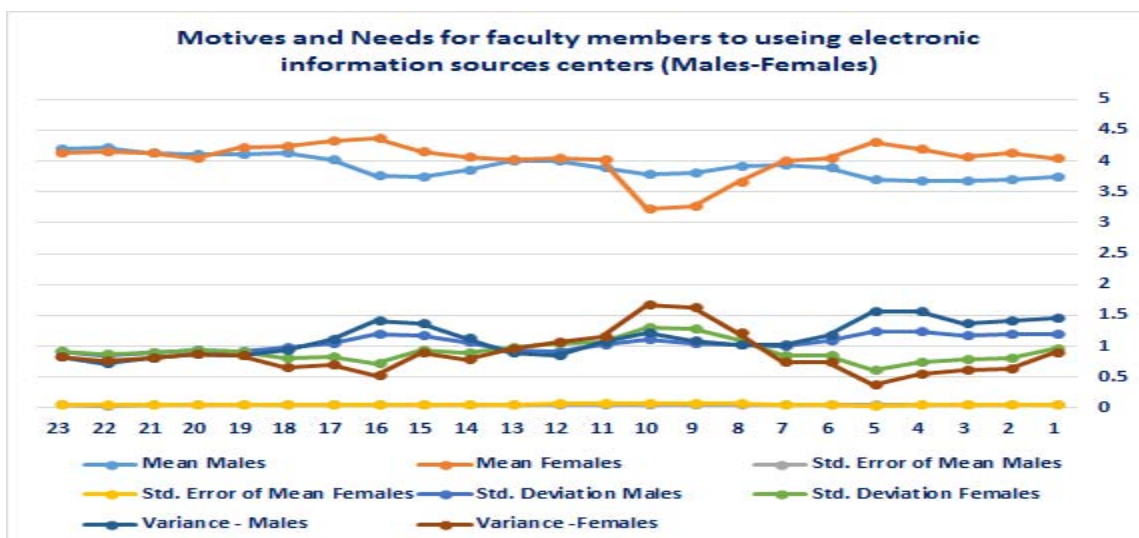
Figure 4. Shows mean scores and standard deviations for the needs of faculty members to use electronic information resources centers.

Results indicate that there are significant differences between males and females at **($\alpha \leq 0.05$)** in favor of females as their mean score was (4.036) with standard deviation of (0.942) and degree of variance of (1.031). Mean score of males was (3.902) with standard deviation of (1.015) and degree of variance of (0.903). Thus, the degree of variance between males was higher than degree of variance between females. This resulted in the significant differences in favor of females. Needs related to teaching could be classified in terms of importance as follows: questionnaire item stating 'allowing opportunities for self-learning' came to be of most important, followed by 'catering for individual differences and meeting students' needs, then continuous support of teaching and learning and authoring, followed by discovering students' potentials and finally developing students' abilities to reach information using various resources.

Results related to the third question' What are the challenges that hinder faculty members at Saudi university from using electronic information resources centers?

In order to answer this question, views on participants (412 males and 243 females) were investigated regarding challenges facing them in using electronic information resources centers through (11) items to investigate the challenges facing faculty members in using electronic information resources centers, with five scale measure requiring a choice among: (often- always- sometimes-rarely- never). This is illustrated in Table 5 & Figure 5 below.

Table 5: *Shows mean scores and standard deviations for challenges facing faculty members (males and females) in using electronic information resources centers.*

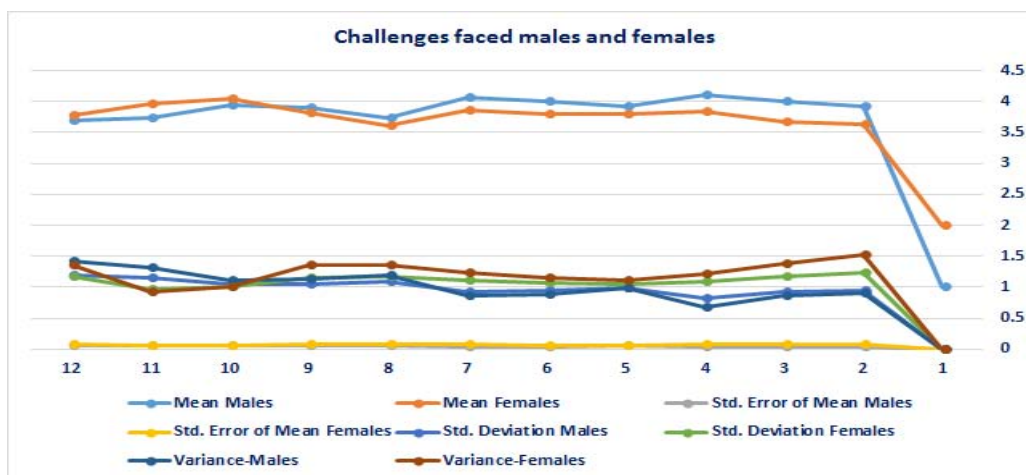| Challenges : Male & Female													
Male & Female		**M & F**	**1.**	**2.**	**3.**	**4.**	**5.**	**6.**	**7.**	**8.**	**9.**	**10.**	**11.**
Males	**N Valid**	412	412	412	412	412	412	412	412	412	412	412	412
	Mean	1.000	3.927	4.002	4.101	3.915	4.014	4.068	3.747	3.893	3.941	3.737	3.686
	Std. Deviation	.000	.951	.926	.822	.998	.946	.9308	1.096	1.061	1.056	1.145	1.192
	Variance	.000	.905	.859	.676	.998	.895	.866	1.201	1.127	1.116	1.313	1.422
Females	**N Valid**	243	243	243	243	243	243	243	243	243	243	243	243
	Mean	2.000	3.642	3.679	3.831	3.802	3.790	3.860	3.613	3.818	4.041	3.975	3.786
	Std. Deviation	.000	1.232	1.176	1.098	1.053	1.072	1.115	1.167	1.164	1.007	.966	1.169
	Variance	.000	1.520	1.384	1.207	1.110	1.150	1.245	1.362	1.356	1.015	.933	1.367

Figure 5. Shows mean scores and standard deviations for challenges facing faculty members (males and females) in using electronic information resources centers.

Results indicate that there are significant differences at (**α ≤ 0.05**) in favor of males as their mean score was (3.911) with standard deviation of (0.995) and degree of variance of 0.994. For females, their mean score was (3.803) with standard deviation of (1.153) and degree of variance of (1.323). This shows that there are significant differences in favor of males as their mean scores representing the challenges facing them as follows: there are no electronic information resources centers in their universities. Furthermore, it was revealed that there are no electronic information resources centers serving their universities. Then, the poor use of electronic information resources centers, lack of specialists to train faculty members to use these centers and finally faculty members are not encouraged to use these centers.

D- Results related to the variable of gender (male and female) and its relationship with variables of the study: academic rank, academic area of specialization and number of years of experience. In order to examine this relationship, data were treated statistically to investigate correlation of gender, differences between males and females in terms of academic rank, academic area of specialization and number of years of experience. as shown in Table 6 & Figure 6

Table 6: *Shows mean scores and standard deviations for the variable of gender and its correlation with variables of the study: academic rank, academic area of specialization and the number of years of experience.*

Comparison between the study variables : Gender				
Gender		**Scientific Degree**	**Academic Specialization**	**Years of Experience**
Males	**N Valid**	**412**	**412**	**412**
	Mean	**3.3471**	**1.9466**	**2.3010**
	Std. Deviation	**1.30446**	**.82660**	**1.16381**
	Variance	**1.702**	**.683**	**1.354**
Females	**N Valid**	**243**	**243**	**243**
	Mean	**2.0823**	**1.8930**	**1.8519**
	Std. Deviation	**.84392**	**.76929**	**.83978**
	Variance	**.712**	**.592**	**.705**

The above table shows that differences between mean scores related to academic rank, academic area of specialization and number of years of experience came in favor of males and were significant at (**α ≤ 0.05**) level**.**
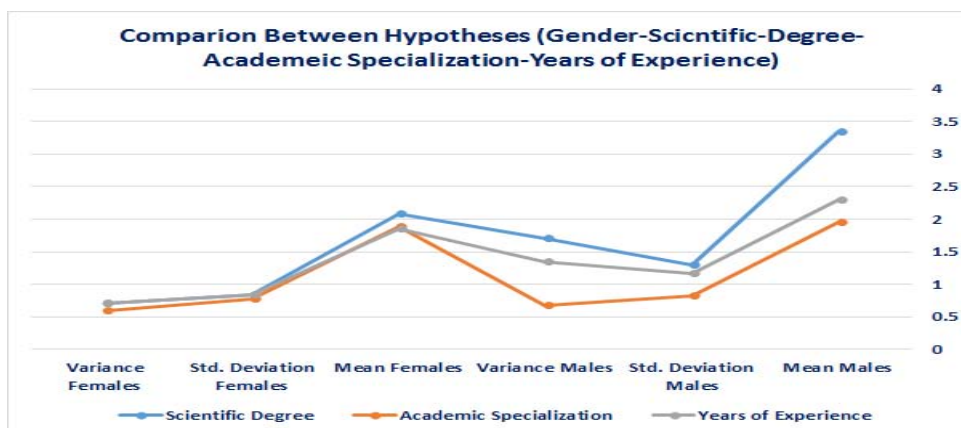
Figure 6. Shows mean scores and standard deviations for the variable of gender and its correlation with variables of the study: academic rank, academic area of specialization and number of years of experience.

Comparisons of standard deviations to the mean scores between males and females show that deviations were higher to males than females. This indicated the correlation between gender and the variables of the study: academic area of specialization and number of years of experience. Degree of variance is higher regarding males more than females.

Second hypothesis: There are significant differences at **(α ≤ 0.05)** level regarding the use of faculty members at Saudi universities to electronic information resources centers in terms of academic rank. In order to verify the second hypothesis data were treated in three stages related to the question of the study (competencies- needs- challenges) and details are as follows:

Results related to the first question: What are the competencies faculty members at Saudi universities should posses in order to be able to use electronic information resources centers?

Results of investigating views of faculty members participating in this study in terms of academic rank (132 demonstrator- 122 lecturer-180 assistant professors-136 associate professors and 85 professors) regarding competencies needed for using electronic information resources centers. They were asked to respond to (10) questionnaire items and were asked to select among five scale measure (strongly agree, agree, neutral, disagree and strongly disagree). As shown in Table 7 & Figure 7

Table 7: *Shows mean scores and standard deviations of academic rank and its correlation with competencies needed for using electronic information resources centers.*

Competencies : Scientific Degree											
Scientific Degree		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Teaching Assistant	N Valid	132	132	132	132	132	132	132	132	132	132
	Mean	4.121	3.916	4.053	4.098	4.090	4.045	3.992	3.833	4.075	3.886
	Std. Deviation	.9493	.9888	.9909	.8636	.8948	.9639	1.022	1.140	.9777	1.109
	Variance	.901	.978	.982	.746	.801	.929	1.046	1.300	.956	1.231
lecturer	N Valid	122	122	122	122	122	122	122	122	122	122
	Mean	4.163	4.032	4.065	4.065	4.049	4.172	4.311	4.106	4.295	4.163
	Std. Deviation	.8367	.9615	.9157	.9769	.9778	.9332	.8037	.8889	.8099	.9565
	Variance	.700	.925	.839	.954	.956	.871	.646	.790	.656	.915
Assistant Prof	N Valid	180	180	180	180	180	180	180	180	180	180
	Mean	4.244	4.011	4.222	4.050	4.056	4.133	4.288	4.138	4.211	4.088
	Std. Deviation	.7953	.9092	.7212	.8734	.9497	.8548	.7873	.9499	.8906	.9819

|												
	Variance		.633	.827	.520	.763	.902	.731	.620	.902	.793	.964
Co-professor	N	Valid	136	136	136	136	136	136	136	136	136	136
	Mean		4.125	4.080	4.198	4.220	3.992	4.022	4.117	3.808	3.985	3.897
	Std. Deviation		.9304	.9031	.7680	.8665	.9698	1.0077	.9741	1.0778	1.1611	1.1944
	Variance		.866	.816	.590	.751	.941	1.014	.949	1.163	1.348	1.426
prof	N	Valid	85	85	85	85	85	85	85	85	85	85
	Mean		4.035	3.976	4.011	4.117	3.988	4.117	4.258	4.211	4.117	4.141
	Std. Deviation		.9315	1.123	1.117	1.016	1.005	.9182	.8612	.8031	1.127	1.166
	Variance		.868	1.261	1.250	1.034	1.012	.843	.742	.645	1.272	1.361
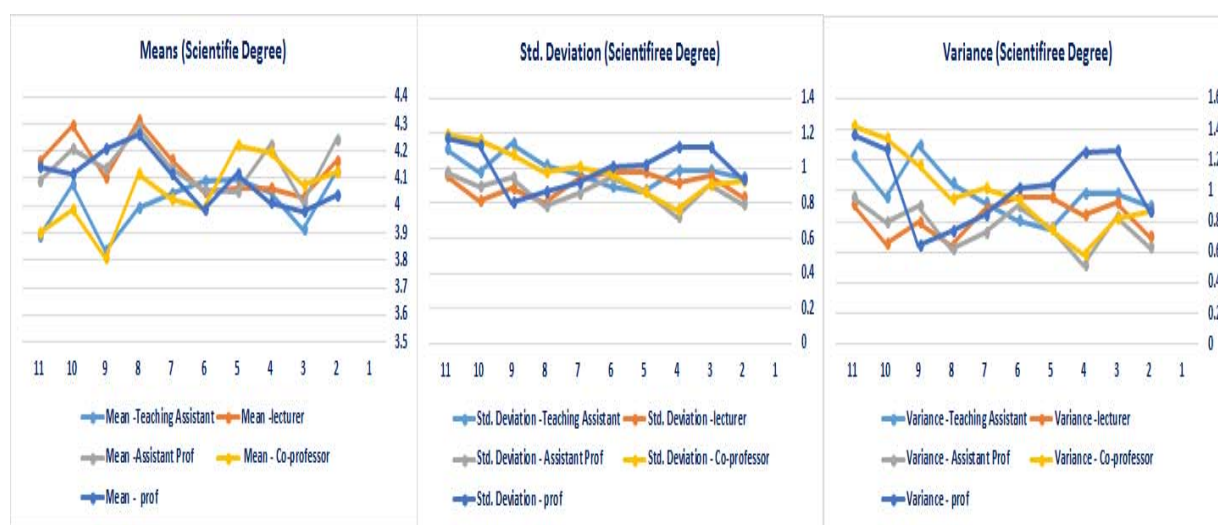
Figure 7. Shows mean scores and standard deviations of academic rank and its correlation with competencies needed for using electronic information resources centers.

Statistical analysis of data shows significant differences among academic ranks at (**α ≤ 0.05**) as mean score of demonstrators was (4.010) with standard deviation of (0.893) and degree of variance of (0.801). Mean score of lecturers was (4.142) with standard deviation of (1.64) and degree of variance of (1.362). Mean score for assistant professors was (4.132) with standard deviation of (0.942) and degree of variance of (0.928). Mean score for professors was (4.088) with standard deviation of (0.904) and degree of variance of (0.816). The above results indicated that there are significant differences among different academic ranks in terms of: (demonstrators- lecturers- assistant professors-professors). This result is assured since the competency of identifying electronic information databases in terms of the academic area of specialization came on top, then authorization of on line references followed by evaluation of search results, after that identifying components of main page of electronic databases and finally, the ability to use direct technical support and topics guide on line.

Results related to the second question: What are the needs of faculty members to use electronic information resources centers for?

Investigation of views of faculty members regarding needs of using electronic information resources centers in terms of academic rank (132 demonstrators- 122 lecturers-180 assistant professors-associate professors -136 associate professors- 82 professors) through (23) items on a questionnaire requiring them to choose among five options (often- always-sometimes-rarely- never).

Table 8: *Shows mean scores and standard deviations of academic ranks and their correlation with needs of using electronic information resources centers.*

|			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
											Needs : Scientific Degree														
Scientific Degree			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Teaching Assistant	N	Valid	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132	132
	Mean		3.583	3.719	3.825	3.734	3.742	4.068	4.045	3.954	3.681	3.848	4.037	4.03	4.053	3.916	3.833	3.803	4.2955	4.272	4.280	4.189	4.181	4.181	4.212
	Std. Deviation		1.198	1.167	.9999	1.144	1.169	.8666	.915	.9235	1.086	1.142	1.058	1.03	.9435	1.026	1.120	1.142	.83564	.865	.849	.839	.9148	.836	.838
	Variance		1.436	1.364	1.000	1.311	1.368	.751	.838	.853	1.180	1.305	1.121	1.07	.890	1.054	1.254	1.304	.698	.749	.722	.704	.837	.700	.703
lecturer	N	Valid	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122	122
	M		4.082	4.090	3.967	4.114	4.098	4.008	3.745	3.803	3.582	3.401	3.918	4.06	4.065	4.008	4.082	4.147	3.9016	3.868	4.057	3.729	3.991	4.041	4.016
	Std. Deviation		.905	.8431	.9528	.8738	.9128	.9045	1.016	1.118	1.225	1.283	1.056	.906	.8789	.9315	.932	.9151	1.0318	.995	.956	.953	.9748	.903	.987
	Variance		.820	.711	.908	.764	.833	.818	1.034	1.250	1.501	1.647	1.117	.822	.773	.868	.869	.838	1.065	.991	.914	.910	.950	.816	.975
Assistant Prof	N	Valid	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
	Mean		4.077	4.105	3.944	4.061	4.161	3.844	3.866	3.566	3.305	3.216	3.961	4.05	3.998	3.933	4.000	4.388	4.3444	4.211	4.161	4.227	4.183	4.266	4.100
	Std. Deviation		.893	.815	.9075	.9164	.8198	1.018	.993	1.143	1.320	1.274	1.064	.993	1.041	1.044	1.118	.6962	.80725	.852	.946	.895	.842	.829	.940
	Variance		.798	.665	.824	.840	.672	1.037	.988	1.308	1.744	1.623	1.133	.986	1.084	1.091	1.251	.485	.652	.726	.896	.803	.709	.688	.884
Co-professor	N	Valid	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136	136
	Mean		3.772	3.727	3.727	3.897	3.838	3.977	4.073	3.845	3.764	3.713	3.897	3.95	4.061	3.911	3.794	3.720	3.9926	4.316	4.183	4.139	4.169	4.198	4.308
	Std. Deviation		1.264	1.232	1.176	1.097	1.168	1.057	.866	1.060	1.027	1.114	1.090	.944	.9124	1.021	1.129	1.239	1.0988	.875	.904	.990	.86	.823	.873
	Variance		1.600	1.518	1.385	1.204	1.366	1.118	.750	1.124	1.055	1.243	1.189	.902	.833	1.044	1.276	1.536	1.207	.766	.818	.980	.749	.679	.763
prof	N	Valid	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85
	Mean		3.541	3.458	3.482	3.317	3.505	3.870	4.152	4.152	3.929	4.000	3.882	3.91	3.882	3.882	3.623	3.600	3.9412	4.094	4.011	4.047	4.082	4.247	4.200
	Std. Deviation		1.314	1.286	1.287	1.521	1.411	1.203	.919	.8238	.8561	.8997	.9438	.928	.9438	1.016	1.224	1.283	1.1685	.971	.957	.924	.953	.911	.870
	Variance		1.727	1.656	1.657	2.315	1.991	1.447	.845	.679	.733	.810	.891	.862	.891	1.034	1.499	1.648	1.366	.943	.917	.855	.910	.831	.757
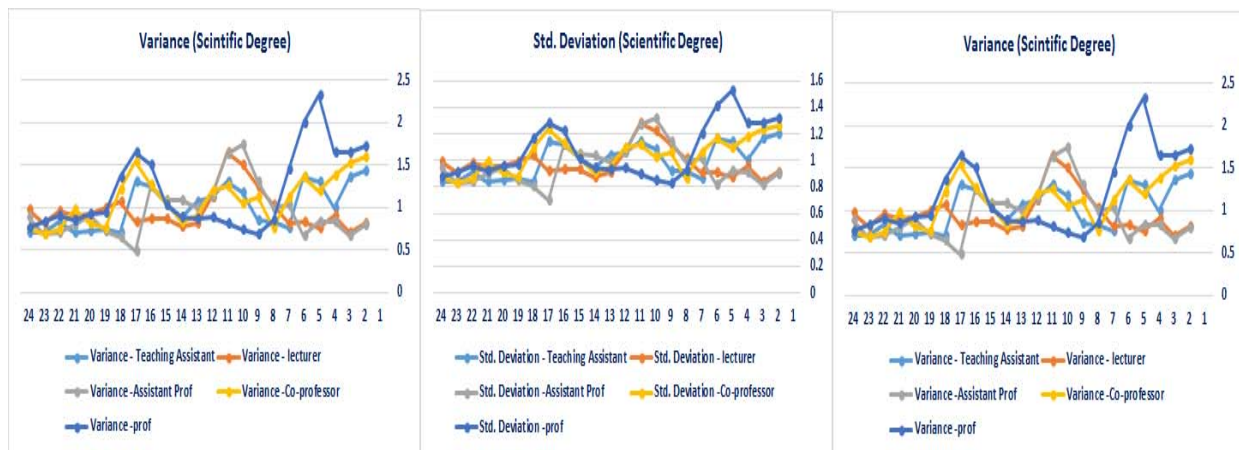
Figure 8. Shows mean scores and standard deviations of academic ranks and their correlation with needs of using electronic information resources centers.

Data analysis revealed that there are significant differences among academic ranks at **($\alpha \leq 0.05$)** level, since mean score of demonstrators was (3.977) with standard deviation of (1.013) and degree of variance of (1.041), for lecturers, their mean score was (3.907) with standard deviation of (1.001) and degree of variance of (1.023),

mean scores of assistant professors was (3.815) with standard deviation of (1.180) and degree of variance of (1.311), mean scores of associate professor was (4.120) with standard deviation of (0.819) and degree of variance of (0.672) and the mean score of professors was (3.861) with standard deviation of (1.016) and degree of variance of (0.943). This is revealed since the item of using and learning at the appropriate times came on top, then discovery of potentials and aptitudes, followed by supporting preparation and implementation of lectures, then providing an economic alternative to save costs of preparation of classrooms with technologies and finally came developing students' abilities to obtain information from multi-sources.

Results related to the third question: What are the challenges that hinder faculty members at Saudi university from using electronic information resources centers?

Statistical analysis of views of participants in terms of academic ranks (132 demonstrators- 122 lecturers-180 assistant professors-associate professors -136 associate professors- 82 professors) around challenges facing them in using electronic information resources centers were investigated through questionnaire items requiring them to select among five options (often- always-sometimes-rarely- never).

Table 9: S*hows mean scores and standard deviations of academic ranks and their correlation with challenges of using electronic information resources centers.*

| Challenges : Scientific Degree												
Scientific Degree		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
Teaching Assistant	N Valid	132	132	132	132	132	132	132	132	132	132	132
	Mean	3.507	3.621	4.136	3.939	4.022	3.909	3.863	3.848	4.159	4.022	4.037
	Std. Deviation	1.257	1.207	.9144	1.075	.9202	1.029	1.046	1.066	.7895	.8949	.9197
	Variance	1.580	1.458	.836	1.157	.847	1.060	1.096	1.137	.623	.801	.846
lecturer	N Valid	122	122	122	122	122	122	122	122	122	122	122
	Mean	3.844	3.868	3.762	3.762	3.918	4.000	3.598	3.647	4.147	3.934	4.082
	Std. Deviation	1.060	1.075	1.091	1.135	1.017	1.020	1.118	1.219	.8969	.9936	.9144
	Variance	1.124	1.156	1.191	1.290	1.035	1.041	1.251	1.486	.804	.987	.836
Assistant Prof	N Valid	180	180	180	180	180	180	180	180	180	180	180
	Mean	3.983	3.950	3.977	3.811	3.827	4.005	3.594	3.916	3.744	3.572	3.211
	Std. Deviation	.9715	.9470	.9451	.9559	1.061	1.038	1.132	1.132	1.196	1.223	1.341
	Variance	.944	.897	.893	.914	1.127	1.078	1.282	1.284	1.432	1.498	1.799
Co-professor	N Valid	136	136	136	136	136	136	136	136	136	136	136
	Mean	3.963	3.970	4.139	4.000	3.992	4.022	3.757	3.992	3.926	3.823	3.647
	Std. Deviation	.8978	.9579	.7810	.9428	.9775	.9772	1.176	.9775	1.106	1.134	1.226
	Variance	.806	.918	.610	.889	.956	.955	1.385	.956	1.224	1.287	1.504
prof	N Valid	85	85	85	85	85	85	85	85	85	85	85
	Mean	3.705	4.023	3.964	3.858	3.929	4.023	3.705	3.894	4.035	3.905	3.929
	Std. Deviation	1.142	.9509	.9315	1.001	.9974	.9509	1.132	1.069	1.017	1.030	1.088
	Variance	1.305	.904	.868	1.004	.995	.904	1.282	1.143	1.034	1.062	1.185
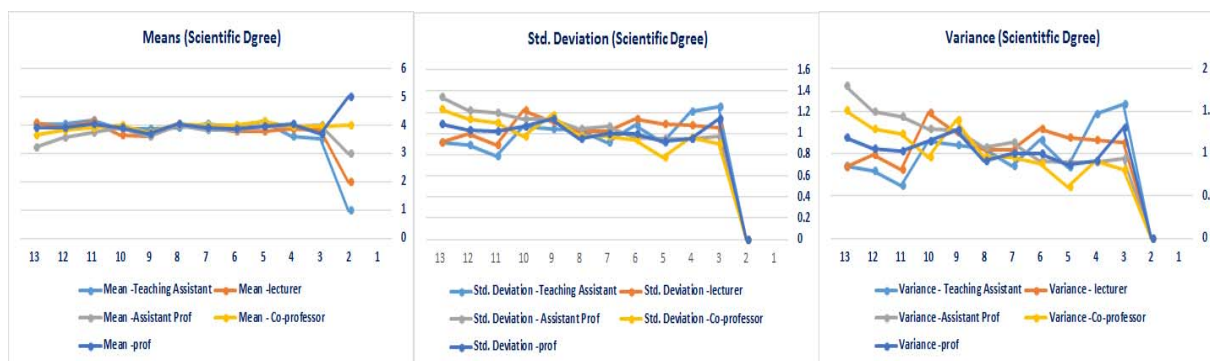
Figure 9. Shows mean scores and standard deviations of academic ranks and their correlation with challenges of using electronic information resources centers.

Analysis of data regarding challenges facing faculty members in using electronic information resources centers in terms of academic ranks showed that there are significant differences among academic ranks at ($\alpha \leq 0.05$) level, since results from participants were as follows: mean scores of demonstrators was (3.914) with standard deviation of (0.918) and a degree of variance of (1.017); mean scores of lecturers was (3.914) with standard deviation of (1.041) and a degree of variance of (1.133), mean scores of assistant professors was (3.780) with standard deviation of (1.136) and degree of variance of (1.080), mean scores of associate professor was (3.930) with standard deviation of (1.080) and a degree of variance of (1.062), and mean scores of professors was (3.906) with standard deviation of (1.028) and a degree of variance of (1.062). the item of lack of electronic information resources centers came on top then, lack of encouragement to faculty members to use electronic information resources centers followed by unavailability of an appropriate place for electronic information resources centers inside universities then, lack of technical support to solve problems facing faculty members searching electronic resources and finally lack of skills of using electronic information resources centers.

Regarding third hypothesis: There are significant differences at ($\alpha \leq 0.05$) level regarding the use of faculty members at Saudi universities to electronic information resources centers in terms of academic area of specialization.

Results related to first question: What are the competencies faculty members at Saudi universities should posses in order to be able to use electronic information resources centers?

The following table shows that results indicated significant differences at ($\alpha \leq 0.05$) level among academic areas of specialization (238 from humanities- 227 from applied sciences- 190 from health sciences) regarding competencies that faculty members should obtain to use electronic information resources centers through a questionnaire requiring them to respond to different items requiring them to choose from five options (often, always, sometimes, rarely and never).

Table 10: *Shows mean scores and standard deviations of results related to academic area of specialization and correlation with electronic resources centers.*

Competencies : Academic Specialization											
Academic Specialization		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Humanities	**N** **Valid**	238	238	238	238	238	238	238	238	238	238
	Mean	4.1008	3.9832	4.1176	4.0630	4.0714	4.0546	4.2017	4.0000	4.1050	3.9916
	Std. Deviation	.97127	.98498	.90172	.9679	.91353	1.0111	.86253	.98512	1.0441	1.1288
	Variance	.943	.970	.813	.937	.835	1.022	.744	.970	1.090	1.274
Applied Sciences	**N** **Valid**	227	227	227	227	227	227	227	227	227	227
	Mean	4.1894	4.0088	4.0837	4.1630	4.0264	4.1674	4.1938	4.0352	4.1498	4.0352
	Std. Deviation	.85408	.97305	.90576	.83869	.96359	.82986	.91562	.97245	.93815	1.0553
	Variance	.729	.947	.820	.703	.929	.689	.838	.946	.880	1.114
S	**N** **Valid**	190	190	190	190	190	190	190	190	190	190

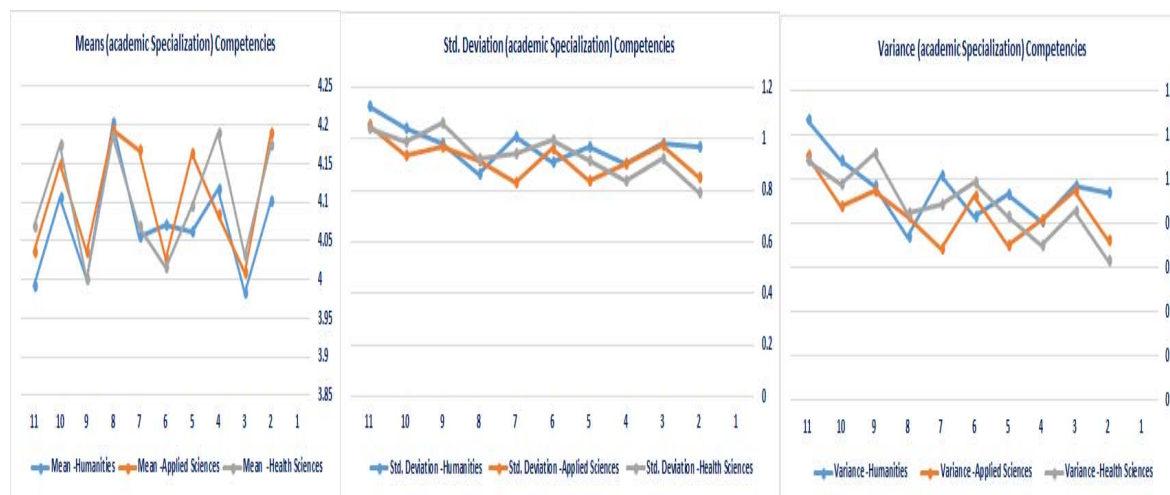|										
Mean	4.1737	4.0316	4.1895	4.0947	4.0158	4.0684	4.1842	4.0000	4.1737	4.0684
Std. Deviation	.79439	.92528	.83943	.91517	.99457	.94312	.92168	1.0591	.99008	1.0442
Variance	.631	.856	.705	.838	.989	.889	.849	1.122	.980	1.091

Figure 10. Shows mean scores and standard deviations of results related to academic area of specialization and correlation with electronic resources centers.

Statistical analysis of data regarding competencies needed for faculty members revealed that there are significant differences among faculty members in terms of academic areas of specialization at **(α ≤ 0.05)** details of this could be explained as follows. Mean scores of humanities was (4.068) with standard deviation of (0.967) and a degree of variance of (0.937), mean scores of applied sciences was (4.104) with standard deviation of (1.044) and a degree of variance of (1.090) and mean scores of health sciences was (4.099) with standard deviation of (0.973) and a degree of variance of (0.947). qualitative interpretation of this resulted in the following: selection of the item 'referring to the citation page to choose a new document cam on the top followed by documentation of references obtained on line, then setting a strategy for searching electronic databases, then identifying databases needed in terms of academic area of specialization and finally entering electronic databases using their abbreviated names.

Results related to the second question: What are the needs of faculty members to use electronic information resources centers for?
The following table shows results of statistical analysis of data obtained in terms of academic area of specialization (238 from humanities- 227 from applied sciences- 190 from health sciences) indicating that there are significant differences at **(α ≤ 0.05)** level among academic areas of specialization which determine the need of faculty members to use electronic information re3sources centers based on a questionnaire using five scales (strongly agree- agree- neutral- disagree- strongly disagree).

Table 11: *Shows mean scores and standard deviations of academic areas of specialization and correlation with needs of faculty members to use electronic information resources centers.*

			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Needs : Academic Specialization																									
Academic Specialization			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Humanities	N	Valid	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238	238
	Mean		3.945	3.932	3.9118	3.9034	4.0126	4.0000	3.9370	3.8403	3.554	3.546	3.937	4.084	4.071	3.907	3.924	4.050	4.319	4.2521	4.210	4.197	4.193	4.214	4.222
	Std. Deviation		1.079	1.0492	.98757	1.0449	1.0692	.98512	.96796	1.0868	1.184	1.254	1.0792	.900	.9408	1.022	1.048	1.05	.846	.9067	.898	.899	.878	.8320	.907
	Variance		1.166	1.101	.975	1.092	1.143	.970	.937	1.181	1.404	1.574	1.165	.811	.885	1.046	1.100	1.103	.716	.822	.808	.809	.773	.692	.824
Sc.	N	Valid	227	227	227	227	227	227	227	227	227	227	227	227	227	227	227	227	227	227	227	227	227	227	227

|																								
	Mean	3.775	3.8326	3.7445	3.8899	3.8767	3.9515	3.9692	3.8062	3.682	3.599	3.8855	3.947	4.013	3.889	3.810	3.898	3.969	4.101	4.074	4.035	4.118	4.158	4.185
	Std. Deviation	1.127	1.0800	1.1272	1.1214	1.1299	.9921	.94725	1.0207	1.123	1.172	1.0829	1.054	.975	1.000	1.149	1.1223	1.074	.956	.9540	.925	.9115	.8526	.878
	Variance	1.272	1.167	1.271	1.258	1.277	.984	.897	1.042	1.262	1.374	1.173	1.112	.951	1.001	1.322	1.260	1.154	.914	.910	.857	.831	.727	.771
Health Sciences	N Valid	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190
	Mean	3.805	3.8105	3.7947	3.8211	3.8316	3.8895	3.9789	3.8211	3.589	3.610	4.0263	4.005	3.957	4.015	3.942	4.0053	4.073	4.136	4.168	4.005	4.068	4.200	4.063
	Std. Deviation	1.167	1.1202	1.0515	1.1950	1.0852	1.0457	.95373	1.0638	1.177	1.188	.97283	.939	.941	1.005	1.137	1.0665	1.0104	.868	.9160	.9785	.920	.8920	.946
	Variance	1.364	1.255	1.106	1.428	1.178	1.094	.910	1.132	1.386	1.414	.946	.884	.887	1.010	1.293	1.138	1.021	.754	.839	.958	.847	.796	.895
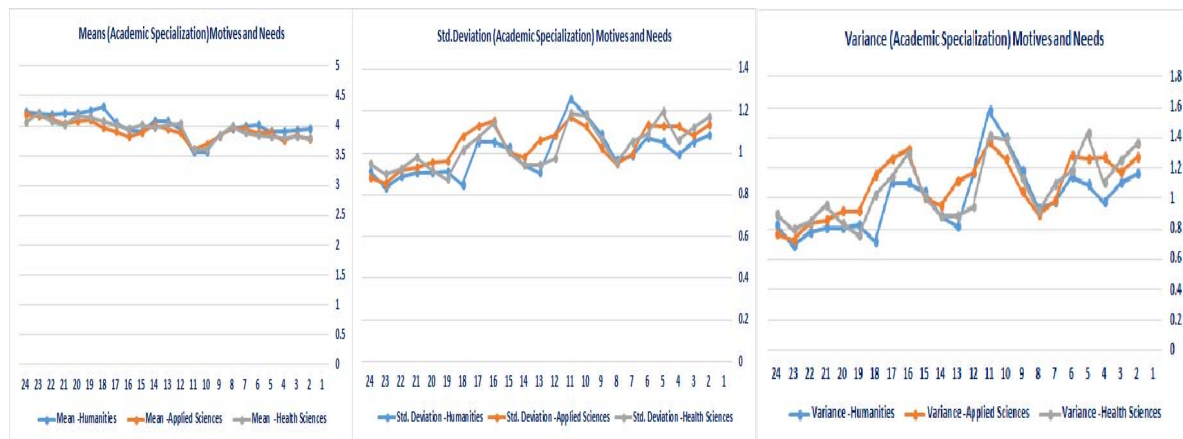
Figure 11. Shows mean scores and standard deviations of academic areas of specialization and correlation with needs of faculty members to use electronic information resources centers.

Data analysis revealed that there are significant differences among faculty members in terms of academic areas of specialization at **(α ≤ 0.05),** details are as follows. Mean scores of participants from humanities were (4.178) with standard deviation of (0.987) and a degree of variance of (0.868) and mean score of participants from applied science was (3.921) with standard deviation of (0.975), mean scores of participants from health sciences was (3.939) with standard deviation of (0.976) and a degree of variance of (0.975). qualitative examination of these results showed that needs of faculty members to' developing research skills , discovery and thinking skills' on top followed by providing students with skills enable them to adapt and make use of competitive developments in information systems. Then' dealing with individual difference', after that, discovering potentials and aptitudes, then using and leaning at the appropriate times, then supporting preparation and implementation of lectures and finally developing students' abilities in obtaining information from different sources.

Results related to the third question: What are the challenges that hinder faculty members at Saudi university from using electronic information resources centers?

The following table shows results of statistical analysis of views of participants on challenges facing faculty members of different areas of specialization in using electronic information resources centers. Results indicate that there are significant differences at **(α ≤ 0.05),** level among academic areas of specialization (238 from humanities- 227 participants from applied sciences- 190 participants from health sciences).

Table 12: *Shows mean scores and standard deviations of different areas of academic specialization and correlation with using electronic information resources centers.*

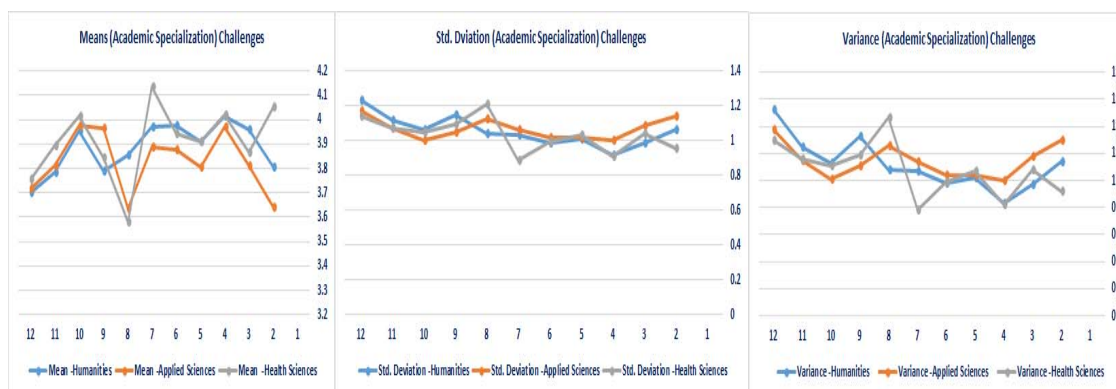| Challenges : Academic Specialization			1	2	3	4	5	6	7	8	9	10	11
Academic Specialization													
Humanities	N	Valid	238	238	238	238	238	238	238	238	238	238	238
	Mean		3.806	3.962	4.016	3.907	3.974	3.970	3.852	3.789	3.953	3.785	3.701
	Std. Deviation		1.065	.9865	.9138	1.010	.9890	1.032	1.039	1.150	1.064	1.117	1.235
	Variance		1.135	.973	.835	1.021	.978	1.067	1.080	1.323	1.133	1.249	1.527
Applied Sciences	N	Valid	227	227	227	227	227	227	227	227	227	227	227
	Mean		3.643	3.810	3.969	3.806	3.876	3.889	3.634	3.964	3.973	3.810	3.718
	Std. Deviation		1.136	1.086	1.001	1.020	1.018	1.064	1.122	1.051	1.004	1.070	1.171
	Variance		1.292	1.181	1.003	1.042	1.038	1.134	1.260	1.105	1.008	1.145	1.371
Health Sciences	N	Valid	190	190	190	190	190	190	190	190	190	190	190
	Mean		4.052	3.868	4.021	3.910	3.942	4.136	3.578	3.842	4.015	3.894	3.757
	Std. Deviation		.9580	1.038	.9082	1.032	.9930	.8862	1.209	1.091	1.051	1.073	1.138
	Variance		.918	1.078	.825	1.066	.986	.785	1.462	1.192	1.106	1.153	1.296

Figure 12. Shows mean scores and standard deviations of different areas of academic specialization and correlation with using electronic information resources centers.

Data analysis regarding challenges facing faculty members revealed that there are significant differences in terms of academic areas of specialization at **($\alpha \leq 0.05$),** level. This is interpreted as follows. Mean score of participants from humanities was (3.883) with standard deviation of (1.064) and a degree of variance of (1.134), mean score of participants from applied science was (3.826) with standard deviation of (1.083) and a degree of variance of (1.181) and mean score of participants from health sciences was (3.910) with standard deviation of (1.032) and a degree of variance of (1.066). The biggest challenges facing faculty members and selected on top of all items was ' lack of encouragement to help faculty members use electronic information resources centers'. followed this ' lack of electronic information resources centers, then lack of electronic information resources serving the university, after that lack of electronic information resources centers in Arabic and finally, lack of modern electronic environment that are supported with modern programs in colleges of the university.

Fourth hypotheses: There are significant differences at **($\alpha \leq 0.05$),** level regarding the use of faculty members at Saudi universities to electronic information resources centers in terms of number of years of experience.

Results related to the first question: What are the competencies faculty members at Saudi universities should posses in order to be able to use electronic information resources centers?

The following table shows statistical analysis of data related to the variable of number of years of experience (from 1-5, from 6-10, from 11-16, from 16-20 and from 21-25) and its correlation with competencies needed to use electronic information resources centers. Results indicated that there are significant differences at ($\alpha \leq 0.05$), based on the five scales (often- always- sometimes-rarely-never). As described in Table 13 & Figure 13.

Table 13: *Shows mean scores and standard deviations of number of years of experience and its correlation with competencies needed to use electronic information resources centers.*

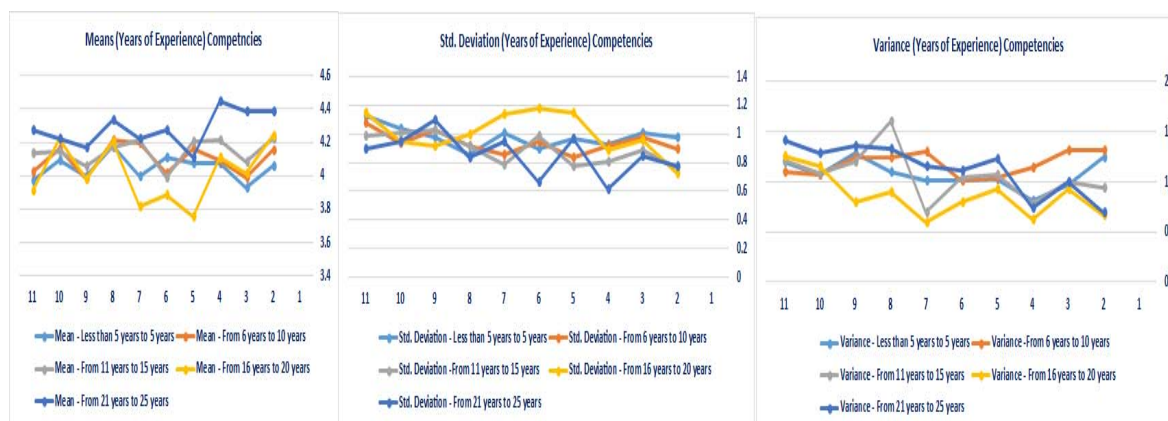| Competencies : Years of Experience											
Years of Experience		**1**	**2**	**3**	**4.**	**5**	**6**	**7**	**8**	**9**	**10**
Less than 5 years to 5 years	N Valid	233	233	233	233	233	233	233	233	233	233
	Mean	4.060	3.931	4.073	4.073	4.107	3.995	4.180	4.000	4.094	3.970
	Std. Deviation	.9763	1.006	.9232	.9688	.9009	1.010	.857	.978	1.042	1.127
	Variance	1.238	.968	.819	1.022	1.017	1.020	1.100	1.285	1.069	1.196
From 6 years to 10 years	N Valid	191	191	191	191	191	191	191	191	191	191
	Mean	4.157	3.989	4.094	4.162	4.015	4.193	4.214	3.984	4.162	4.026
	Std. Deviation	.8923	.9732	.9185	.8334	.9429	.8578	.9124	1.028	.9346	1.083
	Variance	1.320	1.315	1.149	1.048	1.008	1.305	1.242	1.241	1.067	1.096
From 11 years to 15 years	N Valid	159	159	159	159	159	159	159	159	159	159
	Mean	4.226	4.088	4.213	4.207	3.993	4.213	4.169	4.056	4.144	4.132
	Std. Deviation	.7707	.8886	.8063	.7801	.9840	.7824	.9154	1.026	1.011	.9879
	Variance	.949	1.006	.784	1.078	1.045	.699	1.604	1.205	1.082	1.210
From 16 years to 20 years	N Valid	54	54	54	54	54	54	54	54	54	54
	Mean	4.240	4.018	4.111	3.759	3.888	3.814	4.203	3.981	4.222	3.907
	Std. Deviation	.7251	.9613	.8831	1.148	1.176	1.133	.9977	.9212	.9450	1.153
	Variance	.667	.924	.632	.929	.792	.598	.896	.803	1.157	1.261
From 21 years to 25 years	N Valid	18	18	18	18	18	18	18	18	18	18
	Mean	4.388	4.388	4.444	4.111	4.277	4.223	4.333	4.166	4.222	4.277
	Std. Deviation	.7775	.8498	.6157	.9633	.6691	.9428	.8401	1.098	.9428	.8947
	Variance	.693	.997	.735	1.232	1.114	1.163	1.324	1.359	1.294	1.412

Figure 13. Shows mean scores and standard deviations of number of years of experience and its correlation with competencies needed for faculty members to use electronic information resources centers.

Results indicated that there are significant differences at **(α ≤ 0.05),** level based on the five scales (often, always, sometimes, rarely and never) in terms of number of years of experience interpreted as follows. Mean scores of experience ranged from one year to five was (3.553) with standard deviation of (1.029) and a degree of variance of (1.028), mean scores of number of years of experience ranged from six to ten was (9.099) with standard deviation of (1.068) and a degree of variance of (1.301), mean scores of number of years of experience ranged from eleven to fifteen was (4.014) with standard deviation of (0.930) and a degree of variance of (0.865), mean scores of number of years of experience ranged from sixteen to twenty was (4.144) with standard deviation of (0.972) and a degree of variance of (0.843) and mean scores of number of years of experience ranged from twenty one to twenty five was (4.282) with standard deviation of (0.894) and a degree of variance of (0.801). The most important competency revealed and top selected was ' ability to use direct technical support on line and use of topic guide, followed by setting a strategy for searching electronic databases, then identifying components of the main page of electronic databases, after that entering electronic databases using the abbreviated names, then identifying different types of electronic databases and finally method of arranging variables when searching electronic databases.

Results related to the second questions: What are the needs of faculty members to use electronic information resources centers for?
The following table deals with results from statistical analysis for the variable of number of years of experience (from: 1-5, 6-10, 11-15, 16-20 and 21-25).
And the relationship with needs of faculty members through responding to items of a questionnaire selecting among five scales measure (often- always-sometimes-rarely- never). Results indicated significant differences at (α ≤ 0.05). As illustrated in Table 14 & Figure 14.

Table 14: *Shows mean scores and standard deviations of number of years of experience and its relation with needs of staff members of using electronic information resources centers.*

| Scientific Degree		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11	12	13	14	15	16	17	18	19	20	21	22	23
Years to 5	N Valid	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233	233
	Mean	3.90	3.90	3.89	3.91	3.97	4.01	3.96	3.83	3.56	3.99	4.03	4.03	3.8	3.90	4.03	4.27	4.26	4.17	3.56	4.22	4.17	4.19	4.23
	Std.Deviation	1.08	1.02	.990	1.03	1.09	.999	.984	1.07	1.23	1.07	.929	.943	1.01	1.04	1.03	.860	.863	.917	1.23	.910	.878	.832	.880
	Variance	1.17	1.05	.981	1.07	1.18	1.00	.968	1.15	1.34	1.53	1.16	.865	.891	1.02	1.10	1.06	.741	.746	.841	.828	.772	.694	.776
Years to 10	N Valid	191	191	191	191	191	191	191	191	191	191	191	191	191	191	191	191	191	191	191	191	191	191	191
	Mean	3.78	3.85	3.73	3.82	3.89	3.94	3.95	3.86	3.56	3.88	4.04	4.04	3.96	3.80	3.86	4.09	4.14	4.15	3.56	4.22	4.13	4.15	4.14
	Std.Deviation	1.15	1.06	1.09	1.12	1.12	.950	.893	.990	1.18	1.04	.983	.939	.947	1.12	1.17	1.04	.928	.936	1.18	.906	.924	.856	.928
	Variance	1.32	1.13	1.20	1.26	1.25	.903	.798	.981	1.26	1.39	1.09	.967	.882	.899	1.27	1.38	1.09	.863	.877	.822	.855	.733	.863
Years to 15	N Valid	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159
	Mean	3.85	3.84	3.82	3.99	3.93	3.94	4.08	3.79	3.63	3.62	4.00	3.98	3.98	3.89	3.93	3.98	4.06	4.11	4.04	4.094	4.21	4.16	
	Std.Deviation	1.14	1.15	1.08	1.12	1.04	1.05	.885	1.11	1.20	1.18	1.00	1.01	.987	1.01	1.19	1.11	1.07	.994	.930	.950	.939	.902	.894
	Variance	1.30	1.33	1.18	1.25	1.08	1.07	.784	1.23	1.44	1.41	1.01	1.03	.975	1.14	1.41	1.24	1.152	.989	.865	.903	.883	.815	.800
Years to 20	N Valid	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
	Mean	3.77	3.83	3.83	3.70	3.85	3.74	3.61	3.70	3.51	3.44	3.85	3.98	3.85	4.18	4.01	4.12	4.03	4.12	4.05	3.81	4.018	4.20	4.00
	Std.Deviation	1.16	1.12	1.11	1.29	1.15	1.08	1.13	1.09	1.22	1.29	1.10	.999	.959	.991	1.09	.847	1.04	.891	.940	1.10	.857	.876	.971
	Variance	1.34	1.27	1.23	1.68	1.23	1.17	1.29	1.19	1.50	1.68	1.22	1.00	.921	.984	1.18	.719	1.09	.794	.884	1.21	.735	.769	.943
Years to 25	N Valid	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
	Mean	4.27	3.77	3.55	3.66	3.38	3.33	3.77	3.94	3.83	4.05	3.72	3.72	4.27	3.88	3.77	4.22	4.11	4.11	4.44	4.33	4.222	4.22	3.83
	Std.Deviation	.894	1.11	1.19	1.02	1.24	1.13	1.11	1.05	.923	.872	.958	.751	.894	1.07	1.06	.878	.758	.676	.783	.766	.808	.732	.985
	Variance	1.24	1.43	1.05	1.54	1.29	1.24	1.11	.853	1.05	.761	.918	.565	.801	1.16	1.12	.771	.575	.458	.614	.588	.654	.536	.971
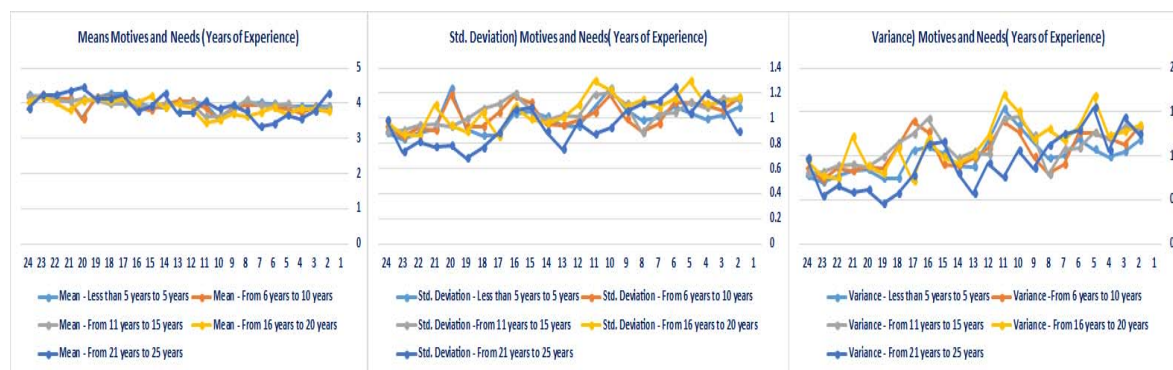
Figure 14. Shows mean scores and standard deviations of number of years of experience and its relation with needs of staff members of using electronic information resources centers.

Results indicated that there are significant differences at **(α ≤ 0.05),** level between different numbers of years of experience. This is explained as follows. The mean score of participants of years of experience was (3.808) with standard deviation of and a degree of variance at (1.013). The mean scores of participants of number of years of experience from 6-10 years was (3.926) with standard deviation of (0.984) and a degree of variance of (0.901). The mean scores of participants of number of years experience from 11- 15 years was (3.957) with standard deviation of (1.98) and a degree of variance a (1.410). Mean scores of participants of number of years of experience from 16-20 was (3.881) with standard deviation of (1.153) and a degree of variance at with standard deviation of (1.381). Mean scores of participants of number of years of experience from 21-25 was (3.929) with standard deviation of (0.931) and a degree of variance at (0.879).

The most prominent needs for electronic information resources centers as follows: 'developing students' abilities in reaching information from multi-sources', followed by discovery of potentials', then' allowing the opportunity for self learning', after that, using and learning at the appropriate time, then, assisting in preparation and implementation of lectures and finally, organizing electronic information resources to facilitate reaching them.
Results related to the third question: What are the challenges that hinder faculty members at Saudi university from using electronic information resources centers?

The following table shows results from statistical analysis to variable of number of years of experience (from: 1-5, 6-10, 11-15, 16-20 and 21-25) and relation with problems that hinder faculty members from using electronic information resources centers through responding to items on a questionnaire requiring selection of five scale measures (often- always- sometimes- rarely- never). Results shows that there are significant differences at (α ≤ 0.05). As described in Table 15 & Figure 15.

Table 15: *Shows mean scores and standard deviations related to number of years of experience and its relation with problem hindering faculty members from using electronic information resources centers.*

Challenges : Years of Experience													
Years of Experience			1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
Less than 5 years to 5 years	N	Valid	233	233	233	233	233	233	233	233	233	233	233
	Mean		3.716	3.952	4.017	3.939	3.905	3.922	3.841	3.794	4.008	3.798	3.759
	Std. Deviation		1.112	.9836	.9048	1.011	1.008	1.009	1.048	1.133	1.033	1.093	1.182
	Variance		1.238	.968	.819	1.022	1.017	1.020	1.100	1.285	1.069	1.196	1.399
From 6 years to 10 years	N	Valid	191	191	191	191	191	191	191	191	191	191	191
	Mean		3.691	3.806	3.942	3.811	3.947	3.837	3.596	3.921	3.963	3.879	3.785
	Std. Deviation		1.148	1.146	1.072	1.023	1.003	1.142	1.114	1.114	1.032	1.046	1.183
	Variance		1.320	1.315	1.149	1.048	1.008	1.305	1.242	1.241	1.067	1.096	1.401
From 11	N	Valid	159	159	159	159	159	159	159	159	159	159	159

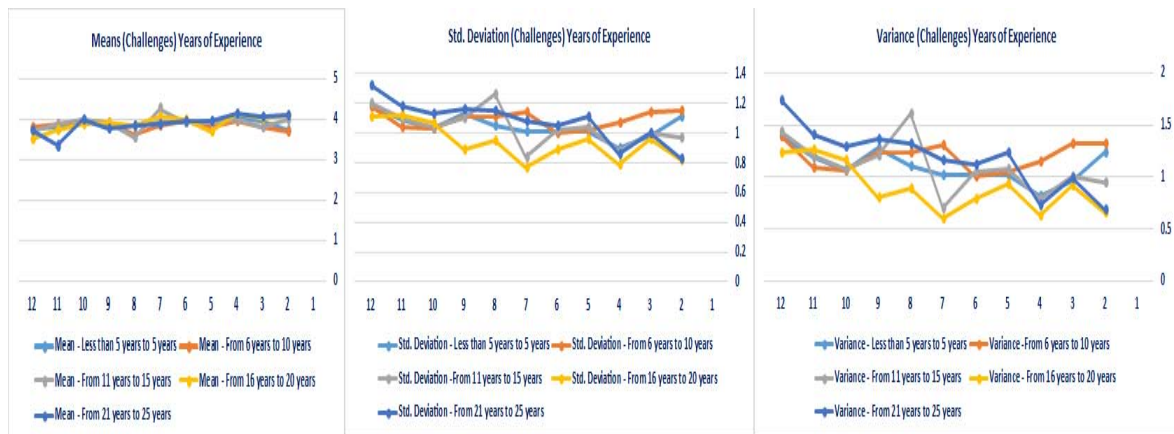|												
years to 15 years	Mean	4.000	3.805	3.974	3.899	3.924	4.257	3.547	3.899	3.981	3.893	3.673
	Std. Deviation	.9743	1.003	.8855	1.038	1.022	.8360	1.266	1.097	1.040	1.100	1.198
	Variance	.949	1.006	.784	1.078	1.045	.699	1.604	1.205	1.082	1.210	1.437
From 16 years to 20 years	N Valid	54	54	54	54	54	54	54	54	54	54	54
	Mean	4.111	4.018	4.166	3.703	4.000	4.074	3.833	3.907	3.888	3.722	3.500
	Std. Deviation	.8165	.9613	.7950	.9640	.8902	.7734	.9466	.8958	1.075	1.122	1.111
	Variance	.667	.924	.632	.929	.792	.598	.896	.803	1.157	1.261	1.236
From 21 years to 25 years	N Valid	18	18	18	18	18	18	18	18	18	18	18
	Mean	4.111	4.055	4.166	3.944	3.944	3.888	3.833	3.777	4.000	3.333	3.722
	Std. Deviation	.8323	.9983	.8574	1.109	1.055	1.078	1.150	1.165	1.137	1.188	1.319
	Variance	.693	.997	.735	1.232	1.114	1.163	1.324	1.359	1.294	1.412	1.742

Figure 15. Shows mean scores and standard deviations related to number of years of experience and its relation with problem hindering faculty members from using electronic information resources centers.

Results from statistical analysis to data related to problems hindering faculty members from using information resources centers and its relation with number of years of experience indicated significant differences at (**α ≤ 0.05**), explained as follows. The mean score of participants of years of 5 years experience was (3.877) with standard deviation of (1.058) and a degree of variance at (1.117). The mean scores of participants of number of years of experience from 6-10 years was (3.834) with standard deviation of (1.071) and a degree of variance of (1.215). The mean scores of participants of number of years experience from 11-15 years was (3.895) with standard deviation of (1.038) and a degree of variance a (1.078). Mean scores of participants of number of years of experience from 16-20 was (3.902) with standard deviation of (0.985) and a degree of variance at (0.803) Mean scores of participants of number of years of experience from 21-25 was (3.888) with standard deviation of (1.068) and a degree of variance at (1.113).

The problems hindering faculty members from using electronic information resources centers in terms of investigation of participants' views are as follows: 'lack of encouragement of faculty members to use electronic information resources'; followed by' lack of electronic information resources centers serving the university'; then, 'lack of specialized trainers to train faculty members in using electronic information resources centers'; after that, lack of an electronic learning environment equipped with technology and modern programs inside the university'; then, ' lack of appropriate places for electronic information resources centers and finally, ' lack of technical support to solve problems facing faculty members when searching electronic information resources centers.

Second: Discussion of Results
First hypotheses
Results related to this hypothesis show different effects to using electronic information resources centers for males and females since there are significant differences in favor of females in terms of importance of acquiring competencies needed to use electronic information resources centers, particularly these related to identifying a strategy for searching electronic databases, methods of documentation of data obtained on line, methods of identifying appropriate databases for particular area of specialization and use of specialized searching engines. These results are supported by the study of **Jain et al. (2012)**, that indicated effective employment of electronic information resources centers in providing the educational content at a wide range and identifying strategies to easily reach required information.

Results indicted differences between males and females in recognizing the nature of needs of faculty members. This is proved by the degree of variance in views of males that were higher than females. Results raise the importance of dealing with individual differences among students and meeting their needs in relation to study courses, allowing opportunities to self-learning, continuous support to teaching and learning, discovering the real aptitudes and potentials of learners, developing learners' abilities in reaching information from multi-resources and enriching learning process.

The study of **Gordillo et al. (2013)** supported the idea of identifying research skills, discovery skills, problem solving skills and learning from multi-resources electronic information. In addition to enabling faculty members to establish new educational units that facilitate learning through electronic information resources.
A number of studies revealed that there are many problems hindering the use of electronic information resources centers in the third world **(King & Boyatt 2015)**. These match results from the current study as shown in the statistical analysis of data that revealed significant differences between males and females in the degree of variance of males in comparison to males... These results may go back to the lack of electronic information resources centers in some Saudi universities, lack of skills of using them, lack of specialized trainers and lack of encouragement. Participants suggested the importance of identifying an institutional strategy aims at providing resources and methods of effective use. Also it was suggested that relying on views of faculty members and making the utmost use of free Google applications for the success of research and teaching processes in terms of cost, easy management and achieving academic goals **(Davidson et al. 2013)**.

Second hypotheses
There are significant differences among different academic ranks arranged as follows: lecturers, assistant professor, associate professor and professor. This is explained in terms of: the desire for identifying required electronic databases according to the academic area of specialization, documentation of references obtained on line, evaluation of search results, ability to use technical support and on line guide of topics and the possibility of using electronic information resources. That is assured by the study of **Davids et al. 2015** and **Basha et al. 2013.** The current study indicated the importance of helping lecturers and assistant professors in acquiring competencies of using electronic information resources centers as they are considered the most active members in the field of teaching and research.

Results indicated the needs of faculty members according to the academic rank as follows: associate professor- demonstrator- lecturer- assistant professor- professor. The degree of variance for assistant professors and professors were less than other academic ranks. The study of **Amjad et al. (2013)**. indicated that most researchers are in need of using electronic information resources centers for the purposes of teaching, researching, using and learning at the appropriate times and discovery of real aptitudes and potentials of learners. Views were variant regarding processes of preparation and implementation of lectures in addition to developing abilities of students in reaching information from multi-sources.

Results indicated significant differences among different academic ranks arranged as follows: associate professor- demonstrator- professor- assistant professor- lecturer. Variance in views shown in different responses of participants in terms of problems hindering them from using electronic information resources centers, lack of encouragements towards using these centers, lack of enough places for these centers, lack of technical support to help faculty members solving their problems and lack of skills of using these centers.

Third hypotheses
Area of academic specialization plays a great role in orienting the hypotheses regarding helping Saudi faculty members acquiring competencies of using electronic information resources centers. Results indicated significant differences at $(\alpha \leq 0.05)$, level in favor of applied sciences specializations, followed by health sciences and finally humanities. Results from the current study agrees with results from the study of **Fahad et al. (2013)**. This

indicated the need for identifying appropriate strategies for researching electronic databases, identifying particular methods for academic areas of specialization, searching methods and documentation of references obtained on line (**Feraru & Teodorescu 2009**).

Responses of questionnaire items related to needs of faculty members in using electronic information resources centers indicated the importance of developing research, thinking and problem solving skills to their students through teaching. Also the importance of providing them with skills enabling them to adapt and make use of competitive rapid developments in the field of information systems. These results agree with results from the study of **Henle (2008)**. As it showed significant differences at **($\alpha \leq 0.05$),** level in favor of health sciences, followed by applied sciences and finally humanities. The current study is supported by the results from the study of **Solomou et al. (2015)** that indicated the importance of dealing with individual differences, fulfilling students' needs, discovery of real aptitudes and potentials of students, using and learning at the appropriate times were the most prominent results obtained. Also, the study of **Dalveren (2014)** goes in match with the current study in relation to needs of using electronic information resources centers.

The analysis of data related to problems hindering different academic areas of specialization from using electronic information resources centers indicated significant differences at **($\alpha \leq 0.05$),** level in favor of health sciences, followed by humanities and finally applied sciences. The study of **Gordillo et al. (2013)** found out that electronic information resources centers play a vital role in the future of education, providing learning content at a wide range, overcoming problems hindering the use of these centers. Results from this study match the results of the current study as it indicated the lack of these centers, lack of skills of using them and lack of such centers to help particular areas of academic specializations came on top of all problems hindering faculty members using electronic information resources centers. In addition to lack of flexibility in using these centers in comparison to applied specializations and the inability to use them in terms of easy access. (**Taber and García-Franco 2010).**

Fourth hypotheses
Results from the current study revealed significance differences at **($\alpha \leq 0.05$),** level among different number of years of experience in relation to the need of acquiring competencies of using electronic information resources centers. Number of years of experience from 21-25 came on top followed by 16-20, then 6-11, after that 10-15 and finally from 1-5. The most prominent reported competency was the ability of faculty members to use direct technical support, use of guide of topics on line and identifying strategies for searching electronic databases (**Caird & Lane 2015**). The current study also agrees with a British study to develop models for helping faculty members to acquire competencies and skills. This study resulted in identifying components of the main page of electronic database, entering electronic database using abbreviated names, recognizing different types of electronic databases and methods of arranging variables of searching electronic databases (**Yang et al. 2014**). Results from the current study revealed variance in views in terms of number of years of experience from 1-5, then 6-11, then 10 to 15. Results indicted significant differences at **($\alpha \leq 0.05$),** level among different years of experience in terms of needs of faculty members in using electronic information resources centers as follows: from 20-25, followed by 11-15, then 6-10, then 16 to 20 and finally from 1-5. The need of using these centers, developing students ability to obtain information from multi-sources, discovering real aptitudes and potentials and allowing opportunities for self-learning were the most prominent and match with the study of **Casquero et al. (2015)**. This study aimed assessing needs of students for on line use of electronic information resources centers and its relationship with establishing persona information networks, using and learning at the appropriate times, helping in preparation and implementation of lecture, classifying and organizing electronic information to facilitate access to them.

Examining data related to the variable of number of years of experience in relation to problems hindering faculty members from using electronic information resources centers revealed significant differences at **($\alpha \leq 0.05$),** level details are as follows: from 16-20 were on top followed by 11-15, then 21-25, variance in views were for years of experience, 6-10 and 20-25 and 1-5.

Results from the current study revealed that lack of encouraging faculty members of using electronic information centers agree with the study of **Peacock et al. (2013)**, as this study identified problems and obstacles related to developing thinking skills. The current study indicated that lack of specialized trainers to train faculty members in using electronic information resources centers was the most prominent obstacle, in addition to lack of an electronic educational environment equipped with technology and modern programs inside colleges of the university. Also, lack of these centers inside universities, lack of appropriate places inside the university and lack of technical support to solve problems of searching electronic databases (**King & Boyatt 2015**).

CONCLUSION

This study addressed the issue of using electronic information resources centers by the faculty members in the Saudi universities. In this context, the study investigated the challenges faculty members face in relation to the use of these information centers. It also outlines the needs of faculty members to get the optimal use of these results. The study was based on a questionnaire design where male and female faculty members in a number of Saudi universities voluntarily responded to the questionnaire. Findings can be summarized as follows.

- Expanding the establishment of electronic information resources centers in new universities.
- Designing training courses to staff members in acquiring needed competencies and fulfilling their needs.
- Designing a plan for solving problems hindering faculty members from using electronic information resources centers.
- Examining the factual situation of using electronic information resources centers in Saudi universities
- Designing strategies for using electronic information resources centers.
- Designing training courses to prepare specialists to offer technical support to faculty members.
- Designing training courses to university students in using electronic information centers and ways of making use of them.

Finally it is recommended that universities need to make electronic information resources available to the faculty members. Universities are also encouraged to conduct training workshops for faculty members for the effective use of these centers.

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