

The Role of Adequate Computer Information System Resources used at the Library Organizations in Enhancing Motivation to Learn among Accounting Students in the Jordanian Universities

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Abstract

The present study sought to identify the adequacy level of computer information system resources used at library organizations in the Jordanian university and exploring the part they take in enhancing motivation to learn among students. Further, the study intends to identify variant roles of the adequate computer information system resources used at library organization in enhancing motivation to learn among students by gender and proprietorship of a university. Questionnaire was primarily used as data collection instrument, and processed using the Statistical Program for Social Sciences (SPSS). Sample (N=1911) was randomly selected representing 30% of population. Major results included that:

1. Adequate computer information system resources available at campus libraries enhance motivation to learn, curiosity to research, and increase loyalty to the library among students.
2. Poorly skilled personnel working in the field of computer information systems at the Jordanian libraries.
3. Low adequacy level of computer information system resources available in campus libraries at the Jordanian universities and there is a need for development and improvement of the service delivered.
4. Lag of library administrators at the Jordanian university in troubleshooting faults and interruptions occurring to computer information system resources.
5. Libraries under study lack networking facility or online communications with students

Keywords: Adequacy of Computer Information System Resources, Enhancing Motivation to Learn, Informational and Libraries organizations.

1. Introduction

No doubt that development witnessed in business organizations, in general, and information and library organization, in particular, could not have occurred without the communication and technology advancements that shifted the whole life to a new level from the various economic, social, and cultural aspects that had reflections not only on the way organizations do business but also on the way they view shareholders, consumers, and other stakeholders.

Breakthroughs in information technology and communications involve greater capabilities for organizations today. As there has been disparity in the outcome levels both negative and positive, organizations realized that optimization of information technology applications depends first and foremost on their capability to develop the organizational structure on the internal and external levels and also developing their various resources in order to be continuously ready to use and capable to employ technology to make best investment decision, maximize strengths of the information technology and minimize weaknesses that would result.

The rapid changes brought about in the information technology system resources field is further propelled with the accelerated growth and development stage in the life cycle of the information technology systems, which necessitates harnessed preparation to fill the information gap between present and future. This, of course, requires changing the way information is dealt with, mainly at the information resource centers and their channels entrenched in the information and library organizations. This study is focused on the adequacy of information system resources based on development and uses of the contemporary information technology systems, while adopting the scientific approach in change and development in a way meeting the capacity of the organization, responds to the internal environment, and in compliance with needs and desires of the customers to whom service is delivered, and for the organization to be able fulfill its pioneering role in the teaching and education fields, and

enhance the motivation to learn by encouraging student to use library resources for sake of learning researching and acquire new knowledge.

1.1 Statement of the Problem

There is a need to identify how adequate are computer information system resources available at the university library organizations in Jordan and to explore the part they take in enhancing the academic background and knowledge repertoire of college students. In particular, the following questions emanate from the problem addressed:

- What is the adequacy level of computer information system resources used at the university library organizations within North of Jordan area?
- What role do adequate computer information system resources used at the university library organizations (hardware, software, individuals, organization/ organizational resources, networks and communications) play to enhance motivation to learn among students?
- Does the part taken by adequate computer information system resources at the university libraries in enhancing motivation to learn among students vary by such demographics as gender and university proprietorship?

1.2 Objectives of the Study

This study seeks to achieve the following:

- Identify adequacy level of computer Information system resources (hardware, software, personnel, data, organization/organizational resources, networks and communication) in use at the Jordanian universities under study.
- Highlight the role of adequate computer information systems used in the library organization (hardware, software, personnel, and data.
- Organization/organizational resources, networks, and communications) in enhancing motivation to learn among students.
- Identify whether the role of adequate computer information system resources used at the university library organization to enhance motivation to learn among students vary by gender and university proprietorship.

1.3 Significance of the Stud:

This study is important because it investigates computer information systems that have become essential cornerstone in the today's organizations, in general, and information and library organizations, in particular. Results from this study will help put in order the components of computer information system, and make optimum use of such components at the information and library organizations considering their importance for improving organizational performance, and improve the library services provided to various stakeholders while in the same time help disseminate the knowledge.

1.4 Hypotheses

H₁: Low adequacy level of computer information system resources at the library organizations under study.

H₂: Low level role of adequacy of computer information system resources used at the campus library organizations in enhancing motivation to learn among students

H₃: The role of adequate computer information system resources as used at the library organizations to enhance motivation to learn among students does not vary by gender or university proprietorship.

1.5 Operational Definitions

- 1- Adequacy of computer information system resources: Refers to availability of essential components of the hardware resources, software resources, human resources, data resources, and organization resources on which depend and interact the computer in a way creating an added value in terms of effort saving, accuracy, speed, and customization to the needs and demands of the beneficiaries. Resources can be defined as the following (Laudon and Laudon, 2004):
 - Hardware Resources: hardware and terminals used for input, processing, and output in computer information systems such as computer, printer, keyboard.
 - Software Resources: Elaborated instruction, systems, and programs concerting the functioning of hardware and operating data, information on the hardware, and control the processes implemented by the hardware.

- Human Resources: Refers to qualified staff specialized in the information systems in terms of operation, design, management, analysis, maintenance, etc. to introduce best service for users.
 - Data Resources: Indicate resources practically mobilized based on needs and desires of end users and stored in special databases to be processed and furnished for researchers as demanded.
 - Organization/Organizational Resources: Refers to organization that adopts, structures, and supports an information system, keep developing it continually, and make available appropriate environment in various ways whether through goal-setting, organizational culture, data, or cooperation with other library organizations in the outside environment for purpose of furnishing better service for researchers.
 - Networks and communication Resources: Indicate integration, linking, and networking mainframe and other computers located domestically, regionally or internationally to exchange data without time or place limitations.
- 2- Informational and Libraries organizations: organization presenting information product for end users via various mediums such as libraries and information centers.
- 3- Enhancement of motivation to learn: refers to encouragement of students, and create self-motivation to use information resources through visiting libraries on site to acquire diversified cognitions with self-motivation and desire.

2. Method

2.1 Sample

Population consists of undergraduate Accounting students at the Jordanian Universities within North Jordan area (N=8).

University	Proprietorship	Location	Number of Accounting Students	Sample Size	Percentage
Yarmouk	Public	Irbid Governorate	2300	690	36.1%
Aal Al Bayt	Public	Mafraq Governorate	985	295	15.5%
Al-Balqaa Applied/Alhusn University College	Public	Irbid Governorate/ Al huson	384	115	6.0%
Al-Balqaa Applied/Irbid Girls College	Public	Irbid Governorate/ City	173	52	2.7%
Irbid National	Private	Irbid Governorate	650	195	10.2%
Jadara National	Private	Irbid Governorate	450	135	7.1%
Ajloun National	Private	Ajloun Governorate	250	75	3.9
Jarash Private	Private	Jarash Governorate	1180	354	18.5%
Total			6372	1911	100%

The randomly selected sample (N=1911) accounted for 30 per cent of population; and questionnaires were comprehensively administered to sample participants. Out of (1837) questionnaires returned, only (37) were unusable for statistical analysis, leaving (1800) usable questionnaires, which representative is of the population and acceptable for statistical analysis and generalize ability of results.

2.2 Data Collection Instrument

This study depended on the questionnaire specifically designed to commensurate with study questions, objectives and variables. Validity was secured by having the questionnaire shown to some judges, and adjusted in accordance with their opinions in light of researcher's targets and study variables. To measure internal consistency among participant estimates, Chronbach alpha coefficient (81%) was obtained which is higher than the standard percentage (60%) indicating dependability of results and inferences.

The questionnaire included the following three subscales:

- The first section is about demographics (gender, university proprietorship)
- The second subscale measures adequacy level of computer information system resources as used at the Jordanian universities. Equally, five questions measured adequacy levels of the hardware, software, data,

- human, organization, and network & communication resources.
- Third subscale measures the role of adequacy of computer information systems employed in the library organizations at the Jordanian universities in enhancing motivation to learn among students.

2.3 Statistical Analysis

Statistical Program for Social Sciences (SPSS) software program will be used for statistical processing, primarily means, standard deviations, T-test for mutual comparisons, F-test and One-Way analysis of Variance (ANOVA).

2.4 Limitations

First: Place Limitation: This study will be conducted only in universities located within North Jordan region.

Second: Time Limitation: This study will be conducted within specified time span, namely the second half of 2012.

3.Theoretical Framework

3.1 Computer Information System Resources

Information technology systems as a concept was defined differently by different authors, and primarily there were two lines the first stressed on information systems, whereas the other was more focused on information technology. This, of course, created conceptual interference and ambiguity that need clarification and conceptualization of what information systems and information technology really mean, and whether a more general concept of information technology systems could be reached that can be used throughout this study.

Alter described Information systems as that system specifically designed to process various tasks of data collection, storage, dissemination, processing, and retrieve as information (Alter, 2001). Laudon referred to information systems as a set of interrelated parts that work together to collect, disseminate, and retrieve information to be used in decision making, control, analysis, and illustrate intricate subjects (Laudon & Laudon, 2004). Information systems were also defined as a set of interrelated components and typical procedures that function together to collect, operate, store and disseminate the data needed by the organization to improve decision making, cooperation, analysis and control in the organization (Alnajjar, 2010).

Comparatively, information technology was defined as the whole technological components required for data collection, processing, communicating, and use to transform them into information (Martin, et al.2002). Turban & James defined information technology as the system that includes hardware, software, databases, communication networks, etc (Turban & James, 2002).

Information technology was also described as the different instruments including technical programs, readymade software programs, databases, and computer networks, and other components used to build information systems that help managers employ information to support their decision making and operational processes in the organization (Edris, 2005).

The various definitions of information systems and information technology discussed above reveal large consistency between both concepts, especially structurally, and also consistency in the purpose that is to obtain meaningful information that when properly processed will be used in the decision making.

In consequence, information technology systems, in general terms, refer to a set of resources consisting the different components in the computer system that are used and interact with computers including hardware, databases, communication means, global and local area networks, software, information processing technologies, financial and management affairs, audio-video, and visual means that form the essential enablers of the functioning of information and library organizations towards accomplishing their goals.

3.2 Components of Computer Information System Resource:

Computer information system consists of a set of essential resources that interact together to achieve single goal. The value of the outcomes of the such system depends on how adequate and developed are the resources so that to respond to developments brought about in the cultural, social, environmental areas. The following elaborates on the essential resources of computer information systems:

First: Hardware Resources: Refers to the resources that include the different hardware, physical supplies, and accessories such as computer sets of different sizes, electronic devices, multimedia, and other data storage mediums such as CD-ROMs

The computer consists of a set of essential units:

- Input Unit: Receives and transforms the data entered by users into electronic form or electric signals to be processed within the computer system. Keyboard, scanner, mouse, etc are some devices used for data entry process.

- Central Processing Unit: The devices used to process and transform crude data into valuable information. This part of the computer system controls and coordinates the functioning of other differing internal processes such as computation, storage and retrieve.
- Output Unit: Refers to devices transforming electronic data into something valuable, meaningful, and of significance for end user (Laudon & Laudon, 2004: 183).

Second: Software Resources: Include the various programs and operating systems that run the computers, Make instructions through a programmed design managed by a specialized user to direct the hardware to operate in certain ways to obtain specific outcomes (Qandelji & al-Samerai, 60: 2001).

The software programs are of two kinds; application programs and system programs, the difference between both types will be discussed below:

- Application Programs: This kind makes instructions and orders for the computer system to operate in specific way to organize and process data of value for end user. Application programs include data manager, illustrative display, office publisher, spreadsheets, communication software, multimedia software, data processing, and operating system software (Turban, et al,1996;199).
- System Programs: Programs managing the various processes, support the computer system, and data processing activities, including input and output units, and secondary storing devices. Such programs operate as interface between computer system hardware and application programs for the end user. System programs include operating system, language programs, check spelling programs and database management systems (Thompson and Cats, 2003;39).

Third: Human Resources: include the individuals or manpower made available by professionals specialized in computer analysis, design and operation including system analysts, programmers, operators, database managers, communication technology specialists, data-entry officers, in addition to management personnel whose jobs heavily depend on computer such as accountants, etc.

- End Users: Individuals use the information system to employ the final outputs in accomplishing various benefits. End users include students, employees, engineers, accountants and other stakeholders.

Fourth: Data Resources: Data is referred to as logically connected collections of files that are integrated and easy to use in order to access their knowledge repertoire with minimum time or effort once demanded. The form an essential component of organization assets that should be carefully considered by top managers strategically, and be organized at a high level of efficiency to maximize benefits for users and fulfilling their needs. Al-Sabbagh (2004) outlined that data takes differing forms. The writing form includes letters, digits, and symbols, whereas text data include sentences and phrases and used in written communications. (Al-Sabbagh, 2004: 26)

Image data would be audio or video that can be recorded or stored using different data mediums such as papers, magnetic and optical mediums or electronic mediums like documents, magnetic discs, optical discs, microfilms, electronic circle slides, etc.

Fifth: Organization/ Organizational Resources: As already highlighted by the operational definition section organization/organizational resources associate with organizational and managerial aspects in terms of:

- Management style and the extent of providing adequate computer information resources, and availability of a leadership style that is flexible open to other.
- Creation an organizational culture that is supportive to technology in terms of establishing regulations and instill technology values in the employees.
- Developing an organizational structure that is responsive to technological changes and assign jobs to employees based on specialty and qualification.
- Building technological strategies keeping abreast with advancement and modernity and conducting comparative and empirical studies on technology.
- Existence of organization in a technology enabled environment in terms of availability of infrastructure and superstructure appropriate for technology, in addition organization managers, and other stakeholders such as users, customers, suppliers, etc.

Sixth: Communications and Networking Resources:

Refer to resources of communications and networking technology that are integrative and interrelated that provide large-scale service in terms of place and time, and provide service of information sharing, exchange, and channeling via numerous kinds of networks such as intranet, Internet, and outside networks such extranet, web networks/World Wide Web, and other networks that have become an essential prerequisite for all business organizations, especially information and library organizations due to their specific tasks, audience and goals.

Networks are of two levels; Local Area Network that link a number of computers together within limited place. The other is Metropolitan-wide Area Networks that links large number of computers together within an open place worldwide such as the Internet that deliver the service of information-sharing for huge number of stakeholders

(Laudon & Laudon, 2006; 272).

3.3 Significance of Computer Information System Resources at Library Organizations

No doubt that computer information system resources have great importance for the industrial, agricultural, economic or information organization. However, from the viewpoint of author the importance of computer information system resources is greater for information and library organizations for different reasons including information sensitivity, accuracy, scope of spread, the need to keep update, variability of customers which imposes more challenges. Organizations, therefore, need to use adequate computer information system resources, in order to accomplish various advantages, including:

- Save efforts required for data collection, analysis, process, dissemination, and retrieve.
- Accurate access to knowledge and information to be employed by decision makers
- Ability to store large quantity of data and flexibly processing
- Allow wide spectrum of alternatives to retrieve information from various tags such as author, subject, title, headings, in addition displaying information in different forms such as the text, diagrams, audio, video, etc.
- Help maximize performance and productivity.
- Shift the information and library organization from parochial to more open horizons worldwide with possibility of exchanging knowledge and information with other peoples (Laudon & Laudon, 2004:4).
- Support the service provided by the information and library organizations including indexing, listing, classification, translation, borrowing, and other functions of the library.
- Support the functions on the various management levels at the information and library organizations (Turban,etal,2005:7).

4. Information and Library Organizations

The information and library organizations no longer as before depend on traditional resources to perform their functions, they, however, have become required to keep track with most recent technological advancements considering the varied cultural, educational, and social roles they assume in a largely diversified populations.

Traditionally, information and library organizations were referred to as the place, building or repertoire, which, in my opinion, deviate from the prevalent environment in which operate the contemporary library organizations. The today's world witnesses information revolution that is ever changing, so real time access to information is necessary, because information change very fast. This reality imposed on the library organization to revolutionize their performance and to make available the various knowledge resources that are compatible with the changing needs of users including, researchers, students and other community stakeholders.

This author believes that the library organizations transferred from being only a place hosting physical objects, into knowledge resource centers that provide electronic access to knowledge gateways, and virtual services that enable the library organization to attract more users and contributed to culture, knowledge and information dissemination in various disciplines.

4.1 Challenges facing Information and Library Organizations

Generally, library organizations face many challenges since they work in a dynamic environment where changes are taking place in almost all life aspects on the economic, social, legal, culture, environment, technology and market levels. More than other, information and library organizations would face more challenges because of the following:

- 1- Globalized Knowledge: Removing barriers and make information freely accessible to public, which made the whole world, in general, and information library organizations, in particular outlet accessed via the Internet. As a result, smaller-scale challenges emanated from the major challenge:
 - Library organizations that try to go out of the traditional circle of functioning face the challenge of becoming globalized library organizations, with virtual libraries, and electronic website that can be browsed on the World Wide Web. This challenge, in fact, requires too much capabilities, efforts, requisites, and adequacy of various resources.
 - Isolation of the traditional information library organizations when researchers or customers move to globalized, virtual or online libraries, which would have negative effects on the organization once enjoyed vantage placement within the community and now have only small number of visitors. Faced with such challenge, information library organizations would be forced to release some library employees, thereby increasing unemployment level in this field.

- 2- Multi languages and cultures: Multilingualism is a serious problem for information and library organization for researcher or author in terms of the language medium that should be used to communicate the message in a way responding to needs and desire of multilingual and multicultural community. Personnel working at the information and library organizations are also required to deal with multilingual works, and they would need to translate much of library material such as devices, computer software programs, references that are written in different languages.
- 3- Quality of intellectual product: This forms a real challenge for library organizations whether classical or virtual since the quality of intellectual product mirrors the library organizational reputation. So, library organizations have to carefully choose their library materials, and staff qualified personnel in order to be able to select and provide high quality intellectual works for customers.
- 4- Poor Financial Return: Despite the recent orientation (Elian & Al-Samerai, 2006: 61) by library organizations towards adopting marketing approaches with the information in order to become for-profit organizations and generate financial revenues from selling information to help self-support of organizations, satisfy customer needs, and deliver best service, library organizations, compared with other business organizations still ineffective in reaping financial return on their information marketing activity for sake of profit. Many world organizations such as the US Statistics Office provide their statistics for money. Similarly, Jordan Department of Statistics follows the same approach taking in mind the economic value of information and possibility to generate financial rewards for users, the fact the justify charge fee by library organizations to cover costs related to data collection, analysis, processing and dissemination.
- 5- Information Revolution: Information and library organizations face the challenge of fast changes taking place in various intellectual and knowledge aspects and the means used to prepare information for use. Thus, keeping along with such changes require stability and flexibility in the various influential elements and variables such as political, legal, social, cultural, environmental, technological, and marketing variables.
- 6- Providing information and library organizations with qualified personnel fro the academic and practical aspects so that to harmonize management practices across functional levels of the library organization. Inconsistencies in the management practices would compromise performance or outcomes. In addition, library organizations require qualified administrators who can keep pace with most up-to-date information through investigation, analysis and predicting in a way comply with the organization, market, and changing needs in the internal and external environments of the organization.

4.2 The Relationship between Information and Library Organization and knowledge

There is a strong relationship between information and library organization and knowledge in that library organizations seek to provide cognitions and knowledge in various disciplines to researchers that meet the needs of both individuals and community, while in the same time create the academic, psychological and social environment in which the culture of innovation and motivation to lean can be entrenched and instilled in students and researchers. This researcher views that providing knowledge is a major goal sought by information and library organizations in order to be channeled to students, researchers and interested parties. To create the learning community it is necessary for organizational knowledge providers, essentially information and library organization to keep improving their performance and produce quality outcomes, and updating their knowledge requisites, basically computer information system resources that form a basic element in improving knowledge outcomes of the library organizations, which would translate into greater motivation among students to acquire up-to-date knowledge in different fields of knowledge, thereby improve their academic performance, and assist building the learning community, in general.

4.3 Importance of Knowledge for Students

Knowledge is paramount for students because of its effects on the practical and academic performance, and skills acquired by learners that improve life quality, and build better future based on job suitability, especially considering that tasks and jobs have become directly associated with skills, cognitions and techniques that exceeds the regular curricula students typically experience during study years, that usually an individual acquire as a result personal motivation for research, inquire and learning about new cognitions through various information resources. Al-Rabei (2008) stressed that knowledge does not associate only with the learning student acquire during study years, but also with the skills and self-competencies that depended on personal efforts, continuous learning and practice to acquire knowledge (Al-Rabei, 2008: 147). A student who acquire knowledge through an academic degree will have parochial perspective with limited horizon of excellence or innovation practically. Instead,

student should think out of the box, with minimal compliance with textbook, and seek towards varied cognitions in different fields through various knowledge resources of libraries, information centers, etc and by concentrating on creative thinking skills, self-learning and interaction with other information and library organizations to achieve maximum possible knowledge.

5. Prior Studies

Ravichandran & Lertwongstien (2005) about the Information systems Resources and Capabilities on firm performances: A Resource-Based perspective sought to explore extent to which do adequate information systems affect performances of (129) USA firms that participate in the study. The researcher used such information system components as (human resources, flexible infrastructure, types of partners both internal and external levels)

The operational performance and market-based performance as performance components. The study found that variability of organizational performance depends on the extent of using information technology to support capabilities and the organizational capability to use information technology to support an organization's capabilities associates with information system capabilities that is based on nature of human resources, adoption of technology, and integration of computer information system resources.

Mohamed, et al. (2010): The role of information and communication technology (ICT) in mobilization of sustainable development knowledge: A quantitative evaluation sought to identify the role of information and communication technology in realization of the sustainable development for knowledge development. Results found that information and communication technology takes a vital part in achieving the sustainable development, while there is a difficulty in achieving sustainable development without being leveraged by information and communication technologies. However, the use of information and communication technology generates positive revenues for the economic growth, quality of decisions made, data sharing, and interlinking among various groups.

In a study by Dom & Sahinyan (2011) about: effects of information and communication technologies on knowledge transfer: An employee perspective for purpose of identifying the effect information and communication technologies on knowledge transfer and data exchange, results indicated that knowledge is a vital resources that energize the organization capacity and innovation, and it is an important activity that every organization seeking for excellence and innovation should practice because its facilitates availability of knowledge, knowledge transfer and data exchange whether inside or outside the organization.

Ben Yossef (2008) conducted a study entitled: The impact of ICT on students performance in higher education: direct effects, indirect effects and organizational changes and sought to explore the relationship between using information technology and communications and graduate student's performance. Results indicated that student achievement associates with the learning environment, and teacher characteristics. Further, it is found that information technology and communications affect learning outcomes, and that application of technology varies by organization, noting that technology applications is paramount for every organization and effectively affect learning outcomes of students (Ben Yossef, 2008).

Krubu & Osawaru conducted a study entitled The impact of information and communication technology (ICT) in Nigerian University library for purpose of identifying the effect of information and communication technology in university libraries in Nigeria. The study found that information and communication technology achieved highly successful performance of the university libraries in terms of speedy provision of service, comprehensive preparation of information, flexible store and retrieve of data, faster dissemination and data sharing, which encouraged adoption of information and communication technology by university libraries (Krubu & Osawaru, 2011).

6. Statistical Analysis

6.1 Participant Characteristics

Table (1) Participant Characteristics by gender

	Frequency	Percentage
M	1152	64%
F	648	36%
Total	1800	100%

Table (1) shows that the sample was dominated by males (64%), this is primarily because males mostly tend to study Accounting more than females; whereas females tend to study Human Sciences disciplines more than Accounting or Administrative Sciences for reasons having to do with job prospects in such fields as education, pedagogy and teaching.

Table (2) Participant Characteristics by university proprietorship

	Frequency	Percentage
Public	504	28%
Private	1296	72%
Total	1800	100%

Table (2) shows that participants were mostly (72%) attending the Accounting Department at the private universities, this is due to the fact that admission policy at the college in the Jordanian public universities is based on competitive criterion of the secondary Grade Point Average (GPA); whereas the Jordanian private universities adopt more flexible admission policy.

6.2 Decision Rule

Five-point Likert Scale was used in the questionnaire design giving five choices for each item, and for statistical analysis purposes, the following coding system was used: Very high=5, High=4, Moderate=3, Low=2, Very Low=1.

Hence, the hypothetical median to accept or reject an item will be at (3) which was obtained adding on respective code numbers divided by number of choices. i.e. $(5+4+3+2+1)/5=3$. So, when an item or hypothesis has median that is above or equals three, this means acceptance of the item or hypothesis. Specifically, the higher the median, the higher the acceptance will be among participants confirming availability of a variable, Similarly, an item or hypothesis that has median lower than three indicate that participants tend to reject the item. The wider the deviation from the hypothetical median, the more assured are participants that a variable has no effect,

6.2 Discussion of statistical outcomes in light of variables and questionnaire items

Table (3) Participant opinions as to adequacy of hardware resources

	Item						M	Rank	Rating
		Strongly Agree %	Agree %	Neutral %	Disagree %	Strongly Disagree %			
1	My university library offers advanced devices	18	22	22	12	26	2.94	3	Moderate
2	My University library adopts continuous improvement of devices	16	28	24	16	16	3.12	2	Moderate
3	Devices at my university library avail with no failure or interruption	32	16	16	18	18	3.26	1	Moderate
4	My university library administrators repair devices and troubleshoot interruptions quickly	10	17	24	31	18	2.7	5	Moderate
5	Computers at my university library are supplied with terminals, keyboard, copier, etc) supporting knowledge seeking and research	18	18	22	16	22	2.86	4	Moderate
	Mean Variable						2.97		

Table (3) shows similarity in the questionnaire weights which can be explained by the fact that means scores of items were somewhat convergent. One can see that the third item was placed top implying highly accepted by participants. This item stated that devices at the university work without faults or interruptions. The reason is that most universities have stand by devices to surmount sudden electrical shutdowns and faults, and this can be viewed as positive indication of student's motivation to visit the library. The second item (M=3.12) was accepted secondly by participants. This item stresses that computer sets used at the universities are being continuously updated in compliance with changes taking place in the information technology field so that to allows students obtain quality

information they need. Item four was the least acceptable by participants that stated that there is sluggishness in repairing faults and breakdowns occurring in computer sets which would impede optimum use of computers to obtain best information. Perceivably, the raiding of individual items under this variable was moderate, meaning moderately acceptable variable ($M=2.97$) which is adjacent to the hypothetical median of (3). The implication is that participants tended to accept the raiding of the adequacy of computer information system resources used in the Jordanian universities at moderate level in terms of adequacy of the hardware.

Table (4) Participant opinions as to adequacy of software resources

	Item	Strongly Agree %	Agree %	Neutral %	Disagree %	Strongly Disagree %	M	Rank	Rating
1	My library provide software programs that meet my needs	8	16	22	6	48	2.3	5	Moderate
2	My university's library keeps updating their software programs	18	24	26	10	22	3.06	2	Moderate
3	Compatibility of update computers with update software programs in my university's library	20	24	12	10	34	2.86	3	Moderate
4	My university's library offers the programs I need to enrich my knowledge	16	20	12	10	42	2.58	4	Moderate
5	Campus library administrators provide training for me on the use of software programs	34	29	8	22	7	3.6	1	High
	Mean Variable						2.88		

Table (4) shows that participant responses as revealed by percentages tended to options "Disagree" and "Strongly Disagree" which would explain that the items median was less than (3). Item five had the highest mean score among variable items meaning that participants agreed that library administrations provide training on the software programs used in the library, which assists enhancing motivation to learn among students, and make it easy for students to deal with such programs because the specialized knowledge is accessible. Item two stating that university library keep updating the software programs they use to obtain information was placed secondly by participant responses. However, the first item was the least accepted ($M=2.3$) by participants as shown by percentages respective to "Agree" and "Strongly Disagree" responses. This item stated that the library does not provide software programs that are suitable to student needs. The reason would be that the university has many specialties that it provides for general needs not the needs of every specialty. The mean score of the overall variable (2.88) was less than hypothesized median (3), implying moderate degree of adequacy of software resources used at the Jordanian university libraries in enhancing motivation to learn among students.

Table (5) Participant opinions as to adequacy of data resources

	Item	Strongly Agree %	Agree %	Neutral %	Disagree %	Strongly Disagree %	M	Rank	Rating
1	My university library has qualified staff	16	20	12	10	42	2.5	5	Moderate
2	I receive assistance from library staff on time	20	22	22	32	4	3.22	4	Moderate
3	Library staff are available at their offices to serve me	36	28	8	16	12	3.6	2	High
4	My university library's staff respond to my research needs	34	24	16	14	12	3.54	3	High
5	I trust the library staff who facilitate access to knowledge.	45	17	12	19	7	3.74	1	High
	Mean Variable						3.33		

Table (5) shows disparity in percentages of items. However, item five was highly (M=3.74) accepted by participants. This item stated that there is mutual trust between students and library administrators, which means integrative roles in providing knowledge service to students. The implication is that library staff members have a degree of specialization. Further, items three was the secondly (M=3.6) accepted by participants that stated that library staffers are available in their offices most of the time, indicating discipline of the staff who carefully deliver quality knowledge service and make it easily accessible via the computer information system. Perceivably, the mean score (3.33) of overall variable was higher than the hypothesized median (3) showing that participants tended to accept that variable pertaining adequacy of data resources.

Table (6) Participant opinions as to adequacy of human resources

	Item	Strongly Agree %	Agree %	Neutral %	Disagree %	Strongly Disagree %	M	Rank	Rating
1	My university library hosts database that is sufficient for researching	30	16	24	18	12	3.34	1	Moderate
2	The library provide me with the possibility of online access while at home	24	20	18	12	26	3.04	4	Moderate
3	My university library provides data processing service for free	24	22	6	24	24	2.98	5	Moderate
4	I believe the database available at my university library adequate for research and knowledge	32	12	16	10	30	3.06	3	Moderate
5	I can access to my university library's database without the need for username or password	21	15	37	11	16	3.14	2	High
	Mean Variable						3.11		

Table (6) shows that the overall rating of items under this variable was moderate. Evidently, participants tended to highly accept the first item (M=3.34), which stated tat the university library has database that is sufficient for academic research purposes that meet student needs and desires. However, item five was placed in the second rank with high acceptability rating. The item stated that students have the possibility to access the university library

database without the need for username or password. This, of course, facilitates communication between students and the library whether from inside or outside using computer information system capabilities. Perceivably, item three was the least accepted by participants that related with providing data free of charge. The overall rating for this variable was moderate (M=3.11) implying adequacy of human resources using computer information systems as a moderate level.

Table (7) Participant opinions as to adequacy of organization resources

	Item	Strongly Agree%	Agree%	Neutral%	Disagree%	Strongly Disagree%	M	Rank	Rating
1	My university library adopts continuous development approach	40	16	15	20	9	3.58	1	High
2	My university library administrators initiate communicate with me via various channels	17	34	19	23	7	3.31	4	Moderate
3	There is comfortable environment inside my university's library	35	18	21	7	19	3.43	3	Moderate
4	My university's library has clearly set regulations and policies	8	9	30	26	37	2.55	5	Moderate
5	Administrators and personnel at my university's library work in teamwork spirit respectfully	43	15	13	14	15	3.57	2	High
	Mean Variable						3.29		

Table (7) shows slight disparity in weights given to the variable items. The first item was placed top (M=3.58) with high rating degree. This item stressed that library administration keep track with advancements in the technological facilities used for purpose better access to knowledge resources by students on time. Perceivably, item five was the secondly accepted (M=3.57) that emphasized on integrative role and cooperation between library administrators and staffers with spirit and mutual respect implying visible lines of authority, and distinct job limits which contributes to effective obtaining of knowledge and learning by students. The mean score (3.29) for the overall variable was higher than the hypothesized median (3), indicating tendency by participants to accept the adequacy of organization resources of computer information systems at moderate level.

Table (8) Participant opinions as to adequacy of communications & network resources

	Item	Strongly Agree%	Agree%	Neutral%	Disagree%	Strongly Disagree%	M	Rank	Rating
1	I can communicate with other regional campus libraries through my university's library	16	24	13	39	8	3.01	5	Moderate
2	I can communicate with other global campus libraries through my university's library	32	35	14	15	4	3.79	2	High
3	My university's library offers distance connection service	41	14	27	2	14	3.62	3	High
4	My university's library provide fast connection with knowledge resourceful websites	33	14	13	25	15	3.25	4	Moderate
5	The communication and networking resources at My university's library characterized with continual connection without interruptions or sluggishness	53	16	10	12	9	3.92	1	High
	Mean Variable						3.51		

Table (8) shows that item five had the largest mean score (M=3.92) among the variable items, which is clearly shown by the percentages of "Agree" and "Strongly Agree" responses with high rating. This item started that my university library's communications and network resources characterized with continuity of networking connection without faults or interruptions, this is might be because the availability of speedy internet service provided at the campus that enable channeling data fast at any time. However, item two that confirmed existence of interregional cooperation among universities to exchange data and knowledge sharing. Based on participant opinions, this item was ranked second. As can be seen, the overall mean score (M=3.51) of the variable was higher than the hypothesized median (3), indicating high acceptance level of the adequacy of communication and networking by participants.

Table (9) Participant opinions as to adequacy of computer information system resources used in enhancing motivation to learn among students

	Item	Strongly Agree%	Agree%	Neutral%	Disagree%	Strongly Disagree%	M	Rank	Rating
1	Mostly I use the library to search knowledge in certain field driven by homework assignment given by the instructor	15	22	19	15	29	2.79	12	Moderate
2	Mostly I use the library to search knowledge in certain field driven by self-interest and curiosity	22	14	22	16	26	2.9	10	Moderate
3	I always use library in my field of study only	18	35	9	22	16	3.17	8	Moderate
4	I always use library for various fields of knowledge	18	34	19	27	2	3.39	6	Moderate
5	I largely depend on the printed material available at my	40	27	7	14	12	3.69	3	High

	university's library for researching								
6	I largely depend on the electronic learning resources available at my university's library for researching	8	30	14	22	26	2.72	14	Moderate
7	I largely depend on the Internet for researching while at home	14	15	31	16	24	2.79	13	Moderate
8	I largely depend on the commercial Internet outlets for researching	19	55	4	18	3	3.46	5	Moderate
9	Adequacy of hardware resources of the computer information systems motivate me go to library for knowledge	24	6	7	17	46	2.45	15	Moderate
10	Adequacy of software resources of computer information systems used at the library help stay longer at the library.	60	16	18	6	0	4.3	1	High
11	Adequacy of human resources of the computer information systems attract me to the library for knowledge diversification	24	18	29	19	10	3.27	7	Moderate
12	Adequacy of data resources of the computer information systems motivate my curiosity for new knowledge	37	27	14	17	5	3.74	2	High
13	Adequacy of resources related to library environment of policies, goals, culture of cooperation and organizational climate motivate my curiosity for research and learn	11	26	16	32	15	2.86	11	Moderate
14	Adequacy of networking resources increases my knowledge orientation	14	29	16	27	15	3.02	9	Moderate
15	My loyalty and belongingness to the library associates with how much adequate resources its computer systems have	42	16	14	4	14	3.48	4	Moderate
	Mean Variable						3.21		

Table (9) indicates that item (10) was ranked first and highly accepted by participants. This item stated that the adequacy of computer information system software resources contributed in lengthening the time spent by student in the library and thus improved motivation to learn. Item (12) stated that the adequacy of computer information system resources increased student curiosity and looking for new knowledge was ranked secondly. However, item (5) stated the dependency on printed material as resources for researching was ranked in the third place. The median (3.21) was moderately rated, indicating a role for adequacy of computer information system resources used at the library organization in the enhancement of motivation to learn among student of the Jordanian universities.

7. Testing Hypotheses

7.1 Results from Testing the first hypothesis

H₁: Low adequacy level of computer information system resources used at the library organizations in the Jordanian universities.

Table (10) shows descriptive statistics of the first hypothesis related to low adequacy level of computer information system resources used in the Jordanian universities.

Hypothesis	SD	M
Low adequacy level of computer information system resources at the library organizations under study.	0.46	3.18

The descriptive analysis of the first hypothesis reveals positive attitudes held by participants towards items that had mean estimates higher than the instrument mean (3). Based on the statistical decision the null hypothesis is rejected and accepting the alternate one instead that confirms a statistically significant effect at ($\alpha \leq 0.05$) of low adequacy level of computer information system resources used at the Jordanian universities.

Table (11) Simple regression test for the first hypothesis of low adequacy level of computer information system resources used at the Jordanian universities

Hypothesis	Computed T	Sig α	R ²	R	Decision
Low adequacy level of computer information system resources used at the Jordanian Universities	12.48	0.00	0.22	0.47	Null Hypothesis Rejected

To test for the above hypothesis, simple regression test was used with computed T (12.48) being statistically significant which is higher than tabulated T, since significant alpha was less or equal .05. Based on the statistical decision rule the null hypothesis is thus rejected and the alternate hypothesis acceptable because of the low adequacy level of computer information system resources used at the Jordanian universities.

7.2 Test results related to second hypothesis

Second hypothesis "Low level role of adequacy of computer information system resources used at the campus library organizations in enhancing motivation to learn among students at the Jordan universities".

Table (12) descriptive statistics of the second hypothesis related to low adequacy level of computer information system resources at library organizations in enhancing motivation to learn among Jordan university students.

Hypothesis	SD	M
Low level role of adequacy of computer information system resources used at the campus library organizations in enhancing motivation to learn among students	0.46	3.18

The descriptive analysis of the first hypothesis reveals positive attitudes held by participants towards items that had mean estimates higher than the instrument mean (3). Based on the statistical decision the null hypothesis is rejected and accepting the alternate one instead that confirms a statistically significant effect at ($\alpha \leq 0.05$) of the lower adequacy level of computer information system resources used at the library organizations on enhancing motivation to learn among students at the Jordanian universities.

Table (13) simple regression test of the hypothesis regarding low level role of adequacy of computer information system resources used at the campus library organizations in enhancing motivation to learn among students at the Jordan universities.

Hypothesis	Computed T	Sig α	R ²	R	Decision
	12.48	0.00	0.22	0.47	Null Hypothesis Rejected

To test for the above hypothesis, simple regression test was used with computed T (12.48) being statistically significant which is higher than tabulated T, since significant alpha was less or equal .05. Based on the statistical decision rule the null hypothesis is thus rejected and the alternate hypothesis acceptable because of the low level role of computer information system resources used at the library organizations in enhancing motivation to learn among students at the Jordanian universities.

7.3 Test results related to hypothesis three

"The role of adequate computer information system resources as used at the library organizations to enhance motivation to learn among students does not vary by gender or university proprietorship"

Independent Sample T-Test was used in the field of effect of gender and university proprietorship status, along with

mean, standard deviation and one-way analysis of variance ANOVA to test for adequacy of computer information system resources used at the library organizations to enhance motivation to learn among students attributed to gender and university proprietorship status as shown by the following table.

Table (14) Independent sample T-test results regarding adequacy of computer information system resources by gender

Gender	M	SD	T	Freedom Degree	Significance α
M	4.09	1.36	6.38	48	0.29
F	3.31	0.83			

Table (14) shows statistically significant T-value (6.38) at ($\alpha=.05$) implying that participant estimate poorly varied regarding adequacy of computer information system resources used at the library organizations to enhance motivation to learn among students attributed to gender.

Table (15) Independent sample T-test results regarding adequacy of computer information system resources by university proprietorship

Proprietorship	M	SD	T	Freedom Degree	A
Public	4.15	1.18	4.29	48	0.427
Private	3.48	1.37			

Table (15) shows statistically significant T-value (4.29) at ($\alpha=.05$) implying that participant estimates were varied regarding effect of university proprietorship status: public (M=4.15) versus private (M=3.48).

8. Results and Recommendations

8.1 Results

The present study concludes with the following results:

- Computers are available at the libraries which enhances the motivation to learn among students.
- Library organizations continuously keep improving the quality of their computers which improves the quality of knowledge accessed by students.
- Availability of database that meet student needs of research and knowledge which increases visits rate by student to the university campus, in addition to the possibility to access library database without the need for a password or user name.
- There is mutual trust between students and library staff which strengthens their motivation to learn and acquire quality knowledge. However, the availability of library employees in their offices help students to improve their knowledge repertoire through the library facilities.
- There is visible authority lines for library staff members, which helps students acquire the knowledge necessary for researching; while there is mutual respect between students and staffers; implying an integrative relationship between library staffers and students seeking quality and specialized knowledge.
- The university library provides excellent communications and networking resources without interruptions or slow functioning.

8.2 Recommendations

- Library organizations are advised to repair faults and interruptions as fast as possible in order to make best use of the advantages of computer information systems.
- It is necessary to make available the allied instruments of accounting information systems or information technological tools for purpose of improving quality of knowledge sought after by students.
- Electronic services should be made available to students for free, in addition to enlarge the library database networking not only in campus but also while student at home.
- There are sufficient number of highly qualified employees at the library which contribute to achievement of the library mission of providing specialized knowledge to students on suitable time.
- It is recommended to offer varied communication channels by using computer information system resources at the library organizations.
- It is important to establish local and regional communications by providing communications and

computer networking that help students access to the knowledge timely and keep track with most recent advancements in the field of computer information systems.

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Questionnaire

Dear Student

Compliments,,

The following questionnaire is designed to elicit your kind opinions regarding:

The Role of Adequate Computer Information System Resources used at the Library Organizations in Enhancing Motivation to Learn among Accounting Students in the Jordanian Universities

This study intends to identify the role of adequate computer information system resources to enhance motivation to learn among students. Please read the questions carefully and select the choice best representing your opinion. Your answers will be used for academic research purposes only. Appreciating your best cooperation

Thank You all

Researchers

Part One: Demographics

- 1- Sex: Male Female
 2- University Proprietorship Status: Public/Governmental Private

Part Two: Includes a number of items measuring adequacy level of computer information system resources used at the Jordanian universities under study.

	Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Adequacy of Hardware Resources						
1	My university library offers advanced devices					
2	My University library adopts continuous improvement of devices					
3	Devices at my university library avail with no failure or interruption					
4	My university library administrators repair devices and troubleshoot interruptions quickly					
5	Computers at my university library are supplied with terminals, keyboard, copier, etc) supporting knowledge seeking and research					
Adequacy of Software Resources						
6	My library provide software programs that meet my needs					
7	My university's library keeps updating their software programs					
8	Compatibility of update computers with update software programs in my university's library					
9	My university's library offers the programs I need to enrich my knowledge					
10	Campus library administrators provide training for me on the use of software programs					
Adequacy of Data Resources						
11	My university library has qualified staff					
12	I receive assistance from library staff on time					
13	Library staff are available at their offices to serve me					
14	My university library's staff respond to my research needs					
15	I trust the library staff who facilitate access to knowledge.					
Adequacy of Human Resources						
16	My university library hosts database that is sufficient for researching					
17	The library provide me with the possibility of online access while at home					
18	My university library provides data processing service for free					
19	I believe the database available at my university library adequate for research and knowledge					
20	I can access to my university library's database without the need for username or password					
Adequacy of Organizational Resources						
21	My university library adopts continuous development approach					
22	My university library administrators initiate communicate with me via various channels					
23	There is comfortable environment inside my university's library					
24	My university's library has clearly set regulations and policies					
25	Administrators and personnel at my university's library work in teamwork spirit respectfully					
Adequacy of Communications & Network Resources						
26	I can communicate with other regional campus libraries through					

	my university's library					
27	I can communicate with other global campus libraries through my university's library					
28	My university's library offers distance connection service					
29	My university's library provide fast connection with knowledge resourceful websites					
30	The communication and networking resources at My university's library characterized with continual connection without interruptions or sluggishness					

Part Three: a set of items measuring role of adequacy of computer information system resources in enhancing student's motivation to learn

	Item	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Mostly I use the library to search knowledge in certain field driven by homework assignment given by the instructor					
2	Mostly I use the library to search knowledge in certain field driven by self-interest and curiosity					
3	I always use library in my field of study only					
4	I always use library for various fields of knowledge					
5	I largely depend on the printed material available at my university's library for researching					
6	I largely depend on the electronic learning resources available at my university's library for researching					
7	I largely depend on the Internet for researching while at home					
8	I largely depend on the commercial Internet outlets for researching					
9	Adequacy of hardware resources of the computer information systems motivate me go to library for knowledge					
10	Adequacy of software resources of computer information systems used at the library help stay longer at the library					
11	Adequacy of human resources of the computer information systems attract me to the library for knowledge diversification					
12	Adequacy of data resources of the computer information systems motivate my curiosity for new knowledge					
13	Adequacy of resources related to library environment of policies, goals, culture of cooperation and organizational climate motivate my curiosity for research and learn					
14	Adequacy of networking resources increases my knowledge orientation					
15	My loyalty and belongingness to the library associates with how much adequate resources its computer systems have					