Exploration and Impacts of Utilizing Computerized Information Systems
Field Study:
At the Headquarters of Jordanian Ministry of Education

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Abstract

The purpose of this study is to investigate the extent of use and application of computerized information systems in the center of Jordanian Ministry of Education. The study also aims to find out the most common information systems according to degree of knowledge, and degree of usage. It also aims to find out barriers lowering the application, sources of knowledge, and areas of application the computerized information systems. The study also aims to find out the impacts of application computerized information systems on areas of (managerial actions, financial actions, office actions, organizational structure, work force, organizational communications, and Decision Making). It also aims to find out whether there are statistically significant differences among degree of knowledge, degree of usage, areas of application, barriers lowering application, sources of knowledge, and impacts of computerized information systems on (managerial actions, financial actions, office actions, organizational structure, work force, organizational communications, and Decision Making) attributed to the following variables: sex, age, educational degree, experience, job level, academic specialization, work department, and nature of department work. The study also aims to find out the relationships (positive or negative) among degree of knowledge, degree of usage, areas of application, barriers lowering application, sources of knowledge, and impacts of computerized information systems.
A study involved purposive sample at (25%) from study population – which include all employees males or females in departments and divisions of center of Jordanian ministry of education, approximately (800) employee whom have the job title: general manager, manager, division chief, division member – the sample will be (200) employee who work in departments and divisions which depend heavily in application of computerized information systems in order to perform their works.

A total of (200) questionnaires were distributed, (162) of them were returned and valid for statistical analysis with a (81%) response rate, and the data was processed by computer using the SPSS/PC+ package, means, standard deviations, T-Test, One Way Anova, f-test, and Correlation Coefficients were calculated.

The study reveals the following results:

1- Individuals using one or more of computerized information systems were (160), composing (98.8%) of the sample, whereas (2) composing (1.2%) of the sample do not use information systems.

2- Office Automation systems (word processing, graphics, data bases, spread sheets, E-mail) were ranked first, according to both the degree of knowledge, and the degree of use, followed by functional information systems (accounting, financial, payroll and loans, purchase and inventory control) at the second place, followed by Human Resource information systems (employee records, skills development, training, and appointment information systems) at the third place and at the fourth place management information systems (group and single decision support systems, expert systems, and executive information systems) were ranked.

3- Secretarial works, typing and Statistical reports, were ranked first as an area of computerized information systems uses, followed by Decision Making at the second place, followed by filing information about employees at the third place, followed by strategic planning at the fourth place, followed by preparing payroll and accounts at the fifth place, followed by training, preparing and analyzing budgets, research and development, quality control, purchase and inventory control.

4- Lack of training programs courses, was ranked first as a reason lowering the use of C.I.S, followed by Lack of specialized personnel at the second place, and the shortage or out-dated of computers at the third place, and the lack of knowledge in using C.I.S, organizational and managerial barriers like (weaken of planning, information security and secrecy), shortage of monetary resources, high cost, lack of management interest, shortage of available data, work nature do not require using computerized information systems.
5- Practice and Experience was ranked first as source of knowledge in C.I.S, followed by self efforts and free readings at the second place, followed by training programs thirdly as a source of C.I.S knowledge and finally at the fourth place Academic studies was ranked, as source of C.I.S knowledge.

6- The Descending order of impacts of C.I.S on managerial actions is as follows: Reducing time and efforts required to completing different managerial transactions, increasing and improving the quantity and quality of services afford to ministry reviewers, offering the best methods for dealing with ministry reviewers, computerization many of routine managerial actions in different ministry departments, using flexible work methods in official times and working anywhere regardless of place, rationalization and coordination the ministry efforts in research and development, simplification of administrative transactions and increasing speed and accuracy of their completion, enhancing the coordination processes among different ministry departments, developing the internal control and supervision processes, and finally delegation many managerial tasks to the lower levels.

7- The Descending order of impacts of C.I.S on financial actions is as follows: Preparing financial reports for top management, facilitation processes of preparing and spending monthly payrolls and employees wages, calculating and typing bills, reducing costs required for completing ministry tasks and works, monitoring and auditing the spending transactions from budget items and categories, recording the financial conveyance of expenditures and preparing the financial situation for each department, the auditing in all financial requests related to workers and agents, comparing estimated expenditures with actual ones and find out reasons of addition or decline, calculating the actual costs for ministry programs and activities, increasing the ministry expenditures since the application of C.I.S requires computers, training, and qualified human capabilities.

8- The Descending order of impacts of C.I.S on office actions is as follows: Typing response on in-transactions and out-transactions, preparing statistical information and data for different ministry departments and divisions, reducing time in correspondences between different administrative levels, providing ministry departments with what they need from information and reply on their inquires, editing and typing different texts such as letters, memoirs, forms, and reports, speed of receiving the in-transactions and classifying them according to ministry departments and divisions, maintaining and recording the response on in-transactions and out-transactions from and to external environment, simplification the classification the office actions files and keeping them, storing and transmit the letters and documents electronically to work groups and
individuals, design and production different print outs in ministry like books, bulletins and guides.

9- The Descending order of impacts of C.I.S on the organizational structure elements is as follows:

Enhancing control and monitor the commitment with official work rules and procedures, minimizing size and role the middle management, changing the vertical organizational structure with multiple administrative levels to horizontal organizational structure with lower administrative levels, reducing the bureaucracy features and authority hierarchy in the ministry organizational structure, confirmation decentralization open way in the ministry organizational structure, redesign jobs and analyzing and description them, creation new organizational units to perform jobs became necessary after application C.I.S in work, creation processes of merging or partition in ministry hierarchical divisions, changing the traditional managerial leadership styles to the specialized technocratic style, cancellation of organizational units which computers became performing their jobs.

10- The Descending order of impacts of C.I.S on the work force is as follows:

Re-studying Assemblage of work force at which there is no need for some skills and specialization like clerks and accountants and the need is increasing to new specialization such as computer operators, programmers, data keepers and others, saving employees efforts which leading them to improve the quality of their performance, organizing and following the transactions of retirement, resigning, classifications, promotions related to employees, providing employees with analytical, artificial, mathematical, and financial skills, appearance of self-motivated, integrated work teams, confirmation on training employees in the ministry from different specialization, splitting the relationships at level of work relations between ministry employees, dismissal many employees whom works were computerized, decreasing the skills of employees as a result of application computer. Some states of instability, stress, and job dissatisfaction for employees so they feel threatened form application computerized information systems.

11- The Descending order of impacts of C.I.S on the organizational communications is as follows:

Simplification the interchanging of information between center of ministry and departments followed it, providing management with accurate information in right time and right managerial level, better interaction among ministry and audience—reviewers and visitors—, interchanging information and ideas and carrying suggestions in both directions from chief to subordinates and vise versa, enhancing communications between different ministry departments and divisions, appearance of open, flexible, vertical, and horizontal communications. Providing banks of
information with different types in various technological, scientific areas. Increasing risks related to intervention and illegal access to secret data, enabling citizens to access to more information about ministry work, goals, and mission. Connecting the departments, divisions, employees, reviewers within computerized communication networks.

12- The Descending order of impacts of C.I.S on the Decision Making is as follows:

   Processing data quickly for decision making and policy taking, providing information which are enough and accurate, so making the best decisions. Generation and evaluating alternatives and selection from them in short time period, increasing number of proposed alternatives in process of decision making and policy taking, knowing the problems and conditions that are facing the ministry quickly and accurately so understanding them better, presenting consultation about the frequent problems through providing information about causes and logic of problem and also interpreting them.

   Joining decisions and policies accurately with reality, increasing the number of decisions makers through improving the communication channels, distributing the decision making positions to more than one level especially in encountering emergency situations, reducing bias of managers in the decisions made by them.

13- The Descending order of impacts of C.I.S on all areas is as follows:

   The financial actions at the first place, followed by managerial actions at the second place, and office actions at the third place, followed by decision making at the fourth place, and work force at the fifth place, followed by organizational communications at the sixth place, and finally the elements of organizational structure at the seventh place.

Base upon these results the study recommends the following:

(a) More attention is to be paid to training programs and workshops in C.I.S particularly in M.I.S (group and single decision support systems, expert systems, and executive information systems).

(b) Exploiting and utilizing the great capabilities of C.I.S in computerization of all office, managerial and financial actions in order to promote the general performance of center of Jordanian ministry of education.

(c) Enhancing the usage and application of C.I.S in areas of (purchase and inventory control, quality control, research and development, and training).

(d) Supplying center of Jordanian ministry of education with updated computers, or upgrading the existing ones where most of them are poor in speed and storage space capacity.
(e) Connecting the computers in center of Jordanian ministry of education within computerized communication networks so enabling interchanging of data and information electronically between different ministry departments and divisions.

(f) Connecting departments and divisions of center of Jordanian ministry of education with the INTERNET so this will enable them from utilizing and benefiting the services offered by internet such as E-mail system, and searching for information in all fields and areas, which will reflect at all on the general performance of ministry.