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# Investigating the Effect of E-management on Customer Service Performance

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## Abstract

The present study aims to investigate the effect of e-management on customer service performance for a group of business organizations in Alexandria - Egypt. The directory of Egyptian Ministry of Trade and Industry was surveyed in order to randomly select the participating organizations. 485 businesses randomly selected representing 25% of the total population, of which only 391 organizations expressed their willingness to participate. 263 questionnaires were distributed, but only 226 were collected representing 30% of the study population. Experts comments were used to check the validity of the study instrument, and the reliability of questions was calculated as 93% using Cronbach's Alpha coefficient. The statistical methods used for data analysis are frequencies, relative frequencies, percentages, averages, order of the responses, Pearson correlation coefficient, Cronbach's Alpha coefficient, confirmatory factorial analysis, central tendency (mean), dispersion (standard deviation), Pearson coefficient, simple linear regression, T-Test, determinant coefficient, and one-way ANOVA. The probability level for a test of statistical significance for the study is  $p < .05$ , to ensure a 95% confidence in generalization of the findings. Study findings assert research hypothesis that there is a statistically significant positive relationship between e-management and customer service performance.

**Keywords:** e-management; performance; customer services; business organizations.

## استكشاف أثر الإدارة الإلكترونية على أداء خدمات العملاء

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### الملخص

تهدف الدراسة الحالية إلى استكشاف أثر الإدارة الإلكترونية على أداء خدمات العملاء لمؤسسات الأعمال في مدينة الإسكندرية بمصر. تم اختيار المنظمات المشاركة عشوائياً من خلال مسح دليل وزارة التجارة والصناعة المصرية، ولقد تم اختيار 485 شركة عشوائياً لتمثل 25% من إجمالي عدد الشركات المسجلة، ولكن استجابت للمشاركة عدد 391 منظمة، وتم توزيع 263 استبانة (نسبة 35% من مجتمع الدراسة)، ولكن تم جمع 226 استبانة فقط بواقع 30% من مجموع مجتمع الدراسة. تم الاستعانة بأراء الخبراء للتحقق من صلاحية أداة الدراسة، وتم حساب موثوقية الأسئلة بنسبة 93% باستخدام معامل ألفا كرونباخ. وتم استخدام مجموعة اساليب الاحصائية في تحليل البيانات مثل الترددات، الترددات النسبية، النسب المئوية، المتوسطات، ترتيب الاستجابات، معامل ارتباط بيرسون، معامل ألفا في كرونباخ، تحليل عامل التوكيد، الاتجاه المركزي (الوسط)، التشتت (الانحراف المعياري)، معامل بيرسون، البساطة الانحدار الخطي، اختبار T، معامل محدد، ANOVA في اتجاه واحد. وتم اعتماد مستوى احتمال لا اختبار الأهمية الإحصائية للدراسة بقيمة  $p < 0.05$  للحصول على ضمان ثقة 95% في تعميم النتائج. تؤكد نتائج تحليل البيانات على فرضية البحث بوجود علاقة ايجابية ذات دلالة إحصائية بين كل من الإدارة الإلكترونية وأداء خدمات العملاء.

**الكلمات الدالة:** الإدارة الإلكترونية؛ الأداء؛ خدمات العملاء؛ منظمات الأعمال.

### Introduction

The current study aims to investigate the effect of e-management on customer service performance for a group of business organizations in Alexandria - Egypt. Thus, the research would be able to provide recommendations based on the results of this investigation.

Although many authors highlighted the role of technology in customer services (Elam & Morrison, 1993; El Sawy & Bowles, 1997), many other investigated various issues related to customer service, but only few dealt with empirical research investigating the effect of technology on customer service performance (Lemon & Verhoef, 2016). The current research aims to fill this gap through investigating the effect of e-management on customer service performance.

The importance of current research stems from lacking studies that focus on e-management in the Arab countries, and particularly in Egypt. Therefore, this research may be considered as a starting point for further research needed to cover in depth the issues affecting the adoption of e-management (which are not discussed in this research). Also, the importance of this research can be derived from its findings, which will be considered as an incentive not only for academics, but, also for business organizations managers and decision makers to investigate deeply in a series of other researches the issues related to the adoption of e-management. Moreover, the current study adds to the literature a new knowledge through dealing with the subject of e-management in relation to customer service performance. In addition to that, the current study provides a theme to prove the effect e-management has on customer service performance.

The main question that the current research aims to investigate and try to answer would be: is there a statistically significant relationship between e-management and customer service performance?

## Literature Review

Current research aims to investigate the effect of e-management on customer service performance; thus, the following literature review covers the most important issues related to the topic of this research study needed to proceed with such objective. The topics that will be covered in the following literature review section are: e-management, challenges of e-management, and the relationship between e-management and customer service.

### E-management

Alaagez (2011) declared that e-management is a process through which management manages. Also, it is an integrated electronic system that relies on information technology to improve the various administrative processes within the organization. He indicated that the idea of e-management goes far beyond the concept of automation of the work within the organization, to include data and information integration between different departments as well as using such data and information in guiding the policies and procedures of the organization towards achieving its objectives and providing the necessary flexibility to respond to the internal and external variables.

In the same context, Hai (2007) illustrated that e-management implies the use of e-capabilities through the adoption of information and communication technology (ICT) solutions in order to improve management performance, simplify the routine procedures, as well as making the data accessible to users anytime anywhere. Moreover, he indicated that e-management would be considered as the backstage information systems that support the management of the business organization, including tools for communication, coordination, and collaboration.

Ellatif and Ahmed (2013) have explained that it was always noted that the concept of e-management is confused with the concepts of e-business, e-commerce and other similar concepts within the digital world. The authors refer to the International business machine (IBM) organization, which has identified e-business as a comprehensive flexible approach to distribute the value of distinguished works by linking electronic systems to operations through which basic activities of business are performed. IBM has identified e-commerce as a commercial transactions conducted electronically through electronic devices. Also, IBM has determined e-management as a managerial concept, hardware and software systems, and functional configuration and mechanisms as well as activities that depends in its operation on technology to achieve predetermined objectives. The authors illustrated nowadays that the transition to e-management is a major competitive force organizations are forced to think about because of the fast expansion in ICTs and the widespread of the technological revolutions worldwide as well as the enormous increase in the size of information flow. Implementation of e-management mandates innovation culture to prevail inside business organizations. Workforce should think out of the box while taking their deep look into the reality of their business organizations, this thinking approach will allow them to consider all issues surrounding them in the environment, both inside and the outside, thus taking the best actions.

### E-management Challenges

Worldwide challenges are forcing business organizations to adopt major changes such as globalization, recent innovations, competition, as well as changing economic structures. Businesses have to be changed by adopting innovative strategies in order to improve their efficiency and effectiveness (Oppong, Yen, & Merhout, 2005).

With reference to Shakkah and Algamdi (2016), in addition to the recent and modern ICTs changes, worldwide challenges have affected the environment and function of e-management; thus creating a new working context as follows:

- Change from independent computerized systems into a networked system have created ICT systems those are an electronic fabric connecting core business systems.
- Change from non-electronic management systems to smart e-management systems allow dealing with information sources that produce smart elements such as databases and software that search for information.
- Change from batch processing, conducting gradually in batches, to online real-time processing suits

- the changing and rapid nature of doing business which requires constant updating.
- Change working environment to make use of different networks, such as intranets and extranets, allowing the online link of systems and databases, thus providing information instantly as needed.
  - Change to work using client/server environment enhance security as well as the ability to serve many users.
  - Change from centralized computing to distributed computing allows flexible and team-work structures instead of individual tasks.

Ibrahim (2011) have illustrated that it is very difficult to draw a conclusion about the status of e-management in the Arab countries due to many reasons including the generalization nature of the topic of e-management, as well as the variety of domains constituting its field such as ICT, e-commerce, e-government, and management.

Moreover, he determined that it is worth mentioning that the Arab countries may have limitations regarding the application of e-management related mainly to a number of issues. One of the most significant limitation is the technology limitation, as some Arab countries has an outdated ICTs infrastructure that limit their capabilities in adopting the required services needed for implementing e-management. Another limitation is the culture limitation, as Arab countries vary significantly in individuals' culture (traditions in the unique Arabia aspects of life), as well as the organizational culture (values and traditions shared by workforce), and vary as well in their administrative methodologies in performing daily activities; individuals affects organizations and organizations affects workforce. In order to keep pace with recent innovations, culture must provide Arabs with innovative thinking tools, and also provide decision makers with knowledgeable capabilities that aid them in developing and using e-management systems.

Moreover, socio-economic limitation is very important, as adopting recent technologies needed to implement e-management systems takes place at levels of both organizations and society; thus transforming them into information community and information economy. Having the right environment leads to the success of e-management implementation; therefore, it is very important to ensure changing the attitudes of the collective society to adopt recent innovations and especially e-management.

In the same context, Maher (2010) has indicated that regardless of the limitations of e-management adoption in Arab environment, the chances of successful e-management are proved to be very high, as there is a serious commitment and established innovations in the administration of the business organizations as well as the governmental entities. It is concluded from the Arab experiments with e-management, that the following are the requirements of its success:

- Having development strategy for recent innovative technologies.
- Investing in the appropriate facets of ICTs infrastructures.
- Having strategies for building and improving culture through innovations.
- Re-engineering traditional work activities to match the recent innovative environments.

### **E-management and Customer Service**

The literature shows that many worldwide organizations adopted e-management as a result of recognizing its positive effects on employees' performance (Cordella, Martin, Shaikh, & Smithson, 2011). E-management - as one of the significant outcomes of the digital world - is considered as an e-mechanisms. Moreover, digital world has changed the theoretical and practical applications of e-management through introducing new systems, tools, and models, which are considered as new ways of competition based on innovation (Shakkah & Algamdi, 2016).

E-management takes care of using ICTs in making the core business functions; thus streamlining business processes in order to maintain e-records, and improving the flow and the integration of information (Kim & Koh, 2004). These ICTs are considered as the facilitator of the recent and rapid changes in business environment, ICTs facilitate the creation of a more flexible organization that is capable of achieving competitive advantage and supports management in achieving their goals (Alzubi, Aldhmour,

& ALattraqchi, 2016). Moreover, e-management is considered as a key success factor in the competition towards e-business applications, which is the umbrella name for major e-business innovations used for information exchange, on-line collaboration, and to ensure the performance required for e-business success (Berman & Eglstein, 2007).

Information is viewed nowadays as a significant resource for generating values throughout the whole organizations and the whole societies; thus affecting human life aspects (Dibrell & Miller, 2002). This is the reason that ICTs are growing up very fast in our daily lives, aiming at solving businesses and personnel problems in new ways, and it allows linking people and data in new effective ways at a lower cost (Sahuquillo & Pont, 2003). Same idea was shared by Almutairi (2014), Crowley (2008), and Sharma (2009), as they declared that since the introduction of the Internet, the main focus of current business organizations is the adoption of e-management, as it has the ability to enhance the quality of processes; leading to improving efficiency and effectiveness, the reduction of the expenses, and the increase of the profitability. In the same context, Joshi (2012) and Alshehri and Drew (2010), declared that e-management has several advantages. e-management makes communication fast and easy, e-management makes cost of communication so cheap, shared information easily seen providing transparency, transparency leads to accountability, and providing flexibility due to handling management issues without time and place restrictions.

Recent technological innovations have revolutionized the 21<sup>st</sup> century, where everything and everyone is getting online, the internet is providing low cost communication mechanism that makes it the most strategic application of technology for businesses. Firms are now searching for means to better interact with customers and influence them, they understand that technology affect customer service performance (Navimipour & Soltani, 2016).

Customers worldwide require businesses to offer greater quality at lower cost, and businesses understand that achieving these objectives has becoming a significant factor to acquire competitive advantage and compete globally (Bergek, Hekkert, & Jacobsson, 2008). Also, most businesses organizations are recognizing customer service as a significant strategic issue used to measure competitiveness of the customer service process (Ray, Muhanna, & Barney, 2005; Rusť, Zeithaml, & Lemon, 2000; Szymanski & Henard, 2001; Zeithaml, 2000).

In order for businesses to become efficient and be able to contribute to the worldwide competitive markets where customers' expectations are continually rising, adoption of recent innovative technologies is critical (Sharabi, 2013). Literature is rich with authors who agree that innovative technologies are an important ingredient for improving customer service performance (Gunawardhana, 2018; Addas & Pinsonneault, 2016; Melville, Kraemer, & Gurbaxzni, 2004; Rai, Patnayakuni, & Seth, 2006). Moreover, they recognized that recent technology adoption significantly enhance customer relationship quality and outcomes (Darajeh & Tahajod, 2010).

Many authors have illustrated that business firms have used innovative technology to impact customer service (Karimi, Somers, & Gupta, 2001; Bradely, Hausman, & Nolan, 1993; Lohse & Spiller, 1998; Porter, 1986; Sweat & Hibbard, 1999; Krishnan, Ramaswamy, Meyers, & Damian, 1999; Furey, 1991). Recent ICTs empowers customers more than ever as the Internet allows continuous contact with them anytime anywhere (Jesu, Gao, Melero, & Sese, 2019; Chen & Nath, 2016; Takeddine & Sun, 2015). Moreover, authors have determined that recent innovative technologies improve customer services expertise and performance in many ways as follows:

- Increasing convenience of provided services, better customer service management, and ultimately increasing the offered services (Furey, 1991),
- Changing standards of competition through offering easy information sharing, reducing costs significantly, reducing cycle times significantly, and ultimately improving customer satisfaction, loyalty and retention (Cash, McFarlan, McKenney, & Applegate, 1992; Choi, 2018; Salomann, Dous, Kolbe, & Brenner, 2005),
- Enhancing customer service by raising entry barriers, enhancing productivity, and ultimately generating revenues (Fitzsimmons & Fitzsimmons, 1997; Lai, Huang, Lin, & Kao, 2011),
- Enhancing customer service quality, reducing customer service cost, aiding in acquiring new customers, tracking consuming behavior, better understanding customer needs, and customizing the required services and activities (Navimipour & Soltani, 2016),

- Making customer services cheaper, easier, faster, and more accurate. Moreover, helping to reduce workload and involvement of human and physical resources (Gunawardhana & Perera, 2015; Choi & Ryu, 2015; Choi & Shin, 2012),
- Increasing salespeople's customer orientation (Reychav & Weisberg, 2009),
- Enhancing customer service capabilities, and ultimately affect customers' behavior (Setia, Venkatesh, & Joglekar, 2013),
- Increasing service expertise (Choi & Ryu, 2015), and
- Enhancing the organizational agility (Mao, Liu, & Zhang, 2015).

## Research Methods

### Approach

This research used the descriptive analytical approach. Data collected using questionnaire instrument, which was designed and tested before its distribution to study sample. Statistical Package for Social Science (SPSS V. 25) was used in coding and analyzing the data in light of the questions of study instrument. The probability level for a test of statistical significance for the study is  $p < .05$ , to ensure 95% confidence in generalization of the findings. Descriptive statistics were used for data analysis of the collected data. The statistical methods used for data analysis are:

- Frequencies, relative frequencies, percentages, averages, and the order of the responses for the pilot test data.
- Pearson correlation coefficient used to test the validity of the instrument.
- Cronbach's Alpha coefficient and confirmatory factorial analysis used to test the reliability of the instrument.
- Central tendency (mean) and dispersion (standard deviation) of data used to know the places of concentration of data and their distance from each other.
- Pearson Coefficient used to measure the degree and type of relationship between variables.
- Simple linear regression and T-Test used to measure the effect of an independent variable on a dependent variable.
- Determinant Coefficient used to determine the extent to which the independent variable can explain the differences in the dependent variable.
- One-way ANOVA used to test the means of independent samples.

### Research Hypothesis

There is a statistically significant relationship between e-management and the performance of customer service.

### Population and Sample

Simple random cluster sampling was used for the selection of the participating business organizations located in Alexandria city of Egypt. The target participating business organizations were chosen randomly based on the list of commercial business organizations obtained through surveying the directory of the Egyptian Ministry of Trade and Industry in November 2018.

The population of the research study consists of 1903 business organizations, and the sample of the study is 485 randomly selected organizations representing 25% of the total population. A contact was made in order to obtain their approval to start distributing the questionnaires and get their responses. Of the 485 selected organizations, only 391 responded and express their willingness to share in the study. Four follow-up contacts were made in order to ensure the readiness of questionnaires for collection. 263 questionnaires were distributed, but only 226 were collected, and all the collected questionnaires were completed and usable, which represent 86% response rate representing 30% of the study population. Data collection took place from December 2018 to January 2019.

## Study Instrument

The study instrument was designed to explore the views of the employees towards e-management and its effect on customer service performance. The researcher prepared the instrument in its initial stage by reviewing the literature related to the research objectives, as well as by reviewing previous studies in order to analysis existing related instruments. The current research instrument consists of three main sections as follows:

- Part 1: aimed at collecting demographic information about professionals participating in the study, such as gender, age, academic qualification, position, experience, and working function.
- Part 2: aimed at soliciting the opinion of participating professionals regarding the applicability and adoption of e-management, and it consists of 9 statements.
- Part 3: aimed at soliciting the opinion of participating professionals regarding the effect of e-management on the performance of customer service, and it consists of 10 statements.

The instrument was piloted in two distinct ways, it was tested in order to ensure that it is accurate, consistent, the questions reflect the intended meaning of the researcher, and to ensure that this meaning will be understood by anyone reading these questions; thus increasing the instrument validity and reliability. Expert comments were used to check the instrument, as a number of 19 academics expert reviewed the instrument to ascertain its relevance and ability to achieve the intended objectives, then the instrument was evaluated and revised with their comments. This was followed by the distribution of a prototype of the instrument to a number of 25 employees in the participating organizations in order to obtain their observations before the final distribution, both pilot tests were with a return rate of 100%.

the reliability of instrument was calculated as 0.93 using Cronbach's Alpha coefficient and confirmatory factorial analysis, and it was 0.86 for part 2 (applicability and adoption of e-management), while it was 0.94 for part 3 (effect of e-management on the performance of customer service).

The validity of the instrument was calculated using Pearson correlation coefficient between each of the used statements and the complete equivalent part in the instrument. Calculations shows that all the values of correlation coefficients are statistically significant at the level (0.01), and this shows the validity of the instrument.

## Data Analysis and Results

### Demographic Information Analysis

Frequencies and percentages of the research sample were calculated according to the different variables as follows:

Gender analysis: distribution of sample shows that 42.9% are females and the remaining higher portion of 57.1% as males, as shown in figure 1.

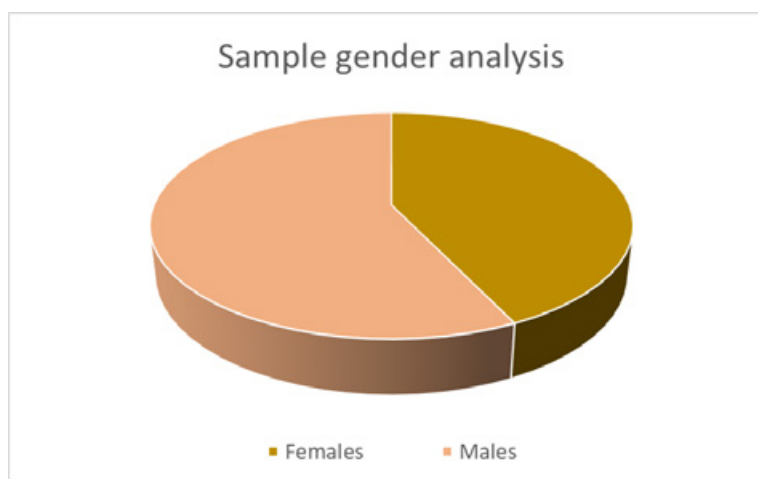
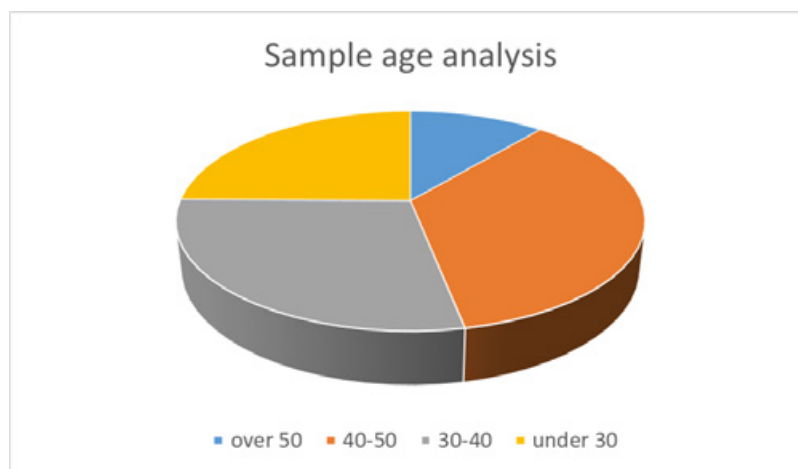


Figure-1. Sample gender analysis



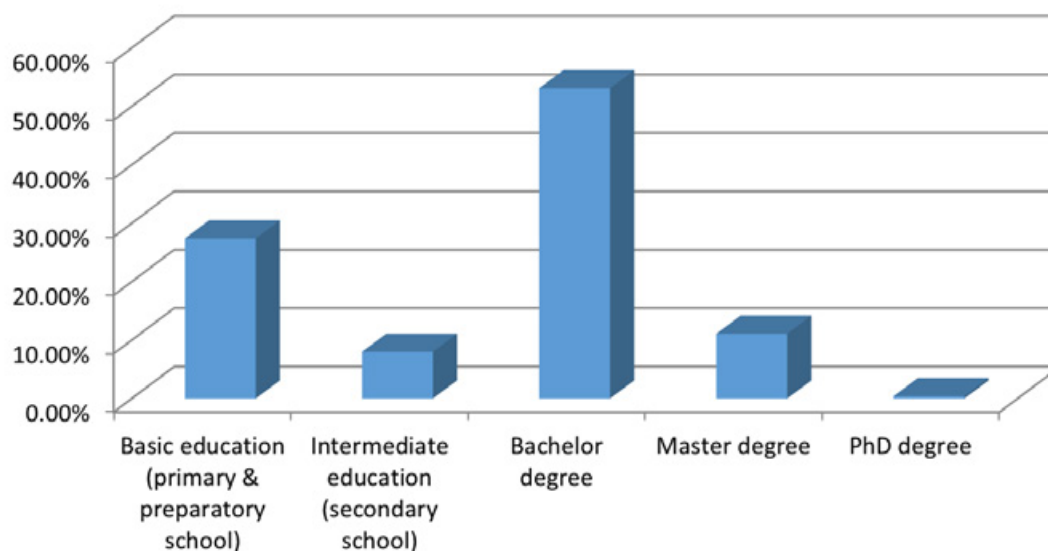
Age analysis: distribution of sample shows that the percentage of individuals aged over 50 years is 11.1%, individuals aged 40-50 years as 35.8%, the percentage of individuals aged 30-40 years 28.3%, while the percentage of individuals under the age of 30 years in the sample is 24.8%. This result indicates the diversity in average ages of the study sample and a relative increase in the average ages, as shown in figure 2.



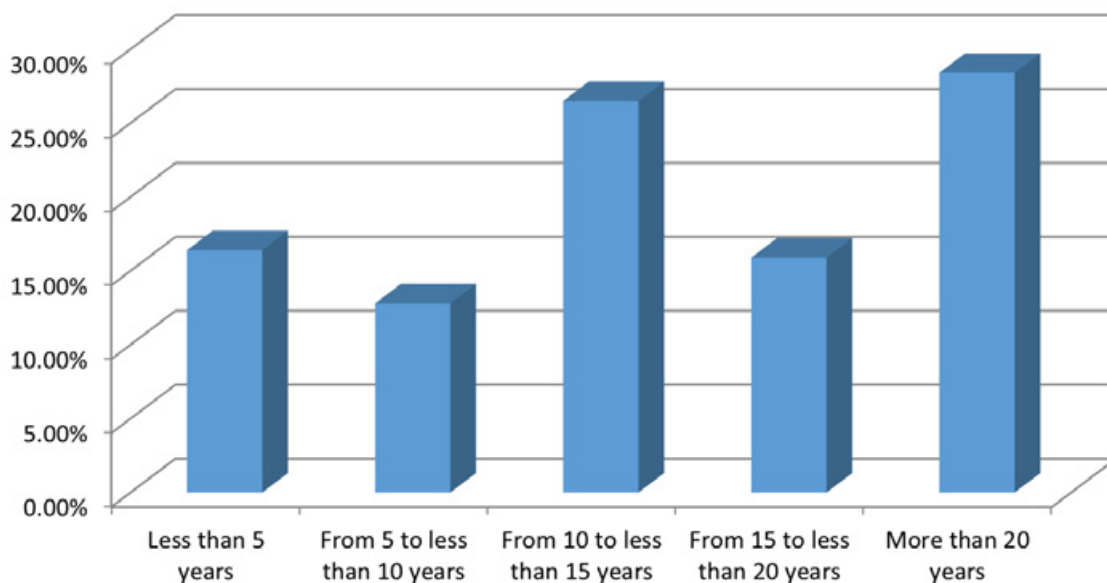
**Figure-2.** Sample age analysis

Scientific qualification analysis: distribution of sample shows that the percentage of individuals with intermediate and above average qualifications (secondary school) in the sample is 27.4%, basic education (primary & preparatory school) percentage in the sample is 8%, individuals with a university qualification (Bachelor degree) represented 53.1%, the MSc holders in the sample is 11.1%, while the percentage of the PhD holders in the sample is 0.4%. It is clear from the previous analysis that the society of current study is well qualified, as shown in figure 3.

**Figure-3.** Sample scientific qualification analysis

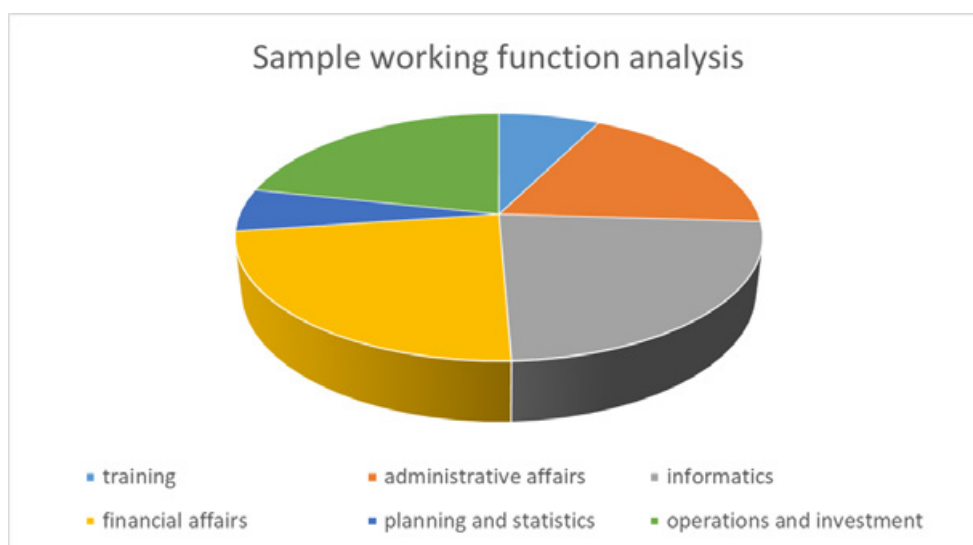


Working experience analysis: distribution of the sample shows that the percentage of individuals with years of experience of 20 years or more is 28.3%, individuals whose years of experience from 15 to less than 20 years is 15.9%, individuals whose years of experience from 10 to less than 15 years is 26.5%, individuals with years of experience from 5 to less than 10 years is 12.8%, and finally individuals with less than 5 years of experience is 16.4%. It is clear that the sample has individuals who have considerable work experience, as shown in figure 4.



**Figure-4.** Sample working experience analysis

Working function analysis: distribution of the sample shows that the percentage of individuals who work in “training” function is 5.3%, those who work in “administrative affairs” function is 13.3%, the percentage who work in “informatics” function is 16.8%, the percentage who work in “financial affairs” function is 16.8%, the percentage who work in “planning and statistics” function is 4%, and the percentage who work in “operations and investment” function is 15.5%, as shown in figure 5.



**Figure-4.** Sample working function analysis

### Data Analysis and Discussion

The results of the descriptive statistics for part 2 of the instrument, which aims at soliciting participant opinions regarding the applicability and adoption of e-management, were examined by comparing the average mean for that part with the mean values of the responses of the participants. From this analysis we can conclude the following results:

Statement 1 “administration aims to replace traditional systems with electronic systems” ranked last according to the average of 3.88, with a strongly agree rate of (26.1%) as well as a strongly disagreeable

rate of 1.3%. This result indicates that participants believe that the administration is replacing traditional systems with recent electronic systems.

Statement 2 “administration uses electronic communication systems” ranked eighth according to the average of 3.88, with a strongly agree rate of 19.5% as well as a strongly disagreeable rate of 0.9%. This result indicates that there is a considerable agreement by participants that the administration uses electronic communication systems.

Statement 3 “administration uses electronic data exchange systems” ranked seventh according to the average of 4.03, with a strongly agree rate of 19.9% as well as a strongly disagreeable rate of 0.4%. This result indicates that there is a high degree of participants who believe that the administration uses electronic data exchange systems.

Statement 4 “Administration relies on electronic monitoring systems” ranked fifth according to the average of 4.09, with a strongly agree rate of 26.5% as well as a strongly disagreeable rate of 0.9%. This result indicates that there is a great deal of agreement among participants that the administration relies on electronic monitoring systems.

Statement 5 “administration develops Internet strategies” ranked fourth according to the average of 4.15, with a strongly agree rate of 30.1 as well as a strongly disagreeable rate of 0.4%. This result indicates that there is a great deal of agreement among participants that the administration is developing Internet strategies.

Statement 6 “administration develops secure information systems” ranked third according to the average of 4.15, with a strongly agree rate of 30.5% as well as a strongly disagreeable rate of 1.8%. This result indicates that there is a great deal of agreement among participants that the administration is developing secured information systems.

Statement 7 “administration is keen to provide modern electronic equipment” ranked first by the average of 4.24, with a high acceptance rate of 35.8% as well as a strongly disagreeable rate of 0.9%. This result indicates that there is a great deal of agreement among participants that the need for modern electronic equipment is considered the most important requirements of the success of the applicability of e-management.

Statement 8 “administration is keen to provide the hardware necessary to build information infrastructure” ranked second by the average of 4.19, with a high acceptance rate of 27.4% as well as a strongly disagreeable rate of 0.4%. This result indicates that there is a great deal of agreement among participants that the administration is keen to provide the hardware necessary to build information infrastructure required for the applicability of e-management.

Statement 9 “administration is keen to provide modern equipment that facilitate the adoption of modern electronic systems” ranked sixth according to the average of 4.09, with a strongly agree rate of 28.8% as well as a strongly disagreeable rate of 0.4%. This result indicates that there is a high degree of approval among participants that the administration is keen to provide modern equipment that facilitate the adoption of modern electronic systems.

The results of the descriptive statistics for part 3 of the instrument, which aims at soliciting participant opinions regarding the effect of e-management on the performance of customer service, were examined by comparing the average mean for that part with the mean values of the responses of the participants. From this analysis we can conclude the following results.

Statement 1 “adopting e-management contributes to the rapid handling and completion of transactions” ranked third by the average of 4.16, with a high acceptance rate of 30.1% as well as a strongly disagreeable rate of 1.3%. This result indicates that there is a great deal of agreement among participants that the adoption of e-management leads to faster handling and completion of transactions.

Statement 2 “adopting e-management improves customer service quality” ranked fifth by the average of 4.08, with a high acceptance rate of 30.5% as well as a strongly disagreeable rate of 2.2%. This result indicates that there is a great deal of agreement among participants that the adoption of e-management improves customer service quality.

Statement 3 “adopting e-management contributes to the rapid completion of work as quickly as possible” ranked first by the average of 4.21, with a high acceptance rate of 33.2% as well as a strongly disagreeable rate of 1.3%. This result indicates that there is a great deal of agreement among participants that the adoption of e-management leads to the completion of the work as soon as possible.

Statement 4 “adopting e-management increases work accuracy” ranked fourth by the average of 4.14, with a high acceptance rate of 32.7% as well as a strongly disagreeable rate of 1.8%. This result indicates that there is a great deal of agreement among participants that the adoption of e-management leads to more accurate work.

Statement 5 “adopting e-management contributes to meeting the modern requirements of customers” ranked ninth by the average of 3.99, with a high acceptance rate of 21.7% as well as a strongly disagreeable rate of 1.3%. This result indicates that there is a great deal of agreement among participants that adopting e-management leads to the recognition of the modern requirements of customers, and this is constantly increasing.

Statement 6 “adopting e-management contributes to the higher rate of rotation speed” ranked last by the average of 3.81, with a high acceptance rate of 18.1% as well as a strongly disagreeable rate of 2.7%. This result indicates that there is a great deal of agreement among participants that adopting e-management leads to higher rate of rotation speed.

Statement 7 “adopting e-management contributes to the fast entry and exit of goods” ranked eighth by the average of 4.02, with a high acceptance rate of 22.6% as well as a strongly disagreeable rate of 1.8%. This result indicates that there is a great deal of agreement among participants that adopting e-management achieves fast entry and exit of goods.

Statement 8 “adopting e-management contributes to the fast handling of transportation” ranked seventh by the average of 4.03, with a high acceptance rate of 22.1% as well as a strongly disagreeable rate of 0.9%. This result indicates that there is a great deal of agreement among participants that adopting e-management contributes to the fast handling of transportation.

Statement 9 “adopting e-management contributes to the easy connection with customers” ranked second by the average of 4.18, with a high acceptance rate of 28.8% as well as a strongly disagreeable rate of 1.3%. This result indicates that there is a great deal of agreement among participants that the adoption of e-management leads to easy connectivity with customers.

Statement 10 “linking with supervision units contributes to the rapid completion of work” ranked sixth by the average of 4.05, with a high acceptance rate of 24.3% as well as a strongly disagreeable rate of 1.8%. This result indicates that there is a great deal of agreement among participants that adopting e-management and the link with supervision units contributes to the rapid completion of work.

In order to test the research hypothesis that there is a statistically significant relationship between e-management and the performance of customer service, the researcher used a simple regression model where the dependent variable is the performance of customer service, while the Independent variable is the applicability and adoption of e-management.

**Table 1:** The correlation and coefficient of determination of research hypothesis

Model Summary				
Model	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate
1	0.47	0.220	0.217	5.53198

From table 1, given the value of  $R^2 = 0.22$ , which indicates that the applicability and adoption of e-management is able to explain 22% of the differences in the performance of customer service.

**Table 2:** Analysis of the variance of research hypothesis

ANOVA						
	Model	Sum of Squares	Df	Mean Square	F	.Sig
1	Regression	1939.085	1	1939.085	63.363	0.000
	Residual	6855.026	224	30.603		
	Total	8794.111	225			

In order to test the significance of the model, the null hypothesis will be that the model is not significant, while the alternative hypothesis will be that the model is significant. As illustrated in table 2, given that the value of probabilistic (F-statistic) = 0.00 is less than ( $\alpha = 0.05$ ) and therefore we can reject the null hypothesis and accept the alternative hypothesis, indicating that the model is significant as the applicability and adoption of e-management has an effect on the performance of customer service.

**Table 3:** Regression coefficients for research hypothesis

Coefficients					
	Model	B	Std. Error	T	.Sig
1	(Constant)	18.307	2.833	6.462	0.000
	performance of customer services	0.609	0.077	7.960	0.000

As indicated in table 3, the value of  $\beta$ , given its significance value = 0.000, which is less than  $\alpha=0.05$ , and therefore we reject the null hypothesis, meaning that the parameter is significant and the applicability and adoption of e-management contributes to the performance of customer service.

These analytical results assert the research hypothesis that there is a statistically significant relationship between e-management and the performance of customer service, which is also consistent with the literature surveyed in this regard (Almutairi, 2014; Alshehri & Drew, 2010; Choi & Ryu, 2015; Choi & Shin, 2012; Choi, 2018; Darajeh & Tahajod, 2010; El Sawy & Bowles, 1997; Ellatif & Ahmed, 2013; Fitzsimmons & Fitzsimmons, 1997; Furey, 1991; Gunawardhana, 2018; Jesu et al., 2019; Karimi et al., 2001; Lemon & Verhoef, 2016; Navimipour & Soltani, 2016; Ray et al., 2005; Setia et al., 2013; Sharabi, 2013).

## Conclusions

The current research aimed at investigating the effect of e-management on the performance of customer service. The importance of this research stems from the lacking of studies that focus on e-management in Arab countries, and particularly in Egypt. Therefore, this research may be considered as a starting point for further research to cover in depth the issue that affect the adoption of e-management. Also, the findings of this research will be considered as an incentive not only for academics, but also for business organizations' decision makers for the series adoption of e-management. Moreover, this study adds new knowledge through dealing with the subject of the e-management in relation to the performance of customer service, as it provides a theme to prove the effect e-management has on the performance of customer service.

The analysis of the collected data showed that the applicability and adoption of e-management contributes positively to the performance of customer service, as there is a statistically significant relationship between e-management and the performance of customer service. This result is in-line and consistent with the literature surveyed in this regard.

The author suggests for the future extended work following the current study to investigate other issues than customer service in relation to e-management, this will add new knowledge to the literature regarding the effect of e-management to a group of collective related issues, as well as a clear image for the adoption process of e-management in business organizations.

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## **Appendix**

### **Survey cover letter & Survey Instrument**

## Investigating the Effect of E-management on Customer Service Performance

### Survey Cover letter

#### Dear Participant:

My name is Dr. Mohamed Elsaadani; I am a researcher investigating the Effect of E-management on Customer Service Performance. Because you are a member of the selected group of business organizations in Alexandria - Egypt, I am inviting you to participate in this research study by completing the attached survey.

The following questionnaire will require approximately 20 minutes to complete. There is no compensation for responding nor is there any known risk. In order to ensure that all information will remain confidential, please do not include your name. The data collected and its analysis results will be used for research purposes only.

If you choose to participate in this project, please answer all questions as honestly as possible and return the completed questionnaire promptly to your designated department coordinator. Participation is strictly voluntary and you may refuse to participate.

Thank you for taking the time to assist me in my educational endeavors. The data collected will provide useful information regarding the investigating issue of this research.

Sincerely,

Dr. Mohammed A Elsaadani

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## Investigating the Effect of E-management on Customer Service Performance

### Survey Instrument

#### Part I - Demographic Information

Kindly select the appropriate choice by adding (v) sign

**Gender:**

Male ( )

Female ( )

**Age:**

Less than 30 years ( )

From 30 to 40 years ( )

From 40 to 50 years ( )

More than 50 years ( )

**Highest level of education:**

Basic education (primary & preparatory school) ( )

Intermediate education (secondary school) ( )

Bachelor degree ( )

Master degree ( )

PhD degree ( )

**The name of your current position** \_\_\_\_\_

**Number of years of professional experience:**

Less than 5 years ( )

From 5 to less than 10 years ( )

From 10 to less than 15 years ( )

From 15 to less than 20 years ( )

More than 20 years ( )

## Part 2 - The Applicability of E-management

This part of the survey aims at soliciting the opinion of participating professionals regarding the applicability and adoption of e-management, and it consists of 9 statements. Kindly select the appropriate choice that reflects your opinion by adding (√) sign.

No	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	the administration aims to replace traditional systems with electronic systems					
2	the administration uses electronic communication systems					
3	the administration uses electronic data exchange systems					
4	administration relies on electronic monitoring systems					
5	the administration develops internet strategies					
6	the administration develops secure information systems					
7	the administration is keen to provide modern electronic equipment					
8	the administration is keen to provide the hardware necessary to build information infrastructure					
9	the administration is keen to provide modern equipment that facilitate the adoption of modern electronic systems					

## Part 3 - The Effect of E-management on the Performance of Customer Services

This part of the survey aims at soliciting the opinion of participating professionals regarding the effect of e-management on the performance of customer service, and it consists of 10 statements. Kindly select the appropriate choice that reflects your opinion by adding (√) sign.

No	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	adopting e-management contributes to the rapid handling and completion of transactions					
2	adopting e-management improves customer service quality					
3	adopting e-management contributes to the rapid completion of work as quickly as possible					
4	adopting e-management increases work accuracy					
5	adopting e-management contributes to meeting the modern requirements of customers					
6	adopting e-management contributes to the higher rate of rotation speed					
7	adopting e-management contributes to the fast entry and exit of goods					
8	adopting e-management contributes to the fast handling of transportation					
9	adopting e-management contributes to the easy connection with customers					
10	the linking with supervision units contributes to the rapid completion of work					

**Thank you very much for your valuable time**

**Mohamed Elsaadani**

