

Applications of Information Technology Systems at Purchasing Department in Cairo Five Star Hotels

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Abstract The aim of the current research is to investigate the use of computer technologies and their diffusion within the purchasing department as well as to identify the factors influencing computer technologies adoption in Cairo five star hotels sector. The study population was comprised all five-star hotels in Greater Cairo. To determine the sampling frame, a list of (33) hotels was obtained from the Egyptian Hotel Guide, 29th Edition (2008_2009). So the sampling frame consisted of (33) purchasing managers who were selected from the five-star hotels in Greater Cairo. The pilot study was performed before the interview questions was finalized or conducted. In order to test the survey instrument, three hotels purchasing managers and some academics were involved. Data required to serve the study collected from questionnaire menu designed to this purpose by using personal interview method called (semi structure interview) conducted with purchasing managers in five-star hotels in Greater Cairo. Out of (33) hotels in Greater Cairo, (31) hotels (93.8%the average response rate) accepted to conduct interview with the researcher. But just two hotels had apologized to conduct interview with the researcher. Statistical Package for Social Sciences (SPSS) version 16 was used to analyze data collected from 31 enterprises. Findings showed that there was a strong support towards computer technology adaptation and making purchasing activities more effective in terms of both time and cost, and changing the way of purchasing products in businesses. But most of purchasing departments in the hostels being surveyed highlighted that computer technology applications are still under the desired standard, so they are difficult to be applied. Results also revealed that the purchasing departments suffered from a lack of purchasing standardization across hotels, and it is observed that there were some barriers, which had both high driving power and dependency and therefore need more attention. Specific recommendations were suggested concerning the issue being researched.

Keywords Computer Technology Applications, Computer Software, Distribution Channels, E-Procurement, Online Ordering System, Purchasing Department, Supplier's Management Performance , Five-Star Hotels

1. Introduction

Today more and more food service operations have become computerized, through the use of microcomputers or through outside services. Purchasing department management should be assigned a formal performance objective for technological development within the department. The general performance should be pursued through technological advancement. In recent years, the role of purchasing has developed into a sophisticated function in most successful hospitality operations. Purchasing currently commands considerable attention from hospitality professionals as a tool vehicle to ensure product supply and increase profit margins. Management has responded to the changing needs, desires, and expectations of guests besides recognizing the need to consider both cost and quality aspects of purchasing decisions. Lately, purchasing

managers have recognized the need to maximize value for the hospitality operations and its guests. Purchasing should no longer be considered a simple matter of ordering needed products; the economic and operational benefits derived from effective purchasing are too greater to disregard the complexities of modern purchasing systems. Every hospitality operation can benefit from a thorough examination of the purchasing system. Regardless of the resources at its disposal, progressive purchasing practices will help a hospitality operation achieve a significant competitive edge. Any firm needs an automated system to approve requisitions and standardize purchasing tasks, Need to simplify and improve portions of purchasing processes and purchasing negotiations to realize cost savings. Using purchasing computer system may be the solution firms have been looking for.

Purchasing computer system allows firm to harness the power of organizational spending, standardize purchasing processes, and improve the bottom-line. Purchasing software can help the hotel by reducing inefficiencies and unnecessary costs related to purchasing methods. There are six different areas of the purchasing activities in hospitality operations

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that were targeted by using new technology are: planning the acquisition of new technology, acquiring new technology, implementation of statistical process control, defining the quality-related attributes for products (feature, reliability, durability, function, and aesthetics) , new product development efforts and evaluating process designs. The concept of computer represents a wider scope. Therefore, the computer system through purchasing activists is an essential integral component. However, many researchers who have not looked at purchasing department support in implementation of purchasing computer system in medium sized hotels. So continuing with purchasing technical needs include the ability to utilize electronic data processing equipment. This must include knowledge as to applications where the computer can assume clerical burdens and maximize information retrieval.

The purchasing-related information systems practices construct was developed based on the work of some authors who designed a taxonomy that categorized purchasing-related information systems into three groups: Base systems and support (hardware and software); Vendor communications interface (enabling technology); and purchasing-specific applications/practices utilizing the technology (e.g. to automate ordering processes and purchasing vendor evaluation) .Thus, effective practices in purchasing rely on the ability to use real-time information. As such, investments in information systems practices such as Electronic data interchange(EDI), internet, and sharing information with suppliers all play a pivotal role in implementing these programs because they provide the vehicle whereby frequent, accurate, and secure information can be compiled, manipulated, and exchanged. While many researchers have studied these operations strategies individually, the Relationship between the adoption of information systems practices in purchasing and effect on purchasing performance has not been yet analysed. Studying these constructs and their relationships is crucial to both researchers and practitioners seeking to implement information systems practices in purchasing.

2. Review of Literature

The aims of effective purchasing are closely linked to aims and objectives of the hotel or catering operation. Purchasing must be carried out with the overall aim of supplying the materials and equipment necessary to provide for the choice and standards set down in the hotel's objectives and to achieve the desired profits through any cost restrictions set down by such objectives as in[1].As technology has advanced, E-supply management has become an increasingly important topic to businesses. With the emergence of the global economy, today's business environment is more competitive than in the past. Relationships throughout the supply are integral to a successful organization. Improved communications among trading partners can result in quicker diagnosis, feedback and

solutions to inventory and customer service problems. Yet, there are still many difficulties faced by companies trying to effectively manage their supply. Perhaps the most critical issue in the evolution of supply management is the traditional mistrust and competition found throughout the supply as in[2].

As in[3] businesses today are faced with an increasingly price sensitive market due to the amount of product information available to the consumer. Improved technologies allow consumers to find numerous suppliers that can provide the desired wares. As a result the marketplace has become increasingly competitive. Companies are using telecom and internet technologies to reach out to their customers and provide a point of contact 24 hours a day, 7 days a week. Moreover, as in[4] the use of computer and new technological developments in managing purchasing in firms has developed rapidly over the last 10 years where Electronic data interchange (EDI) needs little introduction today to most of the business community. The basic idea behind EDI is to replace the paper documents associated with routine business transactions-purchase orders, acceptances, and invoices-with electronic communication of such documents in a standardized format. EDI, therefore, is the movement of business documents electronically between or within firms such as hotels in a structured, machine-retrievable, data format that permits data to be transferred, without re-keying, from a business application in one location to a business application in another location. In a fully developed EDI environment, a computer can use directly the data sent by other computers in electronic form.

In order to improve effectiveness of purchasing management in hotel sector and compete in today's dynamic global markets, it is not sufficient to have effective integrated processes within a business; a synchronized operation of all partners in the purchasing management is required. In the past, this has been achieved by one company owning or having control over all businesses. Now, it is more likely that this integration is carried out by using inter-organizational information systems. The Internet has improved inter-organizational information systems capability and therefore is being adopted as a routine platform for information systems development. An evaluation of its use is carried out as in[5]

2.1. Benefits and Barriers of IT Systems in the Hotel Industry

The development of an E-Business strategy and applying computer applications in managing the hotel operations is a matter of urgency for the hotels as in[6]. So hotels can gain significant benefits from IT, and as in[7] these benefits as Computer applications improves the hotels competitive position in relation to their larger counterparts owing to the pivotal role information plays in the description, promotion, distribution, organization and delivery of tourism products as in[8]. Gives the hotels a chance to be independent of intermediaries and to promote their own services as in [9].

Gives the industry a chance to improve the quality of the service it offers as in[10]. Computer applications Keeps the hotels' doors open 24 hours a day at minimal costs to customers all over the world as in[9]. Thus play an essential role in growing market share and in responding to customer needs in a timely fashion as in[11] and to log the relationship between hotel and client by recording particular guest's preferences and responding to such preferences on subsequent bookings as in[10]. Computer applications Automates many business processes and facilitates most major activities involved in selling room nights, Marketing, pricing, inventory control, booking, guest check-in and checkout as in[9].

But many barriers inhibit hotels from fully capitalizing on IT and the internet, barriers such as: lacking IT knowledge/experience as in[9], the short-term operational focus of its managers, The lack of training, the deficiency of rational management and marketing functions as in[12], Lacking financial resources, Resistance to change and their Peripheral location as in[9]. As in[13] it is stated that IT systems adopted by a hotel include:-Electronic Bar Management System (EBMS), Electronic Locking Systems (ELS), Energy Management Systems (EMS), Electronic Point Of Sales Systems (EPOS), Food And Beverage Systems (F&B), In-Room Business Systems (IRBS), In-Room Entertainment Systems (IRES), Leisure Management Systems (LMS), Restaurant Management Systems (RMS), Telephone Management Systems (TMS) and Central Reservation Systems (CRS). The main barriers to purchasing management information integration are. lack of strategic alignment of information strategies in the, firm size of some purchasing management actors, lack of awareness of potential benefits of computer applications, lack of motivation, and being in a less developed industry or regional context Polarization of strategies in firms can lead to separation and give rise to semi-integration rather than full integration of information as in[14]. Lack of clarity and understanding of its own computer technology requirements. Hence the technology providers face difficulties in understanding the needs of the companies and how to address the overall technology integration to successfully increase the level of communication. According to the computer technology developers, all the required software and hardware is available or can be developed with minimum effort, if the companies are willing to change, adapt and employ the use of modern information technologies as in[15]. Limited empirical research examining the relationship between strategies in firms and the use of computer technology applications. Lack of customer use of a computer applications technology acts as an inhibitor to firms supplier use, particularly of e-mail as in[16]. Some of the major barriers to firms IT adoption as limited access to capital resources, influence of dominant customers, limited technology applications expertise and a lack of business and computer technology strategy. Lack of manager interest in computer technology, where they are concerned about their employees' skills level as in[17]. As

in[18] purchasing departments can be managed according the nature of the product being supplied, such as 'innovative' products and 'functional' products. As this suggests difference in management according to product type, it is reasonable to conclude this may explain difference in management through the adoption of information technologies. As in[19], the main reasons for adoption slowdown in the hotel industry can be attributed to three entities within the selection and procurement process: employees, suppliers, and organizations.

2.2. Importance & Applications of IT Systems at Purchasing Department in Hotel Industry

As in[20] larger firms are more apt to use the technology than small firms where computer systems planning have had limited success in integrating business functions and product manufacturing due to the inaccessibility and incompatibility of information residing in proprietary software. While large firms have developed or purchased complex order management and engineering applications, but small firms continue to use semi-automated and manual methods for managing information throughout the lifecycle of each new product and component. There is a need for reconfigurable and reprogrammable systems that combine advances in computer aided design. As in[21] the new technology has a positive effect on purchasing department, stating that it offers a huge opportunity to re-engineer purchasing department statues to become more technological to offer integrated and high-quality products. Therefore in the near future, there is no doubt that the technology can be used as an effective tool by firms to access more detailed and timely purchasing information. Furthermore, as in[22] if hotel establishments with multiple properties adopt technology for better management of purchasing process, it could lead to lower operating costs and higher profitability for the lodging industry.

Technological applications in the selection and procurement function are evolving rapidly. Today, many forms of technology are available to help suppliers and buyers transact business. Those who decide to use these tools can considerably streamline the cycle of purchasing, distribution, receiving, storage, issuing, and product usage. Technologies that suppliers use include customer database, ordering systems, and global positioning systems (GPS) as in[23],[24], and[25]. Many distributors use logistics and mapping software to outline the routing sequences their delivery drivers must follow when delivering products many of these tools are becoming a vital part of the procurement process. Many technological products have been developed to streamline the selection and procurement process and make life easier for purchaser. Hotel operators have generally been eager to adopt labor- and time-saving electronic equipment to enhance the purchasing function and the overall inventory control process Technologies that purchasing department (buyers) use include Fax Machine, Personal Computers, Computerized Point-of-Sale Systems

Bar Code Reader, Product Identification and Specifications, e-procurement, Inventory-Tracking and Storage Management, and the internet as in [26], [27], [28], [29], [30] and [31].

The growth of the Internet has presented the hotel buyer with many significant opportunities for cost reduction and service improvements such as On-line vendor catalogs, ability to pay invoices electronically, The ability to be more responsive to customer service problems, The ability to reserve space in public warehouses for anticipated deliveries to market locations, The ability to reduce service costs and response time. As in [32] the use of the Internet can also improve supplier relations by improving communications and data flows between suppliers and purchasing department. The benefits of the use of the Internet can therefore equate to "real" savings by reducing the costs. As in [33] digital technologies can bring about 8–35% reductions in supply costs, 22–85% reductions in inventory, 12–24% delivery improvements and 17–68% cycle time improvement. Pricing accuracy is very important in order processing and the Internet provides companies with the ability to check processes on-line before an order is placed. It also gives them access to latest prices. The Internet can also be used to provide information, which can be used for strategic advantage, as opposed to operational purposes. Also, information can be used as long term resource for competitiveness and further innovation in the supply chain as in [34]. As in [35] the Web portion of the Internet has many sites that are useful in terms of the selection and procurement function. Many of these sites provide detailed, current information and can include text, graphics, photographs, sound bites, animation, full-motion video, and interactivity. As in [26] using information on the Internet can assist the hotel buyer. For instance, sites range from those providing daily news about the hotel industry to those specializing in unique cookware and equipment, and just about anything in between. The amount of information, already rather huge, continues to grow each day. As in [36] information on food Websites can help the buyer make key decisions about the type, variety, and quality of product to order. The hotel buyer can find recipe suggestions and consult with experts about a particular product. Although local distributors are usually very knowledgeable about their products, the food sites, especially those maintained by marketing boards, contain vast amounts of current information from growers, processors, and manufacturers. As in [37] Electronic mail (e-mail) enables hotel buyers to communicate with primary sources, Intermediaries, colleagues, and any other person who has an e-mail address. E-mail allows buyers to send information or documents to other individuals. For instance, a buyer can compose a letter to a distributor, soliciting competitive bid data. However, Instead of sending the letter through the postal system, the buyer can send it electronically to the distributor's e-mail address. As in [38] t newsgroups and mailing lists offer a great way to keep current in the hotel field. They allow individuals to obtain specific information very quickly. For instance, a buyer can compose a short message soliciting distributor references,

asking the cost of joining a purchasing co-op, or inquiring about availability of a unique product; send it to the group, and receive relevant information without the normal time delay inherent in other forms of communication.

3. Research Methodology

The study population comprised all five-star hotels in Greater Cairo. To determine the sampling frame, a list of (33) hotels was obtained from the Egyptian Hotel Guide, 29th Edition (2008_2009). The sampling frame consisted of (33) purchasing managers who were selected from the five-star hotels in Greater Cairo. Purchasing managers were determined as the most appropriate respondents because they are most familiar with their firms purchasing management practices, performance outcomes, and they are mainly responsible for the decision of applying computer system in their departments. Data used in the study were gathered from two sources: The secondary data were collected from books, periodicals, scientific articles, and web sites that were related to the thesis subject. The primary data were collected from the utilization of the interview method to survey the researcher's population. These interviews depended on question menus prepared by the researcher in the form of face to face interview (semi-structured interviews), which have been conducted with purchasing managers in five-stars hotels in Greater Cairo. The pilot study was performed before the interview questions was finalized or conducted. In order to test the survey instrument, three hotels purchasing managers and some academics were involved. Their responses and data were not included in the analysis because the major role of the pilot phase was to complete the survey, discuss the interpretation of the questions with the researcher, and provide suggestions to improve any areas that were unclear or incomplete to develop and modify the study instrument.

The data were analyzed by utilizing procedures of the SPSS (Statistical Package for Social Science) version 16.00, (2009) for windows. Data from opened questions were analyzed using qualitative analysis by identifying the implied meaning of statement.

4. Results and Discussion

Before testing the study hypotheses, the researchers used (Alpha Scale) to realize the internal steadiness and reliability of the phrases that were used in interview questions, also to ensure the measurements accuracy. Table (1) illustrated reliability analysis.

Results indicated that all coefficient alphas were greater than (0.60), so the study measurements were acceptable and reliable, and this analysis showed a high degree of correlation among all variables. The current study was restricted in selecting its population to Five-Star hotels in Greater Cairo. Out of 33 hotels included in this survey, the researchers contacted all its purchasing managers and tried to

conduct interviews with them, only 31 hotels positively shared the interview. Two of these hotels were incompletely co-operative and were discarded from further analysis.

Table (1). Reliability Analysis

Measurement	No. of Statements	Coefficient Alpha
Importance of computer technology applications adaptation.	11	0.77
Degree of purchasing department involvement in using computer applications system.	14	0.80
Barriers and problems that face purchasing department towards computer system and its application.	18	0.75

Regarding whether the five-star hotels purchasing department used computers in managing their operations or not, the study found that (96.8%) of five-star hotels in greater Cairo used computers in managing their operations. But only (3.2 %) of five-star hotels operated its activities manually, and didn't use computer in managing their purchasing activities .This (3.2 %) represented in Pyramiza Hotel, which was the only one that didn't use computer applications, from (31) five-star hotels located in Greater Cairo. Figure (1) shows years of using computer within purchasing department, the results reported that, about (9.7 %) of respondents' answers were less than 5 years, and (22.6 %) of the answers were more than 10 years. But (67.7%) of the managers' answers were from 5 to 10 years. So this showed that the majority five-star hotels purchasing departments used computers not recently and not old.

4.1. Computer Applications in Five-Star Hotels Purchasing Department

Table (2). Importance of implementation of computer technology applications

Importance of implementation of computer technology applications.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Purchasing related to Computer applications, increases the efficiency of Purchasing activities	87.1%	3.2%	9.7%		
Computer system improves inter-organizational information systems capability, increases cash flow and streamlines a firm's operations.	61.3%	29.0	9.7%		
Electronic data interchange replaces the paper documents that associated with routine business transactions-process	41.9%	6.5%	45.2%	6.5%	
Speed and accuracy of transmitting purchasing orders and services information.	77.4%	19.4%	3.2%		
E-Procurement eases contacting the supplier	93.5%	6.5%			
Databases on the E-marketplace enable buyers to find select, order and cancel items directly from suppliers.	93.5%	6.5%			
E-procurement offers more useful information about the available choices and quality of choices.	87.1%	12.9%			
Inventory-Tracking and Storage Management systems provide the instant stock level information	64.5%	29.0%	6.5%		
Electronic data interchange is believed to create closer ties between buyers and suppliers.	54.8%	29.0%	16.1%		
The ability to pay invoices electronically and to check outstanding debt balances	61.3%	25.8%	12.9%		
Buyer can find recipe suggestions and consult with experts about a particular product.	77.4%	22.6%			

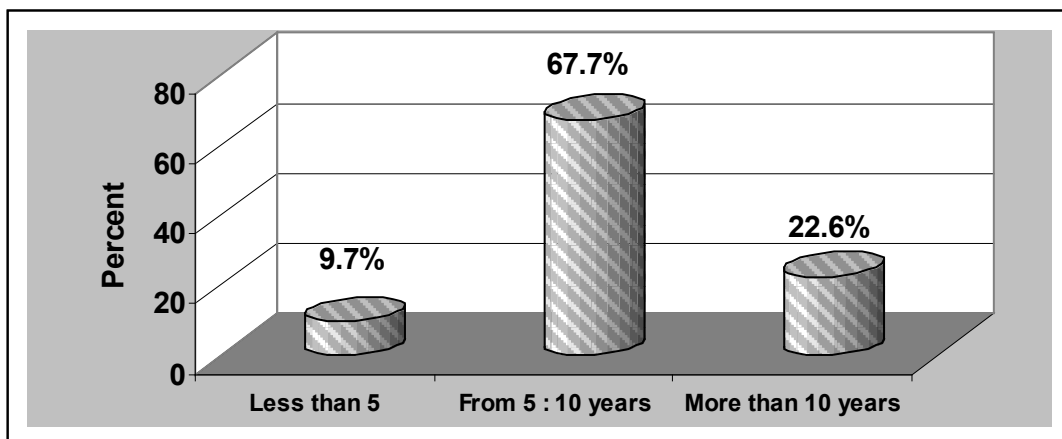


Figure (1). Years of using computer within purchasing department

Moreover, these results agreed with as in[4] who showed that the use of computer and new technological developments in managing purchasing activities in firms had been developed rapidly over the last 10 years, but nowadays computer technology needs little comprehension to most of the business organization.

Results in the above table (2), confirmed the differences between the respondents (purchasing managers) about the importance of adoption of computer technology application variables. It was noted that most of respondents were strongly agreed that there was a positive impact of computer system applications on increasing purchasing processes improvements.

4.2. IT Applications in Purchasing Activities in Hotels

The use of the computer technology applications and internet in managing activities within the purchasing departments had developed rapidly. The results demonstrated that computer technology applications were utilized in a variety of procurement applications including the communication with vendors, checking vendor price quotes, and making purchases from vendor catalogs. (87.1) of purchasing departments in Five-star hotels in Greater Cairo were strongly agreed (with mean 4.8) that the use of the computer technology applications and the internet had reduced its purchasing staff and permitted on-line purchasing from vendor catalogs. The paper-worked systems had been reduced, and the order-cycle time had shrunk, as the time from the order was purchased to the time of its receiving to the hotel had been decreased. Supplier negotiation had also been streamlined through the use of the internet as a type of computer applications. Face-to-face negotiations were not used frequently because negotiations could be conducted through the internet. This included the bargaining, re-negotiation, price, and term agreements. The results also showed that product-damage issues were also managed through the use of the computer technology applications and the internet. This had lowered the costs of the returned or damaged products by improving items' tracking and by notifying suppliers in advance when damaged products could

be shipped. Moreover, the results revealed that the financial aspects of returned products were also handled more efficiently, including notification as credits that were posted by suppliers. Warranty issues were likewise handled on the internet. Notifications of warranty termination dates, new types of warranties, procedures for processing claims, and the actual handling of warranty claim matters were also handled through the computer technology applications and the internet. But it was also highlighted that the greatest benefits of computer technology applications occurred when its application was fully integrated throughout the purchasing department. These results are showed in table (3)

Results in table (3) confirmed the differences between the respondents (purchasing managers) about the extent to which purchasing department utilized computer technology application variables, and also stated that all of these purchasing practices weren't heavily used. From the previous results, it was noted that most of respondents' answers ranged from very low to low, and this indicated that there was a weak degree of using computer technology applications within purchasing department in five-star hotels in Greater Cairo.

Applications of Electronic Systems of Data Bases in Purchasing Department

Most percentages of the above figure indicated that many purchasing departments had electronic system of data base, but this system wasn't effective because it was used in limited cases, and the paper systems were widely used as they were easier and secure. So, it was clear that the current purchasing department was a very paper-intensive system that included many documents being created and shuffled among various departments daily. This problem was especially serious in purchasing procedures in some hotels like Pyramiza hotel, because invoices, purchasing orders, receiving reports, etc. Additionally, the interview with purchasing managers showed that the accounting software used by the hotel was centralized and purchasing personnel had no access to it in order to input their accounts in a systematic way. This demonstrated a major gap in the hotel's audit systems.

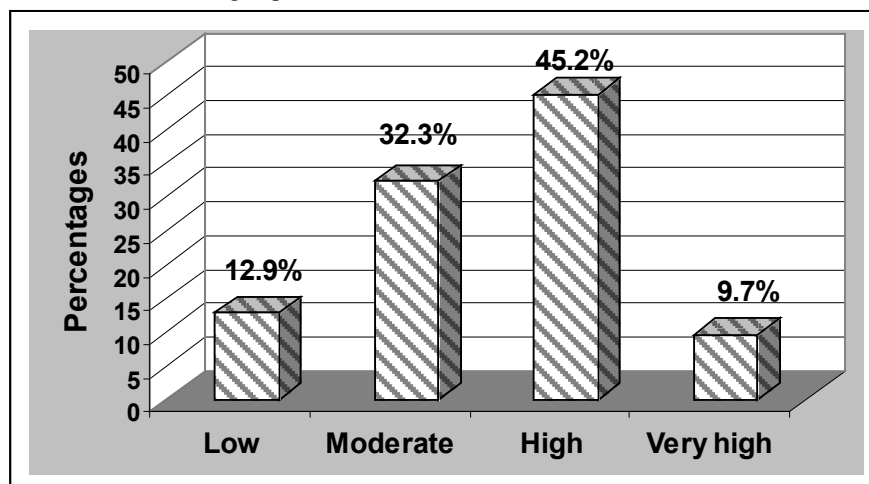


Figure (2). Applications of Electronic Systems of Data Bases in Purchasing Department

Table (3). IT Applications in Purchasing Activities in Hotels

The degree of applying computer system and its applications in purchasing department.	Very high	High	Moderate	low	Very low
1-Purchasing department has electronic systems of data bases?	9.7%	45.2%	32.3%	12.9%	----
2-Purchasing department use application programs like (word-processing package, graphical package (Photoshop), presentation package, statistical package (SPSS), and spreadsheet package (Excel).	6.4%	51.6%	41.9%	----	----
3- Purchasing department has a bar code reader to automate the counting of in-process inventories.	9.7%	----	6.5%	32.3%	51.6%
4-Hotel utilizes computerized point-of-sale (POS) system.	---	51.6%	9.7%	38.7%	----
5-Fax machine is still a common tool that hotels use to order products.	51.6%	41.9%	6.4%	----	----
6-Buyers have an electronic data interchange (EDI) to contact with suppliers (Business- to- Business).	---	----	3.2%	29.0%	67.7%
7-Purchasing department use an electronic or online purchase order system.	---	----	----	32%	68%
8- Purchasing department use an electronic or online supplier catalogue.	---	3.2 %	----	35.5 %	61.3 %
9- Purchasing department has access to suppliers' internal information (production costs, level of quality).	---	----	----	35.5%	64.5%
10-Purchasing provide credit card and purchase information through electronic mail.	---	----	----	38.7%	61.3%
11-Purchasing department use off-the-shelf software packages and services that manage inventory.	---	29.0%	32.3%	12.9%	25.8%
12-Buyers visit (www.namp.com) site for Product Identification and Specifications.	---	----	3.2%	9.7%	87.1%
13-Distributors use software applications to facilitate the sales process in order to manage and price their products quickly and easily.	---	----	----	16%	84%
14-Distributors use marketing and mapping software to outline the routing sequences that their delivery drivers must follow when delivering products.	---	----	----	9.7%	90.3%

The results also revealed that there wasn't any hotel in five-star hotels in Greater Cairo that used ordering or online purchasing systems; whereas (68%) of the answers were very low, and (32%) of the answers were low. Although the majority of hotels had their websites, they only used them for marketing or promotion purposes. These sites often took the form of 'brochure ware', that provided limited products, service information, and contact details. Most of the hotels did not have detailed product, price or stock information available on their sites. These websites were not updated, but a web presence was perceived to protect them from their competitors. All hotels showed a lack of awareness about the potential benefits of enhancing websites to enable online ordering, so almost none of the hotels used E-Procurement. The above results disagreed with what was stated as in [26] who indicated the proper behavior of using an electronic or online purchasing order system through hotel websites or supplier's websites. The findings showed that only (3.2%) of the investigated hotels had on-line catalogues of their suppliers' products. This percentage presented in just two hotels (Four Season Hotel and Formant Hotel). One of these two hotels ceased using on-line catalogues as they found it was too slow. The two Hotels had an off-putting experience of E-catalogues and E-auctions. A few of the investigated hotels had used the internet to purchase stationery as price comparison was easy. This was confirmed with the last mentioned percentages in the table (19), as (61.5%) of answers were very low, and (35.5%) of answers

were low. Interviews with suppliers indicated that only few hotels had external networked information systems, and there were little external integrated systems. Hence, there was no external systems interface. Additionally, it was believed that face-to-face communication was the best way of fulfilling customer needs and winning their confidence; and this secured vendor-supplier relationships. Hotels preferred to buy raw materials from established and 'trusted' suppliers, with whom mutual loyalty took precedence over price.

One of the basic parameters that the researchers planned to compare was the bar code system of stock. Par Stock was defined as a level of inventory items that a buyer believes might be on hand to maintain a continuing supply of each item from one delivery date to the next. Most of hotel inventory operations used bar code systems on their inventory products to facilitate the inventory-control process because bar code systems provided automatic identification of inventory items, and then collect additional information from the inventory operations on computer. And this agreed with what was mentioned by (Truman, 2003). This variable was compared across hotels to figure out how much inventories had barcode systems as compared to the hotel size, business, and type of chain few hotels had set bar code systems for the commodities. This was confirmed by the above mentioned percentages as (9.7%) of respondents' responses were very high, and (6.5%) of the responses were moderate. These results indicated that other hotels did not set

any bar code systems for their inventory levels and for their items. This was probably because purchasing managers at these hotels were used to buy commodities on a retail basis, and they used the paper-worked system on registering the commodities within their inventories. For example, Cairo

Pyramiza Hotel did not provide any information about the par stock levels, and use paper-worked and old controlling systems. This would lead to low inventory turnover, shoplifting, damage, and inability to respond to market.

Table (4). Barriers of Conducting Computer Technology Applications in Hotels

Barriers and challenges faced by the purchasing management in the process of the adoption of computer technology applications.	Strongly agree	agree	Neutral	disagree	Strongly disagree
1-Lack of understanding by general managers.		12.9%	48.4%	38.7%	
2-Lack of knowledge and experience.	61.3%		12.9%	25.8%	
3-No confidence of long term investment.		6.5%	90.3%	3.2%	
4-Employees reluctant to use computer and they are afraid of technology.	29.0%	29.0%	12.9%	29.0%	
5-Manager does not see a current need.	12.9%	51.6%	25.8%	9.7%	
6-Strong loyalty to existing suppliers.	38.7%	35.5%	22.6%	3.2%	
7-Fear of losing sensitive information.	29.0%	38.7%	29.0%	3.2%	
8-Lack of confidence for buying or selling over the Internet.	77.4%	12.9%	9.7%		
9-Users worried about e-hackers and viruses.	67.7%	12.9%	19.4%		
10-Purchasing department like to order products over the phone.	87.1%	12.9%			
11-Suppliers do not use email and web sites.	64.5%	16.1%	19.4%		
12-Level of resources and equipment impacts on electronic data interchange adoption.	48.4%	22.6%	6.5%	22.6%	
13-There isn't enough financial supply to use computer system and its applications.	48.4%	32.3	16.1%	3.2%	
14-Most firms do not have sufficient consultants to advice on the implementation of computer system applications.	74.2%	25.8%			
15-Fear of losing personal touch because of depersonalization issues and the need of face to face interaction to build relationships.	87.1%	12.9%			
16-Problems with product identification or standardization.	83.9% %	16.1%			
17-Suppliers Fear of the disappearance of middlemen role.	74.2%	25.8%			
18-Suppliers are unwilling to get rid of traditional distribution and investment systems.	67.7%	22.6	9.7%		

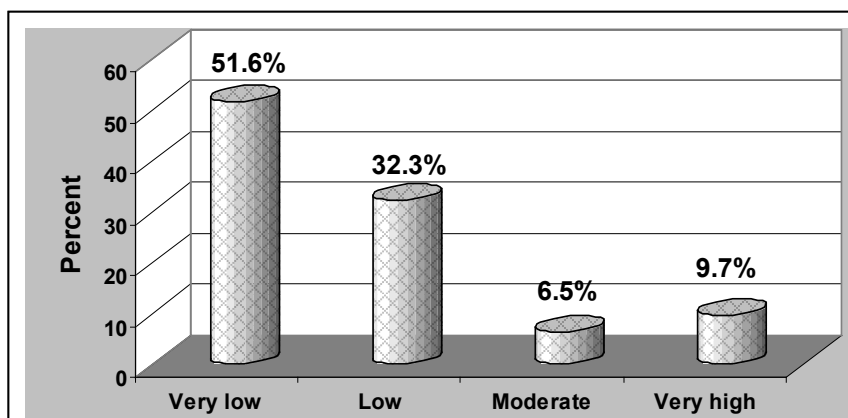


Figure (3). Using a bar code system in purchasing department

Results in the above table (4) indicated that some of the possible variables for the lack of computer technology integration within purchasing department in hotels supported some prior study's findings. The followed problems as the additional investment requirements, the short-term investment, hotel managers' lack of vision, the lack of understanding the potential benefits, and the lack of internal capability, were all featured in this result. However, by addressing a number of variables, it was possible to determine which were central and which were more peripheral. In these results the overriding factor, that was stressed repeatedly, was the fear of losing sensitive information. The bottom line was the level of resources and equipment impacted on computer technology applications. The core explanation for difference in adoption within the hotels was that, there wasn't enough financial supply to use computer technology applications in purchasing department to push computer technology applications integration upstream.

Results also revealed that (48.4 %) of respondents were strongly agreed that financial supply and costs affected the adoption of computer technology and its applications, while (32.3%) of respondents were agreed, (16.1%) were neutral, and only (3.2%) of respondents were disagreed. When appreciating some investment costs in computer applications adoption, the respondents accepted that they would bear these costs if there was a need to it. Additionally, hotels managers' characteristics demonstrated a lack of vision as they focused on the short term investment, reacting to the needed wishes. This lack of vision restricted their appreciation of the potential use of computer applications adoption that might be provided for them. Most of their answers indicated their qualification or training schemes were confined to deal generally with computer usage, like ICDL certificate, and application programs such as word-processing package, presentation package, and spreadsheet package, but these qualification or training schemes didn't include specialized computer applications that could be used to deal with purchasing department activities and processes. These specialized computer applications include: E-procurement applications, an electronic or online purchasing ordering systems, or online supplier catalogues. So dealing with a highly trained and experienced staff was also a motivation for dealing with these specialized computer applications that could be used within purchasing department. Finally, the study revealed that there is a positive correlation between computer qualification and training programs for employees in purchasing department and using computer. This correlation relationship is significant and correlation coefficient is (0.766), (correlation is significant at 0.05 level.). The relation here was clear: the more qualification or training programs for employees in purchasing department, the more using of computer application. The results argued that there was a small group of managers within the surveyed sample, who heard about some of computer application or terms used in the adaptation process.

5. Conclusions

The current study was restricted in selecting its population to Five-Star hotels in Greater Cairo. The findings assured the positive impact of computer system applications on increasing purchasing processes improvements. The results also revealed that there wasn't any hotel in five-star hotels in Greater Cairo that used ordering or online purchasing systems. Results indicated that some of the possible variables for the lack of computer technology integration within purchasing department in hotels supported some prior study's findings. The followed problems as the additional investment requirements, the short-term investment, hotel managers' lack of vision, the lack of understanding the potential benefits, and the lack of internal capability. Finally, the study revealed that there is a positive correlation between computer qualification and training programs for employees in purchasing department and using computer

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