

**The Influence of Automation on Effectiveness and
Efficiency: The Case of North Cyprus
Manufacturing Sector**

Behnoush Razzaghi

Submitted to the
Institute of Graduate Studies and Research
in partial fulfillment of the requirements for the Degree of

Master of Art
in
Marketing Management

Eastern Mediterranean University
February 2014
Gazimağusa, North Cyprus

Approval of the Institute of Graduate Studies and Research

Prof. Dr. Elvan Yılmaz
Director

I certify that this thesis satisfies the requirements as a thesis for the degree of Master of Arts in Marketing Management.

Assoc. Prof. Dr. Mustafa Tumer
Chair, Department of Business Administration

We certify that we have read this thesis and that in our opinion it is fully adequate in scope and quality as a thesis for the degree of Master of Arts in Marketing Management.

Assoc. Prof. Dr. Sami Fethi
Supervisor

Examining Committee

1. Prof. Dr. Cem Tanova

2. Assoc. Prof. Dr. Ilhan Dalci

3. Assoc. Prof. Dr. Sami Fethi

ABSTRACT

This thesis empirically investigates the efficiency and the effectiveness factors for automation criteria in North Cyprus manufacturing sector. A total 250 respondents working at various companies have participated in survey. Descriptive analysis through computing mean scores, independent t-test and one-way Anova test are conducted to investigate and to compare the efficiency and the effectiveness factors.

Increase in answering speed of employees to managers, increase in personnel work accuracy and satisfying the customers' needs have statistical differences on efficiency for official automation criteria; further more organization and personal goals achievement, controlling and up-to-date decision making, and none answering of system have also differences based on gender factor.

The findings also show that balance between labor force and company programs, awareness of company's policies and decisions have statistically significant, differences between age groups on effectiveness for official automation criteria. However, reduction of duties repetition and double working in unit; do not have significant differences between age groups.

Keywords: Automation criteria, the efficiency and the effectiveness factors, manufacturing sector, independent sample T-test, one way analysis Anova-test and North Cyprus economy.

ÖZ

Bu tez verimlilik ve etkinlik faktörlerini kullanarak otomatikleştirme, veya makineleştirmenin Kuzey Kıbrıs imalat sektöründeki önemini inceler. İmalat sektöründe 250 çalışanı hedef almıştır. Ortalama değerleri , bağımsız örneklem t-test ve tek yönlü Anova değerleri hesaplanarak, bu faktörlerin otomatikleştirme üzerindeki etkisi mukayese edilmiştir.

Ampirik sonuçlar genel olarak işçinin hızlı cevap verişini, işteki hassasiyetinin artışını, karar verme mekanizmasının güncelleşmesi, sistemin otomatikleşmede ki verimliliğin en önemli farklılıklar olduğunu göstermektedir. Buna ilaveten, örgüt ve bireysel amaçların başarısı, işçiler üzerindeki takip ve kontrol ve işletim hatalarının azaltılması ise verimliliği en az etkileyen farklılıklar olduğunu ampirik olarak ortaya koymaktadır.

Otomatikleştirme kriterleri bağlamında etkinliği tam olarak etkileyen faktörler ise gereksiz iş bürokrasisinin azaltılması, karmaşık iş ilişkilerinin basitleştirilmesi ve firmaların siyasi kararlarındaki farkındalığı olarak tespit ediliyor. Buna ilaveten meslek saygınlığının azaltılması ve çifte çalışma veya ek mesai otomatikleştirme kriterleri bağlamında etkinliği çok az etkileyen faktörlerdendir.

Anahtar Kelimeler: Otomatikleştirme kriterleri, etkinlik ve verimlilik faktörleri, imalatsektörü, bağımsız örneklem t-test, Anova , Kuzey Kıbrıs Ekonomisi.

DEDICATION

I would like to dedicate this thesis to my parent and my husband who were the source of inspiration to me during my long time stay in this university as a master student and who on one way or another contributed to the success of this thesis. They encourage me to travel all the way from Iran to Cyprus and supported me throughout my studies. I am very grateful and thankful to them. This indicates how significant they were to me during my studies and as well as my life. I would like to express the deepest appreciation of my heart to my mother that always persuades me to continue my education and supported me in my entire life.

I would like to express the deepest appreciation to my dear friend Selira Kotouto who helped me a lot to analysis data and statistical part of my thesis. Also helped me in every situational during proofing my thesis.

ACKNOWLEDGMENTS

I would like to express the deepest appreciation to my supervisor Assoc. Prof. Sami Fethi who has the attitude and the substance of a genius: He continually and convincingly conveyed a spirit of adventure in regards to research, and an excitement to teaching. Without his guidance and persistent help this dissertation would not have been possible.

I am indeed thankful to my examining committee members-, Prof. Dr Cem Tanova, and Assoc. Prof.Dr İlhanDalcı. In addition, a special thank you to Assoc. Prof. Dr Mustafa Tümer - the Chair of Department of Business Administration, who helped in easing various issues that arose in the course of writing this thesis; I remain grateful to him.

It is my pleasure to offer my regards and gratitude to all who supported me in any way during the completion of this research.

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LIST OF ABBREVIATION

PBE	Privet Branch Exchange
SMESs	Small-to-Sized Manufacturer
TPS	Processing System Operation

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Chapter 1

INTRODUCTION

Introduction

Today information technology is used rapidly in many organizations in the most convenient way in many different countries. This creates efficiency in organizations to render quick services. The role of information technology can be improved by the policy of organization to administer information technology to create new channels. The official automation includes all of the official and non-official electronic systems that allow the communication between staff both inside and outside of the organization or vice-versa (Raymond, 1998 - 1994). The purpose of official automation utilization is establishing the electronic communication via transferring data, text or letter, picture and voice inside the organization or cooperator's organizations, as well as outside of the organization.

1.1 Goal of the Thesis

The purpose of this thesis is to empirically examine and compare the efficiency and effectiveness of factors related to automation criteria in the manufacturing sector of Northern Cyprus.

1.2 Methodology and Data Collection

The methodology of the official automation will be chosen as an independent variable, efficiency and effectiveness as dependent variables, age, education level, job level which will be chosen as controlling variables.

1.3 Findings of the Thesis

The findings of the research in this thesis can be summarized as the most important factor compared to other factors maximizing efficiency in organizations and personal goals achievement whereas the least efficient factor is the efficiency of the none answering of system. In the second part on effectiveness, the most important factor is effectiveness balance between human force and company programs. On the other hand, the least important factor is the effectiveness of double working in unit.

1.4 Structure of the Thesis

This thesis is therefore organized as the second chapter reviews in relation to the literature, the third chapter gives brief information about manufacturing sector in Northern Cyprus, the fourth chapter explains the methodology, data and the instrument used in the research of this thesis, chapter five presents and discusses results, chapter six concludes some important remarks by discussing managerial implications and chapter seven summarizes some important recommendations for further studies.

Chapter 2

LITERATURE REVIEW

These days are called “Information Age”. Therefore, it is necessary to use IT in every activity such as individual activities, social and organizational activities. It makes information readily available to managers to be classified and to ensure the basis for fast and accurate decisions. There are many ways to measure and determine the success of any goal. The first and most important is that manager should be responsible to analyze and choose the goals of the organization. Secondly organization should have different stages to evaluate the achievements and the desired goals of the company. In 1776, Adam Smith, ‘the father of modern economics’ defines performance in one of his works. In his performance criteria, there were kinds of work force.

2.1 Automation

Automation consists of two words: automatic and operation, which is much more developed than mechanization. Also they are related but automation is used for actuated devices and at the same time these devices are used. These processes including productive and non-productive and are done without human intervention. In this system instead of work force and mechanical tools, we use hydraulic and electronic tools. In addition, all the operations including controlling, calculating and comparing are done by computers. These are also possible with the replacement of capital rather than labor. With respect to the size and terms of investment, mechanization and automation of the production lines are possible. This means that

instead of using the labor, the organization uses the devices automatically and guided by a computer program (Baarz M. , 1994). Similarly, this rule should always be considered when using automated tools such as computer equipment, numerical controls and robots which can be accepted as long as it is necessary to the practice and economics (Saljughhi, 2002).

2.2 Advantages of Automation

In most organizations the most important condition to use automation is the significance of the rate of speed and accuracy in their work. Office automation makes short communication channels and always readily available to managers. Due to the scope of the organization's operations, this is required to develop channels of communication with more speed. Overall, the benefits of the application of office automation systems can be divided into two categories namely direct benefits and indirect benefits. The direct benefits are the benefits which increased yields, save time or labor. Usually these benefits are measurable and may have a direct impact on the flow of liquidity at short duration which leads to a better control at work and the same divided less labor force. Secondly the direct benefit is the conversion of the data into a formless format done by writing on paper tape after it is typed. Next, non-productive activities such as obtaining of record keeping when the supply is low. Lastly, organizing the staff is better because using teleconference facilities and conference travel is less. On the other hand, in terms of indirect benefits, these benefits are not just possible through long-term profitability and growth to enrich the organization. The benefits include less dependence on other agencies to provide copying, printing and other similar matters as well as needing fewer procedures to monitor and control the flow of work between departments. However, due to increase of staff effectiveness in performing specific tasks, job satisfaction increases.

Greater customer satisfaction provides timely information and services (Habiby, 2005). The optimize staff is important to improve the ability of individuals to avoid wasting resources and compensation of human weakness down overwhelming tasks. Increase productivity for achieving these results it could be high accuracy and lack of reworking and output speed workflow. Grant competition reduces processing time and data transfer to help correct decisions and natural resources conservation. This leads to increase control improvements in individual and organizational resilience, data transfer, reduced costs, initial investment for construction (because of additions) and low running costs.

2.3 Disadvantages of Automation

The application of office automation systems has disadvantages that include lack of knowledge about the program most especially when the manager does not have sufficient knowledge about the application (Habiby, 2005). It also includes license fee which is used for office automation application. Thus, a license fee should be paid for permission to be obtained. One of the most important things for managers is the initial stage design office automation for administrative use. Taking in to consideration the automation system costs, change in the organization's mission and organizational goals, without the support of top level managers, involvement of members of the current team activities, group scheduling and discipline the purpose of automated system application will have no advantages. Thirdly, organizational structure of data and processing changes are considered on their individual ability. It is possible that with the advantage of automation and organizational power structure and other key roles in the process and their underlying cause resistance. Policy making is the fourth factor most organizations have set as a procedures based on old systems to influence management and employees satisfaction. With the advantages

of new technology in office automation, the procedure changes are high and at the expense of the others. People with their own personal reasons or group of individuals can be a barrier to implementation. On the other hand a vendor sometimes due to the lack of support systems offered by vendors disturbs or postponed implementation. The procurement of software compatibility, suitable, efficient system security and full support are other issues that software deals with. Additionally, all the vital information to the system and assigning users to safeguard the security and safety are other important data in the current competitive environment for most organizations in the framework of security issue. On the contrary, legality happens when the system applications (office automation) should take legal perspective. To determine the use of legality such as accounting software, it must be examined by the competent authorities and in order to determine its legality (Baarez , 2001).

2.4 Official Automation

Many believe that there is no statistically significant framework for automation but they reflect that the automation system is the combination of various equipments which are associated with facilitates in the organizations. However, since 1960s, more officials and aspects from the manufacturing industry used the automation systems for commercial purposes and their usage has been expanded. The automation system is an appropriate administrative tool where large amount of information and correspondence was clearly felt. End user computing systems have different names such as office systems and administrative information systems or end user systems. On the other hand, the most popular and the highest form of office automation system is the office automation. These systems have no clear definition but are unique to the user on the automation (Habiby, 2005). The office automation system is the information system that creates an administrative correspondence either

in written , oral or a video created after the storage, display and modify them (Sarrafyzade, 2009). Office automation includes all the electronic systems of formal and informal data communication between persons inside and outside the institution and vice versa. In addition, the main word that separates automation of data processing, management information systems and communications system is the office automation that facilitates both verbal and written forms (Raymond, 1998) . Office automation is an electronic devices used in the office to enhance the efficiency of development and activities within the office to exchange information between offices and their environment (Beheshtian., 2000). Relevant information can be beneficial to the manager. The official automation technologies are set of office applications or production of a particular organization (Ijazzy, 2003). Automation affects all administrative processes in workflow management such as e-mail, fax correspondence and reference works, like forms and interaction.¹

2.5 Paperless Offices

One of the biggest areas in all organizations is the administrative bureaucracy. When automation systems were not available, unfortunately, most administrative offices corresponded by referral services procedures, control the papers and in some cases use several hundreds of pages as an attachment of guidelines to the end users. Archive papers, instead of saving them on a computer, needs a big storage; and it is time consuming and costly. The only way that a paperless organization provides guidelines is done by senior management's organization by using electronic reporting systems. In this system there are activities that determine the deviation of the program and analysis of the quantitative and qualitative improvements. It also prevents unnecessary consumption of paper, the efficient use of workforce, the

¹See (<http://www.chargoon.com>) for more details.

science of statistics and its application in the management. Also, this system provides fast and up to date reporting for managers. Besides, we can use both the information, shared files and internal information in the organizations instead of bulletin board for the publication of regulations, instructions and circulars. The office automation systems should be used instead of using pen and paper to correspond and for internal demands. Using of electronic forms in order to obtain the application and service in the organizations for the integration of sales forces. This will reduces costs, the use of SMS, e-mail advertising and promotions targeted to avoid wasting resources. For instance the use of digital forms and plans for statistical surveys such as e-mail to send bills, invoices for administrative costs and time savings. It is also possible to use video projectors and televisions together with the Internet to obtain information and advertising instead of posters. Finally using email for communication and organization process of converting paper to digital has become very important. Using digital signatures to verify their requirements and prevent print to manually sign things like letters have an advantage of this approach in different parts of the organization.

Administrators and managers are part of groups that benefit most from this system for many reasons. The first reason is to follow the simple things such as letters and there is no need to attend a course to learn the use of mobile systems. Secondly, creating statistical reports for managers and professionals is easy to manage.

Another sector that employees and managers will benefit from this system is because of many reasons. The first reason is working as a systemic response. Also searching and accessing information would be easily possible. Then, using mobile systems and internal databases even outside the workplace through which employees can also

work to address. The secretariats of the traditional tasks such as number of letters are automatically established. Office automation also allows accurate assessment of employees and prevents injustice at work places where these facilities are being used.

The customers are aware of progress in every moment and there is no need to recourse the organization and employees. Elements considered in designing an automated system is used to facilitate an exchange of information and speeds of transfer of information components such as the internet which are used to transfer voice messages, image, data, text and audio-mail. Automation systems can also be used to transfer voice and e-filing that are used to save voice, text, data, image and integrated official automatic (Saljughi, 2002).

2.6 Problems of Non-Automated Office Systems

A non-automated system is used in an administrative organization for correspondence may cause problems such as time consuming, lack of control and supervision to be circulated. Automation systems provide access to writing for administrative processes. Lack of records in organization and the absent of proper tools to perform responsibilities should be followed up by letters. Lack of access to information and business address of the organization is possible. Non-automated system makes it impossible to pursue an agreement at any time during the communication cycle while automation makes communication more easy and flexible. Non-automation may be due to lack of supervision and performance of administrative system and circulation. There is a level of control of employees to access information from the archives and access problems in terms of volume, time limits and subject information. Additionally, maintenance and the use of multiple fax machines and fax receivers to receive information have no credit to the non-

automation systems. Also lack of integrated environment and accessing data, including drafting and fax letters electronic letters reference works and projects don't have any credit to non-automation systems.

Management jobs therefore have no means of access to information and control over tasks and meetings when using non-automation systems. Lack of documented follow-up work referred to the meetings and specialists, no access to business reports by project personnel and reference works, difficulty and time consuming coordination at a common time and agenda of meetings of managers and experts in information and coordination were the missing points.

2.7 Goal and Usage of Official Automation in Organizations

Office automation is a computer application and communication technology that is used to facilitate the administration of an organization and enhance efficiency. The results of all these has to be very effective. The administrative staff can share files easily by using electronic bulletin boards that have been established in the organization. There are files of voice mail messages that employees can use to put notes on. These features are very interesting and the technology has great quality in these messages. Moreover, with the developing of fax machines communication costs declined. Documents that contain text, images and graphs have their prices conveyed through the telephone lines. As computer technology progressed, the sound-office system has also been upgraded and the business phone systems changed to the Private Branch Exchange (PBE). If you consider PBE as a computer's keyboard, this system makes it possible to have postal-voice systems organizations. Complex systems not only can support sophisticated sound systems but can also support systems, such as conference calls. In addition some companies that have huge documents such as insurance companies use this method to improve their work.

They can scan all the electronic images by using the scanner. For example, a company which is active in the insurance industry gets an electronic image of the document provided. Each image in terms of time and history and some important numbers (e.g., customer number - Account Number) and the description in an encrypted form. For example, when a customer claims in relation to case, the employee can access information of all the relevant data and correspondences and come out with the real results. Document systems group helps staff to work both in parallel and in group together. The purpose of the writing systems is to work with a group of people in order to lead a group effort. It is done to be part of the work that is made available to others. Finally, by the growing use of video systems in large organizations like video conferencing capabilities, they would be no need to travel the company's staff to communicate with them face to face. All can be done online through the internet and the use of the automated computer systems. Through the use of these systems managers have the ability to communicate in two or more locations at the same time. Recently, these systems are used to connect thousands of people on a topic. Office automation helps managers, especially in group problem solving. As managers, they rarely solve the problems alone. Thus, they can communicate with other managers through the problem solving process. Additionally, automation can be used for communication (Sarafyzade, 2009). Once employees understand the role of automation in problem solution, they must also consider its limitations of such systems. Automation is not a replacement for all the traditional connections between people like a constant conversation, correspondence, phone calls and notes on paper. However, such informal communication will continue because they are both easy and effective. Complete automation instead of replacement, the traditional relationship between the individual has completed (Tehrany, 2002). Several

approaches have been studied from a variety of automation applications. Here we have one of them. The principal office automation machines are classified as follows. Copying them in detail, the term process, copy machine intelligence, document feed, digital audio, instant letter writing, field of data storage, drawers archive electronic, micro graphic, communication, computerized telephone system, email-conference facilities for remote (Tehrany, 2002).

2.8 The Position of Office Automation Systems

Dashboards and process management system and office automation system are composed of the secretary-house system. Processing system and archive documents are in operation. Therefore, a complete automation of all business software systems is organized.

Today, with the management of a comprehensive system of software processes with the help of well-organized advanced tools, an organization can manage all their resources. This can be achieved by process management systems, which in turn form processing systems operations (TPS) that are conducted in a dashboard. Thus, without the need of paper form, using an approved custom, each form is defined in the circular system, dashboards and process is completed (Tehrany, 2002). An automation system is more than dashboards beyond the organization. However, it is part of organization and with using an integrated system it is possible to achieve goals such as rapidly information cycling on time and trustful without using a piece of paper. All organizational processes are related to each other. The pure automation, is properly applied when communication networks, software and hardware platform, database management systems, process systems and operations systems in knowledge-based work are taken. In this case, the rapid flow of information, timely

and reliably are performed in organizations, based on it can be found in the top layers of information systems.

2.9 Efficiency and Effectiveness

Efficiency in the execution of the work is very important. Thus, the decisions to reduce costs, increase productivity and improve product quality are paramount important to every organization. The performance efficiency to standard output is also valuable. Another definition from Peter Drucker stated that the term efficiency is doing things properly or appropriately. In this case, efficiency is the degree to which the organization achieves its goals (Daft, 2007).

Terms of effectiveness is used in the dictionary sense of adequacy, usefulness, functionality and efficiency. In simple terms, efficiency means doing good work or doing the job properly. According to Joseph Procotico in his book “Management Productivity”, effectiveness is defined by; performance, producing high quality products in the shortest possible time (Araby, 2003). Effectiveness is the output to the input of the purposes indicated (Faghihifarahmand, 2003). In other words, effectiveness refers to the quantity of services provided to the financial costs or labor for which it is used. The organization requires a change in approach to work and make changes in the organization. Findings and experiences are in the field of decision theory. Organizations constantly adapt to changes happening around them and match them to go. In other words, the main principle is flexible supplies with the intent to prevent unwanted changes face to face and successfully implementing programs and events that will advance the circumstances of time and place (Araby , 2003).

2.10 Factors Affecting the Efficiency and Effectiveness of the Organizations

Efficiency and effectiveness of the output will be realized when the human and organizational work processes and behaviors can be modified easily and manage the process. The processes that lead to effectiveness and modify it to human resources are developed. Employment and behavioral aspects of human resources through education, standardization, and self-efficacy and effectiveness of the processes can be accessed. Development of human resources improves the efficiency and effectiveness of processes that are lead. In combining the efficiency and effectiveness of the approach on how do work better; in organization work process efficiency requires to mix process to gather by employees that could be more efficient, desirable and reasonable. For achieving this reason managers must train their employees. One of the issues that have resulted in the production of continuous quality is the work processes which are an integrated approach and it requires efficiency and effectiveness of education. Agency staff should be grown in this area. This is one aspect of human resource development in developing quality. Thus, employees learn both the efficiency and effectiveness of the processes and the proportion between them are reasonable. Secondly, building skills and motions, eliminating redundant work processes is one aspect of individual and organizational development. The employee constantly thinking of removing redundant movements and organization processes are the shortest way to achieve organizational goals. Movement and waste removal processes lead to a more rational organization of work and to be more agile. Agenda of these programs include the logical evolution of the size of government and government organizational structures and developments in management systems. Evolution of employment systems, training and workforce

development, modify work procedures processes, development and promotion of the dignity of the office (Memarzade, 2002). Third factor is combining skill-centered and results-oriented attitude in the process. If the process-oriented approach to the reasonable process is accepted and this acceptance puts extreme emphasis on processes, the production quality will be unaware. It views the genuineness oriented work processes which can be taught but the outcome will be less than the desired results. Fourthly, management and supervisory skills in the work processes and organizational are distressed. In some cases, effectiveness and efficiency of processes that are affected by the crisis are reduced. For example, stopping the production line to be unconventional, work-related accidents, pollution, non-standard employment process including factors that could adversely affect the effectiveness and efficiency of the process are the factors that reduce this crisis. A crisis is a complex process in which event or a situation in which the problem passes (Araby, 2003). Skills to delight customers by improving the process are a measure of the efficiency and effectiveness of organizational processes. It causes increase in satisfaction and then loyalty. Making customers happy is a skill that all employees need to be equipped with. It should also work processes and organizational implementation to be removed. If the employees have enough skills by periodic courses, it increases efficiency. It is kind of investment of customer-oriented companies. Training should be provided continuously during working life (Alipour, 2002). General skills of happy customers through improved process efficiency and effectiveness of organizational processes is as follows; facilitating understanding of customer expectations, providing fast and efficient service to customers, desiring changes of the customer to determine the level of satisfaction with the process and happy customers and giving reasonably quick response to customers to create new

value for customers. Finally, valuing engineering skills in the work processes and organizations is one of the most effective approaches that can be achieved. In the process of valuing engineering is an efficient process and organizational performance. Valuing engineering is an organized group effort which is used for performance analysis systems. Equipment and services for enterprises in order to access the actual and with minimal costs during the project is also used. From the perspective of value engineering solutions they must be replaced in order to improve quality and reduce costs and utility which are presented. Moreover, alternative solutions must also have two important features of efficiency and effectiveness (Jabalamei, 2001; Salimy, 2001). Value engineering processes are needed to establish the technical and social aspects of the process that are reviewed. A process describes the technical aspects of the technology, standards and procedures and the process of social workers, jobs and incentives suggestions that both should be re-engineered (Qlyjlee, 2000)

Chapter 3

MANUFACTURING SECTOR IN NORTH CYPRUS

The reason to choose Northern Cyprus is that this island is the third largest island in the Mediterranean Sea after Sicily and Sardines. It lays between latitudes 30.33 and 35.41 and longitudes 32.23 and 34.55. Cyprus was split in 1960 from Great Britain. From 1974 this island was divided to two parts; Turks in Northern Cyprus and Greeks in Southern Cyprus. Turkish Republic of Northern Cyprus (TRNC) is not a recognized republic. 70% of men employees and 80% of women are employed in service industries. Because of the positive impact of rising expectations and foreign demand, the construction sector was one of the leading industries in the economy of Northern Cyprus. Manufacturing innovation and growth in the Northern Cyprus is improving. Northern Cyprus is the leaders in advanced technology products with a focus on value-added activities that can be argued to improve efficiency and protect the island's manufacturing strategy that enables the location of the Northern Cyprus' companies in order to reach the market easily. Lack of natural resources, a limited labor supply, remoteness, large public sector, limited manufacturing industry, inadequate access to technology and a very small private sector are major disadvantages of this island. Northern Cyprus' economy is booming by the aid of public sector of tourism, trade, industry and education (SPO, 2006).

Cyprus is small-to-medium-sized manufacturer (SMEs) for the European, Middle East, Northern Africa and Asia. Its strategy location matched with its expertise

transport and logistics and well-developed infrastructure and highly skilled labor force into new market with advantages to producers planning expansion. Cyprus companies are members of the euro zone and therefore have many tax benefits. These companies work with new technology and knowledge-based work. Cyprus factories increased production of high value and highly educated workforce in an effort to increase the quality of their work. Also government is encouraging capital-intensive foreign investments that will bring with it advanced technology, knowledge and expertise. The products for main industry include; pharmaceuticals, food, beverage, chemicals, mineral products, machinery and equipment. Also only pharmaceuticals and non-metallic minerals are growing in recent years. The majority of Cypriot manufactures are (SMEs) is seeking to improve (SMEs) access to finance and overseas market. Similarly achieving maximum potential of commercial is possible by local research and development of areas productivity to create new opportunity for traditional enterprises to compete globally. Thus the sector is attempting to sector its future by establishing itself a fresh in special niche market (focus strategy) (SPO, 2006).

3.1 Competition

These days with the increasing competition in the global market, every company tries to make effective use of resources and savings to cheap labor force and removing unnecessary processes and help eliminate additional costs to their economies. And this causes the least cost to high quality products with possible minimum cost. Unnecessary processes and resources refer to the extra labor force, extra cost, unnecessary work and wasted time.

Providing the products to the customers in a timely manner is distinctive mark for competition. Companies today are competing with international rivals. In these circumstances, the company is able to survive in the short term in order to supply its products. Other essential items for a good supply are low prices and high quality products. Northern Cyprus has not been politically recognized for almost 36 years. So a good foreign investment is expected to be in the future. A competitive advantage is necessary for companies to compete with international companies operating. So the strategy of developing products with minimal cost to the company is important. Thus the use of automation in Northern Cyprus is a very important criterion.

Chapter 4

METHODOLOGY

4.1 Survey Design

If the relevant micro data does not exist in the specific area in analyzing some important factors, a questionnaire should be designed with the main purpose of data collection and positive ideas to specific people. The questions use different sources which is why I designed a questionnaire on demographic variable. Factor of efficiency and factors of effectiveness were examined in the study. First part is some general information about respondents which include; their gender, age, monthly income, job situation, educational level, nationality, family size and background, and their occupations. The second part of questionnaire consists of 25 questions, 14 efficiency questions, and 11 effectiveness questions. A five-point Likert Scale ranging from 1 “Not Important at all = 1” to Very Important = 5” was conducted to measure 25 items of importance factors for automation criteria or factors in the survey².

4.2 Data Collection

Obtaining data for the studies was by judgmental sampling and through the distribution of questionnaire from selected manufacturing industry in Northern Cyprus for a time period of three months which is a lag during the break times of the employees. A letter was sent to the industry to ask for permission to conduct the

²See also (HUI, 2005); (Creswell, 2003) (kwong, 2004) (Heung&Chu, 2000) (Gitelson, 1993) consequently, the adaptation and revision of this questionnaire had been done according to some studies in the relevant literature. See (Bazargan, 1997).

interview through the use of questionnaires. Permission was obtained after two weeks. The total number of questionnaires was asked to 250 employees by the researcher to the respondents who were of the manufacturing industry to avoid selection bias. The employees were also given letters of assurance of confidentiality and that only the total results of the research was going to be shared with management (Qlyjlee, 2003). The issue of common bias was managed by the theory of Podsakoff and Mackenzie (Podsakoff, 2013).

4.3 Data Analysis

After collecting the questionnaires, all the results were put into EXCEL and SPSS and analyzed. Information such as the frequency, standard deviation and mean tables were prepared by two software programs. Each question was analyzed separately and by calculating Cronbach's alphabet reliability tests with SPSS and the data was found to be reliable. Data collected technology using Anova and one-side T –student test was analyzed. The factor analysis indicated a cutoff value of more than the commonly accepted value of 0.7. The characteristics of the study population can be evaluated through surveys (people.uwec.edu).

Chapter 5

EMPERICAL RESULTS

5.1 Mean Scale

In this chapter, the mean scale was used to analyze the relevant concept. Other methods were conducted to emphasize the important factors on the subject under consideration. In order to provide useful information and important results in this research studies, we used the implication policies. Furthermore, Table 1 indicated that the 250 questionnaire from the 25 questions were used in the research. The mean of some factors were of importance for automation criteria which are higher than other factors. Table 1 shows the standard measures for the low important factors that are formed from the mean score of each question.

5.2 Interpretation of the Results Estimated

The outcome of the estimates in Table 1 proved that the maximum, minimum, mean and the standard deviation of each of the questions were evaluated. The most important factor compared to other factors was the efficiency in the organization and the personal goals achievement mean score 3.33 whereas the least score is efficiency none answering of system with 2.87 mean score among 250 persons. In the second part on effectiveness the most important factor is effectiveness balance between human force and company programs (mean score is 3.42). On the other hand, the least important factor is effectiveness double working in unit (mean score is 2.76).

Table 1 Mean scale (N=250)

Mean scale	Mean	Standard deviation
Efficiency Increase in answering speed of employees to managers	3.17	1.238
Efficiency reduction in unit's costs	3.14	1.323
Efficiency Increase in personnel work accuracy	3.19	1.245
Efficiency establishing a better relationship between managers & their proficient	3.11	1.389
Efficiency awareness of company's official affairs	3.06	1.325
Efficiency reduction of correspondent's error	3.03	1.358
Efficiency up to date decision making	3.13	1.318
Efficiency Controlling and monitoring on employees works	3.15	1.465
Efficiency Increased speed of offering information to customers	3.16	1.376
Efficiency employees' eagerness for their work	3.16	1.276
Efficiency Increased speed of answering to customers	3.20	1.325
Efficiency Organization and personal goals achievement	3.33	1.313
Efficiency Satisfying customer's needs	3.32	1.313
Efficiency none answering of system	2.87	1.457
Effectiveness reducing of unnecessary official ceremonies	3.04	1.212
Effectiveness Simplicity of complex official affairs	3.31	1.209
Effectiveness increased protection and safety of classified information	3.10	1.303
Effectiveness Simple information classification	3.01	1.256
Effectiveness Operation reduction and shortened unit's work Process	3.00	1.310
Effectiveness double working in unit	2.76	1.258
Effectiveness balance between human force and company programs	3.42	1.275
Effectiveness acceleration of unit's official work	3.09	1.291
Effectiveness the rate of personnel satisfaction from works speed	3.17	1.340
Effectiveness awareness of company's policies and decisions	3.12	1.181
Effectiveness reduction of duties repetition	3.00	1.374

Table 2 shows Cronbach's estimate coefficient which indicates 25 questions asked in the questionnaire are consistent (0.736 is greater than 0.6). Table 2 also indicates whether questions are individually consistent or not by conducting factor analysis. The reliability of the questionnaire was measured through the use of the Cronbach's alpha and the result was obtained as 0.80 which was above the minimum accepted value of Cronbach's alpha of 0.7. and due to the fact that the amount of Cronbach's alpha should be more than 0.6, so the reliability of the questionnaire was confirmed. Tables 2 and 3 show these findings were estimated from SPSS software.

Table 2: Reliability Statistics

Cronbach's Alpha	N of Items
.736	31

Table 3 shows individual reliability statistic alpha scores for each factors taken in the sample or the state of sharing features or the attributes of the factors as shown in this table extraction of questions are less than 0.4 so they should be removed from the model. However, we did not remove these questions because factor analysis shows cut off around 0.7 and all the factor loading is more than 0.4. Also Table 2 shows reliability (Nunnally , 1978).

Table3: Individual Reliability Statistic

	Factor loading
Efficiency Increase in answering speed of employees to managers	0.682
Efficiency reduction in unit's costs	0.742
Efficiency Increase in personnel work accuracy	0.723
Efficiency establishing a better relationship between managers and their proficient	0.659
Efficiency awareness of company's official affairs	0.657
Efficiency reduction of correspondent's error	0.652
Efficiency up to date decision making	0.677
Efficiency Controlling and monitoring on employees works	0.704
Efficiency Increased speed of offering information to customers	0.692
Efficiency employees' eagerness for their work	0.699
Efficiency Increased speed of answering to customers	0.651
Efficiency Organization and personal goals achievement	0.675
Efficiency Satisfying customers' needs	0.652
Efficiency none answering of system	0.679
Effectiveness reducing of unnecessary official ceremonies	0.637
Effectiveness Simplicity of complex official affairs	0.675

Effectiveness increased protection and safety of classified information	0.652
Effectiveness Simple information classification	0.709
Effectiveness Operation reduction and shortened unit's work Process	0.749
Effectiveness double working in unit	0.741
Effectiveness balance between human force and company programs	0.713
Effectiveness acceleration of unit's official work	0.625
Effectiveness the rate of personnel satisfaction from works speed	0.657
Effectiveness awareness of company's policies and decisions	0.609
Effectiveness reduction of duties repetition	0.696

The first part of our questionnaire was about general information (demographic) including: gender, age, job status, education level, nationality, and work experience. I also calculated the answers of frequency and percentage of each question. Table 4 shows the biggest frequencies were noticed between the ages of 28-37. The result revealed that the frequent interval was 84 while the amount for every percentage was 33.6. Also Table 4 shows the frequency and percentage of question one, which was about gender. Column of frequency represents that 131 of 250 represents were male and 119 represents were female, it means that while the amount at each hundred (%) was 52.4 of responders were male and while the amount at each hundred (%) was 47.6 were female.

However, in this Table the job status as full or part time was measured as control variables. It shows that 129 of employees are fulltime and 121 employees are part-time from 250 employees. For education the biggest frequencies were noticed for technical school with 85 and 34 percentage. Also nationality was shown that more employees are from Turkey that living in North Cyprus. The last part was shown that

the most employees had between 6-10 years' experience with 96 frequencies and 38.4 percentages.

Table 4 Respondent profile (N=250)

Factors	Frequency	percentage
Age		
18-27	45	18.0
28-37	84	33.6
38-47	7	1.6
48-57	72	28.8
58-67	45	18.0
Total	250	100
Gender		
Male	131	52.4
Female	119	47.6
Total	250	100
Job status		
Full time	129	51.6
Part time	121	48.4
Total	250	100
Education		
Primary school	16	6.5
Secondary school	27	10.8
Technical school	85	34
University	57	22.7
Post graduate	65	26
Total	250	100
Nationality		
Turkish Cypriot	62	24.8
Turkish	96	38.4
Others	92	36.8
Total	250	100
Work Experience		
1-5 years	65	26
6-10 years	96	38.4
More than 10 years	89	35.6
Total	250	100

Table 5 gives the results of independent sample T-test (compare mean), for various factors as determine the efficiency and the effectiveness. Efficiency has 14 different factors whereas effectiveness has 11 different factors. These factors are used to find out the effect of applying official automation criteria in North Cyprus manufacturing

sector. The results reveal with a p -value equal 0.1 The independent sample T-Test shows that efficiency increase in answering speed of employees to managers (t=1.884, p=0.061), efficiency increase in personnel work accuracy (t=1.878, p=0.620) and efficiency awareness of company's official affairs (t=1.696, p=0.091) all have positive and statistically significant effects on efficiency for official automation criteria and efficiency up to date decision making (t=1.840, p=0.065). The T-ratios also show that effectiveness reducing of unnecessary official ceremonies (t=1.716, p=0.870), effectiveness simplicity of complex official affairs (t=1.696, p=0.091), effectiveness awareness of company's policies and decisions (t=1.730, p=0.085) have difference when considering the gender factor.

Table 5 t-test Comparing mean between male and female

Factors	Gender	N	T-value	P-value
Efficiency Increase in answering speed of employees to managers	male	131	1.884	0.061*
	Female	119		
Efficiency reduction in unit's cost	Male	131	0.445	0.657
	Female	119		
Efficiency Increase in personnel work accuracy	Male	131	1.878	0.620
	Female	119		
Efficiency establishing a better relationship between managers and their proficient	Male	131	-0.0469	0.640
	Female	119		
Efficiency awareness of company's official affairs	Male	131	1.696	0.091*
	Female	119		
Efficiency reduction of correspondent's error	Male	131	-0.242	0.809
	Female	119		
Efficiency up to date decision making	Male	131	1.840	0.065*
	Female	119		
Efficiency Controlling and monitoring on employees works	Male	131	-0.469	0.640
	Female	119		
Efficiency Increased speed of offering information to customers	Male	131	1.387	0.167
	Female	119		
Efficiency employees' eagerness for their work	Male	131	1.391	0.165
	Female	119		
Efficiency Increased speed of answering to customers	Male	131	1.004	0.316
	Female	119		
Efficiency organization and personal goals achievement	Male	131	0.468	0.640
	Female	119		

Table 5 (Continued)

Factors	Gender	N	T-value	P-value
Efficiency Satisfying customer's needs	Male	131	0.469	0.640
	Female	119		
Efficiency none answering of system	Male	131	0.815	0.416
	Female	119		
Effectiveness reducing of unnecessary official ceremonies	Male	131	1.716	0.870
	Female	119		
Effectiveness Simplicity of complex official affairs	Male	131	1.696	0.910
	Female	119		
Effectiveness increased protection and safety of classified information	Male	131	0.609	0.543
	Female	119		
Effectiveness Simple information classification	Male	131	-0.399	0.690
	Female	119		
Effectiveness Operation reduction and shortened unit's work process	Male	131	-0.465	0.643
	Female	119		
Effectiveness double working in unit	Male	131	-0.241	0.809
	Female	119		
Effectiveness balance between human force and company programs	Male	131	0.402	0.688
	Female	119		
Effectiveness acceleration of unit's official work	Male	131	-0.767	0.444
	Female	119		
Effectiveness the rate of personnel satisfaction from works speed	Male	131	0.463	0.644
	Female	119		
Effectiveness awareness of company's policies and decisions	Male	131	1.730	0.085*
	Female	119		
Effectiveness reduction of duties repetition	Male	131	0.368	0.713
	Female	119		

Note: The comparison between male and female was conducted on SPSS and the result was tabulated as shown above.

(*P<0.10 **P<0.05) (2-tailed).

The results based on age in Table 6 one way analysis Anova confirm the result with a P -value < 0.10 indicated that the majority of the results were all significant. It is found that factors such as efficiency increase in answering speed of employees to managers (mean =3.47, F=3.162, P= 0.10), efficiency increase in personnel work accuracy (mean = 3.08, F= 3.781, P= 0.007), efficiency establishing a better relationship between managers and their proficient (mean = 2.95, F= 3.062, P= 0.11), efficiency up to date decision making (mean = 3.45, F= 4.166, P= 0.55) and efficiency organization and personal goals achievement (mean =3.23, F= 2.784, P= 0.18) have difference based on age groups. For the effectiveness for official automation criteria there is 6 factors include effectiveness reducing of unnecessary

official ceremonies (mean = 3.33, F= 3.093, P= 0.10), effectiveness simplicity of complex official affairs (mean = 3.34, F= 3.801, P= 0.06), effectiveness increased protection and safety of classified information (mean =3.23, F= 2.784, P= 0.18), effectiveness acceleration of unit's official work (mean =2.86, F= 2.109, P= 0.65), effectiveness the rate of personnel satisfaction from works speed (mean =3.15, F= 2.784, P= 0.18) and effectiveness awareness of company's policies and decisions (mean =2.98, F= 4.163, P= 0.58). All of these results are statistically significant.

Table 6 Anova Analysis

Factors		N	Mean	F	P-value
Efficiency Increase in answering speed of employees to managers	18-27	45	3.47	3.162	0.10
	28-37	84	3.08		
	38-47	72	3.03		
	48-57	45	3.20		
	58-67	4			
	Total		250		
Efficiency reduction in unit's cost	18-27	45	3.42	1.020	0.406
	28-37	84	3.17		
	38-47	72	2.99		
	48-57	45	3.11		
	58-67	4			
	Total		250		
Efficiency Increase in personnel work accuracy	18-27	45	3.47	3.781	0.007
	28-37	84	3.08		
	38-47	72	3.13		
	48-57	45	3.20		
	58-67	4			
	Total		250		
Efficiency establishing a better relationship between managers and their proficient	18-27	45	3.31	3.062	0.011
	28-37	87	2.95		
	38-47	72	3.31		
	48-57	45	2.93		
	58-67	4			
	Total		250		
Efficiency awareness of company's official affairs	18-27	45	3.02	0.971	0.436
	28-37	84	2.98		
	38-47	72	3.33		
	48-57	45	2.89		
	58-67	4			
	Total		250		
Efficiency reduction of correspondent's error	18-27	45	2.78	1.290	0.269
	28-37	84	3.01		
	38-47	72	3.31		
	48-57	45	2.91		
	58-67	4			
	Total		250		

Table 6 (Continued)

Factors		N	Mean	F	P-value
Efficiency up to date decision making	18-27	45	2.96	4.166	0.055
	28-37	84	3.45		
	38-47	72	3.26		
	48-57	45	3.49		
	58-67	4			
	Total		250		
Efficiency Controlling and monitoring on employees works	18-27	45	2.64	0.638	0.671
	28-37	84	3.38		
	38-47	72	2.93		
	48-57	45	3.49		
	58-67	4			
	Total		250		
Efficiency Increased speed of offering information to customers	18-27	45	2.80	0.737	0.597
	28-37	84	3.19		
	38-47	72	3.17		
	48-57	45	3.42		
	58-6	4			
	Total		250		
Efficiency employees' eagerness for their work	18-27	45	3.40	0.952	0.448
	28-37	84	3.12		
	38-47	72	3.14		
	48-57	45	3.07		
	58-67	4			
	Total		250		
Efficiency Increased speed of answering to customers	18-27	45	3.42	1.203	0.308
	28-37	84	3.04		
	38-47	72	3.25		
	48-57	45	3.18		
	58-67	4			
	Total		250		
Efficiency organization and personal goals achievement	18-27	45	2.89	2.784	0.018
	28-37	84	3.23		
	38-47	72	3.01		
	48-57	45	3.36		
	58-67	4			
	Total		250		
Efficiency Satisfying customer's needs	18-27	45	2.67	0.489	0.784
	28-37	84	3.08		
	38-47	72	2.93		
	48-57	45	3.47		
	58-67	4			
	Total		250		
Efficiency none answering of system	18-27	45	2.73	0.787	0.560
	28-37	84	3.26		
	38-47	72	2.92		
	48-57	45	3.49		
	58-67	4			
	Total		250		
Effectiveness reducing of unnecessary official ceremonies	18-27	45	3.64	3.093	0.010
	28-37	84	3.33		
	38-47	72	3.39		
	48-57	45	3.47		
	58-67	4			
	Total		250		

Table 6 (Continued)

Factors		N	Mean	F	P-value
Effectiveness Simplicity of complex official affairs	18-27	45	3.40	3.801	0.006
	28-37	84	3.34		
	38-47	72	3.25		
	48-57	45	3.47		
	58-67	4			
	Total		250		
Effectiveness increased protection and safety of classified Information	18-27	45	3.18	2.784	0.018
	28-37	84	3.23		
	38-47	72	2.93		
	48-57	45	3.11		
	58-67	4			
	Total		250		
Effectiveness Simple information classification	18-27	45	3.20	0.489	0.784
	28-37	84	2.94		
	38-47	72	2.83		
	48-57	45	3.29		
	58-67	4			
	Total		250		
Effectiveness Operation reduction and shortened unit's work process	18-27	45	3.27	1.163	0.328
	28-37	84	2.88		
	38-47	72	2.92		
	48-57	45	3.11		
	58-67	4			
	Total		250		
Effectiveness double working in unit	18-27	45	2.93	0.582	0.714
	28-37	84	2.62		
	38-47	72	2.67		
	48-57	45	2.98		
	58-67	4			
	Total		250		
Effectiveness balance between human force and company programs	18-27	45	3.04	0.419	0.835
	28-37	87	2.80		
	38-47	72	2.75		
	48-57	45	3.04		
	58-67	4			
	Total		250		
Effectiveness acceleration of unit's official work	18-27	45	3.27	2.109	0.065
	28-37	87	2.86		
	38-47	72	3.19		
	48-57	45	3.16		
	58-67	4			
	Total		250		
Effectiveness the rate of personnel satisfaction from works speed	18-27	45	3.00	2.784	0.018
	28-37	87	3.15		
	38-47	72	3.15		
	48-57	45	3.40		
	58-67	4			
	Total		250		
Effectiveness awareness of company's policies and decisions	18-27	45	3.44	4.163	0.058
	28-37	87	2.98		
	38-47	72	3.13		
	48-57	45	3.13		
	58-67	4			
	Total		250		

Table 6 (Continued)

Factors		N	Mean	F	P-value
Effectiveness reduction of duties repetition	18-27	45	2.47	0.737	0.597
	28-37	87	3.06		
	38-47	72	3.24		
	48-57	45	3.02		
	58-67	4			
	Total		250		

Note: The comparison between ages was conducted on SPSS and the result was tabulated as shown above $p < 0.5$

Chapter 6

CONCLUSION AND MANAGERIAL IMPLICATIONS

The relevant literature has analyzed the importance of efficiency and the effectiveness by using various factors to determine the effect of applying official automation criteria. Efficiency has 14 different factors whereas effectiveness has 11 different factors. These factors in this questionnaire are used to find out the effect of applying official automation criteria in Northern Cyprus manufacturing sector. Generally speaking, respondents give high importance to all of the factors provided in the survey form of this study. According to the findings estimated, in mean scale automation criteria, efficiency is the most important factor compared to other factors. Efficiency and personal goals achievement are in organization. The least score is the efficiency in the none answering automated systems. In the second part, the case of effectiveness, the most important factor is effectiveness of balance between labor and company programs. However, the least important factor is the effectiveness of double working in a unit.

The independent sample T-Test shows that efficiency increase in the answering speed of employees to their managers, efficiency increase in personnel work accuracy, efficiency increase of awareness of the company's official affairs and efficiency increase up to date decision making, have difference based on gender.

The T-ratios also indicated the automation criteria effectiveness which reduces unnecessary official ceremonies, effectiveness simplicity of complex official affairs is one of the three items and the effective awareness of company's policies and decisions have difference based on gender.

Based on the results estimated from Anova analysis show that table confirms the result with a P-value < 0.10 indicated that the majority of the results were all significant. It is found that factors such as efficiency increase in answering speed of employees to managers , efficiency increase in personnel work accuracy, efficiency establishing a better relationship between managers and their proficient , efficiency up to date decision making , and efficiency organization and personal goals achievement , have difference based on age groups. For the effectiveness for official automation criteria there is 6 factors include effectiveness reducing of unnecessary official ceremonies, effectiveness simplicity of complex official affairs , effectiveness increased protection and safety of classified information , effectiveness acceleration of unit's official work , effectiveness the rate of personnel satisfaction from works speed and effectiveness awareness of company's policies and decisions. All of these results are statistically significant.

These findings were also supported by evidence found in Habibi's paper (2005). He emphasized that ignoring some of the human and social relations make the automation system difficult and complex to work. He explained that the updating of information should be done from time to time to avoid mistakes during the process and that manager and employees should learn and know how to increase efficiency in their responsibilities at work (Habiby, 2005).

Chapter 7

RECOMMENDATION FOR FUTURE STUDIES

Due to an increase in large number of manufactures worldwide, it is important to increase quality of output in manufactures to stay in the competition. It is therefore important to research more on the growth of different and unique ideas. Furthermore, since Northern Cyprus is a small country improving the efficiency and effectiveness of modern automation system, it needs to encourage future results to raise quality. I will also recommend that a similar research could be conducted in other countries since Northern Cyprus is an Island and a very small country. A research of this study should be extended to other countries such as Turkey, Iran and the Middle East could be more profitable business to the organizations in these areas.

The limitation of this research was the testing of automation software application which was very important for the organization to function. It needed information technology skills or technical skills to be able to execute the programs correctly. In the absent of those skills training from the human work force is required to be able to run the applications properly. Maintenance was another limiting factor to be considered. The skill personal of the organization should maintain the systems up to date to increase quality performance and productivity. It was time consuming for the respondents from the manufacturing industry to complete the questionnaire on time because of the nature of the works. It took several week and months for the data to collected.

Finally, in order to see if the results of this thesis can be generalized across the other sectors of the industry, further research can be done for the other sectors by using more advanced statistical techniques at the later stage for comparison purposes. The testing of automation software application is important and it needs information technology skills or technical skills to be able to execute the programs correctly. In the absent of those skills training from the human work force is required to enable them to run the applications properly. Maintenance is another limiting factor to be considered. The personal in the organization should be maintaining the systems up to date to increase quality performance.

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APPENDIX

The Influence of Automation on Effectiveness and Efficiency: The Case of North Cyprus Manufacturing Sector

Dear Participant,

This research is about your opinions as an expert. Please read all of the following questions carefully and try to answer the questions on the type of automation factors.

Regards,

Assoc. Prof Sami Fethi and Behnoush

PART A. DEMOGRAPHIC PROFILE

1. Gender:

- a. Male b. Female

2. Age

- a. 18-27 b. 28-37 c. 38-47 d. 48-57 e. 58 and upper

3. Job status:

- a. Full time b. Part-time

5. Work Experience

- a. 1-5 years b. 6-10 years c. more than 10 years

6. Education Level

- a. Primary School b. Secondary/high School c. Technical school
d. University e. Post graduate

7. Nationality

- a. Turkish Cypriot b. Turkish c. Others

PART B.THE EFFECT OF APPLYING OFFICIAL AUTOMATION CRITERIA

This section comprises of 25 questions on the devices selection factors. Please use the following Likert's scale ranging from 1 (Not Important at all) to 5 (Very Important) for your answers:

Not Important at all

Very Important

1 2 3 4 5

ID	IMPORTANCE FACTORS FOR AUTOMATION CRITERIA	LIKERT'S SCALE				
	Efficiency					
1.	Increase in answering speed of employees to managers	1	2	3	4	5
2.	reduction in unit's costs	1	2	3	4	5
3.	Increase in personnel work accuracy	1	2	3	4	5
4.	establishing a better relationship between managers and their proficient	1	2	3	4	5
5.	awareness of company's official affairs	1	2	3	4	5
6.	reduction of correspondent's error	1	2	3	4	5
7.	up to date decision making	1	2	3	4	5
8.	Controlling and monitoring on employees works	1	2	3	4	5
9.	Increased speed of offering in formation to customers	1	2	3	4	5
10.	employees eagerness for their work	1	2	3	4	5
11.	Increased speed of answering to customers	1	2	3	4	5
12.	Organization and personal goals achievement	1	2	3	4	5
13.	Satisfying customer's needs	1	2	3	4	5
14.	Non answering of system	1	2	3	4	5
	Effectiveness					
1.	Reducing of unnecessary official ceremonies	1	2	3	4	5
2.	Simplicity of complex official affairs	1	2	3	4	5
3.	increased protection and safety of classified information	1	2	3	4	5
4.	Simple information classification	1	2	3	4	5
5.	Operation reduction and shortened unit's work Process	1	2	3	4	5
6.	double working in unit	1	2	3	4	5
7.	balance between human force and company programs	1	2	3	4	5
8.	acceleration of unit's official work	1	2	3	4	5
9.	the rate of personnel satisfaction from works speed	1	2	3	4	5
10.	awareness of company's policies and decisions	1	2	3	4	5
11.	reduction of duties repetition					

Source: 1 (Bazargan, Research method in behavioral science, 1997)2 - (Taghizadeh, 2012). 3- (Taleghani, 2012)

