# THE EFFECT OF THE SUCCESS INFORMATION TECHNOLOGYON THE QUALITY OF WORKING LIFE OF THE STAFF IN INDUSTRIAL ORGANIZATIONS IN IRAN

HASSAN FORATI

*Department of Management*
*Payam Noor University*
*Tehran, Iran*

## Abstract

*We examined the influence of the success of Information Technology (IT) on the Quality of Working Life (QWL). We first explored the success dimensions of IT/IS and also dimension of QWL. Then, we proposed a new model – managing IT for improving QWL model - to explain and predict the influence of IT's success on employees' QWL. Drawing on the previous literature, and the results of a series of case studies, the managing of IT to improve the QWL model, integrates several sets of factors that are influencing the improvement of QWL: organizational factors; quality of IT; employees' attitudes to IT; employees' use of IT; perceived usefulness of IT and QWL. These sets of factors are drawn from well-established frameworks (IS's implementation, IS's success and TAM models). Results from a survey involving 299 IT users in semnan province (Iran) indicate that a positive relationship exists between IT's success and QWL. The analysis provided strong support for the model, with 15 of 17 hypotheses which are supported. Path analysis was also used to test the research model. The study used theoretical and empirical evidence to propose a model and then validate it by using quantitative data from industrial organizations in Semnan. Finally the model was validated by path analysis.*

*Keywords: Information technology; success of information system success; employee's attitude to IT; perceived usefulness; quality of working life.*

## Introduction

IT is a universal technology and it influences all aspects and functions of organizations and has the potential to change the social and economical conditions of nations and countries (Avgerou, 2000). On the other hand, every organization, whether it is a multinational conglomerate, a small business, a religious institution, or government agency, depends on people. The key to success in this economy depends on the knowledge of the people: the reputation and greatness of organizations and big companies, is not more than the sum of the physical asset, but also by having a staff with knowledge and the required skills. Thus, people play a vital role in any organization's ability to meet its goals, so

it follows that assuring a high quality of work life is vital to attract and keep talented people, as well as in achieving better organizational performance.

## Problem Statement

Both academics and practitioners recognize that the success of information technology can potentially be measured through its impact on work at the level of the individual end-user (Torkzadeh & Doll, 1998). As systems and technologies are being improved and developed, discussions on their effectiveness and evaluation on their success have been continuously debated

by researchers, scholars and practitioners, therefore it is becoming necessary to investigate the effects of IT on QWL and measuring of the success of information technology through its impact on work at the level of the individual end-user in order to improve their QWL. Although extensive research has been conducted in investigating the Information Technology's impact on organization performance, employee's work and performance and also on IS/IT, success, little research has addressed the impact of IT or IT,s success systems on QWL and how managing of IT for improving the QWL. The present study has been endeavoured to fill this gap in the literature. The Industrial organizations in Semnan have invested enormous amount of funds in developing IT and they are concerned about what the impact of their investment can be on the individual and his/her performance and how this impact will be measured. For the convenience of sampling and the researcher's access to the subject, Semnan as an Industrial province was selected. In this research, there are two main questions:

1. What is the effect of IT's success on the QWL of employees in industrial organization in Semnan and how can this impact be measured?
2. How can the industrial organizations in Semnan use Information Technology in order to improve the Quality of working Life of their employees?

## Objective of The Study

The main objective of this study is to develop a model for managing Information Technology in order to improve the QWL and to investigate the relationship between IT's success and the Quality of working life in the context of Semnan's industrial organizations' environment. In fact, we are looking into identifying the relationship between IT's success and the QWL in order to see how the success of Information Technology contributes to employees' QWL.

## Review of Literature

The success of the Information system success models: IS's success is a multi-dimensional concept that can be assessed at various levels, the measure for IS's success has neither been totally clear nor exactly defined (Wu & Wang, 2006).Various generic models for assessing the success of information system have existed (Namakula & Kituyi, 2014). The DeLone& McLean (1992) model is one of the most widely cited IS's success models (Myers, Kappelman, 1997 &Heo& Han, 2003) and much of the work done in IS's success has its origin in this model (Elpez& Fink, 2006). Numerous studies have since been sought to extend and/or validate this framework.

Table 1

*Dimensions of IS Success*

| Dimension | D&M (1992) | S&K (1994) | K&L (1994) | Pitt (1995) | Seddon (1997) | M.K.P (1997) | Wang (2000) | M&L (2001) | Rai (2002) | M&D (2003) | Livari (2005) | S&0 (2006) | B&J (2008) | Gable (2008) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| System quality | * | * | * | * | * | * | | * | * | * | * | | * | * |
| Information quality | * | * | * | * | * | * | | * | * | * | * | | * | * |
| Service quality | | | * | * | | * | | * | | * | | | * | |
| User satisfaction | * | * | | * | * | * | * | * | * | * | * | * | * | |
| Use | * | | | * | * | * | * | * | * | * | * | * | | |

*(Continued)*

| Dimension | D&M (1992) | S&K (1994) | K&L (1994) | Pitt (1995) | Seddon (1997) | M.K.P (1997) | Wang (2000) | M&L (2001) | Rai (2002) | M&D (2003) | Livari (2005) | S&0 (2006) | B&J (2008) | Gable (2008) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Individual impact | * | | | * | * | * | * | | | | * | | | * |
| Organization impact | * | | | * | * | * | * | | | | | | | * |
| Perceived usefulness | | * | * | | * | | | | * | | * | | * | |
| Net benefit | | | | | * | | | | | * | | * | | |
| Trust | | | | | | | | * | | | | | * | |
| Intention to use | | | | | | | | | | * | | * | * | |
| Environment factor | | | | | | * | | | | | | | | |
| Organization factors | | | * | | | | | | | | | | | |
| Management action | | | | | | | | | | | | * | | |
| Technology character | | | | | | | | | | | | * | | |
| profitability | | | | | | | | | | | | | | * |
| Improve performance | | | | | | | | | | | | | | * |

The information system's implementation (ISI) model: Implementation processes affect a new system's acceptance in the workplace. The ISI model (Land 1994) is based upon research that is designed to identify the factors that are most important in determining a user group's successful adoption of a new system. Land's model recognizes that the introduction of a technological innovation is essentially an altered process that requires planning and managing, and is affected by six groups of factors: Motivation for introducing the new system, Commitment to the system, Organizational culture, the management of the implementation process, the 'distance' between the existing system and the replacement system, and the technology itself.

The Technology acceptance model: The Technology Acceptance Model (TAM) aims to predict and explain the users ''intention to use'' by understanding factors which lead users to accepting or rejecting an IS (Gros &

others, 2005). Among the different models proposed, the Technology Acceptance Model (TAM) (Davis 1989) appears to be the most widely accepted among the information system researchers (Mathieson, 1991; Davis & Venkatesh, 1996; Gefen& Straub, 2000; Wang, 2003). TAM proposes that the two particular constructs which are of primary significance for IS/IT acceptance. The Perceived Usefulness (PU) and Perceived Ease Of Use (PEOU), affect user's' attitude towards using the information system. Attitude is directly related to user's intention, which will in turn determine the usage of the system. Perceived Usefulness is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis 1989). Perceived Ease Of Use is defined as "the degree to which a person believes that using a particular system would be free from the usage of efforts" (Davis, 1989).

Quality of working Life: QWL is a very important concept of favourable situation in

a working environment ( Vijaimadhavan & Raju, 2013). The phrase "Quality of working Life" (QWL) has come into use recently to evoke a broad range of working conditions and the related aspirations and expectations of the employees. The QWL can be described as, the subjectively perceived satisfaction with one's different aspects of working life as reported by the individual (Swarnalatha, 2014).Quality of working Life (QWL) refers to the favourableness or unfavourableness of a job environment for people (Newstrom & Davis, 1993).

In this research the model purposed by Walton (1973) will be the basic referential to analyze dimensions of QWL. This is because of its amplitude. Also, we will try to use other models but under Walton's basic model, there are

1. Adequate and fair compensation: This refers to a just and fair balance between effort and reward.  Does the income from full-time employment meet the standards of both society and the worker? Is the pay compatible with other types of employment?
2. Safe and healthy working conditions: Safe and healthy refers to reasonable hours of work, zero-risk physical conditions of work, and age restrictions on both the lower and upper side.
3. Immediate opportunity to use and develop human capacities: employee's perception of the quality of the working life depends upon the extent to which jobs allow them not only to use but also to develop their competences. Does the work allow the use of a wide range of skills? Does the work allow autonomy and self-control? Is relevant and meaningful information available? Is the work a complete or natural unit or is it a small part of a unit? Does the work allow for planning?
4. Future opportunity for continued growth and security: here the focus is on career opportunities as against the job. Does the work permit the growth of a person's capacities? Are there advancement opportunities for using newly acquired skills or knowledge? what are the employment and income security?

5. Social integration in work organization: Is there freedom from prejudice? To what extent does the organization rely on status symbols and the hierarchy? Is there upward mobility? Is there interpersonal openness among members and support for each other?
6. Constitutionalism or the 'rule of law' in the work organization: Do the members have the right to personal privacy? Can members speak out without fear of reprisal from higher authority? Is there equitable treatment of members? Is there a due process for grievances and complains?
7. Work and the total life space: refers to the extent to which there is the balance between the role for work and the employee's other life spheres. Does the working organization allow the members to have other life roles? What are the overtime requirements, travel demands, and geographical movements?
8. The social relevance of working life: employees who feel that their organization is acting in a socially responsible manner. How does the worker perceive the social responsibility of the organization: products, waste disposal, marketing and selling techniques, employment practices, relations to underdeveloped countries, participation in political campaigns, attitude to laws, and so on?

## Conceptual Model

The research model was adapted by Information System's success models, information system's implementation (ISI) model, Technology acceptance model and Walton's Quality of Work Life model. Neither of them covers all of the issues that our study has identified as the managing of IT for the improvement of the improved QWL. DeLone et al. (2003) noted that the IS's Success model has been criticized for not incorporating management control variables such as user's involvement and top management support. The ISS model also considers only the quality influences on the intention to use, and the use.
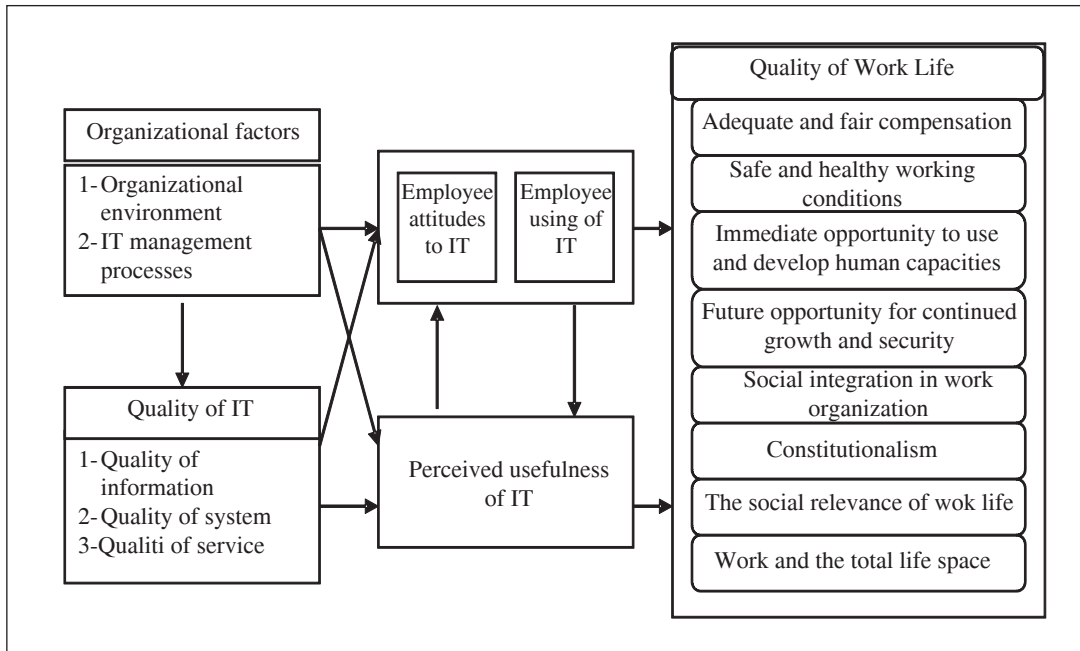
*Figure 1.* Quality of working life

These limitations made it necessary to draw upon all the three models in order to assemble a framework that could explain the factors influencing IT's success at the organizations of our research work. This integrated model - which we have titled as the managing of IT for the improvement of the QWL model - is shown in Figure1. In the this model, Davis's TAM model forms the basis of the perceived usefulness of IT and employees' attitudes to IT, while Land's ISI theory underpins the factors that are related to organizational factors and employees' attitudes to IT. DeLone and McLean's model forms the basis of the quality of IT's group of factors and Employees' usage of IT. QWL construct is based on Walton's model. Together these provide a richer suite of issues for the management to consider on how best to manage IT for the improvement of the QWL

H1 : There is a positive and significant relationship between IT's success and QWL.

H2 : IT's management processes, Organizational environment, Quality of information, Quality of system, Quality of service, Employees' attitudes to IT, Employees' usage of IT and Perceived usefulness of IT indexes can measure the SUIT.

H3 : Adequate and fair compensation, Safe and healthy working conditions, Immediate opportunity to use and develop human capacities, Future opportunity for continued growth and security, Social integration in the working organization, Constitutionalism, The social relevance of working life, and Work and the total life space indexes can measure the QWL.

Organizational factors**:** In an organizational context, organizational environment and IT management are of importance. It therefore stands to reason that organizational factors are additional dimensions to consider in addition to the traditional dimensions of system quality, information quality, user satisfaction, perceived usefulness, and use.

In this study, with the consideration of the ISI model, the review of literature, and the research

aim, we also used organizational environment and IT management processes as a measure of organizational factors.

As the system's implementation is based on management responsibility and organizational environment, we have named this part of the model as organizational factors. In fact, we have changed the ISI model to organizational factors. We have grouped organizational culture, interaction among units, power and politic of the organization, and commitment of the organization to IT/IS in its organizational environment. Thus, in this construct we have added the interaction among units, and the power and politic of the organization.

We have omitted motivation for the introduction in the new system, because this is evinced through the employees' attitudes to IT. We have renamed the "management of the implementation process" as "IT management processes".

In this study we will only concern ourselves with the areas relating to employee's aspect.

H4 :   There is a positive and significant relationship between Organization factors and Quality of IT.

H5 :   There is a positive and significant relationship between Organization factors and Employee's attitudes to IT.

H6 :   There is a positive and significant relationship between Organization factors and Employees' usage of IT.

H7 :   There is a positive and significant relationship between Organization factors and Perceived usefulness of IT.

H8 :   There is a positive and significant relationship between Organization factors and Quality of Working Life.

Information quality: Information quality is highlighted by DeLone& McLean (1992) as an important indicator of IS's success. Information quality defines how good the system is in terms of its output. Factors in this category span a broad range from the importance, the relevance,

the usefulness and the informativeness to clarity, content, accuracy, and completeness (Jennex & others, 1998).

System quality: System quality describes how good the system is in terms of its operational characteristics (Jennex & others, 1998). System quality is related to the quality of the system that produces information output, and this can be measured in terms of reliability, accessibility, integration, and response time, adaptability, usability, turnaround time, completeness, system flexibility, ease of use, safety, integrity and security ( Irwin & Jayakody, 2008; Nelson, 2005; chandio, 2008).

Service quality: The overall support delivered by the service provider, applies regardless of whether this support is delivered by the IS department, a new organizational unit, or is outsourced to an Internet Service Provider (ISP) (DeLone and McLean, 2003). Parasuraman (1998) developed an instrument, named SERVQUAL, for measuring service quality. The five factors included in SERVQUAL are: tangibles, reliability, responsiveness, assurance, and empathy.

H9 :   There is a positive and significant relationship between Quality of IT and Employee's attitudes to IT.

H10:   There is a positive and significant relationship between Quality of IT and Employee's usage of IT.

H11:   There is a positive and significant relationship between Quality of IT and Perceived usefulness of IT.

H12:   There is a positive and significant relationship between the Quality of IT and the Quality of Working Life.

Employee's attitude to IT: Attitude is "the degree of evaluative affect that an individual associates with the using of the target system" (Davis, 1993). It represents what a person feels about a concept, which may be any entity about which the persons can think and attach their feeling (East, 1997). In this research, Employees' attitude to

IT refers to employee's belief in whether IT can improve their job conditions, performance and also the organizational performance or not.

H13: There is a positive and significant relationship between Employees' attitudes to IT the and Employees usage of IT.

H14: There is a positive and significant relationship between the Employees' attitudes to IT and the Quality of Working Life.

Employees' usage of IT: The usage of Information refers to the utilization of the outputs of the system. This construct is most applicable as a success measure when the use of a system is voluntary (Jennex&others, 1998).

H15: There is a positive and significant relationship between the Employees' usage of IT and the Quality of Working Life.

Perceived usefulness of IT: Rai (2002) in validating the Seddon (1997) model demonstrated that perceived usefulness positively influences the user's satisfaction with an information system. Perceived Usefulness (PU) can be defined as "the degree to which a person believes that using a particular system would enhance his/her job performance" (Davis, 1989).

H16: There is a positive and significant relationship between the Perceived usefulness of IT and the Employee's attitudes to IT.

H17: There is a positive and significant relationship between the Perceived usefulness of IT and the Quality of working Life.

## Research Methodology

Due to the advantages presented by the of path analysis method and the Structural Equation Modeling (SEM), these approaches are adopted to analyze the statistical data.

Instrumentation: The survey method was used for collecting data. Although most of the information related to IT users was collected through interviews, these interviews were carried out based on the questionnaires. The general contents of the survey questions were divided into two groups: the demographic and, the attitudinal questions. The survey involved 299 IT users in industrial organizations of the Semnan province of Iran. The attitudinal questions attempted to reveal the viewpoints, opinions, and the perceptions of the interviewees with respect to the different dimensions and variables of the QWL and IT. The Likert scale has been utilized to measure the interviewees' attitudes. Many standard questionnaires regarding IT and QWL were investigated in order to derive a usable questionnaire for this research.

The reliability of the questionnaire in this study has been assessed by cronbach's alpha, which is an appropriate criterion for evaluating the reliability of the measurement tools. Through a pre-test and by the use of SPSS package and cronbach test, the total reliability of questionnaire was determined, as presented in table 2.

Validity: The validity of questionnaire in this research has been obtained by the examination of the experts' viewpoints (content validity) and the use of the standard questionnaires.

Statistical population, sampling approach and the size of sample: The questionnaires were distributed to 299 IT user during 2011and 2012. The statistical population of this research involves all IT users of the private companies in Semnan province. The total number of users is nearly 1350 people. The Stratified random sampling method is employed in this study. When the individuals in the population are not homogenous and sub-groups with in-group homogeneity exist, then the random approaches are not effective. In such populations, the Stratified random sampling method must be used. In this approach, the people in the population are divided into different groups, based on their in-group characteristics and sample people are selected from different stages,

Table 2

*The Cronbach's Alpha for Questionnaire and its Sub-Scales*

| Name of measure | Questionnaire | Cronbach's alpha |
|---|---|---|
| Organizational environment | 4 | 0.73 |
| IT management processes | 6 | 0.84 |
| Organizational factors | 10 | 0.87 |
| Quality of Information | 9 | 0.87 |
| Quality of system | 13 | 0.85 |
| Quality of service | 7 | 0.84 |
| Quality of IT | 29 | 0.92 |
| Employee's attitudes to IT | 14 | 0.91 |
| Employees usage of IT | 6 | 0.60 |
| Perceived usefulness of IT | 8 | 0.87 |
| Quality of Working life | 40 | 0.94 |
| Adequate and fair compensation | 6 | 0.78 |
| Safe and healthy working conditions | 5 | 0.70 |
| Immediate opportunity to use and develop human capacities | 7 | 0.77 |
| Future opportunity for continued growth and security | 6 | 0.84 |
| Social integration in work organization | 5 | 0.84 |
| Constitutionalism | 4 | 0.67 |
| The social relevance of working life | 3 | 0.60 |
| Work and the total life space | 4 | 0.67 |

proportionally (Hafezniya, 2002). Stratified random sampling is a modification of random sampling in which the population is divided into two or more relevant and significant strata based on one or a number of the attributes(Saunders and Thornhill2003).

The sample size is computed, based on the following formula:

$$N\ t^2\ P(p-1)$$

$$n =$$
_____

$$Nd^2 + t^2\ pq$$
$$1350\ (1.96)^2\ (0.5)\ (0.5)$$

$$n = \underline{\hspace{5cm}} = 299$$

$$1350\ (0.05)2\ + (1.96)^2\ (0.5)\ (0.5)$$

Where,

n: sample size : 299; p: the ratio of existence of attribute in 50% of population; N- size of the statistical population: 1350; $t^2$: (t = 1.96) for reliability of 95 %; q: the ratio of non-existence of attribute in 50% of population; $d^2$: level of error (possible desirable accuracy) 0.05

## Data Analysis

### *Examining the impact of IT's success systems on the QWL by SEM*

Confirmatory Factor Analysis: In developing and conducting the CFA of this study, the research design followed the four stages characteristic of most applications of SEM, based on the suggestions of Bollen and Long (1993): (1) model specification, (2) identification, (3) testing fit, and (4) modification
Model specification

The first step in the operational zing is the model of relationship between IT's success (SUCIT) and Quality of Working Life, is to clarify exactly what relationships the model proposed, based on the literature review and whether the indicators can measure their variables or not. The first construct of IT's success is measured by eight indicators (IT's management processes, Organizational environment, Quality of information, Quality of system, Quality of service, Employees' attitudes to IT, Employeess' usage of IT and Perceived usefulness of IT), and the second is the QWL which is also measured by eight indicators (Adequate and fair compensation, Safe and healthy working conditions, Immediate opportunity to use and develop human capacities, Future opportunity for continued growth and security, Social integration in work organization, Constitutionalism, The social relevance of work life and working and the total life space).

There are two components to the SEM. First, the structural model specifies the predictive relationships among the latent constructs. Second, the measurement model defines how the latent constructs are measured (i.e., represented by indicators). The structural model is based on the hypotheses that IT's success impacts on the QWL. In addition, the structural relations use latent constructs; that is, each construct in the model is represented by multiple indicators. when performing LISREL, IT's success and the QWL are defined as constructs.

Based on the output of LISREL, the residuals, modification indices, expected changes, and standardized expected change provide information about the sources of the model's lack of fit. LISREL suggests that the fit of the initial model would be improved substantially by making some negative covariance between variables. Therefore, the final model comes up with a good fit by removing the Employees' attitudes to IT (EAIT) indicator due to EAIT being not significant (figure 2).
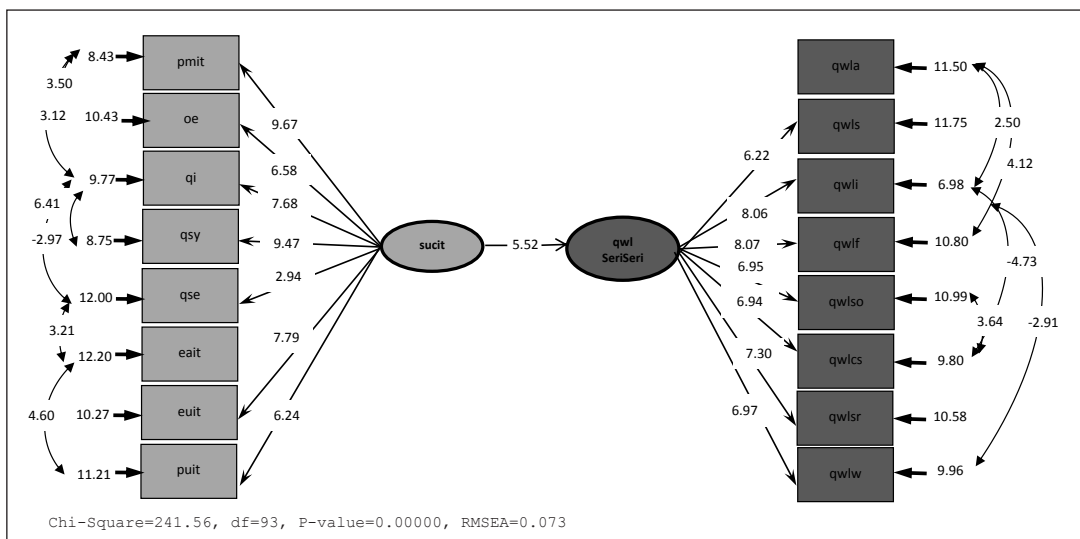


Chi-Square=241.56, df=93, P-value=0.00000, RMSEA=0.073

*Figure2* Final model of IT impact on QWL (The path numbers are t-value)

Estimation: All model tests are based on the covariance matrix and used the maximum likelihood (ML) estimation as implemented in the LISREL programme. In Table 10 to 11, the output from LISREL is divided into a number of sections: (1) the maximum likelihood estimates, (2) the R2 values for each variable as indications of how well the latent constructs explain the variance in the observed variables, and (3) the fit indices for the model. As shown in the tables, the final (modified) model contains low X2 which indicate better fit than the initial model. For each endogenous variable in the model, LISREL calculates the R2 value, which is interpreted exactly the same as the R2 values in regression.

Table 3

*LISREL Estimates and Path Diagram of initial Model of Impact IT on QWL*

| Equations | Error Variance | Standardized Solution | Standard Error | T-Values | Significant level | $R^2$ |
|---|---|---|---|---|---|---|
| Measurement Equations: | | | | | | |
| QWLa=2.45* QWL | 14.45 | 0.54 | - | - | Yes | 0.29 |
| QWLs=1.65* QWL | 7.32 | 0.54 | 0.23 | 7.10 | Yes | 0.27 |
| QWLi=3.25* QWL | 6.71 | 0.78 | 0.36 | 9.10 | Yes | 0.61 |
| QWLf=2.87* QWL | 7.08 | 0.73 | 0.33 | 8.80 | Yes | 0.54 |
| QWLso=2.17* QWL | 5.33 | 0.59 | 0.26 | 8.48 | Yes | 0.47 |
| QWLcs=1.92* QWL | 5.07 | 0.55 | 0.23 | 8.21 | Yes | 0.42 |
| QWLsr=0.72* QWL | 0.48 | 0.72 | 0.083 | 8.71 | Yes | 0.52 |
| QWLw=1.47* QWL | 2.73 | 0.55 | 0.17 | 8.17 | Yes | 0.42 |
| IT management processes = 2.50* IT success | 10.92 | 0.50 | 0.24 | 10.59 | Yes | 0.36 |
| Organizational environment = 0.44* IT success | 0.81 | 0.44 | 0.060 | 7.25 | Yes | 0.19 |
| Quality of Information = 4.01* IT success | 8.83 | 0.80 | 0.27 | 15.09 | Yes | 0.65 |
| Quality of system = 5.98* IT success | 16.69 | 0.83 | 0.38 | 15.62 | Yes | 0.68 |
| Quality of service = 0.54* IT success | 16.07 | 0.13 | 0.25 | 2.11 | Yes | 0.018 |

*(Continued)*

| Equations | Error Variance | Standardized Solution | Standard Error | T-Values | Significant level | $R^2$ |
|---|---|---|---|---|---|---|
| Employee attitudes to IT = 0.99* IT success | 98.73 | 0.10 | 0.63 | 1.57 | No | 0.0098 |
| Employee using of IT = 1.60* IT success | 14.74 | 0.39 | 0.25 | 6.34 | Yes | 0.15 |
| Perceived usefulness of IT = 2.22* IT success | 42.35 | 0.32 | 0.42 | 5.24 | Yes | 0.10 |
| Structural Equations QWL Seri = 0.39*IT success | 0.85 | 0.39 | 0.075 | 5.21 | Yes | 0.15 |

Table 4

*LISREL Estimates and Path Diagram of Final Model of Impact IT on QWL*

| Equations | Error Variance | standardized solution | Standard Error | T-values | Significant level | $R^2$ |
|---|---|---|---|---|---|---|
| Measurement Equations: | | | | | | |
| QWa = 2.45* QWL | 15.64 | 0.47 | - | - | Yes | 0.22 |
| QWL s = 2.45* QWL | 7.44 | 0.51 | 0.30 | 6.22 | Yes | 0.26 |
| QWL i=2.45* QWL | 5.14 | 0.84 | 0.50 | 8.06 | Yes | 0.70 |
| QWL f=2.45* QWL | 7.83 | 0.70 | 0.40 | 8.07 | Yes | 0.49 |
| QWL so=2.45* QWL | 5.83 | 0.55 | 0.35 | 6.95 | Yes | 0.42 |
| QWLcs=2.45* QWL | 4.74 | 0.58 | 0.34 | 6.94 | Yes | 0.46 |
| QWLsr=2.45* QWL | 0.48 | 0.72 | 0.12 | 7.30 | Yes | 0.52 |
| QWLw=2.45* QWL | 2.52 | 0.58 | 0.25 | 6.97 | Yes | 0.46 |
| IT management processes = 2.63* IT success | 10.15 | 0.54 | 0.27 | 9.67 | Yes | 0.41 |
| Organizational environment = 0.46* IT success | 0.79 | 0.45 | 0.070 | 6.58 | Yes | 0.21 |
| Quality of Information = 2.66* IT success | 17.70 | 0.53 | 0.35 | 7.68 | Yes | 0.29 |
| Quality of system = 4.48* IT success | 32.27 | 0.52 | 0.47 | 9.47 | Yes | 0.38 |
| Quality of service = 0.80* IT success | 15.54 | 0.20 | 0.27 | 2.94 | Yes | 0.040 |
| Employee attitudes to IT = 0.99* IT success | 98.05 | 0.10 | - | - | No | 0.0099 |

*(Continued)*

11

| Equations | Error Variance | standardized solution | Standard Error | T-values | Significant level | $R^2$ |
|---|---|---|---|---|---|---|
| Employee using of IT = 2.13* IT success | 12.73 | 0.51 | 0.27 | 7.79 | Yes | 0.26 |
| Perceived usefulness of IT = 2.75* IT success | 39.43 | 0.40 | 0.44 | 6.24 | Yes | 0.16 |
| Structural Equations QWL Seri = 0.39*IT success | 0.53 | 0.52 | 0.081 | 5.52 | Yes | 0.27 |

In the final model (see Table 4), the success Information Technology has a significant effect (standardized? = 0/52) on the QWL. The success of Information Technology consists of IT's management processes, Organizational environment, Quality of information, Quality of system, Quality of service, Employees' attitudes to IT, Employees usage of IT and Perceived usefulness of IT. QWL consists of Adequate and fair compensation, Safe and healthy working conditions, Immediate opportunity to use and develop human capacities, Future opportunity for continued growth and security, Social integration in work organization, Constitutionalism, The social relevance of working life and Work and the total life space.

Testing fit: 1. Absolute fit. This model of relation of the success of Information Technology with the QWL is based on 16 variables The initial model therefore has df = 103. The modified model fixed the Employees' attitudes to IT and it has df = 93.

In summary, assessing the model fit is based on (1) whether the final model fit better than the initial model, and (2) whether the model provides a good fit to the data (see Table 5). The initial model falls in the category of a "modest" fit to the data. That is, the RMR, GFI, PNFI, and PGFI. The final (modified) model falls in the category of a "reasonable and good" fit to the data. That is, the RMR, standardized RMR, RMSEA, GFI, IFI, CFI, PNFI, PGFI, AIC, and CAIC all indicate a good fit to the data; the X2 and P value are close to the marginal.

Table 5

*The Goodness of Fit Statistics for the E-government Readiness Model*

| Goodness of fit statistics | Criteria for good fit | Initial model | Modified model |
|---|---|---|---|
| 1. Absolute Fit | | | |
| Standardized RMR | Below 0.05 or 0.10 | **0.089** | **0.066** |
| Root Mean Square Error of Approximation (RMSEA) | Below 0.10 | 0.11 | **0.073** |
| Goodness of Fit Index (GFI) | Above 0.9 | 0.83 | **0.91** |
| 2. Comparative fit | | | |
| Incremental fit Index (IFI) | Above 0.9 | 0.77 | **0.90** |
| Comparative Fit Index (CFI) | Above 0.9 | 0.76 | **0.90** |
| 3. Parsimony Fit | | | |
| Parsimony Normed Fit Index (PNFI) | Large | **0.62** | **0.65** |
| Parsimony Goodness of Fit Index (PGFI) | Large | **0.63** | **0.62** |
| Model AIC | small | 559.51 | **327.56** |
| **Model CAIC** | small | 714.62 | **529.68** |

*The bold font means an acceptable fit to the data based on the criteria for a good fit of the second column.

### *Model modification*

In order to improve the fit of the original theoretical model, given that all the estimated parameters are significant, theory trimming (i.e., deleting non significant paths) seems to be a viable option (Pedhazur, 1982). Theory building (i.e., adding parameters based on the empirical results) also remains an option. The original model provides a poor fit to the data (i.e., X2=493.51, df=103, p-value=0.000, RMSEA=0.0113). With fixed of Employees' attitudes to IT and made negative covariance between some variables, improves the fit of the model (i.e., X2=241.56, df=93, p-value=0.000, RMSEA=0.073), and the modified model becomes a "reasonable and good" fit to the data. Some researchers divide the Chi-square by the numbers of degrees of freedom. A rule of thumb is that if this ratio is less than 2, it is considered well-fitted; it is considered acceptable if it is less than 3 and definitely not acceptable if greater than 5. In initial model, the value is 4.78 and in final model, value is 2.59, therefore, final

model is acceptable. Moreover, LISREL did not suggestion in modification Indices for improve of the model.

Managing of IT to improve QWL by path analysis: Depiction Initial model of path analysis: The first, Organization factors (OF) and the Quality of Information technology (IT) were considered as independent variables (exogenous variables) and Employees' attitudes to IT(EAIT), Employees' usage of IT (EUIT), Perceived usefulness of IT (PUIT) and QWL as dependent variables (endogenous). Then all possible relations between exogenous and endogenous variables were depicted. First, in this model the estimated quantity has to be obtained, then, through them we could calculate the raw marks of the variables and factors.

These estimates are raw quantity, as in the result, they are not comparable. Standard solution was used for recognising this theme in which the estimates in structural equations can measure the research concepts better and more precisely or to
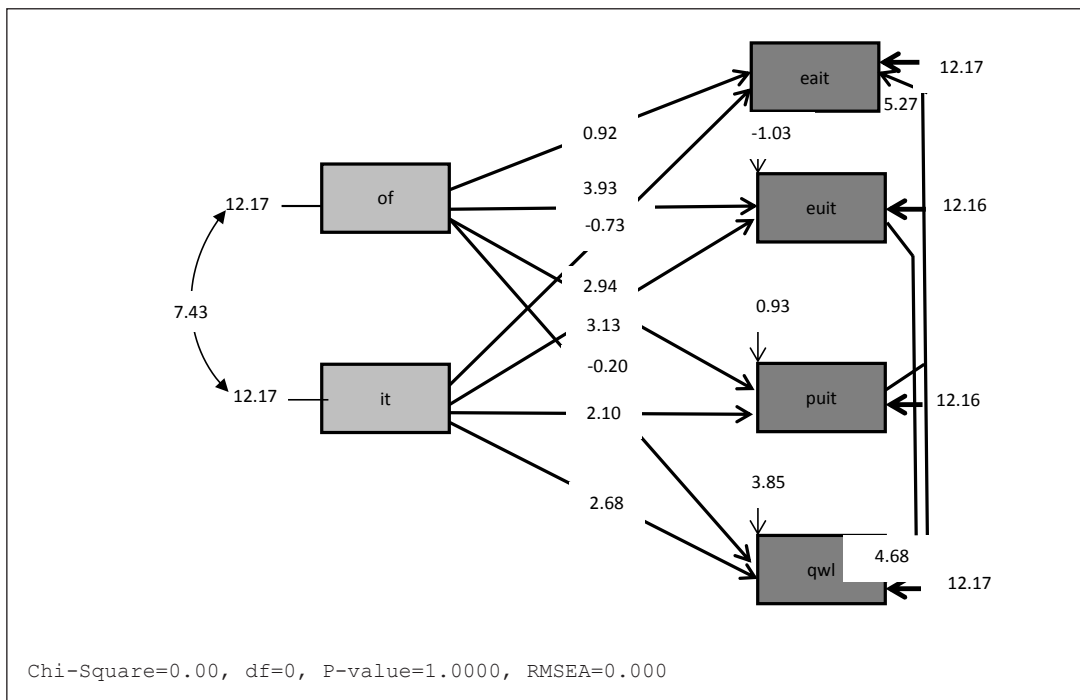


*Figure3.* Path di**ag**ram of initial model of managing IT to improve QWL (the numbers of paths represent T-value)

determine which factor has more effect. Initial model of path analysis with T-values shows that whether the relations between variables are significant or not. Quantity less than 2 (T-value < 2) means that there is no signification relationship between the variables.

In figure 3 T- value < 2 is shown with red colour to indicate the lack of significant relation between the variables.

With regard to figure 3 Organization factors has a significant effect (t- value = 3.39) on Employees' usage of IT and effect (T- value = 2.94) on Perceived usefulness of IT, Organization factors also has a bi-directional relationship (T-value = 7.43). IT Quality has an effect (T- value = 2.10) on Perceived usefulness of IT, and an effect (T-value = 2.68) on QWL. Employees' attitudes to IT has an effect on Perceived usefulness of IT (t-value = 5.27), Employees' usage of IT has an effect on QWL (T-value = 4.68) and Perceived usefulness of IT has an effect on QWL (t-value = 3.85). Also with reference to figure … there is

no significant relationship between Organization factors with Employees' attitudes to IT and direct relationship with QWL. There is no significant relationship between IT with Employees' attitudes to IT, Employee's attitudes to IT with Employees' usage of IT, and Employees' usage of IT with Perceived usefulness of IT.

### Structural Equation

QWL = 0.0056*Employee attitudes to IT + 0.062*Employees using of IT + 0.032*Perceived usefulness of IT - 0.012*Organization factors + 0.16*Information technology Quality,
R² = 0.20

With regard to coefficients of Structural Equation, 20 percent of QWL's variance is explained by the Perceived usefulness of IT, Organization factors and IT Quality that is 80 percent of QWL's variance is not explained by the model. A summary of the output from LISREL for the initial model of managing IT for improve QWL is shown in table 6.

Table 6

*The Output from LISREL for Initial Model of Managing IT to Improve QWL*

| Direct relationship | Estimates | standardized solution | Standard Error | T-values | Significant |
|---|---|---|---|---|---|
| Perceived usefulness with Employee attitudes | 0.45 | 0.31 | 0.084 | 5.27 | Yes |
| Organization factors with Employee attitudes to IT | 0.59 | 0.06 | 0.64 | 0.92 | No |
| Information technology Quality with Employee attitudes to IT | -0.46 | -.056 | 0.63 | -0.73 | No |
| factors with Employees using of IT | -0.025 | -0.06 | 0.025 | -1.03 | No |
| Information technology Quality with Employees using of IT | 0.88 | 0.21 | 0.26 | 3.39 | Yes |
| Employees using of IT with Perceived usefulness of IT | 0.81 | 0.19 | 0.26 | 3.13 | Yes |
| Organization factors with PUIT | 0.096 | 0.06 | 0.10 | 0.93 | No |
| Information technology Quality with Perceived usefulness of IT | 1.30 | 0.19 | 0.44 | 2.94 | Yes |
| Employees attitudes to IT with QWL | 0.0056 | 0.06 | 0.0055 | 1.02 | Yes |

*(Continued)*

| Direct relationship | Estimates | standardized solution | Standard Error | T-values | Significant |
|---|---|---|---|---|---|
| Employees using of IT with QWL | 0.062 | 0.26 | 0.013 | 4.68 | Yes |
| Perceived usefulness of IT with QWL | 0.032 | 0.22 | 0.0083 | 3.85 | Yes |
| Organization factors with QWL | -.012 | -0.01 | 0.061 | -0.20 | No |
| Information technology Quality with QWL | 0.16 | 0.16 | 0.061 | 2.68 | Yes |

| Structural Equations | Error variance | R2 |
|---|---|---|
| Employee attitudes to IT = 0.45* Perceived usefulness of IT+0.59*OF-0.46*IT | 89.94 | 0.098 |
| Employees using of IT = -0.025* Employee attitudes to IT+0.88*OF+0.81*IT | 15.23 | 0.12 |
| Perceived usefulness of IT = 0.096* Employees using of IT+1.30*OFF+0.93*Information technology Quality | 42.97 | 0.091 |
| QWL=0.0056* Employee attitudes to IT+0.062* Employees using of IT+0.032*Perceived usefulness of IT-0.012*OF+0.16*IT | 0.80 | 0.20 |

**Testing Model**

The initial model of managing IT to improve QWL has a good fit. That is, Degree of Freedom = 0. Minimum Fit Function Chi – Square = 0.00 (P=1.00). Normal Theory Weighted Least Squares Chi-Square = 0.00 (P = 1.00). The Model is saturated, the Fit is perfect.

Final model of managing IT to improve QWL

For depiction of the final model, all the paths in the initial model where their t-value were less than 2 (t-value<2) are omitted. On the other hand, Employees' attitudes to IT (EAIT) have a direct relationship with QWL, but there is no relation with perceived usefulness of IT (PUIT) and employees' usage of IT (EUIT) which are the independent variables. And step by step the paths have been recalculated by LISREL software. All relations are shown as 4.35with their standardized solution and t-values.

Relation Organization factors with Employees' usage of IT is 0.20 and with Perceived usefulness of IT is 0.17, IT Quality with Employees' usage of IT, Perceived usefulness of IT and QWL are 0.19, 0.15 and 0.16, Employees' attitudes to IT with Perceived usefulness of IT is 0.28 and Perceived usefulness of IT with QWL is 0.24. On the other hand, there is bi–directional relationship between independent variables; Organization factors with IT Quality 0.48, Organization factors with Employees' attitudes to IT is 0.12 and IT Quality with Employees' attitudes to IT is 0.06.

Final model of path analysis with t-values is shown in figure 4.

With regard to figure 4.36 Organization factors has a significant effect (T- value = 3.29) on Employees' usage of IT and effect (T- value = 2.75) on Perceived usefulness of IT, OF also has a bi-directional relationship (T-value = 7.42) with IT Quality and (T-value = 2.05) with Employee's attitudes to IT. IT has an effect (T-value = 3.12) on Employees' usage of IT  and (T- value = 2.42) on Perceived usefulness of IT, also an effect (T-value = 2.81) on QWL. Employees' attitudes to IT has an effect on Perceived usefulness of IT (T-value = 5.23), Employees usage of IT has an effect on QWL (T-value = 4.67) and Perceived usefulness of IT has an effect on QWL (T-value = 4.37).
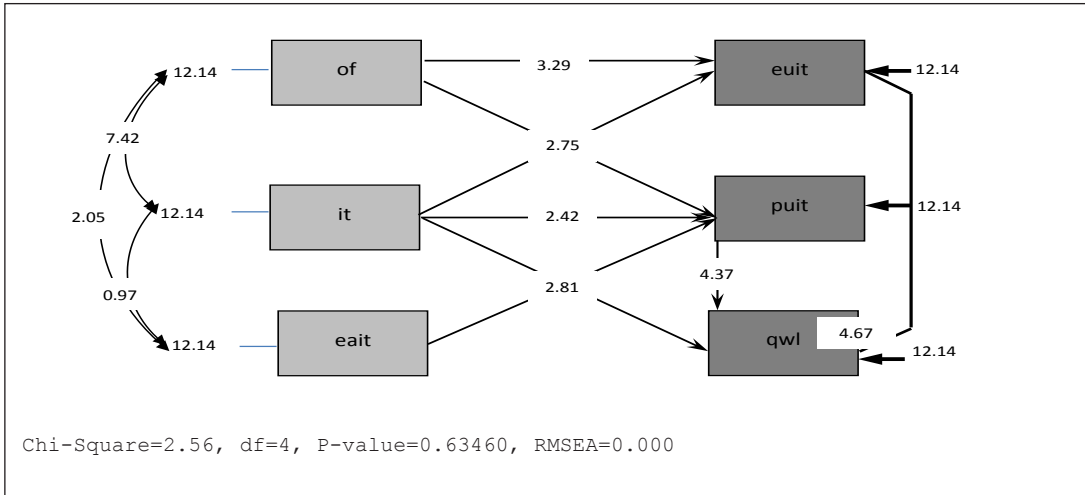
*Figure 4.* Path diagram of final model of managing IT to improve QWL (the numbers of paths represent T-value)

With regard to figure 4.36 Organization factors has a significant effect (T- value = 3.29) on Employees' usage of IT and effect (T- value = 2.75) on Perceived usefulness of IT, OF also has a bi-directional relationship (T-value = 7.42) with IT Quality and (T-value = 2.05) with Employee's attitudes to IT. IT has an effect (T-value = 3.12) on Employees' usage of IT and (T- value = 2.42) on Perceived usefulness of IT, also an effect (T-value = 2.81) on QWL. Employees' attitudes to IT has an effect on Perceived usefulness of IT (T-value = 5.23), Employees usage of IT has an effect on QWL (T-value = 4.67) and Perceived usefulness of IT has an effect on QWL (T-value = 4.37).

Structural Equation: QWL = 0.061*Employees' usage of IT+ 0.034*Perceived usefulness of IT + 0.16*Information technology Quality, R² = 0.20 With regard to coefficients of Structural Equation, 20 percent of QWL's variance is explained by Employees'usage of IT, Perceived usefulness of IT, Organization factors and IT that is 80 percent of QWL's variance is not explained by model.

A summary of the output from LISREL with their Covariance Matrix, Total Effects of X on Y, Indirect Effects of X on Y and Total Effects of Y on Y for the final model of managing IT to improve QWL is shown in table 7.

Table 7

*The Output from LISREL for Final Model of Managing IT to Improve QWL*

| Direct Relationship | Estimates | Standardized Solution | Standard Error | T- Values | Significant Level |
|---|---|---|---|---|---|
| OF with EUIT | 0.85 | 0.20 | 0.26 | 3.29 | Yes |
| IT with EUIT | 0.81 | 0.19 | 0.26 | 3.17 | |
| OF with PUIT | 1.15 | 0.17 | 0.42 | 2.75 | |

*(Continued)*

| Direct Relationship | Estimates | Standardized Solution | Standard Error | T- Values | Significant Level |
|---|---|---|---|---|---|
| IT with PUIT | 1.01 | 0.15 | 0.42 | 2.42 | Yes |
| EAIT with PUIT | 0.19 | 0.28 | 0.037 | 5.23 | Yes |
| EUIT with QWL | 0.061 | 0.25 | 0.013 | 4.67 | Yes |
| PUIT with QWL | 0.034 | 0.24 | 0.0037 | 4.37 | Yes |
| IT with QWL | 0.16 | 0.16 | 0.056 | 2.81 | Yes |

| Structural Equations | Error variance | $R^2$ |
|---|---|---|
| EUIT = 0.85*OF + 0.81*IT | 15.26 | 0.12 |
| PUIT = 1.15*OF + 1.01*IT+ 0.19*EAIT | 39.37 | 0.17 |
| QWL= 0.061* EUIT + 0.034* PUIT + 0.16*IT, | 0.80 | 0.20 |

Table 8

*Total and Indirect Effects of final model of managing IT to improve QWL*

| Total Effects of X on Y | Estimates | standardized solution | Standard Error | T- values |
|---|---|---|---|---|
| OF on EUIT | 0.85 | 0.20 | 0.26 | 3.29 |
| OF on PUIT | 1.15 | 0.17 | 0.42 | 2.75 |
| OF on QWL | 0.09 | 0.09 | 0.03 | 3.57 |
| IT on EUIT | 0.81 | 0.19 | 0.26 | 3.12 |
| IT on PUIT | 1.01 | 0.15 | 0.42 | 2.42 |
| IT on QWL | 0.24 | 0.24 | 0.06 | 4.24 |
| EAIT on PUIT | 0.19 | 0.28 | 0.04 | 5.23 |
| EAIT on QWL | 0.01 | 0.07 | 0.00 | 3.35 |
| Indirect Effects of X on Y | | | | |
| Organization factors on QWL | 0.09 | 0.09 | 0.03 | 3.57 |
| Information technology Quality on QWL | 0.08 | 0.08 | 0.02 | 3.36 |
| Employee attitudes to IT on QWL | 0.01 | 0.07 | 0.00 | 3.35 |
| Total Effects of Y on Y | | | | |
| Employees using of IT on QWL | 0.06 | 0.25 | 0.01 | 4.67 |
| Perceived usefulness of IT on QWL | 0.03 | 0.24 | 0.01 | 4.37 |

**Testing fit:** 1. Absolute fit. This model of relation of Its' success with QWL is based on 6 variables. The initial model therefore has df = 0. The final (modified) model has df = 4.

Table 9

*The Goodness of Fit Statistics for the Final Model of Managing IT to Improve QWL*

| Goodness of fit statistics | Criteria for good fit | Final model |
|---|---|---|
| 1. Absolute Fit | | |
| Degrees of Freedom (df) | | 4 |
| Minimum Fit Function X2 | X2 small; P above 0.5 | 2.57(p=0.63) |
| Normal Theory Weighted Least Squares X2 | X2 small; P above 0.5 | 2.56 (p=0.63) |
| Critical N (CN) | | 1541.38 |
| Root Mean Square Residual (RMR) | Below 0.05 | 0.45 |
| Standardized RMR | Below 0.05 | 0.015 |
| Root Mean Square Error of Approximation (RMSEA) | Below 0.10 | 0.0 |
| 90% Confidence Interval for RMSEA | | (0.0; 0.072) |
| p-value for Test of Close Fit (RMSEA<0.05) | Large | 0.86 |
| Goodness of Fit Index (GFI) | Above 0.9 | 1.00 |
| Adjusted Goodness of Fit Index (AGFI) | Above 0.9 | 0.99 |
| 2. Comparative fit | | |
| Normed Fit Index (NFI) | Above 0.9 | 0.99 |
| Non-Normed Fit Index (NNFI) | Above 0.9 | 1.02 |
| Incremental Fit Index (IFI) | Above 0.9 | 1.01 |
| Comparative Fit Index (CFI) | Above 0.9 | 1.00 |
| Relative Fit Index (RFI) | Above 0.9 | 0.96 |
| Expected Cross-Validation Index (ECVI) | Small | 0.13 |
| ECVI for Saturated Model | Small | 0.14 |
| X2 for Independence (Null) Model | Small | 243.52 (df=15) |
| 3. Parsimonious Fit | | |
| Independence AIC | small | 255.52 |
| Model AIC | small | 36.56 |
| Saturated AIC | small | 42.00 |
| Independence CAIC | small | 283.72 |
| Model CAIC | small | 116.71 |
| Saturated CAIC | small | 140.71 |

**Results of Research Hypothesis**

Results of this study indicated that the support for hypothesis 17. The findings of this study indicated that the Perceived usefulness of

IT have a significantly positive influence on Quality of Working Life. In summary, results of the path analysis for our research hypothesis are as shown below in table 10.

Table 10

*Result of Path Analysis for Research Hypothesis*

| Hypothesis | | Direct effect | | Indirect effect | | Total effect | |
|---|---|---|---|---|---|---|---|
| | | T-value | Result of test Accept | T-value | Result of test | T-value | Result of test |
| 1- | Information Technology success & QWL | 5.21 | Accept | - | - | 5.21 | Accept |
| 4- | Organization factors & IT Quality | 7.43 | Accept | - | - | 7.43 | Accept |
| 5- | Organization factors & Employeee attitudes to IT | 0.92 | Reject | - | - | 2.05 | Accept |
| 6- | Organization factors & Employees using of IT | 3.39 | Accept | - | - | 3.39 | Accept |
| 7- | Organization factors & Perceived usefulness of IT | 2.94 | Accept | - | - | 2.94 | Accept |
| 8- | Organization factors & QWL | -0.20 | Reject | 3.57 | Accept | 3.57 | Reject |
| 9- | IT Quality & Employee attitudes to IT | -0.73 | Reject | - | - | -0.73 | Accept |
| 10- | IT Quality & Employees using of IT | 3.13 | Accept | - | - | 3.13 | Accept |
| 11- | IT Quality & Perceived usefulness of IT | 2.10 | Accept | - | - | 2.10 | Accept |
| 12- | IT Quality & QWL | 2.68 | Accept | 3.36 | Accept | 4.24 | Accept |
| 13- | Employee attitudes to IT & Employees using of IT | -1.03 | Reject | - | - | -1.03 | Reject |
| 14- | Employee attitudes to IT & QWL | 1.02 | Reject | 3.35 | Accept | 3.35 | Accept |
| 15- | Employees using of IT & QWL | 4.68 | Accept | - | - | 4.68 | Accept |
| 16- | Perceived usefulness of IT & Employee attitudes to IT | 5.27 | Accept | - | - | 5.27 | Accept |
| 17- | Perceived usefulness of IT & QWL | 3.85 | Accept | - | - | 3.85 | Accept |

## Discussion

This study examined the relationship between IT and QWL in industrial organizations in Semnan, Iran. The empirical data collected is based on the perceptions and opinions of IT users. Path analysis and SEM were used to test our hypotheses. Results indicated that a positive relationship exists between IT and QWL. The analysis provided strong support for the model, with 15 of 17 hypotheses being supported. In particular, the results of SEM demonstrated that, of the eight independent variables (Organizational environment, IT management processes, information quality, system quality, service quality, Employee's attitudes to IT, Employees' usage of IT, Perceived usefulness of IT), only Employee's attitudes to IT could not measure IT's success though other variables proved good criterion for the measuring of IT's success. The eight dependent variables (Adequate and fair compensation, Safe and healthy working conditions, Immediate opportunity to use and develop human capacities, Future opportunity for continued growth and security, Social integration in work organization, Constitutionalism, The social relevance of working life and Work and the total life space), proved to be good criteria for the measuring of QWL. Also SEM showed that IT's success has a significant effect on QWL in industrial organizations in Semnan province.

Path analysis was used to test the research model – managing IT for improving the QWL-. The study used theoretical and empirical evidence to propose a model and then validate it by using quantitative data from industrial organizations in Semnan. The model was validated by path analysis and showed the framework which suggests the factors of the information systems which impact the service quality directly and the factors that impact it indirectly. The results have demonstrated that the quality of the system, the quality of the information, and employee's IS characteristics influence employee's IS performance, which, in turn, affects the quality of the service quality. Therefore, it is important to note that a change in the QWL of employees can be a result of the effects of the quality of the information, the quality of the system, or employee's IS characteristics on employee's IS performance. On a side note, technical support has shown to have a direct effect on the quality of the service.

## Contributions and Implications

This study provides several important implications for IT/IS's success in research and management. A primary aim of our work was to initiate a stream of work to develop and validate a generic instrument for measuring the Its' success and the QWL.

This research represents a significant effort at integrating varied but complementary literature as well as, to develop a theory in a new and important area of IT research. It is hoped that the results will advance the understanding in this area of IT research, i.e. managing information technology for the QWL. The research also attempts to provide insight for IT professionals on how to manage information technology in order to improve the QWL in their organizations.

Results of the current study reflect a favourable view of the impact of IT on the QWL. The measures and variables included in the model represent a sample of the many variables and constructs available to researchers at IT and QWL.

In fact, the results of the study can provide managers with useful information about the planning of IT for improving the QWL .The present study has proposed and validated an integrative and parsimonious framework that not only explains the impact that information Technology has on the QWL, but also provides a framework that might be used, with some modification, to explain the impact that Information Technology has on the QWL in other industries.

## Limitations and Suggestions for Future Research

Limitations: The investigation of IT's success on the QWL is relatively new. The discussed findings and their implications were obtained from one single study that examined some particular components of IT's success and the QWL and targeted IT users in the industrial organizations in one province of Iran only. Thus, caution needed in generalizing these findings, or in relating them to a discussion of other organizations.

Since surveying on the effect of IT's success on the QWL is new, we lack previous studies and secondary materials. Also, IT/IS's success is widely acknowledged as difficult to measure. Hence, there is no single standardized measure for IT/IS's success, and it is therefore difficult to identify the full dimensions of IT/IS's success and the causal relationship between them.

Suggestions: While this study presents some interesting findings, it has some obvious limitations which can be addressed in future research:
- The empirical model proposed in this work is a preliminary method that requires extra testing. Additional research efforts are needed to evaluate the validity of the investigated model. For example longitudinal evidence might enhance our understanding of the causality and interrelationships between variables of IT's success and their effects on the QWL.

The sample used here was from Iran. It may be possible that the findings could be extrapolated to other countries: in future research, a sampling frame that combines firms from different countries could be used in order to provide a more international perspective view on the subject.

In this study we have used Confirmatory factor analysis for variables of IT and the QWL; it may be better to use Exploratory factor analysis to determine the IT and the QWL variables in other studies.

## References

Avgerou, C. (2000). IT and organizational change: An institutionalist perspective. Journal VIT and people, 13(4), 234 -262.

Bharati, P.,& Berg, D. (2003).Managing information systems for service quality: A study from the other side. Information Technology & People, 16(2),183-202.

Bollen, K. A., & Long, J. S. (1993).Testing structural equation models. Newbury Park, CA: Sage.

Brown, I., & Jayakody, R. ( 2008). B2C e-Commerce Success: a Test and Validation of a Revised Conceptual Model. The Electronic Journal Information Systems Evaluation, 1(3), 167 - 184.

Chandio, F. H. (2008). Evaluating User Acceptance of Online Banking Information Systems: An Empirical Case of Pakistan. Brunel University West London.

Davis, F. D. (1993). User acceptance of information technology: System characteristics, user perceptions, and behavioral impacts. International Journal of Man Machine Studies, 3(8), 475-487.

Davis, F. D. (1989). Perceived usefulness, perceived easy of use, and user acceptance of information technology. MIS Quarterly, September, 319-40.

Davis, F. D., & Venkatesh, V. (1996). A critical assessment of potential measurement biases in the technology acceptance model: Three experiments. International Journal of Human-Computer Studies, 4(5), 19-45.

DeLone, W. H., & McLean, E. R. (1992). Information systems success:the quest for the dependent variable. Information Systems Research, 3(1), 60-95.

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten year update. Journal of Management Information Systems, 19(4), 9–30.

East, R. (1997). Consumer Behavior: Advances and Applications in Marketing. Prentice Hall, Hertfordshire, UK.

Elpez, I., & Fink, D. (2006). Information Systems Success in the Public Sector: Stakeholders' Perspectives and Emerging Alignment Model. Informing Science and Information Technology, 3(1), 219-231.

Gable, G., & Rai, A. (2009). Reconceptualising the Information System as a Service, In: Proceedings of the 17th European Conference on Information Systems. University of Verona Polo Zanotto, Verona, 8(10).

Gefen, D., & Straub, D. (2000).The relative importance of perceived ease of use in IS adoption: a study of e-commerce adoption. Journal of the Association for Information Systems, 1(8), 1-28.

Gros, C., Mueller, H., & Lovis, C. (2005), Evaluating user interactions with clinical information systems: A model based on human–computer interaction models. Journal of Biomedical Informatics, 38(1), 244–255.

Heo, J., & Han, I. (2003). Performance measure of information systems (IS) in evolving computing environments: An empirical investigation. Information and Management, 40(4), 243–256.

Irwin, B., & Ruwanga, J. (2008). B2C e-Commerce Success: A Test and Validation of a Revised Conceptual Model.www.ejise.com.

Kettinger, W. J., & Choong C. L. (1995). Perceived Service Quality and User Satisfaction with the Information Services Function", Decision Sciences, 25(5-6), 737-766.

Land, F. (1994). The Management of Change: Guidelines for the Successful Implementation of Information Systems. In: Computer-Supported Cooperative Work: The multimedia and networking Paradigm. Scribener S.A. R. (ed), pp. 273-286.

Lu, H. P., & Wang, J. Y. (1997).The Relationship between Management Styles. User Participation, and System Success over MIS growth stages. Information & Management, 32(3), 203-213.

Molla, A., & Licker, P. S. (2001).E-commerce systems success: An attempt to extend and respecify the DeLoneand McLean model of IS success. Journal of Electronic Commerce Research, 2(4), 1–11.

Myers, B. L., Kappelman,L. A. & Prybutok, V. R. (1998).A Comprehensive Model For Assessing The Quality And Productivity Of The Information Systems Function: Toward A Theory For Information Systems Assessment. Information Resources Management Journal, 10(1), 6-25.

Namakula, S., & Mayoka Kituyi, G. (2014). Examining Health Information Systems Success Factors in Uganda's HealthcareSystem. Journal of global healthcare system, 4(1), 1-16.

Nelson, R. R., Todd, P. A., & Wixom, B. H., (2005). Antecedents of Information and System Quality: An Empirical Examination within the Context of Data Warehousing. Journal of Management System, 21(4), 199-235.

Newstorm, J., & Davis, K. (1993), Organizational Behavior; Human Behavior at work. McGraw-Hill. Inc.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple item scale for measuring consumer perceptions of service quality. Journal of Retailing, 64(1), 12–40.

Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnila, S. (2004). Consumer acceptance of online banking: an extension of the technology acceptance model. Internet Research, 14(3), 224-235.

Pitt, L. F., Watson, R. T. & Kavan, C. B. (1995).Service quality: A measure of information systems Effectiveness. MIS Quarterly, 19(2), 173-187.

Rai, A., Lang, S. S., & Welker, R. B. (2002). Assessing the validity of IS success models: An empirical test and theoretical analysis. Information Systems Research, 13(1), 50–69.

Saunders, C. S., & Jones, J. W. (1992). Measuring Performance of the Information Systems

Function. Journal of Management Information Systems, 8(4), 63-73.

Seddon, P., & Kiew, M. (1994). A Partial Test and Development of DeLone and Mclean's Model of IS Success. Australian Journal of Information Systems, 4(3), 66-88.

Seddon, P.B. (1997). A Respecification and Extension of the DeLone and McLean Model of IS Success. Information Systems Research, 8(3), 240-253.

Schermerhorn, R. (2005. Management. John Wiley and sons / INC.

Seen, M., Rouse, A., & Beaumont, N. (2004). Explaining and predicting information systems acceptance and success: An integrative model. In Winter, Robert and Osterie, Hubert (eds), ECIS2007 Conference Proceedings, University of St. Gallen, Switzerland, 1356-1367.

Swarnalatha, K. (2014). An Analytical Study of Quality of Work Life of theMiddle Level Managers in Service Industries in Tamil Nadu. The International Journal of Management, 3(1), 77-81.

Torkzadeh, G., & Doll, J. W. (1999). The development of a tool for measuring the perceived impact of information technology on work. OMEGA, 27(3), 327–39.

Vijaimadhavan, P., & Raju, V. (2013). An Empirical Study on relationship among Quality of work life and its factors. Journal of Business and Management, 12(3), 20-28.

Walton, R. E. (1973). Quality of working life: What is it?. Management review, 15(1).

Wang, H. A. (2000). Opportunities to enhance a commercial Web site. Information and Management, 38(1), 15–22.

Webster, F. (2001). A new politics?In Culture and politics in the information age. Edited by Frank Webster, London: Routledge.

Wu, J., & Wang, Y. (2006). Measuring KMS success: A respecification of the DeLone and McLean's model", Information & Management, 43(1), 728–739.