# IDENTIFICATION OF ASPECTS AND FACTORS AFFECTING THE IT UTILIZATION WITH HUMAN RESOURCES EMPOWERMENT APPROACH IN EDUCATION

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## ABSTRACT

With regard to the trend of globalization, organizations have no choice but to join global networks, and the requirement to do so is to create necessary readiness, which is an inevitable necessity, in every way. One of the tools needed to be prepared is the IT factor by utilization of which we will be able to travel this path faster. Nowadays, information technology and its unique role in educational systems is something that has attracted the minds of managers, policy-makers and administrators of the world's educational systems. The purpose of this study is to identify the aspects and factors affecting the IT utilization in Education. In this study, Delphi method and library method were used to collect data. In terms of the nature of the data, this research is a qualitative one. Therefore, key aspects and factors influencing the IT utilization in Education have been identified firstly by studying books, references, papers, previous research and related models and discovering the meanings, attitudes, priorities and researchers' perceptions regarding the aspects and factors influencing the IT utilization were conducted using analysis of content method.

 In this method, initial codes were extracted by repeatedly reviewing related papers and research at the first step. Different codes were categorized in the framework of (secondary) sub-contents at the second step. Reviewing the contents was made at the third step. This step involved two stages of reviewing and refining the contents. The first stage involves a review at the level of coded abstracts and the second one involves the validity of the contents in relation to the dataset. In the next step, the contents were named according to their semantic relationship with the theoretical foundations of the research. At the last step, based on all the contents identified, a more general classification was made based on the level of their analysis that led to the creation of the main content and finally the target question was answered based on the findings resulted from this analysis. To answer the research question, 72 contents were extracted by repeatedly reviewing related papers and research. After extracting the metrics, the researcher classified the metrics in searching for the factors, with the assumption of how different primary metrics could be combined to create the factors, and the factors were identified by combining them. After generating the factors based on primary extracted codes (metrics), the researcher classified the metrics in searching for the components, with the assumption of how the factors could be combined to create the factors, and has identified the factors by combining them. Finally, the researcher has categorized the factors and identified the main aspect by combining them. The statistical population of this research includes IT and human resources managers and involved persons of General Office for Education of Fars province that were selected by cluster random sampling method. As a result of the analysis, IT components are: hardware infrastructure, software infrastructure, security, information systems, IT applications, juridical-legal-ethical, human resource, organizational structure, managerial-political, environment, financial-economic and social- cultural.

## Introduction

Zimbabweanski (2012) believes that the development and influence of information and communications technology in the context of social, economic, political, and technological infrastructures have altered the activities' nature of social entities, businesses and even the government, resulting in the formation of a new type of societies under the title of informative societies. Eunice et al. (2013) believe that the comprehensive ICT infrastructure in informative societies provides a basic and facilitating platform for the development of a variety of electronic application spaces and a wide range of electronic value-added services with the different groups of the users' community. According to Riazi (2007), human life has improved from the era of mass production to communications and information, and the evolutionary movement of the countries around the world towards informative and knowledge-based societies has affected all economic, cultural, industrial, and political processes and activities, and social relations. The structural framework that constitutes this era is the production, processing, transfer, and management of information and communications in order to create individual, group, organizational, and countrywide knowledge and recognition bases. Metzok & Schreider (2008) state that in the current world, information and communications are valuable assets for any organization and can play a significant role in enhancing the growth of organizations. Indian Charles notes in his book i.e "The Empty Rain Coat" on 1995 that "the focused wisdom of technical knowledge and the ability to acquire and apply the knowledge is a new source of wealth".

Undoubtedly, information technology has had a unique role in the development and growth of different sciences and creation of connection among different scientific disciplines in a way that it can be said that it is not currently limited to the border of a particular country and interconnects the different communities around the world and has put together in a single unit, and it seeks to overcome the problems by utilizing different sciences and linking them. Research results show that the countries, which have utilized new technology in the field of education in a reasonable and desirable way, have eliminated or reduced most of their training problems. Using new information's capabilities can be an effective step towards the Education reforms program. Having capable, creative, and deserved human resources is among the top competitive priorities for the current organizations and it will not be possible unless the organization's human resources is seen as a strategic unit (department).

Importance and substantial and serious role of information technology and its relation to human resources empowerment in Education, several existing problems in information technology system and enterprise resources planning in Education, old-fashioned software and Education programs and the problems resulted from these issues, which have involved all departments of Education, have prompted the researcher to help the officials and involved persons of Education by doing this research, and thus this research, which is adopted from a PhD thesis in human resource management field, attempts to recognize the aspects and factors affecting the IT utilization in Education and to help the persons in charge of Education to provide development and excellence of the Education by improving and enhancing the identified components.

## Methods

This research is a research and developmental one in terms of purpose in one perspective since a specific uncertain situation was first identified and the conceptual framework was formulated based on the research findings. And from another perspective, with regard to the fact that the purpose of the present study is to develop applied knowledge in a particular context, this research can be considered as an applied research. In terms of the data nature, this research is a qualitative one. In other words, the content analysis method was used in this study to identify the desired components in order to identify the aspects and factors affecting the IT utilization in Education. Content analysis is a process to analyze textual data and converts scattered and diversified data into rich and detailed data (Braun & Clarke,

2006). The thematic analysis is somewhat similar to the content analysis, but with subtle differences. Content analysis focuses mainly on the micro level and often represents the data abundance and provides the quantitative analysis of qualitative data. One of the drawbacks of the content analysis is that either the data context is usually ignored or little attention is paid, and this makes the data richness get reduced greatly. However, in thematic analysis, the unit of analysis is more than a word or a term, and more attention is paid to the context of the data and their subtle notes. In addition, thematic analysis goes beyond counting obvious words and terms and focuses on identifying and explaining explicit and implicit ideas. The main themes codes are then used for a more in-depth data analysis (Namey et al., 2007). Therefore, the thematic analysis is not dependent on a pre-existing theoretical framework and can be applied in different theoretical frameworks and for different affairs. The thematic analysis can be divided into different types based on different categorizations. In terms of theme recognition time, it is divided into primary and final thematic analysis. Initial thematic analysis is known in the early stages of research, and the present study is considered as a primary thematic analysis, too. In terms of the nature of the theme in the text, the thematic analysis is divided into descriptive, interpretive, and relational types and the thematic analysis at the present research is in descriptive and interpretive type since in this study, on the one hand, the thematic analysis describes what is stated in the text in the same way and on the other hand, interprets it if necessary. In terms of the visibility of the theme in the text, the thematic analysis is divided into the types of visible and latent. The visible thematic analysis is directly visible in the text but the latent thematic analysis is not directly visible in the text and its text should be extracted according to the text concept. In this study, the thematic analysis is both visible and latent in terms of the visibility of the theme in the text. In terms of theme identification, thematic analysis is divided into data-driven and theory-driven types. Data-driven thematic analysis is recognized based on research data. However, theory-based thematic analysis is recognized based on theories and researches. Since the present research is based on the theories and researches of the researchers, it is considered to be theory-based thematic analysis. Therefore, in the present study, the thematic analysis is theory-based in terms of theme's cognition origin. The level of analysis represents the level and scope that the researcher chooses to analyze the theoretical concepts and information gathered, so that the inferred results can only be generalized at that level and generalization of the results obtained at the levels lower or higher than the level selected for the analysis is invalid. In the present study, aspects and factors affecting IT utilization were identified by the researchers' perception (which was determined through analyzing the theme of patterns, models, and related papers).

In the present study, library methods were used for data collection. The data used in the research may be primary or secondary. The researcher acquires the primary data as first-hand and most often through observation, questionnaire, and interview. Secondary data are obtained from other sources in different ways. These data were created and available before the researcher begins the research. Therefore, in order to build an initial conceptual model of the research, first of all, key aspects and factors influencing the IT utilization were identified through library study (study of books, references, papers, previous research and related models), and discovering the meanings, attitudes, priorities and perception of researchers about the aspects and factors affecting the IT utilization was conducted using thematic analysis method. The following steps were taken to analyze the content of papers, models and related research:

- The unit or level of analysis was decided: The unit of level is the organization.
- Relevant concepts were identified and defined: aspects and factors affecting IT utilization in Education
- The coding rule was formulated.
- The information existing in papers and researches were reviewed.
- Information were coded and set.
- The results were analyzed.

Thematic analysis method was used to identify, analyze and report the patterns existing in related papers and research in order that the aspects and factors affecting the IT utilization in Education could be identified. Thematic analysis goes beyond counting explicit words and phrases and focuses on

identifying and explaining explicit and implicit ideas. Finally, sixty-nine papers and studies, which were explicitly or implicitly related to the concepts under study, were analyzed and the following steps were taken:

There are different ways to analyze the theme, each of which follows specific processes. In this thesis, a comprehensive step-by-step process for the theme analysis is presented by combining King & Horrocks (2010) proposed method. In this section, the thematic analysis process is introduced in three stages, six steps and twenty actions. As shown in Table (1-1) below, the entire thematic analysis process can be divided into three major stages: (a) text analysis and description, (b) text interpretation and explanation, and (c) text re-integration. While all these stages are accompanied by interpretation and analysis, a higher level of abstraction is achieved at each stage of the analysis. The thematic analysis process begins when the analyst seeks to identify patterns of meanings and themes in the data, although this may occur during the data collection. The end point of this process is also to provide a report on the content and meanings of patterns and themes in the data. In addition, analysis is a process that takes place over time and should not be conducted in rush. Writing is also an essential part of the process that starts from the very first step and continues until the final step. Table 1-1 provides an appropriate way to identify and discover themes in the research text from the perspective of Ryan & Bernard (2000).

**Table (1-1):** Thematic (content) analysis process

| Stage | Step | Action |
|---|---|---|
| Analysis and description of the text | 1- Getting familiar with the text | - Writing data<br>- Initial study and data re-study<br>- Writing initial ideas |
| | 2- Creating primary codes and coding | |
| | 3- Searching and recognizing the themes | |
| Text interpretation and description | 4- Drawing the themes' network | -Checking and controlling the consistency of themes with extracted codes<br>- Sorting the themes<br>-Choose basic, organizing and comprehensive themes<br>- Drawing themes maps<br>Modifying and confirming themes' networks |
| | 5- Analyzing the themes' network | |
| Text integration and combination | 6- Providing report | - Abstracting the themes' network and its concise and explicit expression<br>-Extracting the interesting samples of data |

| | | - Relating the results of the analysis to the research's questions and theoretical foundations |
|---|---|---|
| | | |

The statistical population of this study includes the stakeholders and managers of Information Technology and Human Resources of General Office for Fars Province Education. Since Fars province's Education has the largest number of educational districts in the country and covers a wide range of low-income to high-income areas, it is typically the most extensive Education in the country. In addition, a considerable number of distance education schools are located in the province and, in a sense, Fars province can be called small Iran. Conducting the present research in this province can be considered as an evaluation pilot and it can also be used as the test sample's run site. Therefore, the statistical population was selected with regard to the above-mentioned cases and considering the availability and familiarity of the researcher with the province Education and sufficient recognition of its organizational environment. Considering the acceptable error of 5% and confidence level of 95%, the sample size required to perform the survey is equal to 136 individuals according to the Cochran sampling table. With regard to the rate of questionnaires return, 155 questionnaires were distributed, the 141 pieces of which were returned completely and correctly and analyzed. A multi-stage cluster random sampling method was used to select the subjects. In summary, this research can be considered as a fundamental positivist paradigm in terms of philosophy, purpose, and procedure, and as qualitative in terms of research page, and as descriptive (non-experimental) in terms of data collection method. The required information have been collected through library study method, thematic analysis and Delphi method.

## Data analysis

Data collection tool is thematic analysis in this research and therefore, the qualitative findings are based on the analysis of the data collected from the thematic analysis, which have been analyzed accordingly. In this method, initially in the first step, the initial codes were extracted by repeatedly reviewing the related papers and research. Different codes were categorized into (secondary) sub-themes in the second step. The themes were reviewed in the third step. This phase (stage) consisted of two stages of reviewing and refining the themes.

The first stage consisted of a review at the level of encoded abstracts, and the second stage involved the validity of the themes in relation to the dataset and the themes were then named according to their semantic relevance to the theoretical foundations of the research. Finally, a more general classification was made based on their level of analysis according to all identified themes, which led to the creation of the main themes. The research question is then answered at the findings of this analysis.

Research Question: What are the aspects and factors affecting the IT utilization in the Education?

To answer the above question, 72 themes have been extracted by repeated study of related papers and research and are presented in Table 2-1.

**Table (2-1):** Primary themes of IT in the Education

| | |
|---|---|
| A1 | Broadband of local area network access |
| A2 | Broadband of internet access |
| A3 | Number of telephone (landline) lines per person |
| A4 | Number of computers per person |
| A5 | Quality of technical-telecommunication services support |
| A6 | Reliability of access to computer services |
| A7 | Quality of network hardware equipment |

| | |
|---|---|
| A8 | Influence and access to local area network |
| A9 | Access to mechanized information of organization |
| A10 | Influence and access to internet, intranet and extranet |
| A11 | Easy access to information without time and geographic constraints |
| A12 | Easy access to information without time and geographic constraints |
| A13 | Information security hardware infrastructure |
| A14 | Information security software infrastructure |
| A15 | Authentication mechanism |
| A16 | Data verification mechanism |
| A17 | Confidentiality mechanism |
| A18 | Access Control Mechanism |
| A19 | Office Automation |
| A20 | (TPS) Information Systems |
| A21 | (MIS) Management Information Systems |
| A22 | SCM Integrated and comprehensive information system |
| A23 | ERP Integrated and comprehensive information system |
| A24 | CRM Integrated and comprehensive information system |
| A25 | Other information systems |
| A26 | Electronic commerce |
| A27 | Electronic Business |
| A28 | Electronic Advertising |
| A29 | Electronic Learning |
| A30 | Electronic logistics |
| A31 | Electronic marketing |
| A32 | Electronic payment |
| A33 | Other IT applications |
| A34 | Compliance with copyright law |
| A35 | Compliance with intellectual property law |
| A36 | Compliance with the law on cybercrimes prohibition |
| A37 | Compliance with e-commerce law and related laws |
| A38 | Compliance with e-government law |
| A39 | Compliance with the law on electronic consumers protection |
| A40 | Compliance with the law of ethics codes in computer services utilization |
| A41 | Compliance with ethical privacy of using the achievements of the others in IT area |
| A42 | Managers' information literacy of IT |
| A43 | Managers' skill literacy of IT |
| A44 | level of staff's information technology skill literacy (ICDL skills) |
| A45 | level of staff's information technology specialized literacy (related education) |
| A46 | Organizational structure readiness |
| A47 | Preparedness for change in organizational structure |
| A48 | The power of change in organizational structure |
| A49 | Lots of delegations |
| A50 | Quality of services of organizational unit responsible for IT development |
| A51 | Organizational commitment in the field of IT development |
| A52 | Organization's seriousness in the field of IT development |
| A53 | Quality of IT development strategy |
| A54 | Transparent plans and policies for IT development |
| A55 | Mechanized information exchange system |

A56 Quality of electronic communication with customers (electronic customers' satisfaction with electronic services

A57  Percent of electronic customers

A58  Quality of electronic communication with partners

A59  Percent of electronic communication with partners

A60  Quality of electronic communication with suppliers

A61  Percent of electronic communication with suppliers

A62  Revenue resulted from electronic exchanges

A63 Communication and utilizing the power of IT development supporter organizations (consultants etc.)

A64  Using outdoor electronic services (e-banking, e-government)

A65  Organization's financial capability to deploy IT

A66  Organization's financial capability for IT development

A67  Organization investment for IT deployment

A68  Organization investment for IT development

A69  Dominant organizational climate of "public acceptance level"

A70  Cultural and social infrastructure readiness

A71  Employees' shared beliefs about the necessity to utilize IT

A72  Managers' beliefs about the necessity to utilize IT

After extracting the metrics, the researcher classified the metrics in searching for the factors, with the assumption of how different primary metrics could be combined to create the factors, and has determined the factors by combining them. Table (3-1) shows axial encoding in the factor identification framework.

**Table (3-1):** The basic concepts extracted in open encoding stage

| code | Factor's description or concept | Index |
|------|-------------------------------|-------|
| B1 | Quantity of network hardware equipment | A1, A2, A3, A4 |
| B2 | The quality of computer services | A5, A6, A7 |
| B3 | Access to local area network and organization's mechanized information | A8, A9 |
| B4 | Penetration and access to information networks | A10, A11, A12 |
| B5 | Hardware and software infrastructure of information security | A13, A14 |
| B6 | Security mechanisms | A15, A16, A17, A18 |
| B7 | Management information systems | A19, A20, A21 |

| B8 | Integrated and comprehensive information systems | A22, A23, A24, A25 |
|---|---|---|
| B9 | E-commerce and trade | A26, A27, A28 |
| B10 | Electronic services | A29, A30 |
| B11 | Electronic applications | A31, A32, A33 |
| B12 | Law on intellectual property and cybercrimes | A34, A35, A36 |
| B13 | E-government and trade laws | A37, A38, A39 |
| B14 | Ethical rules | A40, A41 |
| B15 | Level of skill and information literacy of managers | A42, A43 |
| B16 | Level of staff's IT expertise and literacy | A44, A45 |
| B17 | Readiness to change organizational structure | A46, A47 |
| B18 | The power to change in organizational structure | A48, A49 |
| B19 | Management readiness | A50, A51, A52 |
| B20 | organizational policies | A53, A54, A55 |
| B21 | Quality and quantity of electronic communication | A56, A57, A58, A59, A60, A61 |
| B22 | Communication and utilization of supporter organizations services | A62, A63, A64 |
| B23 | Financial capability for IT deployment and development | A65, A66 |
| B24 | The amount of investment to deploy and develop IT | A67, A68 |
| B25 | Cultural and social infrastructure | A69, |

| | | A70 |
|---|---|---|
| B26 | Beliefs of staff and managers | A71, A72 |

After generating the factors based on primary extracted codes (metrics), the researcher classified the codes in searching for the components, with the assumption of how the factors could be combined to create the components, and (the researcher) has specified the components by combining them. Table (4-1) shows the axial encoding in the components identification framework.

**Table (4-1):** The basic themes specified in axial encoding step

| Component's code | Component's theme | Combined factor's codes |
|---|---|---|
| C1 | Hardware infrastructure | B1,B2 |
| C2 | Software Infrastructure | B3,B4 |
| C3 | Security | B5,B6 |
| C4 | Organization's information systems | B7,B8 |
| C5 | IT applications | B9,B10,B11 |
| C6 | Juridical, legal and ethical | B12,B13,B14 |
| C7 | Manpower | B15,B16 |
| C8 | Organizational structure | B17,B18 |
| C9 | Political-managerial | B19,B20 |
| C10 | Environment | B21,B22 |
| C11 | Financial-economic | B23,B24 |
| C12 | Sociocultural | B25,B26 |

Finally, the researcher has classified the factors and specified the main aspect by combining them. These themes are at a higher level of abstraction than they were at the previous stage. The main theme identified are the aspects and factors of IT in Education. Table (5-1) shows the selected encoding in the aspects recognition framework.

**Table (5-1):** The main theme specified in the selected encoding step

| Aspect code | Aspect theme | Component's combined codes |
|---|---|---|
| D1 | IT | C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12 |

## Discussion and conclusion

The purpose of this study was to identify the aspects and factors affecting the IT utilization in Education by using content analysis method and therefore, extensive studies in books, papers, researches, previous research etc. was conducted while seeking advises of professors, elites and professionals in this area. While studying related references and literature, an investigation into national and international models, which have been supported highly by science and executives and have been implemented in different countries at national and international level, was made. In this regard, while reviewing previous research and related models, 69 models including UNDP, CID, APEC, CSPP, Oraei et al. (2013), Fathian and Sheikh (2011) were specially analyzed and the research components were identified and defined as follows:

The main themes are defined up next. Therefore, the aspects and factors affecting the IT utilization in Education are defined as follows: Information technology or its more complete phrase, i.e. information and communications technology in its modern sense, is a set of tools and methods is used for the production, dissemination, organizing, exchange, access, retrieval and dissemination of information by utilizing computer and communication networks and therefore, the components affecting the IT utilization in Education are: hardware infrastructure, software infrastructure, security, organization information systems, IT

applications, juridical, legal and ethical, manpower, organizational structure, political-managerial, environment, financial-economic, socio-cultural.

is related to IT applications component and the lowest one to financial-economic average.

## Descriptive findings

To analyze the collected data, first we describe the variables studied in the research at the descriptive level using descriptive statistical indices.

Table (6-1) shows the average and standard deviation of the studied variables.

As shown in the table above, in the IT aspect, the highest average

**Table** Average standard

**(6-1)** and

| Variable | Minimum score | Maximum score | Average | Standard deviation |
|---|---|---|---|---|
| Hardware infrastructure | 4.00 | 20.00 | 14.6454 | 2.79319 |
| Software infrastructure | 4.00 | 20.00 | 13.7092 | 3.40281 |
| Security | 4.00 | 20.00 | 12.8652 | 3.60599 |
| Organization's Information systems | 4.00 | 20.00 | 15.9787 | 3.37738 |
| IT applications | 7.00 | 35.00 | 28.9929 | 4.22492 |
| Juridical, legal and ethical | 6.00 | 30.00 | 26.5532 | 3.60441 |
| Manpower | 4.00 | 20.00 | 17.4681 | 2.63643 |
| Organizational structure | 4.00 | 20.00 | 17.1418 | 2.35912 |
| Political-managerial | 4.00 | 20.00 | 16.1844 | 3.04397 |
| Environment | 5.00 | 25.00 | 17.3050 | 3.44745 |
| Financial-economic Sociocultural Information Technology | 4.00 | 20.00 | 12.1348 | 3.57415 |
| Sociocultural | 4.00 | 20.00 | 13.0071 | 2.96286 |
| IT | 67.00 | 247.00 | 205.9858 | 22.36451 |

deviation of IT and its aspects

## KMO and Bartlett test table:

**Table (7-1)** KMO and Bartlett test results

| KMO statistics | | 0/883 |
|---|---|---|
| Bartlett test | $X^2$ | 10917/338 |
| | Degree of freedom | 630 |
| | Significance level | 0/000 |

Based on the results obtained, the test statistics qualify for the mentioned conditions, in which the KMO index is equal to 0.883 and greater than 0.7, and the Bartlett test is significant with respect to the amount of its level of significance indicating that the data are appropriate to conduct factor analysis.

The estimated path for IT index is presented in Figure (1-1) and the Figure (2-1) represents the t-statistic values for the IT index.
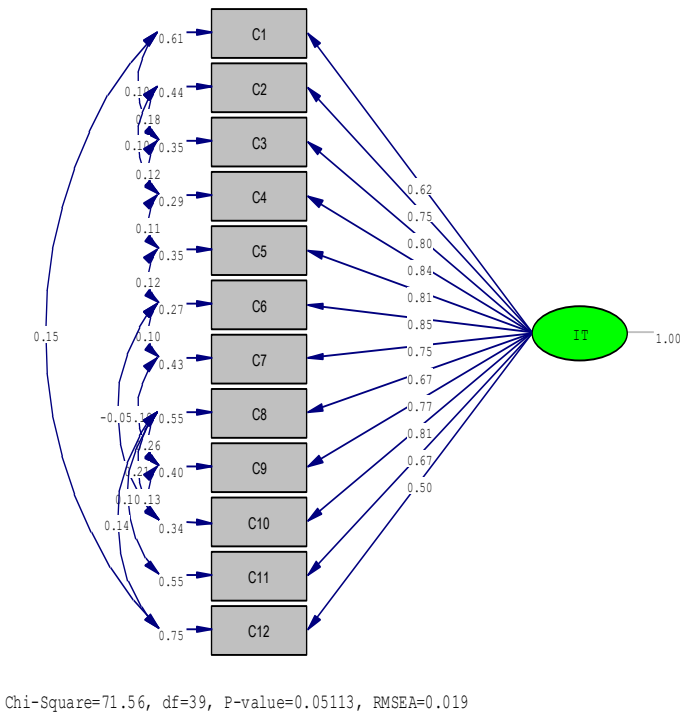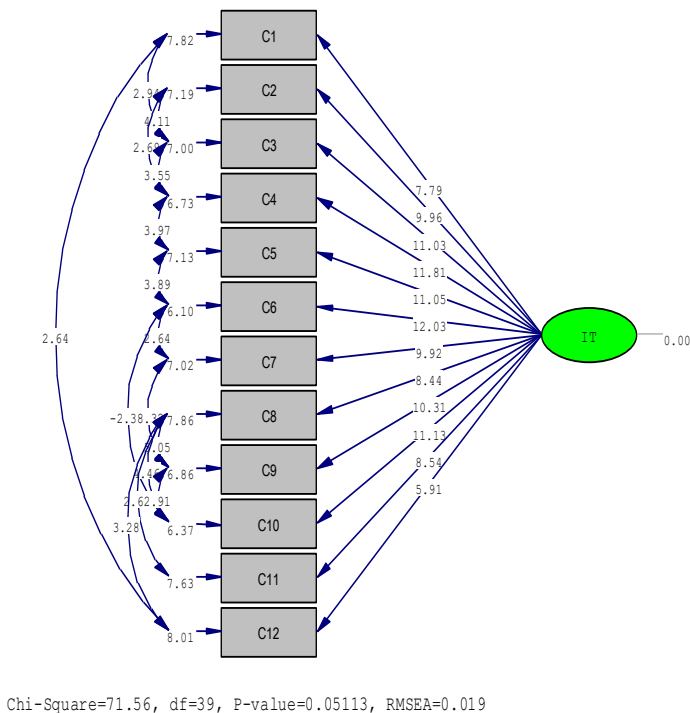


Chi-Square=71.56, df=39, P-value=0.05113, RMSEA=0.019

**Figure (1-1): Factorial loads of indices of information technology structure**



Chi-Square=71.56, df=39, P-value=0.05113, RMSEA=0.019

**Figure (2-1):** t statistical values for the IT structure

**Indices of goodness of fit of structural equations:**

**Table (8-1):** Goodness-of-fit indices of structural equations for information technology structure

| Item | Name | Desired amount | Calculated amount | Situation |
|------|------|----------------|-------------------|-----------|
| 1 | df/ χ2 | <3 | 1/834 | Favorable |
| 2 | RMSEA | <0.1 | 0/019 | Favorable |
| 3 | RMR | <0.1 | 0/028 | Favorable |
| 4 | NNFI | >0.9 | 0/98 | Favorable |
| 5 | NFI | >0.9 | 0/98 | Favorable |
| 6 | CFI | >0.9 | 0/99 | Favorable |
| 7 | AGFI | >0.9 | 0/94 | Favorable |
| 8 | GFI | >0.9 | 0/92 | Favorable |

Based on the findings of table (8-1), the information technology index of NNFI, NFI, CFI, AGFI and GFI are 0.98, 0.98, 0.99, 0.94 and 0.92, respectively which implies a favorable and appropriate fit of the model. RMR, RMSEA indices and chi square-to-degree of freedom ratio are equal to 0.028, 0.019, and 1.834, respectively, which confirms the favorable fit of the model.

**Table (9-1):** Results of an investigation into structural validity - information technology convergence Factors T-factor Aggregate Target Factor AVE Combined construct validity-convergent validity

| Item | Factorial load | T | Factorial load significance | AVE | Combined reliability | Structural validity-converge |
|------|----------------|-----|-----------------------------|-----|----------------------|-------------------------------|
| Hardware infrastructure | 0/62 | 7/79 | ☐ | | | |
| Software | 0/75 | 9/96 | ☐ | | | |
| Security | 0/80 | 11/03 | ☐ | | | |
| Organization' | 0/84 | 11/81 | ☐ | | | |
| IT | 0/81 | 11/05 | ☐ | 0/552 | 0/874 | ☐ |
| Juridical, | 0/85 | 12/03 | ☐ | | | |
| Manpower | 0/75 | 9/92 | ☐ | | | |
| Organization | 0/67 | 8/44 | ☐ | | | |
| Political- | 0/77 | 10/31 | ☐ | | | |
| Environment | 0/81 | 11/13 | ☐ | | | |

| Financial- | 0/67 | 8/54 | ☐ | | | |
|---|---|---|---|---|---|---|
| **Sociocultural** | 0/50 | 5/91 | ☐ | | | |

According to the Table (9-1), the factorial loads of the investigated items can be observed. As is shown in this table, all factorial loads of the items are greater than 0.4. In addition, since the value of t for all factorial loads is greater than 1.96, it can be said that all factorial loads are significant at 95% confidence level. Since the factorial loads are greater than 0.4 and significant; and the mean variance extracted is greater than 0.5, and the combined reliability value is greater than 0.7, the existence of convergent validity is confirmed for the information technology aspect..

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