



111 Testing the Validity of A Proposed Model for Measuring Human Resources Training in Libyan Banks *Using Confirmatory Factor Analysis*

Ali Ramadan Musbah¹, Dr. Nasser Habtoor² Ahmed Abdul Malik³

^{1, 2, 3} Faculty of leadership and Management, Universiti Science Islamic Malaysia (USIM).
Correspondence: Ali Ramadan Musbah, E-mail: alirm1975@yahoo.com

Abstract:

The current study aimed to test the validity of a proposed model for measuring human resources training in the public commercial banks and their branches in the Libyan context. The proposed model consisted of the training of human resources as a potential factor through three apparent factors (Knowledges, Capacities, Trends). In order to achieve this, the researcher used a Confirmatory Factor Analysis (CFA) through the Amos program (Amos 21.0). The study population represented the middle management including directors and heads of departments in the main six commercial banks in Libya and the branches of these banks (N= 402). The findings of the study showed that the proposed model was valid and reliable for measuring training of human resources in the public commercial banks.

Keywords: Knowledge, Capacities, Trends.

Introduction

For successful achievement of their wanted goals, organizations rely to a large extent on the human resources' efficiency of the performance, their abilities to produce products or services with a high quality as well as their adaptation to the modern technology used in the work. However, this cannot be achieved in reality only through constant training of human resources on the changes in developments and environments. Therefore, constant training of human resources, their capacity growth as well as developments represent the basis and the paths through which organizations can achieve their goals. The increasing trend towards specialization in the performance of businesses or work and the necessity for adaptation with modern and advanced technologies and changing circumstances in the successive business have led to increasing the need for employees training. These have also led to the emerging importance of human resource training as one of the most important functions that contribute to providing advanced levels and the effective capacity as well as ability to achieve good performance in work. Thus, human resource training is defined as a set of actions that allow members of a given organization to be in a state of readiness and preparedness permanently and advanced for their current and future jobs. It is also known as a set of programmed or well-planned activities that aim at enabling individuals and groups to gain or obtain collective knowledge, skills and attitudes that will assist them to adapt to the professional and social environment on the one hand, and on the other hand to achieve the effectiveness of the organization to which they belong. Based on such definitions, it can be said that training promotes or develops employees' knowledge and capacity as well as their attitudes towards new changing trends. This means that having provided employees with knowledge or skills through preparation, the training phase which is about the development of this knowledge and skills to perform and implement a specific job starts. In other words, this training phase aims at strengthening the abilities of the individual to the extent that he/she can perform his/her



work tasks better and more effectively. Hence, the current study is based on some the pillars, the aims of human resource training, which are presented as follows:

Knowledge and information development:

That is through training, employees' knowledge can be developed and they can be provided with information on the Organization's aims/objectives and policies and their information about the products offered by the organization and their markets can be updated. In addition, training enhances employees' knowledge of the procedures and systems of work within the organization, and it also increases employees' knowledge and information of the organization's plans and problems encountered when implementing such plans. Training also promotes employees' technical knowledge and methods as well as ways of production because of their constant renewal through training.

Development of skills and capacity:

that is through training, it becomes possible to develop employees' skills and capabilities necessary for performing various technical operations or tasks, develop skills that enable them to analyze and solve problems independently or without much reliance on others in making or taking decisions. Training also enables them to develop their skills in speech and debate or discussions as well as their capacity and management skills such as planning, organization and coordination, control and organization of work.

Development of attitudes:

Through training, organizations can develop or foster their employees' attitudes towards work preference in the organizations, their willingness as well as their motivation to work harder. Training can also develop employees' attitudes towards cooperation with the heads or managers and their workmates for the sake of developing a sense of responsibility and the spirit of collective work. In addition to these, training assists employees to develop an awareness of the value or importance of excellence in work and to develop a sense of feelings mutual benefit exchanges between them and their organization. Based on these, training can be described as attempt to enable the employees of a given organization at all levels to acquire or develop knowledge, skills and new behavioral patterns that assist them to use different methods and techniques in performing their work. In other words, such knowledge and skills make them behave differently after training from what they had followed or used or behaved prior to training. The outcome of this change is the development of human resources that are more capable and more productive and that can adapt to the new environmental circumstances while performing work and that can fulfill the requirements of work to a higher extent. Training also enables the organization to maintain its competitiveness and its human resources that are capable of coping with the requirements of the consumer's constantly changing market because the consumer's yesterday or past requirements are not the same as those of today. In this sense, training can support the organization's performance as well as the consumer satisfaction.

Research Objectives

The current study aimed to test the validity of a proposed model for measuring human resources training in the public commercial banks in Libya.

Method

Research Instruments

In this regard, it is relied upon the questionnaire as a tool to gather the necessary information for this study as one of the most suitable scientific research tools that achieve the survey study objectives and to obtain information and facts associated with a determined reality, for achieving the study, a questionnaire is made for the purposes of processing the studying test the validity of a proposed model for measuring human resources training.

Confirmatory Factor Analysis

The Structural Equation Modeling (AMOS) model-fitting program is used to test the validity constructs are to test the validity of a proposed model for measuring human resources training. The overall model fit is assessed by using four indices of the model goodness-of-fit: (1) the chi-square statistics; (2) the comparative fit index



(CFI); (McDonald & Marsh,1990), (3) the minimum value of the discrepancy between the observed data and the hypothesized model divided by degrees of freedom (CMIN/DF) or normed chi-square (Marsh & Hocevar,1985) described that the minimum fit function for CMIN/DF of an acceptable fit is between 2 and 5. (4) in addition (RMSEA) of between (.08) to (.10) indicates a mediocre fit (MacCallum et al., 1996), and would not employ a model a (RMSEA) greater than (.1) (>0.1) (Browne & Cudeck, 1993).

Construct Validity

The employment of factor loading composite reliability (CR) and average variance extracted (AVE) were proposed by (Hair, et al,2006) to determine the convergent validity if it equals to or greater than(.5) (≥ 0.5) and the composite reliability equals to or greater than (.7) (≥ 0.7) if were recommended by Hair et al,2006. In addition (AVE) reading values should be greater than (.5) (≥ 0.5).and greater than (Shared Variance – SV) .

Results:

The Modified Model

From Figure (1) that shows the results of the (CFA) for the proposed model for measuring human resources training, it is evident that the model is free of the illogical correlation since it reaches or exceeds the integer (1). This also indicates that there is not any problems in the (CFA) used for testing the validity of this model that comprises three factors: The first factor including the knowledges development, the second factor including the trends development and the third factor containing the Capacities development. As seen in Figure (1) and Table (1), the indicators of agreement between the model and the data exceeded the T-value, thus, implying that there is disagreement between human resources training and the data of the sample since the value of the Chi-Square was (307.482) and the degree of freedom was (62), and the level of significance was (P=.000). In addition, we can see that the normative Chi-Square (Chi-Square /degrees of freedom) was (4.959) which did not exceed (5) and the value of relative strength index (CFI) was (.897) less than the T-value (.90). The results also show that the value of the index (RMSEA) error square was (.095) being higher than (.080). Due to this contradiction between the model and the data, it was necessary to modify the human resources training model in this study.

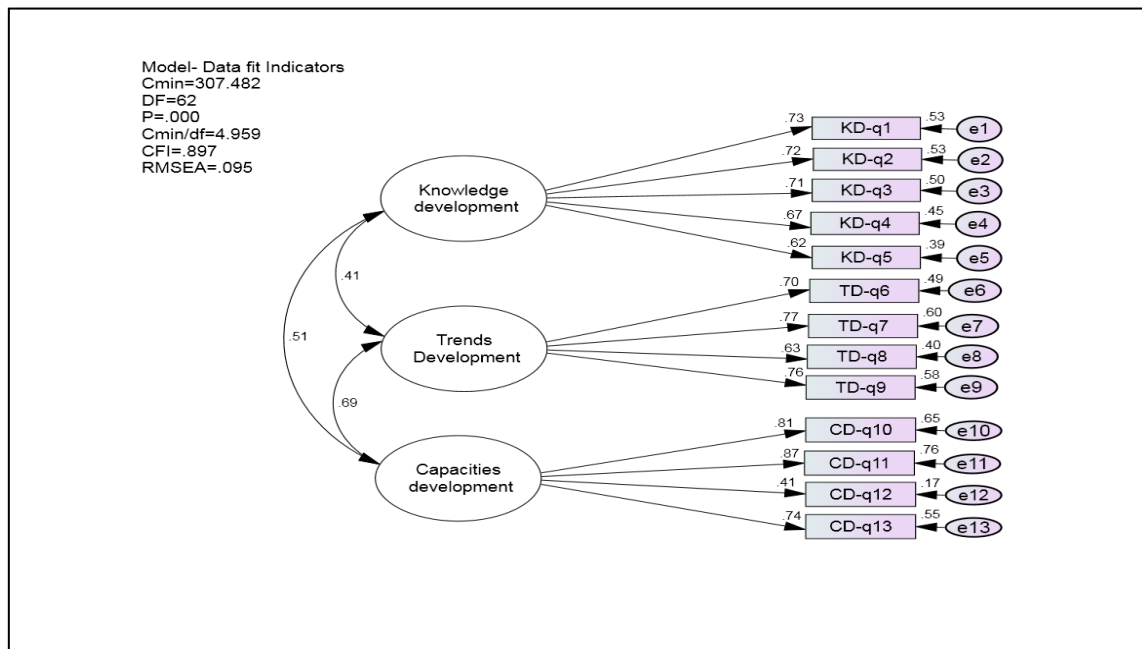


Figure 1: Model human resources training before the amendment

In order to modify this model, we followed was deleting three items (q3, q4, q12) where the ratio of saturation or loading these items was the least compared to other items and to what Amos confirmed by analysis of Amos.



Table 1: index value of human resources training model before and after modification

indicators consistency	index value before modification	index value after modification	Function value on the quality of conformity
Cmin	307.482	72.422	---
df	62	32	---
P	.000	.000	Non
Cmin/Df	4.959	2.263	Less than (5)
CFI	.897	.978	More (0.90)
Rmsea	.095	.054	Less than (0.08)

Confirmatory Factor Analysis of the human resources training model

The results of the goodness-of-fit of the final revised of the human resources training model showed that normed chi- square (CMIN/DF) was (2.263), the (CFI) was (.978) and Rmsea was (.054). Figure (2) shows the adequacy of the final revised of the human resources training model.

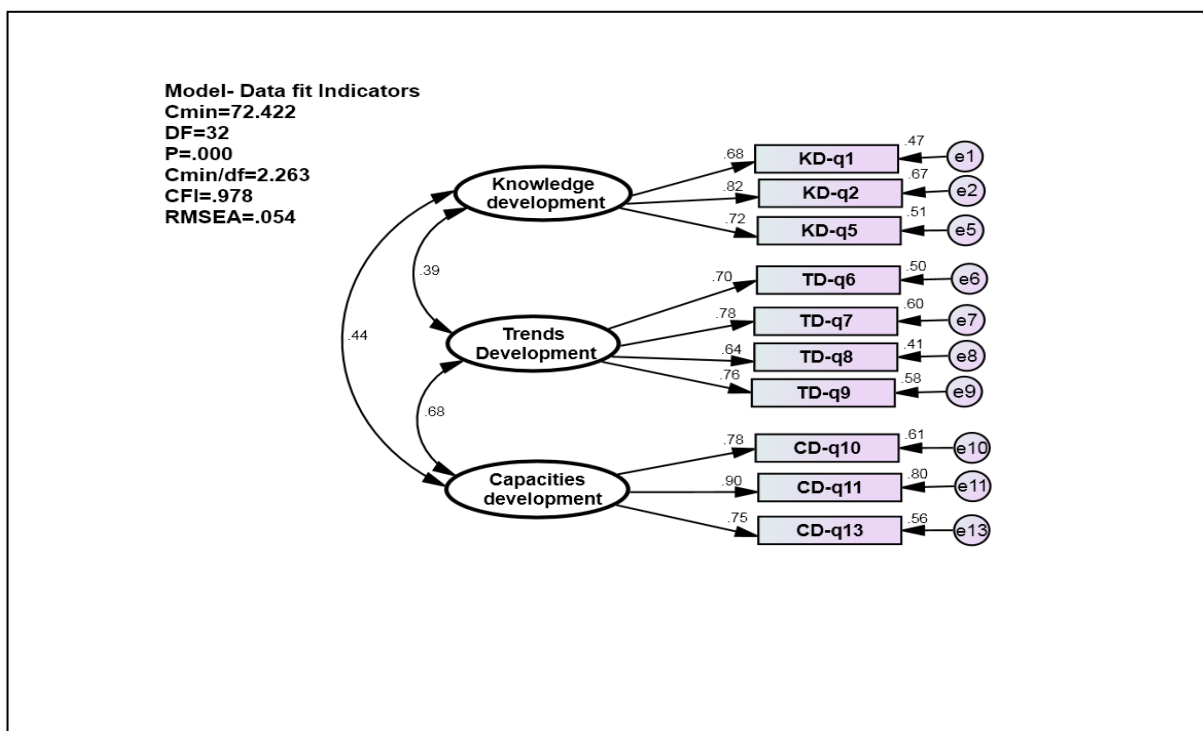


Figure 2: Human resources training model after amendment.

Construct Validity and Reliability:

In this study, the factor loading for the parameters ranged from (.64 to .90), with all parameters were above (.5) (≥ 0.5). The reliability ranged from (.89 to .89), were greater than (0.7) (≥ 0.7). Furthermore, the (AVE) readings was (.55, .52, .66) where the value was greater than (0.5) (≥ 0.5). Thus, also (SV) readings was (.19, .15, .46) and Less than (AVE), all results fulfilled the (AVE), and The reliability discriminant validity of the model. Generally, the measurement model of the human resources training model was fit and fulfilled the construct as depicted in table (2).



Table 2: Construct Validity and Reliability of human resources training model

No	Latent variables	Items	R	estimate	S. E	C. R	P	Loading	SMC	SV	AVE
KD q1	Knowledge	Data shall be updated regarding the organization's plans and objectives.	.89	1.000	-	-	-	.68	.47	.19	.55
KD q2		Technical knowledge shall be renewed by service production ways and materials.	.89	1.194	.096	12.43	.000	.82	.67	-	-
KD q5		Knowledge shall be developed in various administrative jobs in the organization	.89	1.085	.089	12.12	.000	.72	.51	-	-
TD q6	Trends	Emotion shall be developed at employees in terms of liability in the organization.	.89	1.000	-	-	-	.70	.50	.15	.52
TD q7		Emotion shall be developed in terms of team spirit between the employees and management in the organization	.89	1.081	.077	13.92	.000	.78	.60	-	-
TD q8		Emotion shall be developed by the importance of distinction for the required service produced.	.89	0.882	.074	11.79	.000	.64	.41	-	-
TD q9		Cooperation spirit shall be developed between the employees and administrative leadership in the organization.	.89	1.072	.078	13.72	.000	.76	.58	-	-
CD q10	Capacities	Skills and capacities shall be developed to take the appropriate decision.	.89	1.000	-	-	-	.78	.61	.46	.66
CD q11		Employees' skills shall be developed for solving problems faced during the work.	.89	1.262	.068	18.38	.000	.90	.80	-	-
CD q13		Employees' skills shall be developed in terms of expression and discussion during providing the service to the customer.	.89	0.945	.059	15.94	.000	.75	.56	-	-

S.E. Standard Error, C.R: Critical Ratio, P: Probability, SMC: Squared Multiple Correlation, AVE: Average Variance Extracted, SV: Shared Variance. R: Reliability.

5. Conclusion

The current study aimed to test the validity of a proposed model for measuring human resources training in the public commercial banks and their branches in Libya. The proposed model included human resources training as a potential variable that is realized through three apparent factors Development (Knowledge, Capacities, and Trends). To achieve this research aim, the researcher carried out a (CFA) by using the Amos program (Amos .21). This was test the validity of the model that can be used for measuring the human resources training. Based on the results of the analysis and the outputs of the Amos in Figure (1) and Table (1), it is evident that there is disagreement between the model and the data, which emphasizes the need to modify the model. After the model modification as illustrated by Figure (2) and Table (2), there was a match between the model and the sample data based on the goodness of fit indices. Moreover, the average variance extracted (AVE) of all the factors was higher than the standard test factors (.50). Therefore, it can be concluded that the proposed model in this study



has both convergent and discriminate validity, which implies that the model is valid and reliable to be used for measuring of human resources training.

6. REFERENCES:

- [1] Hair, J. F., Anderson, R. E., Tatham, R. L. & Black, W. C. (2006). *Multivariate Data Analysis* (5th ed.), New Jersey, Prentice-Hall.
- [2] Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. *Sage Focus Editions*, 154, 136.
- [3] McDonald, R. P., & Marsh, H. W. (1990). Choosing a multivariate model: Noncentrality and goodness of fit. *Psychological Bulletin*, 107(2), 247-255.
- [4] MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power Analysis and Determination of Sample
- [5] Marsh, H. W., & Hocevar, D. (1985). Application of confirmatory factor analysis to the study of self-concept: First-and higher order factor models and their invariance across groups. *Psychological bulletin*, 97(3), 562-582. <http://dx.doi.org/10.1037/0033-2909.97.3.562>