VALIDATING THE CONSTRUCTS OF EMPLOYEE PERFORMANCE MODEL THROUGH CONFIRMATORY FACTOR ANALYSIS: EVIDENCE FROM PAKISTAN'S TELECOM SECTOR

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Abstract

This study aims to validate the measurement model comprising five core constructs—Transformational Leadership, Organizational Culture, Emotional Intelligence, Organizational Commitment, and Employee Performance—through Confirmatory Factor Analysis (CFA). Drawing from responses of 370 employees across multiple telecom organizations in Pakistan, the research employs Structural Equation Modeling (SEM) using AMOS software to test the validity and reliability of each construct. The CFA procedures, including both individual and pooled analysis, confirm that the constructs meet the requirements for construct validity, convergent validity, discriminant validity, and composite reliability. The results demonstrate that the measurement model satisfies the necessary psychometric standards and can be confidently used for further analysis in empirical studies on employee behavior and performance in the telecom sector. The significance of this paper lies in its methodological rigor and contextual relevance, offering insights for scholars and practitioners interested in employee dynamics within rapidly evolving service industries.

Keywords: Transformational Leadership, Organizational Culture, Emotional Intelligence, Organizational Commitment, Employee Performance, CFA, SEM, Telecom Sector

Introduction

The application of Confirmatory Factor Analysis (CFA) has become a prominent methodological practice in validating measurement models within empirical research in social sciences. It aids in verifying whether a theoretical construct is measured reliably by its respective observed variables. In organizational behavior studies, particularly those involving latent psychological and behavioral constructs, CFA is a prerequisite step prior to structural modeling. This study integrates five key constructs—Transformational Leadership, Organizational Culture, Emotional Intelligence, Organizational Commitment, and Employee Performance—in the context of telecom operators in Pakistan. The telecom sector, marked by technological transformation and intense market competition, provides a fertile ground for examining the psychological and organizational determinants of employee outcomes. The study deploys CFA as a tool to validate the measurement models of these constructs before structural relationships are assessed.

Method

Data for this study were obtained through a cross-sectional survey administered to employees of major telecom service providers across Pakistan, including Jazz, Telenor, Zong, Ufone. The sampling technique adopted was simple random sampling to ensure generalizability and representativeness. Out of 1,343 questionnaires distributed, 1,006 were returned. After addressing missing values and outliers through data screening and Mahalanobis Distance, 370 responses were retained for CFA and SEM analysis. The constructs were measured through established scales and structured into second-order constructs, each comprising multiple sub-components. A 10-point Likert scale was used for all measurement items.The analysis began with the unidimensional assessment of each construct through individual CFA. This stage ensured that the items within each construct loaded significantly onto their respective dimensions. Following this, pooled CFA was conducted to assess the discriminant validity

among the constructs. The assessment adhered to the established model fit indices: absolute fit index (RMSEA), incremental fit index (CFI, TLI, NFI), and parsimonious fit index (Chi-square/df), as recommended by Awang (2015).

Telcom in Pakistan

In line with the research objectives, the present study on employee performance in the telecom sector of Pakistan incorporates five core constructs, namely: Transformational Leadership**,** Organizational Culture**,** Emotional Intelligence**,** Organizational Commitment**,** and Employee Performance**.** These constructs encompass a total of 81 measurement items, carefully adapted and validated from previous literature to suit the specific context of telecom operators in Pakistan. The items were structured in a questionnaire format, designed to capture participants' perceptions and experiences across these variables. A 10-point Likert scale was employed, enabling respondents to indicate the degree of their agreement or disagreement with each statement, thereby allowing a more nuanced understanding of their views regarding the determinants of employee performance.

Confirmatory Factor Analysis Procedure for Validating Measurement Model in this Study.

Confirmatory Factor Analysis Procedure for Validating Measurement Model in this Study. Confirmatory factor analysis is considered as the validation process which takes place through measurement model. It is used in order to ensure the instruments intended to use for a particular study are appropriate (Harrington, 2009). This category of analysis requires some certain number of components and the items involved reflect the components as well as the correlation between the given components (Thompson, 2004). The technique is usually performed before employing the use Structural Equation Modeline (SEM) for the entire latent constructs (Awang, 2012; Shih-I, 2011). The confirmatory factor analysis is seen as a procedure used in validating the convergent and discriminant validity after the structural equation modeling might have been executed (Chua, 2009). Hence, as a method of confirming the factor structure of a group of observed variables, the CFA is required in order to enable the researcher explore the hypotheses on the link between the observed and the latent constructs (Kashif et al., 2016; Moss, 2016). Thus, this process was observed before using Structural Equation Modeling (SEM) for the entire latent constructs (Awang, 2012; Shih-I, 2011). The study tested all the measurement models of the given latent construct to ensure the validity and reliability as well as unidimensionality before executing the structural model. The overall process is called Confirmatory Factor Analysis (Awang, 2014; Moss, 2016; Suhr, 2006).

Results and Discussion

The CFA output for each individual construct was examined for fitness and psychometric adequacy. The Transformational Leadership construct, consisting of four sub-dimensions—idealized influence, intellectual stimulation, individualized consideration, and inspirational motivation—achieved acceptable model fit with RMSEA at 0.046, CFI at 0.969, and ChiSq/df at 1.780. Similarly, the Organizational Culture construct demonstrated a good fit, with RMSEA of 0.046, CFI of 0.973, and ChiSq/df of 1.765. The Emotional Intelligence construct, measured through self-emotional appraisal, others' emotional appraisal, use of emotion, and regulation of emotion, also attained strong model fit indices, with RMSEA at 0.046, CFI at 0.973, and ChiSq/df at 1.765. Organizational Commitment, comprising affective, continuance, and normative dimensions, met the required model thresholds with identical fit statistics, confirming its construct validity.The Employee Performance construct was initially assessed with all items included, but certain indicators (EP13 to EP17) were removed due to poor factor loading below 0.60. After item removal, the construct attained acceptable model fit: RMSEA at 0.050, CFI at 0.944, and ChiSq/df at 1.911. Thus, all

constructs demonstrated satisfactory construct validity according to the fit indices required in structural equation modeling.

The convergent validity was assessed through the computation of Average Variance Extracted (AVE), and the composite reliability (CR) was used in place of Cronbach's Alpha. All constructs exceeded the threshold AVE of 0.50 and CR of 0.60. Specifically, the AVE and CR for Transformational Leadership were 0.590 and 0.892 respectively; Emotional Intelligence showed AVE of 0.643 and CR of 0.878; Organizational Commitment recorded AVE of 0.638 and CR of 0.840; Employee Performance achieved AVE of 0.552 and CR of 0.938. These results confirm the convergent validity and internal consistency of the constructs.The pooled-CFA model was then developed by converting all second-order constructs into first-order constructs using item-parcelling. The model was analyzed collectively to verify the discriminant validity among constructs. The pooled model also demonstrated acceptable fit: RMSEA at 0.050, CFI at 0.944, and ChiSq/df at 1.911. Furthermore, the correlation values among the constructs were below 0.85, confirming the absence of multicollinearity and the presence of discriminant validity. As highlighted by Awang (2015), if the square root of AVE is greater than the correlation between constructs, discriminant validity is achieved. This criterion was met for all constructs.

The Confirmatory Factor Analysis (CFA) for Individual Construct

For the complex model, the researcher could elect to assess the CFA for each construct separately and to pool these constructs together at the final stage to perform the Pooled-CFA (Awang et al., 2018, 2023; Baistaman et al., 2020; Bahkia et al., 2022; Abdul Rahim et al., 2022; Dani et al., 2022; Baharum et al., 2023, 2024; Anuar et al., 2023).

Thus, this study decided to conduct CFA procedure separately for every second-order construct. Once the CFA report for all second-order constructs is completed, the study would convert all second-order construct into first-order construct. The conversion procedure is called item-parcelling. In the item-parcelling process, the mean score is computed for all items in the same component to represent the respective component. Now the second-order construct has been transformed into first order construct. Then the study would combine all first-order constructs and conduct the Pooled-CFA to assess the discriminant validity among these constructs. The pooled-CFA is required because the researcher needs to prove that all constructs involved in the model are discriminant of each other or they are not highly correlated especially between the exogenous constructs (Awang et al., 2018, 2023; Abdul Rahim et al., 2022; Dani et al., 2022; Baharum et al., 2023; Anuar et al., 2023; Mustafa et al., 2024; Bolaji et al., 2024). If the two exogenous constructs are highly correlated (correlation greater than 0.85), then there exists a serious problem called Multi-collinearity, and the study needs to utilise their respective remedial measures.

The CFA Procedure for Validating Transformational Leadership construct

As has been explained earlier, the Transformational Leadership is a second order construct with three sub-constructs or components as presented in Figure 4.4. the CFA procedure produces fitness indexes for the whole construct, the factor loading for every sub-construct (component) as well as the factor loading for every item are presented.

The results of CFA procedure to validate the measureent model of this construct (Figure 4.4). The output present fitness indexes of the model, factor loading of the components as well as for their respective items. Using this output, the researcher could determine construct validity, convergent validity, and also composite reliability. The construct validity could be determined through fitness indexes, the convergent validity could be assessed by computing AVE (average variance extracted, while the composite reliability could be determines through computing CR index.
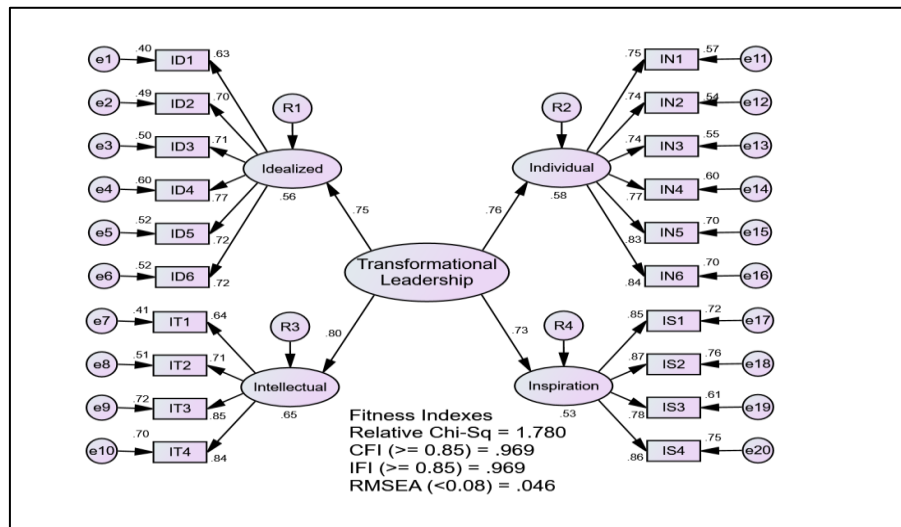
Figure 4.4: The CFA output for Transformational Leadership construct

The Assessment for Construct Validity

The construct validity is achieved when the three index categories produced in Figure 4.4 surpassed their threshold values as presented in the following table (Table 4.5).

Table 4.5: The Assessment for Construct Validity

Name of category	Name of index	This Model	Result
Absolute Fit Index	RMSEA <0.08	0.046	Achieved
Incremental Fit Index	CFI > 0.90	0.969	Achieved
Parsimonious Fit Index	ChiSq /df < 3.00	1.780	Achieved

The fitness indexes in Table 4.5 have met the threshold values as stated in Table 4.4. Thus, the measurement model of Transformational Leadership construct has achieved the requirement for Construct Validity (Mohamad et al., 2018, 2019; Raza & Awang, 2019, 2020, 2021; Bahkia et al., 2019; Afthanorhan et al., 2020, 2020a; Alown et al., 2021; Fitriana et al., 2022; Abdul Rahim et al., 2022; Dani et al., 2022; Baharum et al., 2023, 2024; Anuar et al., 2023; Adnan et al., 2024).

The Assessment for Convergent Validity and Composite Reliability

For the assessment of Convergent Validity, the study needs to compute Average Variance Extracted (AVE). The construct achieved Convergent Validity if its AVE exceeds the threshold value of 0.5 (Afthanorhan et al., 2020, 2020a, 2021; Rahlin et al., 2019a, 2021, 2022, 2023; Mahfouz et al., 2019; Sarwar et al., 2020; Bahkia et al., 2022). The Average Variance Extracted (AVE) and Composite Reliability (CR) for the main constructs and their respective sub-constructs are computed and presented in Table 4.6.

Table 4.6: The AVE and CR for Transformational Leadership Construct.

Construct	Item	Factor Loading	CR (Above 0.6)	AVE (Above 0.5)
Transformaional Leadership	Idealized	.78	.892	.590
	Intellectual	.80		

(construct)	Individual	**.76**		
	Inspirational	**.73**		
Idealized (Component 1)	ID1	.63	**.858**	**.533**
	ID2	.70		
	ID3	.71		
	ID4	.77		
	ID5	.72		
	ID6	.72		
Intellectual (component 2)	IT1	.64	**.903**	**.608**
	IT2	.71		
	IT3	.85		
	IT4	.84		
Individual (component 3)	IN1	.75	**.877**	**.588**
	IN2	.74		
	IN3	.74		
	IN4	.77		
	IN5	.83		
	IN6	.84		
Inspirational (component 4)	IS1	.85	**.887**	**.665**
	IS2	.82		
	IS3	.70		
	IS4	.88		

The values of AVE (Average Variance Extracted) and CR (Composite Reliability) for this construct and all of its components are greater than 0.50 and 0.60 respectively. Thus, the study can conclude that the Convergent Validity and Composite Reliability for this particular construct is achieved (Awang, 2014, 2015; Awang et al., 2018, 2023; Muda et al., 2018, 2020).

The CFA Procedure for Validating Emotional Intelligence construct
As has been explained earlier, the Emotional Intelligence is also a second order construct with three sub-constructs or components as presented in Figure 4.6. The CFA procedure produces fitness indexes for the whole construct, the factor loading for every sub-construct (component) as well as the factor loading for every item are presented.
The results of CFA procedure to validate the measurement model of this construct is presented in Figure 4.6. The output present fitness indexes of the model, factor loading of the components as well as for their respective items. Using this output, the researcher could determine construct validity, convergent validity, and also composite reliability. The construct validity could be determined through fitness indexes, the convergent validity could be assessed by computing AVE (average variance extracted, while the composite reliability could be determines through computing CR index.
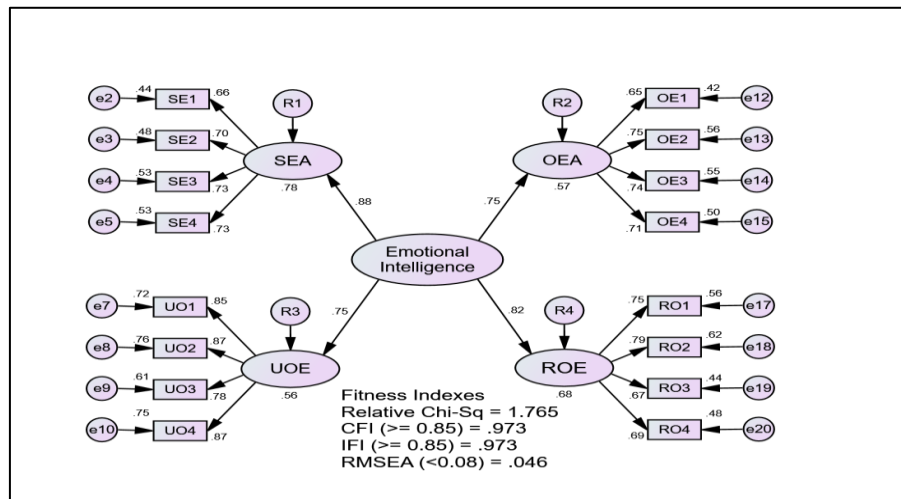
Figure 4.6: The CFA output for Emotional Intelligence construct

The Assessment for Construct Validity

The construct validity is achieved when the three fitness index categories produced in Figure 4.6 surpassed their threshold values as presented in Table 4.7.

Table 4.7: The Assessment for Construct Validity

Name of category	Name of index	This Model	Result
Absolute Fit Index	RMSEA <0.08	0.046	Achieved
Incremental Fit Index	CFI > 0.90	0.973	Achieved
Parsimonious Fit Index	ChiSq /df < 3.00	1.765	Achieved

The fitness indexes in Table 4.7 have met the threshold values as stated in Table 4.4. Thus, the measurement model of Emotional Intelligence construct has achieved the requirement for Construct Validity (Mohamad et al., 2018, 2019; Raza & Awang, 2019, 2020, 2021; Bahkia et al., 2019; Afthanorhan et al., 2020, 2020a; Alown et al., 2021; Fitriana et al., 2022; Abdul Rahim et al., 2022; Dani et al., 2022; Baharum et al., 2023, 2024; Anuar et al., 2023; Adnan et al., 2024).

The Assessment for Convergent Validity and Composite Reliability

For the assessment of Convergent Validity, the study needs to compute Average Variance Extracted (AVE). The construct achieved Convergent Validity if its AVE exceeds the threshold value of 0.5 (Afthanorhan et al., 2020, 2020a, 2021; Rahlin et al., 2019a, 2021, 2022, 2023; Mahfouz et al., 2019; Sarwar et al., 2020; Bahkia et al., 2022). As for assessing the Composite Reliability, the study needs to compute the CR and its value should exceed the threshold value of 0.6 for this reliability to achieve (Awang et al., 2018, 2023).The Average Variance Extracted (AVE) and Composite Reliability (CR) for the main constructs and their respective sub-constructs are computed and presented in Table 4.8.

Table 4.8: The AVE and CR for Emotional Intelligence Construct.

Construct	Item	Factor Loading	CR (Above 0.6)	AVE (Above 0.5)
Emotional Intelligence	**SEA**	.88	.878	.643
	UOE	.75		

(construct)	OEA	.75		
	ROE	.82		
SEA (Component 1)	SE1	.69	**.805**	**.508**
	SE2	.70		
	SE3	.73		
	ISE4	.73		
UOE (component 2)	UO1	.85	**.908**	**.711**
	UO2	.87		
	UO3	.78		
	UO4	.87		
OEA (component 3)	OE1	.65	**.805**	**.509**
	OE2	.75		
	OE3	.74		
	OE4	.71		
RO (component 4)	RO1	.75	**.817**	**.528**
	RO2	.79		
	RO3	.67		
	RO4	.69		

The values of AVE (Average Variance Extracted) and CR (Composite Reliability) for this construct and all of its components are greater than 0.50 and 0.60 respectively. Thus, the study can conclude that the Convergent Validity and Composite Reliability for this particular construct is achieved (Awang, 2014, 2015; Awang et al., 2018, 2023; Muda et al., 2018, 2020).

The CFA Procedure for Validating Organization Commitment construct
As has been explained earlier, the Organization Commitment is also a second order construct with three sub-constructs or components as presented in Figure 4.8,The CFA procedure produces fitness indexes for the whole construct, the factor loading for every sub-construct (component) as well as the factor loading for every item are presented.
The results of CFA procedure to validate the measureent model of this construct is presented in Figure 4.8. The output present fitness indexes of the model, factor loading of the components as well as for their respective items. Using this output, the researcher could determine construct validity, convergent validity, and also composite reliability. The construct validity could be determined through fitness indexes, the convergent validity could be assessed by computing AVE (average variance extracted, while the composite reliability could be determines through computing CR index.
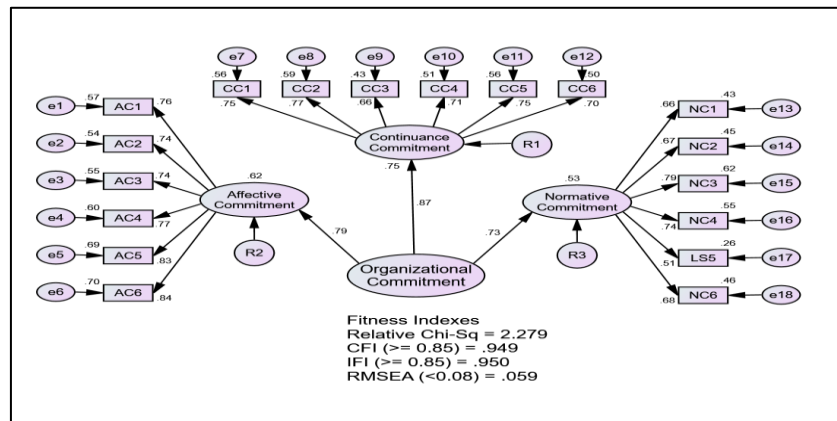
Figure 4.8: The CFA output for Organizational Commitment construct

The Assessment for Construct Validity
The construct validity is achieved when the three index categories produced in Figure 4.8 surpassed their threshold values as presented in Table 4.9.

Table 4.9: The Assessment for Construct Validity

Name of category	Name of index	This Model	Result
Absolute Fit Index	RMSEA <0.08	0.046	Achieved
Incremental Fit Index	CFI > 0.90	0.973	Achieved
Parsimonious Fit Index	ChiSq /df < 3.00	1.765	Achieved

The fitness indexes in Table 4.9 have met the threshold values as stated in Table 4.4. Thus, the measurement model of Organizational Commitment construct has achieved the requirement for Construct Validity (Mohamad et al., 2018, 2019; Raza & Awang, 2019, 2020, 2021; Bahkia et al., 2019; Afthanorhan et al., 2020, 2020a; Alown et al., 2021; Fitriana et al., 2022; Abdul Rahim et al., 2022; Dani et al., 2022; Baharum et al., 2023, 2024; Anuar et al., 2023; Adnan et al., 2024).

The Assessment for Convergent Validity and Composite Reliability
For the assessment of Convergent Validity, the study needs to compute Average Variance Extracted (AVE). The construct achieved Convergent Validity if its AVE exceeds the threshold value of 0.5 (Afthanorhan et al., 2020, 2020a, 2021; Rahlin et al., 2019a, 2021, 2022, 2023; Mahfouz et al., 2019; Sarwar et al., 2020; Bahkia et al., 2022). As for assessing the Composite Reliability, the study needs to compute the CR and its value should exceed the threshold value of 0.6 for this reliability to achieve (Awang et al., 2018, 2023).The Average Variance Extracted (AVE) and Composite Reloability (CR) for the main constructs and their respective sub-constructs are computed and presented in Table 4.10.

Table 4.10: The AVE and CR for Organizational Commitment Construct.

Construct	Item	Factor Loading	CR (Above 0.6)	AVE (Above 0.5)
Organizational Commitment	**Affective Commitment**	.79	.840	.638

(construct)	Continuance Commitment	.87		
	Normative Commitment	.73		
Affective Commitment (Component 1)	AC1	.76	**.903**	**.610**
	AC2	.74		
	AC3	.74		
	AC4	.77		
	AC5	.83		
	AC6	.84		
Continuance Commitment (component 2)	CC1	.75	**.868**	**.525**
	CC2	.77		
	CC3	.66		
	CC4	.71		
	CC5	.75		
	CC6	.70		
Normative Commitment (component 3)	NC1	.66	**.858**	**.504**
	NC2	.67		
	NC3	.79		
	NC4	.74		
	NC5	.71		
	NC6	.68		

The values of AVE (Average Variance Extracted) and CR (Composite Reliability) for this construct and all of its components are greater than 0.50 and 0.60 respectively. Thus, the study can conclude that the Convergent Validity and Composite Reliability for this particular construct is achieved (Awang, 2014, 2015; Awang et al., 2018, 2023; Muda et al., 2018, 2020).

The Pooled-CFA for all Measurement Model of Constructs

The pooled construct is presented in Figure 4.10. Here the measurement model for all second order constructs have been validated using CFA procedure separately and simplified into first order constructs in order to reduce complexity (Awang, 2015, Awang et al., 2015, 2018, 2023). The reason for running the pooled-CFA for all constructs together is to assess the Discriminant Validity among constructs in the model (Mohamad et al., 2016, 2017, 2018, 2019; Alown et al., 2021; Fitriana et al., 2022; Dani et al., 2022; Al Nohoud et al., 2024; Mustafa et al., 2024).

The results of the Pooled-CFA procedure for model is presented in Figure 4.10. The output presented the fitness indexes for all constructs in the model, the factor loading for every sub-construct or component measure the main construct, and the correlation between construct in the model. The fitness indexes should meet threshold values as shown in Table 4.4, the factor loading for every item should be a minimum of 0.6 and the correlation coefficient any two constructs should not exceed 0.85 (Awang et al., 2018, 2023; Ersan et al., 2021; Fitriana et al., 2022; Bahkia et al., 2022; Baharum et al., 2023, 2024; Anuar et al., 2023; Al Nohoud et al., 2024; Mustafa et al., 2024). The problem of multi-collinearity occurs if the correlation between any two constructs exceeds 0.85. Looking at the correlation values (at the double-headed arrow), none of the value found to be greater than 0.85. Thus, the multi-collinearity problem does not arise.
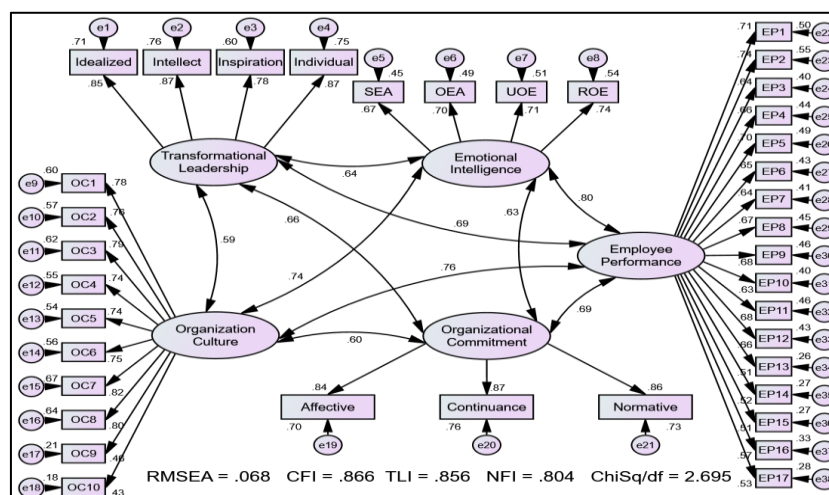
Figure 4.10: The results of Pooled CFA

Some of the fitness indexes presented in Figure 4.10 (CFA results) do not meet the threshold values. The CFI is 0.866, TLI is 0.856 and NFI is 0.804. At least one of these values exceed the threshold value 0.9. The problem occur due to poor loading items such as OC9 (0.46) and OC10 (0.43) from Organizational Culture construct, and EP13 (0.51), EP14 (0.52), EP15 (0.51), EP16 (0.57), EP17 (0.53) from Employee Performance construct. According to Awang (2014, 2015) and Awang et al. (2018, 2023), the researcher needs to remove the items with factor loading less than 0.6 in order to improve the model fit. However the percentage of removed items should not exceed 20% of the total items in the pooled-models.Thus, the study has removed those items and reanalze the pooled-CFA again. The total items remove is 7 and the percentage of removed items do not exceed 20%, thus the procedure is within the acceptable range (Awang et al., 2018, 2023). The new pooled-CFA results is presented in Figure 4.11.
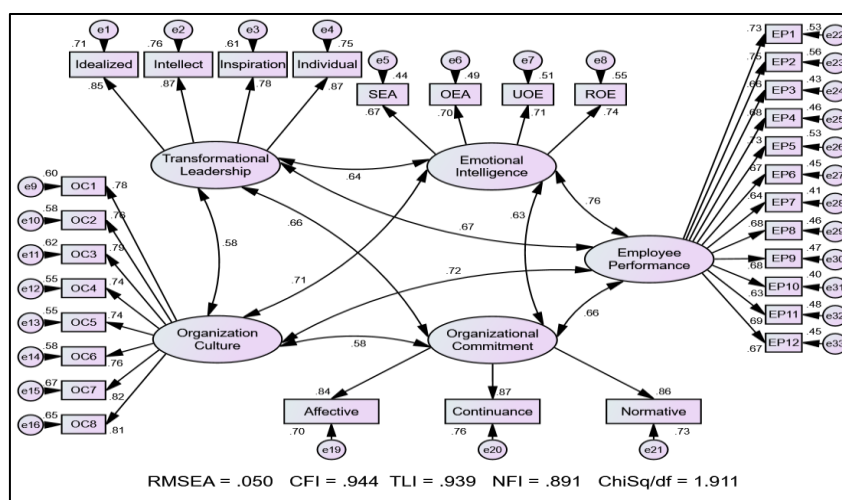

Figure 4.11: The results of Pooled CFA after certain items are removed.

The Assessment for Construct Validity

The Fitness Indexes in Figure 4.11 have met the threshold values as stated in Table 4.2. The Absolute Fit category namely RMSEA is 0.050 (achieved the threshold of less than 0.08), the Incremental Fit category namely CFI is 0.944 (achieved the threshold of greater than 0.90), and the Parsimonious Fit category namely the ratio of Chisq/df is 1.911 (achieved the threshold of less than 3.0). Thus, the measurement model of all latent constructs in Figure

4.11 have achieved the requirement for Construct Validity (Bahkia et al., 2019, 2022; Fitriana et al., 2022; Abdul Rahim et al., 2022; Dani et al., 2022; Baharum et al., 2023, 2024; Al Nohoud et al., 2024; Mustafa et al., 2024).

The Assessment for Convergent Validity and Composite Reliability

For the assessment of Convergent Validity, the study needs to compute Average Variance Extracted (AVE). The construct achieved Convergent Validity if its AVE exceeds the threshold value of 0.5 (Muda et al., 2018; Rahlin et al., 2019a, 2022, 2023 and Fitriana et al., 2022; Abdul Rahim et al., 2022; Dani et al., 2022; Baharum et al., 2023, 2024). As for assessing the Composite Reliability, the study needs to compute the CR and its value should exceed the threshold value of 0.6 for this reliability to achieve (Afthanorhan et al., 2018, 2019; Rahlin et al., 2019a, 2021, 2022 and Mahfouz et al., 2019, 2020). The Average Variance Extracted (AVE) and Composite Reloability (CR) for the main constructs and their respective sub-constructs are computed and presented in Table 4.12.

Table 4.12: The Average Variance Extracted (AVE) and Composite Reliability (CR)

Construct	Items	Factor Loading	CR (Above 0.6)	AVE (Above 0.5)
Transformational Leadership	Idealized	.85	**.908**	**.711**
	Intellectual	.87		
	Inspirational	.78		
	Individualized	.87		
Organizational Culture	OC1	.79	**.925**	**.607**
	OC2	.76		
	OC3	.79		
	OC4	.74		
	OC5	.74		
	OC6	.78		
	OC7	.82		
	OC8	.81		
Organizational Commitment	Affective	.84	**.892**	**.734**
	Continuance	.87		
	Normative	.86		
Emotional Intelligence	SEA	.67	**.810**	**.516**
	OEA	.70		
	UOE	.71		

	ROE	.74		
Employee Performance	EP1	.73	**.938**	**.552**
	EP2	.76		
	EP3	.86		
	EP4	.88		
	EP5	.76		
	EP6	.67		
	EP7	.64		
	EP8	.88		
	EP9	.68		
	EP10	.63		
	EP11	.69		
	EP12	.67		

With reference to the Average Variance Extracted (AVE) and Composite Reliability (CR) values in Table 4.12, the study found all AVE and CR exceed their threshold values of 0.5 and 0.6 respectively (Noor et al., 2015; Yusof et., 2017, Mohamad et al., 2017, 2018, 2019;

Sarwar et al., 2020; Baharum et al., 2023, 2024; Anuar et al., 2023). Thus, the study can conclude that the Convergent Validity and Composite Reliability for all latent constructs in the model have been achieved.

The Assessment of Discriminant Validity among Constructs

The study needs to assess another type of validity for the model namely, discriminant validity. The discriminant validity assessment is to ensure that no redundant constructs occur in the model. Redundant construct occurs when any pair of constructs in the model are highly correlated. For assessing the discriminant validity, one needs to develop the discriminant validity index summary as shown in Table 4.13. The diagonal values in bold are the square root of the AVE of the respective constructs while other values are the correlation coefficient between the pair of the respective constructs.

Table 4.13: The Discriminant Validity Index Summary for all Constructs

Construct	Transform. Leadership	Organization Culture	Organization Commitment	Emotional Intelligence	Employee Performance
Transform. Leadership	**.843**				
Organization Culture	.58	**.779**			
Organization Commitment	.66	.58	**.856**		
Emotional Intelligence	.64	.71	.63	**.738**	
Employee Performance	.67	.72	.66	.73	**.742**

Referring to Table 4.13, the Discriminant Validity for the respective construct is achieved if the square root of its AVE exceeds its correlation value with other constructs in the model (Awang et al., 2015, 2018, 2023; Muda et al., 2018; Bahkia et al., 2022; Fitriana et al., 2022; Baharum et al., 2023, 2024; Anuar et al., 2023). In other words, the Discriminant Validity is achieved if the diagonal values (in bold) are higher than any other values in its row and its column. The tabulated values in Table 4.10 meet the threshold of Discriminant Validity. Thus, the study concludes that the Discriminant Validity for all constructs is achieved.

Conclusion

This study provides empirical validation for employee performance model composed of five constructs: Transformational Leadership, Organizational Culture, Emotional Intelligence, Organizational Commitment, and Employee Performance. Employing Confirmatory Factor Analysis (CFA) within the Structural Equation Modeling (SEM) framework, the research rigorously assessed the psychometric properties—construct validity, convergent validity, discriminant validity, and composite reliability—of each construct using data from 370 telecom sector employees in Pakistan. The CFA results affirm that the theoretical structure of

all five constructs holds strong empirical support. All measurement models demonstrated acceptable goodness-of-fit indices (e.g., RMSEA < 0.08, CFI > 0.90, ChiSq/df < 3.0), and each construct met the required thresholds for AVE (> 0.5) and CR (> 0.6), confirming internal consistency and unidimensionality. Notably, the pooled CFA further verified discriminant validity, ensuring that the constructs are conceptually distinct and non-redundant. The validated measurement model offers a reliable and context-specific tool for understanding employee performance dynamics in Pakistan's telecom industry. Given the sector's rapidly evolving nature, intensified by digital transformation and market competition, the rigorous validation of such a model ensures that future research can build on a solid foundation.

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