Tariq Humaid ALMASKARI, Effendi MOHAMAD, Siti Norbaya YAHAYA, Muhammad Farhan JALIL /
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The Influence of Transformational Leadership on Employees' Innovation in Universities of UAE: Mediating Effect of Technological Diversity

Tariq Humaid ALMASKARI[1], Effendi MOHAMAD[2], Siti Norbaya YAHAYA[3], Muhammad Farhan JALIL[4]

Abstract

This study seeks to empirically investigate the impact of transformational leadership on employees' innovation with the mediating effect of technological diversity. Employees have evolved into leaders in organizing work within institutions over the last few decades. This shift presents new demands for leaders, who are forced to reinvent individual workers while also improving workplace innovation. This research proposes a conceptual model for considering transformational leadership and the impact of technological diversity on innovation. Structured questionnaire is used in the study and the analysis of the data from 633 employees of universities in the United Arab Emirates uses stratified sampling technique and hypotheses verified through Structural Equations Modelling (AMOS-21). According to the results, transformational leadership has a big effect on employees' innovation. Furthermore, in the relationship between transformational leadership and workforce innovation, technological diversity has a partial mediation impact. This research adds to the growing body of knowledge about how transformational leadership influences employees' innovation and how it affects employees' success, especially in the context of UAE-based universities. Overall, this research contributes to the previous studies wherein transformational leadership plays a critical role in influencing the innovative performance of employees and that, in turn, will promote diversification of technology in the organization.

Keywords: Transformational Leadership, Employee Innovation, Technological Diversity, Structural Equation Modelling

JEL Classification Code: M12, O31, O33

1. Introduction

Changes have been noticeable recently in the business world, and the countries' educational system is progressing by implementing creative approaches to functionality in a sector that can be perceived to be adding to its growth and survival (Timmers et al., 2015). Employees' innovation is seen as the practice of consuming and processing new knowledge or operational knowledge to obtain the latest procedures, facilities, and knowledge (Obeidat et al., 2016). Innovative capabilities can be realized as significant aspects of organizational success and improvement (Baumgartner & Rauter, 2017). Additionally, innovation can be seen as a key competitive edge for an organization (Autio et al., 2014). These are management skills that create new insights and apply relevant information and novel ideas to create valuable demand effectively. Wonglimpiyarat (2017) mentions the abilities that an organization employs to help develop and adjust its traditional abilities.

The universities in the United Arab Emirates (UAE) are under continuous incentives to look for different strategies, which help them to achieve a competitive advantage (Alghalban, 2017). There are various factors, which have helped these organizations to be efficient in the stable environments that are management control, standardized routines and division of labor (Johnson & Szamosi, 2018). However, as the competitive strategies have become obsolete, organizations have been compelled by the

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[1]First Author. Ph.D. Scholar, Institute of Technology Management and Entrepreneurship, Universiti Teknikal Malaysia Melaka, Malaysia. Email: t.almaskari@hotmail.com
[2]Corresponding Author. Associate Professor, Faculty of Manufacturing Engineering, Universiti Teknikal Malaysia Melaka, Malaysia [Postal Address: Jalan Hang Tuah Jaya, 76100 Durian Tunggal, Melaka, Malaysia] Email: effendi@utem.edu.my
[3]Deputy Dean, Faculty of Technology Management and Technopreneurship, Universiti Teknikal Malaysia Melaka, Malaysia. Email: sitinorbaya@utem.edu.my
[4]Lecturer, School of Business and Management, University College of Technology Sarawak, Malaysia. Email: muhammad.farhan@ucts.edu.my

changes in the business environments to search for new strategies, which can be applied to gain a competitive edge (Johnso & Szamosi, 2018). Some of the significant central environment forces, which were faced by the contemporary organizations, are the developments in the communication and information technology and economic globalization, which is also known as the integration of the markets and operations in borderless economic space (Alghalban, 2017). Innovation can be characterized as transactional and administrative routines, which are characterized by management skills, have evolved technology growth and organizational capabilities as a result of technical learning. (Bain & Kleinknecht, 2016). This study aims at developing a model of innovation, which leads to employees' innovative capabilities in academic institutions in UAE.

Despite previous findings indicating that employees' innovation is heavily influenced by transformational leadership, relatively few studies on the impact of leadership on innovation have been conducted (Oeij et al., 2017). The majority of recent research has focused on theoretical study of emerging leadership hypotheses and employees' satisfaction (Frisch & Huppenbauer, 2014; Qu et al., 2015). Yet, very little research links the transformational leadership with employees' innovation (Hao et al., 2018). As per Erkutlu and Chafra (2015), there is not only one way for leaders to raise employees' innovation spirits; the phenomenon (innovation) is a complex multi-factor that needs further investigation. Likewise, Ramos et al. (2016) discussed how to gain a better understanding of the scenario of leadership behaviours against employee innovation, more research is required. Yukl (2012) also underlined that studies are needed to determine how transformational leadership affects employees' innovation in the workplace. As a result, the aim of this research is to learn more about leadership and the characteristics that are needed for talented workers to innovate.

The behavior of a personal or individual is defined in answer to the climate in which educational institutions perform culture-oriented innovation (Roffeei et al., 2018). In particular, it depends on willingness and abilities of employees to perform innovation. An employee may have the ability and skill to reply to technological change and came up with new ideas; can tolerate errors and accept others' opinions; uses the freedom of sharing valuable thoughts; have an ability to take considered risks; and adopt change with willingness and doing things in new ways. Innovation is a consolidated issue as a source of organization's competitive advantage. This will be accomplished as institutions continue to build or possess their own technologically-diverse innovation capabilities (Coccia, 2017; Bain & Kleinknecht, 2016).

Furthermore, the willingness of workers to innovate will lead to new markets and technological advancements, as well as better technology management based on experience (Lasakova et al., 2017; Mittal & Dhar, 2015). Though determining the impact of innovation on employee success necessitates a thorough review of a number of studies in the context of government-owned institutions (Ordanini et al., 2014). As a result, a majority of prior studies have confirmed that there are critical elements that must be present in order to build an environment conducive to creativity, such as material and moral support, rewards, risk acceptance, inspiration, and constant motivation (Baruah & Paulus, 2019; Hülsheger et al., 2009).

United Arab Emirates, like several other countries, face the challenge of structuring and satisfying an educated population. Specific challenges are caused by the necessity to educate an aggregate ratio of the population to advanced levels in tidiness to backing the progress of a modern-day skills and knowledge economy, as different to an economy constructed on services and products (Hülsheger et al., 2009). UAE's higher education faces a challenging combination of employees' capabilities and knowledge drivers that interrelate to produce a problem obstructing and make difficulties in innovation in the models used to educate adults.

Many authors (i.e., Romanowski, 2017; Rao & Abdul, 2015) have highlighted the role of leadership in the success of quality initiatives. Yet, few studies have examined the leadership that supports new idea exploration and implementation. A few studies proposed that transformational leadership is desired to make sure to build a successful innovative behavior within organizations in UAE (Jabeen et al., 2015).

The cultural and technological idiosyncrasies are significant to facilitate or hinder the processes of employees' innovation performance (Towndrow et al., 2010). Past studies argued that educational institutions change that environment of institutions and is an important element that effects instructional innovation. Hence, it is a vital impact on educational institutions change, particularly to recognize innovation cultural within institutions.

2. Literature Review

Amabile (1997) and Befekadu and Feleke (2015) show that innovation models are playing a vital part in the job environment within the organization. To recognize success, the innovation provided the employee's reputation and condition, as well as the relationship between various phases of the organization (Woodman et al., 1993). Following these conceptualizations, the literature shows that distinct differences and the effects of social contexts were investigated, resulting in innovation in various fields (Perry-Smith & Shalley, 2003).

Leadership is an important organizational feature that determines the social and work environment, and it was developed to forecast individual innovation in various contexts (Mumford & Licuanan 2004). The examined literature has identified that leaders influence creativity in various ways, including enhancing individuals' critical motivation and articulating an inspiring vision (Mumford & Licuanan 2004), as long as there is assistance, establishing a trustworthy relationship based on respect, approving and allocating decision-making authority, and promoting strong ethical values (Volmer et al., 2012; Valentine et al., 2011). Despite the fact that major leaders are concentrating on inspiring people to engage in creative action, other findings have explicitly shown that leadership skills are linked to achievement. Some research in the literature looked at the controversial subject of transformational leadership and its effects on employees' innovation in an organization. These studies looked at the impact of theoretically-oriented leadership styles that were created to address results or corporate implications rather than innovation (Valentine et al., 2011). The aim of this study is to bridge the divide by examining the capacity for transformational leadership to affect workforce innovation.

This research would also demonstrate the impact of organizational level-setting and personal inventiveness on employees' innovation in the workplace. The organizational culture describes the standards and measures in the organization (Gumusluoglu & Ilsev, 2009), connected to innovation (Charbonnier-Voirin et al., 2010). Employee's awareness for new technologies and its impact on employee's innovation, can be more effective for their innovative behavior, and their reaction to leadership that promote innovation (Jaiswal & Dhar, 2015).

This study similarly separates employee's innovative performance in its theoretical models and examination. Innovative performance has been imagined as a multi-dimensional procedure (Dorenbosch et al., 2005), containing different behavioral deeds, representing a main stage – innovation (Jong & Hartog, 2010). Since, the individual's innovation is a contribution to make their performance more innovative, investigating the predictors of innovative behavior in one major stage of this procedure is bound with existing knowledge (Slåtten et al., 2011). Jong and Hartog (2007) used detailed survey of different organization's managers in knowledge-intensive facility businesses to classify various leadership behaviors that prejudiced innovation of employees in organization, originate that combining innovation or concentrating only on one component would not let the researchers describing the specific leadership behaviors that were useful at a subsequent stage. It is well to keep innovation distinct to know more completely the differences in respect to leader behaviors promising innovation (Jong & Hartog, 2007). The results of

this study are useful for the review of literature and for the capacity of employees' innovative performance.

2.1. Employees' Innovation and Transformational Leadership

Transformational leadership is a prominent aspect of the organizational climate for workers, and it has a significant effect on employees' concept generation and problem-solving abilities (Cheung & Wong, 2011). Various analytical perspectives have been established for identifying processes where leadership aids in motivating employees' creativity. Transformational leadership has been seen to have a direct impact on workforce innovation (Mumford & Licuanan, 2004). However, when interacting with the help of leaders, transformational leadership has an indirect impact on human innovation in developed countries (Cheung & Wong, 2011). The theory of leadership member exchange is empirically linked to this particular innovation process (Wang & Zhu, 2011; Atwater & Carmeli, 2009). Subordinates' innovative behavior is directly linked to transformation leadership (Gumusluoglu & Ilsev, 2009).

Correspondingly, transformational leadership has a strong impact on the innovation behavior and attitude of supervisor-follower dyads in service-related organizations such as travel agencies, banking industries and tourism sector (Cheung & Wong, 2011). In addition, Zhang et al. (2011) found that leadership behavior is strongly linked to innovation in a study of various service groups and workers from various Chinese organizations.

Several researchers used a quantitative approach to examine transformational leadership and how it could impact employees' innovation. A number of leadership practices has been documented, including tracking and consulting, classifying positions and goals, and basic leader behavior that has a direct impact on employee generating ideas (Jong & Hartog, 2007). Other leadership styles that have been linked to subordinate ingenuity include role modeling, empowerment, and delegation (Gupta & Singh, 2013).

Lee and Pang (2011) conducted a survey in China. According to the findings, top-level management inspiration and guidance, as well as good coordination and engagement between staff and supervisors, are all important motivators for employee innovation. Significant factors that define employee's innovation include empowering the leader's attitude, relying on consultation, collaborative decision-making, and upholding the employee's freedom (Slatten et al., 2011; Slatten & Mehmetoglu, 2011). Nagy (2014) found that transformational leadership imposing rituals and discipline within Romanian workers leads to a lack of effort and innovation. However, workers are not included in the decision-making process when it comes to innovation.

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Furthermore, job-related obstacles to innovation include establishing laws and regulations, organizational bureaucracy, and conservative management styles (Lee & Pang, 2011). When taken as a whole, leadership behavior has a significant impact on employee creativity. However, there is currently insufficient empirical evidence of leadership and innovation in the literature on this subject. This report is divided on which types of leadership have a greater effect on employee innovation. In particular, the relationship between leadership and employees' innovation in the UAE has yet to be empirically investigated.

Additionally, the literature indicated that transformational leadership is likely to be linked to employee's innovation. Inside an organization, innovation is described as the generation of new concepts that are then implemented in new goods, processes, and services (Krause, 2004). Throughout this context, adequate time and funding from the appropriate people within the organization are needed to introduce the innovative innovations that can lead to new business growth (Slatten et al., 2011). Fraj et al. (2015) conducted a survey of 232 Spanish executives, managers, and owners and discovered that organizational skills do not primarily produce strategic advantages, but that strategic planning is the driving force behind innovation. Since study has a common history in terms of innovation and its place in the market (Enz, 2012; Nagy, 2014; Chang et al., 2011), as a result, it has evolved into a classification system for various types of innovation.

Human resources consume workers' innovations to increase the quality of business services and management processes, which is one of the key causes of success. (Huang & Chen, 2010; Martínez-Ros & Orfila-Sintes, 2012; Kattara & El-Said, 2013). If managers in an organization optimize programs, it can be relatively simple to achieve innovation enhancements. Employees in the sectors, on the other hand, are associated with institution representatives, which are essentially service suppliers who design customer reactions after using the service (López-Fernández et al., 2011; Slåtten & Mehmetoglu, 2011). Scholars must examine the effect of staff and corporate technological factor on innovation (Paais & Pattiruhu, 2020); effective innovation strategies have been linked to leadership (Wong & Chan, 2011).

According to previous studies, employees' innovative approaches are shaped by their interactions with coworkers and the corporate climate (Wanasida et al., 2021; Suong et al., 2019). Leaders provide a significant impact on personal innovation through securing coworker approval for creative decisions, articulating strategy, describing pieces and assignments, and providing motivating and inspiring tools (Jong & Hartog, 2007; Amabile et al., 2004; Nguyen, 2020; Gupta & Singh, 2013).

This transformational leadership's dynamic qualities contribute to increased team innovation with a mission and vision, as well as fostering a sense of team loyalty and identity (Paulsen et al., 2013). Michaelis et al. (2009) found that transformational leadership has a positive effect on followers' innovation, especially their innovation execution behavior. However, there is a paucity of literature on transformational leadership characteristics that empower and inspire employee innovation in UAE organizations owing to a lack of empirical evidence. Therefore, to address this particular gap the study formulated the following hypothesis.

H1: *Transformational leadership has a positive relationship toward employees' innovation performance.*

H1a: *Employees' innovation has a positive relationship with idea championing.*

H1b: *Employees' innovation has a positive relationship with idea.*

2.2. Technological Diversity, Leadership and Innovation

The numerous technological solutions offered by the organization played an important role in improving an individual's success through innovation. Any of the available influential technological gadgets and tools in the organization can be referred to as technological diversity. The importance of technological diversity will also be assessed for the leadership in improving individual innovation success at UAE universities in this proposed study.

Hekman et al. (2017) say that, according to data collected from 36 company leaders and 367 employees in manufacturing companies, technological diversity has a partial mediating effect on the relationship between leadership and employee success. The analysis revealed that technological diversity is crucial in inspiring individuals to improve their efficiency, and that workers who work in such an atmosphere are more creative. This study shows that when leaders develop technological enhancements in which they trust experimentation and stand on abnormal shortcomings, they are better able to improve employee efficiency.

Furthermore, Oldham and Da Silva (2015) showed that the mediating impact of technological diversity between leadership mechanism to improve employees' innovation and employee success was documented in a survey of 284 R&D employees in 43 software development firms. Consistent with the suggestion of this survey, Huang and Chen (2010) found that the understanding of technological diversity partly mediates the relationship between leadership and employees' creative success in a study of 320 employees of consumer goods firms. The study further said that technological diversity makes workforce innovation a

hazardous choice that is still not considered motivating, if it does not have structured framework.

Despite the importance of technological diversity, this research examines how technological diversity influences leadership action and employees' innovation in universities in the United Arab Emirates. Improvements to a workplace's technological climate, such as providing adequate tools and time for success, will support employees' innovation. Individuals' views of work should be improved by university leaders in the UAE and this indicates that a technological diverse environment exists in which managers and non-managers are positive about the impact of innovation on employee success.

H2: Transformational leadership behavior has a positive association with the technological diversity.

H3: Technological diversity has a positive association with the employees' innovation.

H4: There is a significant mediating role of technological diversity between the transformational leadership and employees' innovation.

2.3. Conceptual Framework

The significance of this research is that it focuses on transformational leadership, and has been integrated into the analytical context for explaining workforce innovation. Furthermore, the novelty of this study is that it focuses on the mediating impact of technological diversity. The conceptual framework is presented in Figure 1.

3. Methodology

This segment specifies using a quantitative approach in this study. It explains the use of a self-administered questionnaires as being suitable for collecting data from the sample of employees in universities in UAE.

Based on the existing literature on transformational leadership, this study develops a conceptual model based on theories to test the research hypotheses as discussed earlier. Hence, a quantitative method was carried out to test the hypotheses. According to Creswell and Creswell (2017),
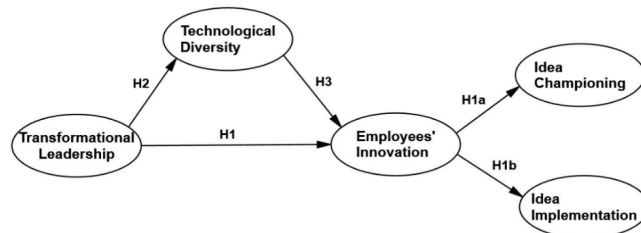

Figure 1: Conceptual Framework

quantitative approaches refer to "a structured method for uniting deductive logic with defined empirical examinations of individual behavior in order to find and verify a set of probabilistic causal laws that can be used to predict general patterns of human activity".

Similarly, according to Zehir et al. (2016), relating quantitative approach helps the scholars to create statistical proof on the depth of relationships between both dependent and independent constructs. Furthermore, their study also highlight that the statistical outcomes deliver guidelines of relationships when joined with theory and literature. In the same way according to Redmond and Walker (2008), measurement of the constructs in the conceptual and theoretical framework is an important part of research and an essential feature of quantitative research design, therefore this study purposes to measure variables.

Although quantitative research design is incapable to create theory or deliver the in-depth clarifications of qualitative enquiry, some studies (such as Amaratunga et al., 2002) discuss that it be able to test the hypotheses and specify reliability and validity. Additionally, this methodology approach adopted in this study has been effectively used in past studies of leadership (see Garmaise & Natividad, 2010), and mainly those in innovation (see Anggadwita & Dhewanto, 2016), have also extensively used this method. In other words, for the objective of this study, which is to investigate empirically relationships among the variables, this methodology is considered to be suitable.

A self-administered questionnaire has been adopted in quantitative survey methodology, to collect data about the essential constructs suggested in the conceptual model. These constructs are transformational leadership, innovation with idea championing, idea implementation, and mediating role of technological and cultural diversity. These constructs were measured by multi-items using 7-point Likert scales adopted from previously tested scales.

3.1. Final Survey Sample Size

Saunders (2011) explains that sample methods can be divided into two categories, the first is the probability sampling and the second is non-probability sampling. Probability sampling is typically used where the study's overall validity is in jeopardy. The successful sampling should be 384 workers, according to Krejcie and Morgan (1970). However, since the previous study's feedback average was 25%, the final sample size is 1,536 (stratified sampling) (Table 1).

3.2. Data Analysis Methods

The study has two key aims, one is to trial a hypothesized structural model to measure the relationships between

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Table 1: Sample of Universities' Employees in UAE

Major Cities	Population of Universities' Employees	Percentage	Sample
Abu Dhabi	74,029	34.36%	528
Dubai	83,168	38.60%	593
Sharjah	58,239	27.04%	415
Total	215,436	100%	**1536**

transformational leadership and employees' innovation. The second was to determine the mediating effect of technological diversity between leadership and employees' innovation. Therefore, the study analyzes the preliminary data through Structural Equation Modeling (SEM). SEM is used for confirmatory factor analysis for measurement model and to test the hypothesis in structural model.

Structural Equation Modeling (SEM) calculates direct and indirect special effects of leadership behaviors toward employees' innovation and mediating effect of technological diversity. SEM, not only inspects the underlying relationship among different variables, but also concurrently inspects the relationships of the variables connected to models.

3.3. Rationale for Employing Structural Equation Modeling

The main objective of this study is to inspect leadership behavior toward employees' innovation with the interference of technological diversity through a causal model. This model covers the exact relationships between independent, dependent and mediating variables. Underlying relationships and complete fitness could be measured moreover through Path Analysis (CPA), or through Structural Equation Modeling (SEM). One of the main assumptions in Path Analysis is that variables being measured do not cover any inaccuracy, then, it is normally considered as a feebler method (Field, 2013). In social sciences, such a supposition is unbearable (Luc, 2018). In view of this restriction, SEM is normally a favored method in which the items of the scale are measured as a deep variable of the concept and adding of measurement mistake produces robust and dependable outcomes (Luc, 2018).

Since SEM is inclusive of measurement and structural models, consequently, this multivariate method has the strength of both factor and path analysis. The measurement model signifies the factor analysis, though path analysis signifies its structural part. Therefore, in view of this mixture, it is possible with SEM to inspect the measurement model and structural relationships, instantaneously (Hair et al., 2017).

3.4. Two-Stage Structural Equation Modeling Approach

Two technical methods can be used in SEM – single-stage and two-stages. The dissimilar process of a single-stage method is that together the measurement estimation and structural modeling are carried out at the same time. Whereas, in the two-stage approach, firstly measurement models are recognized and then dealings between the latent variables are verified (Field, 2013). While together the methods are used in SEM, usually researchers give first choice to the two-stage approach meanwhile it decreases the probabilities of contact between measurement and structural models (Pancasila et al., 2020). Furthermore, this two-stage method is usually carried out in the area of research (Field, 2013). In assessment of the direct relative advantages, the two-stage approach will be used in this study.

The primary stage of SEM process included the founding the uni-dimensionality and reliabilities of each construct used. Uni-dimensionality might be dignified over CFA and similarly through Exploratory Factor Analysis (EFA). Though, CFA is usually chosen over Exploratory Factor Analysis (EFA) as the structure identified by EFA, the influence is not be that operational for CFA (Kline, 2015). In this study, both EFA and CFA are used.

4. Results

4.1. Reliability and Discriminant Validity

According to Tarhini et al. (2016), "internal consistency signifies the extent to which respondents are reliable across the items mentioned in the questionnaire as a measurement scale". Internal consistency is measured by Cronbach's alpha, where 0.70 or above is considered good (Pallant, 2013; Kline, 2015). The Cronbach's alpha values for this study were: transformational (0.881), technological diversity (0.855), idea championing (0.905), and idea implementation (0.912).

The association between all the structures in this analysis is used to determine discriminant validity. Table 2 indicates that the discriminant validity findings for the association between the pairs of constructs are less than 0.85, as researchers recommend (Voorhees et al., 2016; Henseler et al., 2015).

4.2. Sample Characteristics

A total of 633 valid questionnaires were gathered, as well as demographic and personal information about the respondents. There are 414 male respondents in the survey, accounting for 65.40 percent of the total population, while female respondents account for 34.60 percent. The respondents' average age is 31–35 years old (34.60%),

71.72 percent are married, and 71.24 percent of the sample has a monthly income of AED10,000 or more. In terms of qualifications, respondents are well educated, with 52.61 percent holding a master's degree.

4.3. Confirmatory Factor Analysis (CFA) Results

After CFA, some items are kept; seven of them reflect transformational leadership. Both metrics are meaningful and filled with more than the least standard value of 0.5, according to the single factor loadings (Hair et al., 2017). After CFA, six elements were kept from the technological diversity construct, which had just one factor. Employee innovation is also divided into two categories: idea championing and idea implementation; one item was eliminated during the CFA. The responses to these nine items were analyzed using CFA, and the model that included these items matched the data well. The precise CFA results of all constructs are presented in Table 3.

4.4. Overall Measurement Model

As proposed by Sass et al. (2014), inspection of standardized residuals revealed that all residual values are below the threshold (2014). Modification indices, on the other hand, revealed that the TF_10 (transformational leadership) predictor has unacceptably high values. The overall model fit predicted a nice shape after iteratively eliminating such redundant item (see Figure 2). The findings demonstrated that the overall measurement model is well fitted and generated RMSEA (0.037), chi square value (714.171 with 633 df), GFI (0.938), AGFI (0.909), CFI (0.953) and CMIN/df = 1.612. In summary, the CFA findings indicated that the overall measurement model is satisfactory.

Table 2: Inter-Item Correlation

	1	2	3	4
Transformational	1			
Technological Diversity	0.307	1		
Idea Championing	0.389	0.396	1	
Idea Implementation	0.367	0.294	0.378	1

4.5. Structural Model

Once all structures have been checked and an optimal match has been achieved (Kline, 2015; Sass et al., 2014), a structural model can be evaluated and obtained as a second and crucial stage of the study (Field, 2013). The structural model is specified as "the portion of the model that specifies how the latent variables are related to each other" (Field, 2013). The aim of a structural model is to figure out which latent variables influence the values of other constructs directly or indirectly (Kline, 2015) (see Figure 3).

The findings demonstrate that the structure model is well fitted, resulting in RMSEA (0.037), chi square (673.219 with 633 df), GFI (0.942), CFI (0.949), AGFI (0.909) and CMIN/df (1.784).

Standardized regression beta weights are represented by the values for the paths linking constructs with a single-headed arrow. The values at the boxes' edges are variance estimations, in which the sum of variance in the measured variables interpreted by latent variables or causes, and the values next to the double headed arrows are correlations, much as in the measuring model. Table 4 shows the results of this study's structural model assessment. The hypotheses H1, H1a, H1b, H2, and H3 are statistically significant and in the hypothesized direction when tested against the model.

4.6. The Mediation Analysis

Hypothesis 4 (H4) tests the mediating relationship of technological diversity with transformational leadership and employees' innovation. The procedure for testing mediator is outlined by Awang et al. (2015). In the model (Figure 4), the indirect effect is 0.26 (0.69 × 0.37 = 0.26), while the direct effect is 0.24. Partial mediation happened when the indirect effect was greater than the direct effect. Since the direct effect of leadership on employee innovation is significant.

The bootstrapping technique can be used to validate the outcome of every mediation test (Awang et al., 2015). The maximum likelihood bootstrapping protocol was used in this analysis, with a bootstrap sample of 1000 and a bias correction confidence interval of 95%. Table 5 shows the findings received. Hence, H4's mediation effect is accepted.

Table 3: Summarized CFA Results

Constructs	χ^2	df	CMIN/df	GFI	AGFI	CFI	RMESA	AVE
Transformational	24.691	7	2.048	0.971	0.934	0.975	0.068	0.651
Technological	28.328	6	2.136	0.964	0.923	0.972	0.068	0.688
Idea Championing	18.284	4	2.674	0.982	0.957	0.986	0.070	0.672
Idea Implementation	18.135	5	2.437	0.985	0..961	0.989	0.68	0.714

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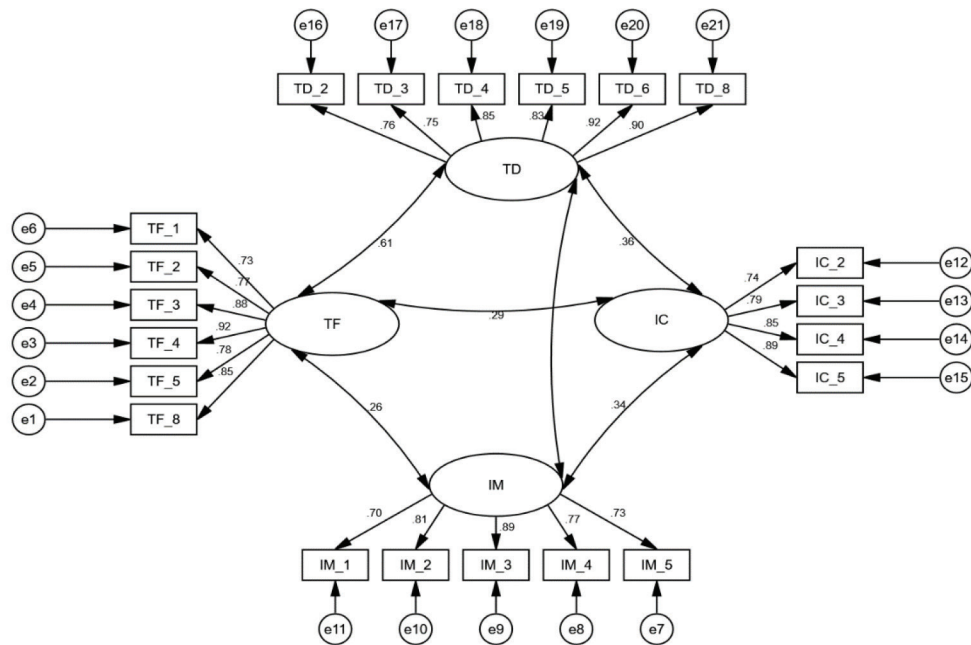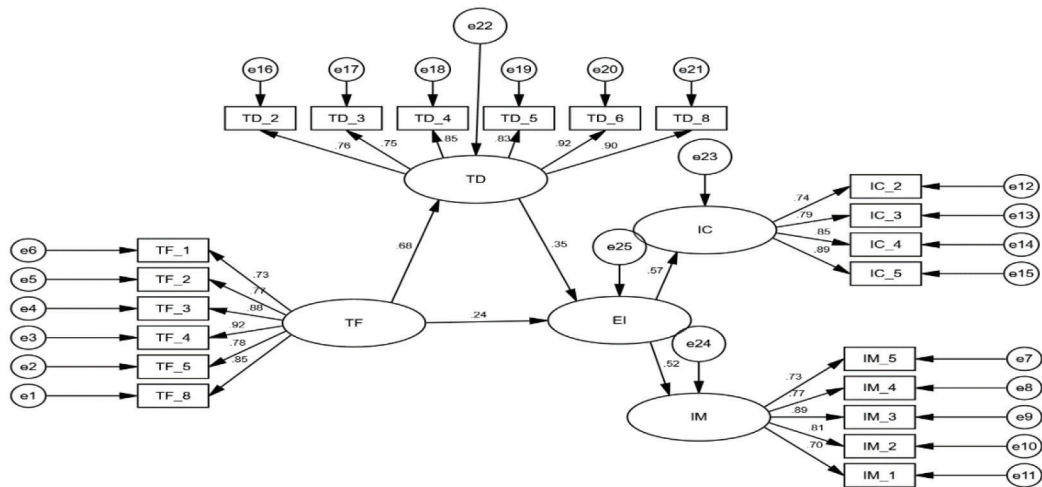
Figure 2: Overall Measurement Model

Figure 3: Structural Model Innovation

Table 4: Testing Hypotheses using Standardized Estimations

Hypothesized Path	Standardized Estimate	T-value	P-value	Result
H1: TF → EI	0.24	3.914	***	Significant
H1a: EI → IC	0.57	6.043	***	Significant
H1b: EI → IM	0.52	5.541	***	Significant
H2: L → TD	0.68	7.091	***	Significant
H3: TD → EI	0.35	4.243	***	Significant

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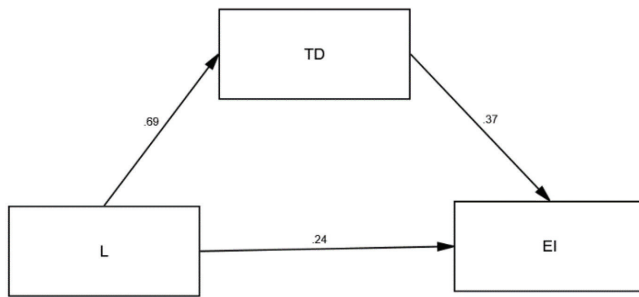
Figure 4: Mediating Effect

Table 5: Bootstrapping Procedure

Indirect Effect	0.26	*p*-value (0.000) Significant
Direct Effect	0.24	*p*-value (0.002) Significant

5. Conclusion and Limitations

The research study combined the construct of leadership with technological diversity, and employees' innovation in universities' employees in UAE. Evidently, the results of this study suggest that employees of universities in UAE are strongly influenced by the perception of innovation-enhancing leadership on employees' innovation. Employees' innovation refers to the process of putting innovative ideas into action, since leaders have more power at the implementation level than at the concept generation stage. Furthermore, data from the findings shows that, since executives have a higher organizational status than workers, they would have more access to capital, which is a prerequisite for effective innovation. The results suggest that leaders who promote creativity will have a greater impact on employees' innovation. The findings of the study show that transformational leadership styles inspire staff at UAE universities to be more innovative. The results also indicate that transformational leadership is a phenomenon that empowers and assists workers, especially university employees, in becoming more imaginative and inventive within the company.

In UAE universities, it has been discovered that technological diversity positively and greatly mediates the relationship between assumed leadership and innovation. According to the results, organizations with a high degree of technological diversity are more open to innovative leadership than those without. New thoughts, feedback, and disruptive practices emerged from the relationship between perceived innovation-enhancing leadership and technological diversity within the organization.

This study adds to our understanding of how leaders should inspire workers to innovate. It also included a discussion of how transformational leadership, technological diversity influence workforce innovation in UAE universities.

The findings of this research have both factual and theoretical ramifications. Primarily, this research refers to theoretical or observational research on the importance of technological diversity in the advancement of employee creativity through leadership (Kamukama & Natamba, 2013). In reality, technological diversity is an important aspect and a fundamental requirement. There has been no empirical study on the advancement of workforce innovation through technological diversity via leadership behaviors. As predicted, this report revealed the importance and impact of technological diversity connections in concept production, and it strengthened our understanding of how such ideas are implemented. As a result, this research serves as a basis for further investigation into the relationships between these principles.

Furthermore, a large number of workers in the company were unsuccessful. More active workers will not be eliminated if employees are strengthened to be productive and learn new skills. Employee trust and gratification may be boosted by leadership behaviors. For instance, as workers understand just what the organization wants of them, they are more likely to be satisfied with their jobs. Leadership has the ability to expose workers' strengths and open doors to job advancement, resulting in a salary and increased earnings.

This research adds to the body of knowledge on leadership and workforce innovation and shows practical implications, therefore it has some limitations which creates opportunities for future research. First, different cultural contexts can disrupt the relations between employee evaluations of four organizations. Second, one of the most serious flaws in this research is the sample used to choose the organizations. Third, reliance on material supplied by workers who are not open in reporting their leaders to an anonymous individual for fear of being revealed is a possible restriction.

Despite the fact that this study provided a paradigm that demonstrated an actual link between transformational leadership and employees' innovation, as well as the role of technological diversity as a mediator, there are still some places where future research is needed. For example, the findings of this analysis are restricted to academic institutions in the UAE; according to Pancasila et al. (2015), the findings can differ if other ethnicities are considered. It suggested the need for more observational research to determine if leadership styles work similarly or whether there is any exclusivity to UAE universities. Prasertchuwong (2015) argued that culture plays an important role in these relationships. More analysis is needed to broaden our interpretation of the structures used in this study by examining them in a variety of ways. This research has identified many gaps in the field of leadership, especially in the area of employees' innovation. Scholars should consider other aspects not limited to technological diversity in their innovation process, which have a significant effect and impact on organizational activities.

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