

The Impact Of Transformational Leadership On Followers' Innovative Behavior In Public Sector “An Applied Study”

Shaymaa Mahmoud Mahmoud Bayoumi *

Mohamed Rabie Zanaty Yossef **

Nehal Mohamed Rabie Zanaty Yossef ***

(*)Shaymaa Mahmoud Mahmoud Bayoumi, Ministry of Trade and Industry , Cairo , Egypt , The Research interests are in Human Resources Managemant , Strategic Management , Organizational Behavior, International Trade .

E-mail: shaymaabayoumi@aucegypt.edu

(**) Mohamed Rabie Zanaty Yossef, professor of Human Resources and former Dean of Faculty of Commerce , Tanta University ,Tanta , Egypt , The Research Interests are In Human Resources Management, Organizational Behavior ,International Business , Strategic Management .

E-mail: rabiezanty52@yahoo.com

(***)Nehal Mohamed Rabie Zanaty Yossef , Lecturer Of Business Administration , Faculty Of Commerce Tanta University , Tanta , EGYPT , The Reserch Interests are In Organizational Behavior , Human Resources Management , Strategic Management.

E-mail: nehalzanaty28@gmail.com

Abstract

This study aims to examine the direct impact of Transformational leadership (TL) on Innovative Behavior in the Egyptian Ministry of Trade and Industry. A field study was conducted using a sample of 240 participants operating in the Ministry. A total number of 216 questionnaires were utilized for analysis purpose.

Results revealed that all dimensions of Transformational Leadership have a positive impact on employees' innovative behavior. The results also indicated that intellectual stimulation comes in first place in its impact on achieving innovative behavior, followed by inspirational motivation, individualized consideration, and finally, idealized influence.

Key Words: Transformational Leadership (TL) , Innovative Behavior
Ministry of Trade & Industry

تهدف هذه الدراسة إلى اختبار الأثر المباشر للقيادة التحويلية على السلوك الإبداعي للموظفين الإداريين بوزارة التجارة والصناعة المصرية. وقد تم إجراء الدراسة باستخدام عينة قوامها ٢٤٠ مفردة من موظفي الوزارة، وكانت الاستثمارات الصالحة للتحليل ٢١٦ استمارة، وقد أوضحت النتائج وجود أثر معنوي إيجابي مباشر لأبعاد القيادة التحويلية الأربعة على السلوك الإبداعي للعاملين. كما أظهرت النتائج أن بُعد الاستشارة الفكرية يأتي في المقام الأول من حيث الأهمية والتأثير على السلوك الإبداعي، يليه التحفيز الإلهامي، ثم مراعاة الأفراد، وأخيراً التأثير المثالي

الكلمات المفتاحية : القيادة التحويلية ، السلوك الإبداعي ، وزارة التجارة والصناعة

1-Introduction

Public sector organizations in the current era are witnessing many rapid developments and successive changes because of the knowledge explosion and communication revolution. This made organizations face many challenges and difficulties in how to cope with these changes and how to adapt to them. This forced organizations to find innovative methods and abandon traditional methods and procedures by hiring creative employees and setting appropriate means that help to find new methods and quick administrative solutions.

Leaders play a major role in organizations, as they influence the direction of the group's activity, although there are many factors inside and outside the organization that affect employees innovative level, many ways indicate that leadership within the organization plays a cardinal role in creating the appropriate administrative environment, the current challenges force public sector institutions to adopt TL style to encourage innovation.

TL is a cornerstone to achieve innovation and success in public organizations. Transformational leaders foster employees to seek new achievements, think distinctively, and find new solutions to problems (Ekrem&Eren,2020). They motivate the employees, enabling them to adopt innovative approaches in the workplace and to perform beyond expectations (Noor, 2011).

Although there is a consent on the cardinal influence of leaders in fostering employees innovation, little studies investigated the relationship between leadership and innovation (Jong & Hartog, 2007). Accordingly, this present research is seeking to investigate the impact of TL dimensions on followers' innovative behaviour, in addition, few studies have investigated innovative behaviors in public sector organizations (Park &Jo, 2018).

2. Theoretical Background

This section provides a theoretical review of the study's two main variables.

2-1 Transformational Leadership

– Transformational Leadership Definition

Burns (1978) used TL to describe political leaders who alter their followers' values. Later, Bass (1985, 1990) broadened the scope to incorporate leadership in organizational settings. TL, which is required recently, has the impact to motivate followers to do best work and enhance their talents so that they can reach intellectually advanced levels. The transformational leader can inspire his followers to achieve beyond what is anticipated.

Transformational leadership has consequently become one of the well-known leadership styles because it emphasizes changing workplace norms and motivating employees to exceed their own expectations (Yukl, 1989). Transformational leaders are expected to achieve these results by aligning the objectives of their followers with those of the organization as well as providing an inspiring vision of the future. Transformational leaders express a compelling and demanding future vision. They infuse labour with purpose, intellectually engage followers, and motivate them to transcend self-interest and contribute to the group. As a result, transformational leadership is a vision-centred and values-driven style.

Transformational leadership is defined by Conger (2002) as leadership that goes beyond performance inducements to intellectually and creatively develop and assist employees, as well as transmit their own stakes into an integral part of the organization's goal. According to Kirkan (2011), TL is a leadership style adopted by leaders to change the present situation by identifying those who can handle problems through their skills and sound vision to achieve the hoped targets.

Transformational leadership refers to leaders who seek to produce new ideas and perspectives to chart a new course for the growth and

profitability of the firm. By developing commitment, passion, and loyalty in managers and employees, they mobilize the organization's members to make significant changes to the organization's core and foundational elements to be able to move in new directions and attain greater ideal performance peaks (Mirkamali et al., 2013).

. The dimensions of Transformational Leadership

Transformational leadership is typically divided into four major dimensions:-

a – Idealized influence:

Idealized influence refers to behaviors that offer followers a model to emulate. Such conduct may involve demonstrating strong moral beliefs and prioritizing group interests over personal ones (Bono & Judge, 2004)

Transformational leaders are noble role models who respect others and also show idealized impact, they manifest grit, and trust in their followers and focusing in achieving the targeted goals

b – Intellectual stimulation:

Intellectual stimulation consists of boosting the follower's creativity and forcing him or her to consider old challenges in novel ways (Bass, 1985). Transformational leaders intellectually stimulate innovation by remolding new issues and presenting previous situations in novel shape. They approaching followers with novel situations and encourage them to think critically. In addition, they do not publicly criticize blunders, or failures, as well as methods that vary from their own (Bass and Avolio, 1990).

Transformational managers establish a culture of active thinking through intellectual stimulation, which motivates followers to become more engaged in the organization (Tims et al., 2011). These leaders employ and encourage both intuition and reasoning when addressing difficulties.

c – Individualized consideration:

A leader demonstrates appreciation for subordinates by behaving fairly with them (Bass & Avolio, 1990). Individualized attention entails recognising each follower as a distinct individual with distinct requirements and satisfactorily satisfying those needs (Judge & Bono, 2000).

When leaders exercise individualised concern, they spend time listening, mentoring, and instructing in order to facilitate the growth of their followers, and regard others as unique individuals with distinct needs, skills, and goals , Individual concern increases the development of followers motivation (Sosik& Jung, 2011).

Transformational leaders serve as guides or coaches who are aware of their followers' aims and desires and help them realise their full potential. ,Leaders demonstrate individual concern for followers by identifying their personal abilities, needs, and concerns, matching individuals with appropriate learning opportunities and challenges in a nurturing environment, delegating authority to followers as a means of developing them, providing progressive feedback and tutoring followers.

d – Inspirational motivation:

Inspirational motivation requires the capacity to communicate simply and effectively while motivating employees to accomplish crucial business objectives. Transformational leaders are regarded as eager and positive while discussing the future, which energises and inspires their followers (Dubinsky et al., 1995).This dimension entails that leader shapes vision, acquires hopeful obligation to vision, and ignites passion for overcoming the obstacles associated with achieving the vision. They express outright vision for future, integrate organizational goals and personal claims , so employees can fulfil both, and view risks and challenges as learning opportunities.

2-2. Innovative Behavior

– Definition of Innovative Behavior

Drucker (2002) defines innovation as the process by which creates new wealth-generating resources or enhances existing resources. Innovative behavior is defined by the same author as the sharing of personal knowledge about the learning process and the creation of new knowledge.

Rogers (2003) defined innovative behavior as an idea, practice, or object that an individual or other adopting unit regards as novel. The individual's attitude to an idea is determined by how novel it is regarded, Innovation, as defined by Brown and Ulijn (2004), is the successful introduction of something new .

Innovative behavior is defined by Laforest & Tann (2006) as pursuit of new or improved processes, and labour practices. Newness is not necessarily synonymous with new knowledge; it can also refer to the modification or advancement of current knowledge (Tiwari & Buse, 2007).

According to Santos-Rodrigues et al. (2010), innovation is the creation of new information or the creative recombination of existing data. Innovative behavior and innovation may not always require the introduction of something totally new that advances the global technological frontier; rather, it must result in something new for the company bringing the invention to market .Innovative behavior, according to Tavalae (2013), is the application of unique ideas to improve organization, or workplace.

Innovative behavior is facilitated by creativity and the commercialization of the creative process. Innovative behavior is the extra-role acts of an employee that have been recognized directly or indirectly (Torka, 2013). Innovative behavior is a broad notion that encompasses all the actions that employees must demonstrate in order to pass the innovation process, with innovation being the desired outcome and output (Jeroen & Deanne, 2014).

– Importance of Innovative Behavior

Innovation is an important factor that maintains longevity of an organization. Innovation is the process by which a member of an organization seeks out and implements novel ideas to enhance performance , Innovation is not limited to the creation of new product concepts and ; it also includes the introduction of new methods or modifications to current processes to improve work efficiency (Jong & Kemp, 2003).

In terms of market share, profitability, and growth, innovative companies have a competitive advantage over their rivals, according to a number of studies ,not only may the domestic market benefit from innovative behavior, but so can international markets (Tiwari&Buse, 2007).

To compete with the price-oriented competition offered by low-cost producers from emerging nations, enterprises must provide ever-more-innovative products with enhanced utility , Businesses operating in hostile environments must be prepared to continuously update their products and operations and exhibit more innovative behavior; else, their chances of survival will be severely affected (Duygulu et al., 2008).

Innovative behavior and innovation assist businesses in implementing more productive manufacturing processes, offering high-quality, value-added products and services, performing better in their markets, establishing a positive reputation on the market and in the eyes of their customers, and increasing their market share and competitive advantage (Gunday et al., 2011).

As a result, numerous businesses have incorporated innovation into their corporate objectives. Innovative conduct is essential for the existence of all businesses (Schroll, 2012). Many businesses have begun to see the benefits of innovation in terms of productivity, efficiency, sales, profitability, market share, growth, and overall performance, as well as the necessity of innovation to maintain a competitive edge . Innovation is widely recognized as crucial for enhancing levels of competitiveness .

Some scholars have focused on the factors that influence followers innovative behavior and how to promote innovation (Yuan & Woodman, 2010). Leadership is regarded as the most significant predictor of innovative behavior, according to earlier research reviews (Jung et al., 2008). According to Conger (1999), TL has a great influence in encouraging innovation, transformational leadership theory sees innovation initiation as a fundamental leadership obligation, according to Basu and Green (1997), TL is an effective method for encouraging innovative behavior.

3. Previous Studies

Previous studies are classified into 2 axes ,the first related to TL and the second related to innovative behavior. Some of the studies will be reviewed in chronological order as follows:

A) - Studies related to transformational leadership

Keung & Szapkiw, (2013) studied the relationship between cultural intelligence and transformational leadership, this study examined 193 international school leaders within Unites States schools. The findings show significant positive relationship between cultural intelligence and TL ,Leaders who have a higher level of cultural intelligence manifest a higher level of TL style, which means that people with high-cultural intelligence can lead more effectively in multicultural workplace.

Furthermore, Hayati et al, (2014) investigated the impact of TL components on work engagement among nurses in five public hospitals in the Khuzestan province of Iran. , 240 nurses have been chosen randomly ,findings asserted the significant effect of this type of leadership on work engagement.

Ebrahemi et al., (2016) examined how leadership styles (transformational and transactional styles) affect organizational performance by considering innovation (exploratory and exploitative) in manufacturing companies in Iran. using sample of 401. The results indicate a positive relationship between TL and exploratory innovation; however, a negative relationship between TL and exploitative innovation was found..

Dorra, (2021) examined the direct impact of TL on psychological empowerment of managerial employees at Tanta university faculties in Egypt. A field study was conducted using a sample of 220 participants operating in these faculties. Results revealed that all dimensions of transformational leadership have a direct positive impact on employee's psychological empowerment. The results also showed that individual consideration comes in the first place in terms of its impact on achieving psychological empowerment, followed by intellectual stimulation, then idealized influence and finally come inspirational motivation.

Abdelghafar (2022) study at South Delta Electricity in Egypt asserted the positive effect of transformational leadership on employee performance

B) - Studies related to innovative behavior:

Noordin (2014) investigated the relationship between intellectual capital, innovation capability, and firm performance in small and medium enterprises in Malaysia. The study revealed that innovation capability mediates the impact of structural capital and intellectual capital on firm performance.

Tummers (2016) examined whether learning opportunities, as a job resource can predict innovative work behavior through work engagement. 154 respondents working in a global acting customer service division within a larger organization in in Netherlands, completely filled in a self-rating survey, results showed that the relationships between learning opportunities and innovative work behavior are directly positive.

Moreover, Qian & Huang (2017) examined the relationship between innovation ability and human capital in medical education, at a hospital in Shanghai city, China. Total of 238 valid questionnaires are retrieved, with a retrieval rate of 79%. , results asserted the positive relationship between human capital and innovation ability,

Rachid et al., (2019) studied the impact of authentic leadership on employees' creativity and innovative behavior in banking sector of Lahore,

Pakistan . The data for this study was collected from 276 employees through Google forms ,the results revealed a positive impact of authentic leadership on creativity and innovative behavior.

Ebeid (2019) conducted an empirical study on food industrial sector in Egypt to examine the impact of intellectual capital on innovation in SMEs. The researcher found that all of the intellectual capital dimensions [structural, human and relational capital] have significant positive direct impact on innovation in SMEs. The researcher added that both Knowledge acquisition and knowledge exploitation have significant direct impact on innovation in SMEs, while knowledge assimilation and transformation did not have such a significant impact.

Phuong et al (2021) study examined some factors impacting employees innovative behavior in Vietnam , using a sample of 455 employees in diverse organizations , it has been found that Empowerment Leadership and job Satisfaction positively affect innovative behavior. while Workplace Happiness shows no effect on innovative behavior.

Comments on Previous Studies:

According to the previous review of literature it has been noted:-

- The studies have highlighted the importance of leadership on employees innovative behaviour and organizational performance.
- To our best, few previous studies investigated the relationship between TL innovative behavior.
- It has been difficult to find studies that examined the impact of transformational leadership on the followers' innovative behavior in Egyptian public sector organizations.
- There is a dire need for this study due to the need for innovation in the public sector. This study can be considered as a pioneer in this field and can add a cardinal contribution to the literature.

4. Research Problem

Organizations face many problems that require their leaders and employees to think about reducing dependence on the traditional approach in problem solving and trying to employ a creative approach. Transformational leadership is characterized by a high ability to face challenges ,accordingly the researchers were keen to study transformational leadership that seeks to open horizons and prepare the appropriate climate for the innovative behavior of the public sector employees .

Egypt is considered as a site for conducting this research because it is working on a complete administrative system reform as part of rebuilding the country and enhancing government services for the welfare of its citizens. The Public sector plays a vital role in economic development in Egypt.

Therefore, the present research is looking at the gap that exists within the literature surrounding TL and innovative behavior. According to a pilot study conducted at the Ministry of Trade and Industry, including 25 employees working there, the study findings indicated that:

- Transformational leaders encourage followers to find their own way to fulfil tasks that way improving innovative behavior.
- Transformational leaders set high targets, and communicate their work vision,
- Transformational leadership has been shown to have a positive influence on employee innovative behavior.
- Followers rank transformational leadership dimensions at above average ranking.
- The study manifested that the innovation is also above average, depending on individual ideas.

Depending on what previously mentioned, research problem can be formulated in the following questions:

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- What is the impact of transformational leadership on employees innovative behavior?
 - Do perceived transformational leadership dimensions differ on its impact on innovative behavior in the Ministry of Trade and Industry?

5. Research objectives

This research aims at:

- a – Assessing the level of practicing the dimensions of TL among employees at the Ministry of Trade and Industry.
- b – Assessing the level of practicing innovative behavior at the Ministry of Trade and Industry.
- c – Investigating the impact of TL dimensions on innovative behavior in the Ministry of Trade and Industry and determining the most important dimensions of transformational leadership affecting innovative behavior.
- d – Coming up with results and recommendations that convince leaders at the Ministry of Trade and Industry that practicing the traits of transformational leadership can affect the level of innovative behavior of the followers.

6. Research Importance

This research gets its importance from the additions expected to be provided at both scientific and practical levels:

- a – This study added to the human resource research literature in the fields of transformational leadership and innovative behavior.
- b – This study filled research gap by investigating the impact of TL on innovative behavior.
- c – This research is focusing on two recent topics in workplace, which are TL and innovative behavior. This study will contribute to fine-tuning these two topics' literature.

- d – Studying the impact of transformational leadership on followers' innovative behaviour in public sector could result in a further understanding of their importance in the public sector settings. Therefore, performance and success may be improved.
- e – This study helps people in charge in the Ministry of Trade and Industry to understand the significant importance of innovative behavior. It also enables them

7. Research Methodology

7-1. Research Hypotheses

In an effort to fulfil the study objectives, the following hypotheses were developed.

- *H₁: Transformational leadership dimensions have a significant direct positive impact on innovative behavior. this hypothesis was divided into 4 sub –hypotheses as follows;-
- H₁₁: Idealized influence has a significant direct positive impact on innovative behavior.
- H₁₂: Intellectual stimulation has a significant direct positive impact on innovative behavior.
- H₁₃: Individual consideration has a significant direct positive impact on innovative behavior.
- H₁₄: Inspirational motivation has a significant direct positive impact on innovative behavior.

7-2. Techniques of Data Collection

– Office Technique:

This technique attempts to collect secondary data from sources such as books, reports, and prior studies that are linked to research variables (transformational leadership dimensions and innovative behavior) in order to develop the study's theoretical framework.

– Field Technique:

This technique aims to obtain primary data by a questionnaire designed specifically for the current investigation. This questionnaire was distributed to a random sample of employees from Egypt's Ministry of Trade and Industry.. Prior to constructing the questionnaire, an extensive review of relevant literature was conducted in order to find existing measures of associated dimensions. The measurement items for this study were used by adapting measures used in earlier studies and adjusting them to fit the Egyptian environment.

To ensure the content validity of the questionnaire, the initial copy was distributed to a number of managerial employees at various sectors of Egypt's Ministry of Trade and Industry (Foreign Trade and Trade Agreements Sector, Trade Remedies Sector, Central Department for Strategic Management); they reshaped certain items to make them more understandable for potential respondents.

Following the foregoing efforts, the researchers based on Bass et al (2003) and Birasnave (2014) studies developed (24) items to measure **the independent variables** (transformational leadership dimensions) , (7) were used to measure idealized influence dimension, (7) were used to measure intellectual stimulation, (5) were used to measure individualized consideration and (5) were used to measure inspirational motivation as fourth dimension of transformational leadership ,

Also 20 items were used to measure innovative behaviour as a **dependent variable** and were adopted from Lukes& Stephan (2017), Asih& Inderiati(2020).

7-3. Study's Limitations

This research is limited to 2 sectors and one central department that reports directly to the Minister at Egypt's Ministry of Trade and Industry by focusing on permanent employees who spent more than three years in their jobs,

7-4 . Research Population and Sample Selection

Using sampling techniques, the researchers can collect data from sub-groups (two sectors and one central department at Egypt's Ministry of Trade and Industry) rather than entire population, according to the formal data obtained from Egypt's Ministry of Trade and Industry, the total number of permanent employees occupying permanent jobs for more than three years (in the selected two sectors and one central department) is 640 employees. The following table shows the total number of employees distributed on two sector sand one central department included in the current study.

Table (1)

Numerical statistics for total numberof employees selected for this study

The Sectors	Total
Foreign Trade and Trade Agreements Sector	367
Trade Remedies Sector	250
Central Department for Strategic Management	23
Total	640

In the light of the population size (640)the sample size is 240 at 95% as confidence level with 5% margin of error and 50% as population proportion.

In addition, the sample was distributed by using the random method, as mentioned above 240 questionnaires were directed to the respondents, the researchers collected 228 questionnaires with a response rate of 95%, where twelve invalid cases were excluded, the total number of 216 questionnaires (with a usable rate of 90%) were utilized for analysis purpose as the table (2) shows

Table (2)
Sample size of each sector according to the employee jobs

The Sectors	Total
Foreign Trade and Trade Agreements Sector	154
Trade Remedies Sector	49
Central Department for Strategic Management	13
Total	216

7-5. Research Variables Coding and questionnaire items

Table (3) indicates variables coding and their questionnaire items as follows:

Table (3)

Research Variables	Codes	Questionnaire Questions
Independent Variables		
Transformational Leadership	X	1 → 24
→ Idealized influence	X ₁	1 → 7
→ Intellectual stimulation	X ₂	8 → 14
→ Individualized consideration	X ₃	15 → 19
→ Inspirational motivation	X ₄	20 → 24
Dependent Variables		
Innovative behavior	Y	25 → 44

7-6. Tools of Statistical Analysis

The following are the statistical technique that is used for analyzing research data:

A) -Alpha Cronbach Test

It is a tool used to prove the reliability of the items that measure study variables. This statistical technique shows the level of internal matchmaking between items that shape each variable.

B) -Descriptive Analysis for the study

The researchers used descriptive statistics for the purposes of descriptive analysis of the field study data, as the study relied on the arithmetic mean and the standard deviation of each of the dimensions of transformational leadership and innovative behavior.

C) -Regression Analysis

SPSS package, Version(22) was used in the statistical analysis to estimate simple regression and multiple regressions to measure the impact of independent variables (transformational leadership dimensions) on the dependent variables (innovative behavior). Besides, the coefficient of determination (R^2) was estimated because of its importance, since it measures the proportion of the total variation in the dependent variables caused by the impact of independent variables. The significance of the whole regression model was tested (F test) from the table of ANOVA. Finally, (T-test) was estimated to test the significance of each independent variable separately on the dependent variable. A stepwise pattern was used in the statistical analysis of the present study because it arranges the independent variables according to their influential strength on dependent variables.

8. Data analysis

8-1. Results of Reliability Analysis

The reliability of the scales was evaluated using Cronbach's Alpha Test that measures the internal consistency between the scale items. Results of the reliability analysis in table (4) show that all alpha coefficients exceed the acceptable level of reliability which is 0.7 .

Table (4) Reliability Analysis: Cronbach's Alpha Coefficients

Study variables	Alpha Coefficient	No. of items
Transformational leadership (X)	.824	24
Idealized influence (X1)	.783	7
Intellectual stimulation (X2)	.822	7
Individualized consideration (X3)	.762	5
Inspirational motivation (X4)	.728	5
Followers' Innovative Behavior (Y)	.824	19

8-2. Descriptive analysis of the study's data

The researchers used descriptive statistics for the purpose of descriptive analysis of the field study data, as the study relied on the arithmetic mean and the standard deviation of each of the dimensions of Transformational Leadership and Followers' Innovative Behavior, and this is shown in the following table:

Table (5) Descriptive Statistics

Research variables	Arithmetic mean	Standard deviation
Transformational leadership (X)	3.03	.69
Idealized influence (X1)	2.95	.77
Intellectual stimulation (X2)	3.02	.81
Individualized consideration(X3)	3.03	.75
Inspirational motivation (X4)	3.11	.87
Followers' Innovative Behavior (Y)	2.41	.88

It is clear from the previous table that the arithmetic mean values for transformational leadership is 3.03 and standard deviation is .69 this indicates that respondents have Transformational Leadership to a moderate degree, while the arithmetic mean values of the dimensions of

Transformational Leadership ranged between 2.95 to 3.11 this means that these dimensions already exist to a moderate degree, the table also indicates that the mean for Followers' Innovative Behavior (Y) is 2.41 and its standard deviation is .88.

8-3. Results of regression analysis

The first sub-hypothesis

The first sub-hypothesis (H_{11}) investigates the impact of Idealized Influence on Followers Innovative Behavior", which states:

"Idealized Influence has a significant positive impact on Followers' Innovative Behavior".

By performing a simple regression on the collected data from the sample, the following table was obtained

Table (6) “The impact of Idealized Influence on Followers' Innovative Behavior”

Transformational leadership	B	T	Sig T	R	S.e	R ²	F	Sig.F
X1 → Y	.769	13.385	.000	.675	.6557	.456	179.169	.000

Table(6) indicates that:-

- The coefficient of determination R^2 has reached .456, which means that 45.6% of the change in Followers' Innovative Behavior is due to Idealized influence (Idealized influence explain 45.6% of the variation in Followers' Innovative Behavior), while the remaining 54.4% is due to other factors than Idealized influence.
- The table also showed that the results supported the first sub-hypothesis(H_{11}), which proposes that Idealized influence has significant positive effect on Innovative Behavior, where correlation coefficient is positive between Idealized influence and Followers' Innovative Behavior ($r = .675$). It can be noted that Idealized influence has a

significant impact on Followers' Innovative Behavior as shown from the value of T test with a significant level $.000 < 0.001$.

- The previous table also reflects the significance of the regression model through the (F) test, which is equal to 179.169 with a level of significance $.000 < 0.001$, These results support the validity of the first sub-hypothesis of the research which proves that there is a significant positive impact of Idealized influence on Followers' Innovative Behavior.
- **The second sub-hypothesis**
- The second sub-hypothesis (H_{12}) investigates the impact of Intellectual Stimulation on Followers' Innovative Behavior. which states:
- **"Intellectual Stimulation has a significant positive impact on Followers' Innovative Behavior. "**
- By performing a simple regression on the collected data from the sample, the following table was obtained

Table (7) "The impact of Intellectual Stimulation on Followers' Innovative Behavior"

Transformational leadership	B	T	Sig T	R	S.e	R ²	F	Sig.F
X2 → Y	.889	20.927	.000	.820	.50923	.672	437.920	.000

Table(7) indicates that:-

- The determination coefficient R^2 has reached .672, which means that 67.2% of the change in Followers' Innovative Behavior (Y) is due to the Intellectual stimulation (Intellectual stimulation explains 67.2% of the variance in Followers' Innovative Behavior), while the remaining 32.8 % is due to factors other than Intellectual stimulation.
- The regression coefficients for the independent variable have a positive sign, in addition to the significant effect of Intellectual stimulation on Followers' Innovative Behavior, which is evident from the (t) test with a

significant level $.000 < 0.001$. there is also a positive correlation $r = .820$ between Intellectual stimulation and Followers’ Innovative Behavior.

- The previous table also reflects the significance of the regression model through the (F) test, which is equal to 437.920 with a level of significance $.000 < 0.001$, These results support the validity of the second sub-hypothesis of the research which proves that there is a significant positive impact of Intellectual stimulation on Followers’ Innovative Behavior.
- In this case, the leaders act as a caring supportive resource for their employees, they advice them and devote more time to enhance their follower’s innovative behavior.
- **The Third sub-hypothesis**
- The third sub-hypothesis (H_{13}) investigates the impact of Individualized Consideration on Followers’ Innovative Behavior. which states:
- **"Individualized Consideration has a significant positive impact on Followers’ Innovative Behavior. "**
- By performing a simple regression on the collected data from the sample, the following table was obtained

Table (8) "The impact of Individualized Consideration on Followers’ Innovative Behavior"

Transformational leadership	B	T	Sig T	R	S.e	R ²	F	Sig.F
X3 → Y	.930	19.078	.000	.794	.5408	.630	363.97	.000

Table(8) indicates that: -

- The determination coefficient R^2 has reached $.630$, which means that 63% of the change in Followers’ Innovative Behavior (Y) is due to Individual consideration (individual consideration explains 63% of the variance in

- followers’ innovative behavior), while the remaining 37% is due to factors other than individual consideration.
- The table also showed that the results supported the third sub-hypothesis (H₁₃), which proposes that Individual consideration has a significant positive impact on Followers’ Innovative Behavior, where the correlation coefficient is positive between individual consideration and Followers’ Innovative Behavior (r =.794), and the regression coefficient of Individual consideration has a positive sign($\beta =.930$).It can be noted that Individual consideration has a

significant impact on followers innovative behavior as shown by the T value since (Sig.T=0.000< 0.001).

The previous table also reflects the significance of the regression model through the (F) test, which is equal to 363.979 with a level of significance .000 < 0.001, These results support the validity of the third sub-hypothesis of the research which proves that there is a significant positive impact of Individualized consideration on Followers’ Innovative Behavior.

The Fourth sub-hypothesis

The fourth sub-hypothesis (H₁₄) investigates the impact of Inspirational Motivation on Followers’ Innovative Behavior.which states:

"Inspirational Motivation has a significant positive impact on Followers’ Innovative Behavior."

By performing a simple regression on the collected data from the sample, the following table was obtained

Table (9) "The impact of Inspirational Motivation on Followers’ Innovative Behavior"

Transformational leadership	B	T	Sig T	R	S.e	R ²	F	Sig.F
X4 → Y	.773	17.395	.000	.765	.57206	.586	302.588	.000

Table (9)indicates that:-

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- The determination coefficient R^2 has reached .586, which means that 58.6% of the change in Followers' Innovative Behavior (Y) is due to Inspirational motivation (Inspirational motivation explains 58.6% of the variance in

Followers' Innovative Behavior), while the remaining 41.4% is due to factors other than Inspirational motivation.

- The table also showed that the results supported the fourth sub-hypothesis (H_{14}), which proposes that Inspirational motivation has significant positive impact on Followers' Innovative Behavior, where correlation coefficient is positive between Inspirational motivation and Followers' Innovative Behavior ($r = .765$), and the regression coefficient of Inspirational motivation has a positive sign ($\beta = .773$). It can be noted that Inspirational motivation has a significant impact on Followers' Innovative Behavior as shown from the value of T since ($\text{Sig. } T = 0.000 < 0.001$).
- The previous table also reflects the significance of the regression model through the (F) test, which is equal to 302.588 with a level of significance $.000 < 0.001$, These results support the validity of the fourth sub-hypothesis of the research which proves that there is a significant positive impact of Inspirational motivation on Followers' Innovative Behavior.

The main hypothesis of the study

The main hypothesis (H_1) investigates the impact of Transformational leadership on Followers' Innovative Behavior.

A multiple regression analysis (using stepwise method) was used to test the main hypothesis of the research, which states:

"Transformational leadership dimensions have a significant positive impact on Followers' Innovative Behavior"

By performing a multiple regression on the collected data from the sample, the following table was obtained

Table (10) The impact of dimensions of Transformational leadership on Followers’ Innovative Behavior

dimensions of Transformational Leadership	OLS				R ²	F	SIG F	Rank
	B	T-value	Sig.T	R				
					0.797	207.678	0.000	
Idealized influence(X1)	0.110	2.204	0.000	0.675				4
Intellectual Stimulation (X2)	0.405	7.089	0.000	0.820				1
Individualized consideration (X3)	0.293	4.825	0.000	0.794				3
Inspirational motivation (X4)	0.301	6.607	0.029	0.765				2

Table (10) revealed that:

- The determination coefficient R² has reached .797, which means that 79.7% of the change in Followers’ Innovative Behavior (Y) is due to the dimensions of Transformational leadership (the dimensions of Transformational leadership explain 79.7% of the variance in followers’ Innovative Behavior, while the remaining 20.3% is due to factors other than dimensions of Transformational leadership).
- The table also showed that the results supported the main hypothesis(H1), which proposes that the Transformational leadership has significant positive impact on Followers’ Innovative Behavior, where correlation coefficients is positive between dimensions of Transformational leadership (Idealized influence, Intellectual stimulation, Individualized consideration, Inspirational motivation) and Followers’ Innovative Behavior (r = 0.675 , 0.820 , 0.794, 0.765), and the regression coefficients of all dimensions of Transformational leadership have a positive signs (β = + 0.110, +0.405, + 0.293, + 0.301). It can be noted that all dimensions of Transformational leadership have a significant impact on Followers’ Innovative Behavior as shown from the values of T since Sig.T is between (0.001) and (0.029).

- The results can also be supported from F value of 207.678 since (Sig.F=0.000< 0.001), which means acceptance of the model as a whole which express main hypothesis of the study.

Results also revealed that Intellectual stimulation comes in the first place in terms of its importance to the achievement of Followers' Innovative Behavior, followed by Inspirational motivation, then Individualized consideration, and finally comes Idealized influence.

9. Study's Implications and Future Research

In this section th theoretical and practical implications of this study are mentioned, and recommendations for future research will be proposed.

Theoretical implications

This study seeks to add to the literature on TL and innovative behavior. so this study offers some theoretical and academic implications by incorporating new flows of research that have not been studied before and manifesting research gaps in TL and innovative behavior.

This study added to transformational leadership theory by proposing that transformational leadership could directly contribute to followers' innovative behavior. This study suggests that TL has significant positive direct impact on followers' innovative behavior, this impact has not examined enough in literature ,so this study is a good start that add to the literature of leadership theories by highlighting the dimensions of transformational leadership that predict innovative behavior.

- Practical Implications

This study addressed the dire need to investigate the relationship between the TL dimensions and the employees Innovative Behavior at Egyptian Ministry of Trade and Industry. The research recommends the senior management at the Ministry should practice the transformational leadership style because of its positive results on employees innovative behavior and this can be done through the following:

1- **Generally**, Egyptian Ministry of Trade and Industry management should focus more on transformational leadership style and develop it because this style is highly needed in all managerial levels which increase followers' innovative behavior, this can be achieved through:

- The senior management at Egyptian Ministry of Trade and Industry should pay more attention to design and implement training programs that focus on transformational leadership behaviors, this notably important to practitioners because as highlighted by this study reinforcing the environment of transformational leadership creates a higher propensity among followers to practice innovative behavior.
- The senior management at Egyptian Ministry of Trade and Industry, when hiring applicants to fill leadership positions- they should strive to choose applicants who have transformational leadership traits.
- Developing accountability programs for those in leadership jobs, this could be an appraisal that leaders fill out to identify how transformational leadership dimensions are being practiced.
- Leaders at Egyptian Ministry of Trade and Industry need to note that their followers who worked with transformational leadership share the same value of their leaders. This can facilitate the task of the leader in the Ministry.

2- **More especially**, it is necessary for all leadership positions to improve actually the four dimensions of transformational leadership, this can be executed through:

A- Improving the managers' Intellectual stimulation through:

- Manager encourages creativity from both followers and self.
- Questioning assumptions and considering new ways to approach old problems or situations are necessity to generate innovation and creativity.

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- A transformational leader must ensure an environment that foster new ways of thinking even if these ways of thinking vary from those of the leader.
- Identifying new solutions to old problems and allows followers a sense of pride and ownership in an organization, resulting in an increased sense of innovation.

B- Improving Inspirational motivation between leaders and followers, this can be achieved through:

- A transformational leader can inspire, energize, and induce others. and has the ability to create shared meaning and vision.
- Inspired followers are motivated by the vision created by the leader.
- A transformational leader challenges followers to attain this vision through high standards.
- A transformational leader clearly communicates follower expectations required to attain this shared vision and as a result, promotes a team creativity and innovation.

C- It is necessary for sectors in all leadership positions to emphasize through their actions the components of individual consideration, this can be achieved through:

- A leader looks to develop individuals by identifying or creating learning opportunities geared toward the individual's needs, capabilities, and aspirations for the future.

D- Improving the level of Idealized influence among employees through the following actions:

- Putting a complaints and suggestions box to know the reactions of managerial employees about their leader to enhance the channels of communication among them to receive the needed feedback.
- A transformational leader demonstrates high moral standards, cares for followers' needs, is transparent, makes decisions, and consciously maintains and shares a vision for the future.

- Forming a committee within the different units and departments in each sector to evaluate leaders' influence from time to time to inform them of their strengths and weakness and to provide the proposed methods of improvement.

Finally, related to innovative behavior, because our study highlights the impact of TL on innovative behavior at the Egyptian Ministry of Trade and Industry, managers in all leadership positions should take the following steps:

- Managers should support followers and be valued by their leader, and in turn, they will be more likely to engage in innovative behavior.
- Managers should practice a high level of innovative behavior; they must be good examples that should be followed by their followers..
- Managers should create and develop a climate that emphasizes the innovation and creativity of their employees; this climate is the key factor that impacts the followers' innovative behavior, so the manager should periodically monitor the innovation climate to take the needed actions to promote innovative conduct.

- **Recommendations for Future Research**

- 1- Future research on the relationship between TL and Innovative Behavior should be done in a variety of settings and cultures to broaden understanding and improve empirical evidence.
- 2- There is a need for additional research to explore the connection between TL and other positive organizational outcomes.
- 3- Future research with a substantial (preferably nationwide) sample of employees from multiple Ministries is necessary. Future studies would benefit from employing accurate transformational leadership assessment measures.
- 4- Future research can use innovative behavior as a mediator to examine the influence of TL on the organizational performance.
- 5- Future research can examine the influence of innovative behavior on decision-making processes, mediated by personality traits.

- 6- Future studies should be conducted to unveiling the black box between TL and innovative behavior through mediating variables such as psychological capital, group cohesion, and organizational prestige ...etc
- 7- Future research can investigate how various leadership styles affect the followers innovative such as attuned leadership, paternalistic leadership and authentic leadership.

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