The Relationship between Transformational Leadership and Supply Chain Performance with Mediation Role of Job Satisfaction: Evidence from Egyptian Petrochemical Companies

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Abstract

The purpose of this research is to empirically investigate the relationship between transformational leadership, job satisfaction, and supply chain performance in context of Egyptian Petrochemical Companies. The objectives of this research are: to investigate how transformational leadership affects Supply chain performance, to examine how transformational leadership Job satisfaction, to identify how Job satisfaction affects Supply chain performance, to investigate the mediation role of Job satisfaction between transformational leadership and Supply chain performance. The study followed the quantitative approach and data gathered from a survey of 466 acceptable responses. The results were analysed employing by structural equation model analyses (SEM) using AMOS software. The main conclusions drawn from this study are that, all the hypotheses are statistically supported. Finally, job satisfaction partially mediates the relationship between transformational leadership and Supply chain performance in the Egyptian petrochemical companies.

***Keywords**: Transformational Leadership, Supply chain Performance, Job Satisfaction, Egyptian Petrochemical Companies.*

Introduction

In recent years, there has been a growing interest in the role of motivation in supply chain management. Researchers have found that motivation can have a significant impact on supply chain performance, particularly in the context of petrochemical companies (Sánchez-Flores et al., 2020). One type of motivation that has received increasing attention is inspirational motivation, which refers to the motivation that individuals receive from their leaders, colleagues, and work environment (Kashyap et al., 2016). Egypt aims to upgrade its petrochemical industry through leadership development and advanced technologies. Yet human capital constraints remain (World Bank, 2020).

The Egyptian petrochemical industry plays a vital role in the country's economy, contributing significantly to national income and employment. However, the industry faces challenges in maintaining a competitive edge in the global market. Enhancing supply chain performance is crucial for the industry to remain competitive and meet the demands of the ever-changing global business environment. Transformational leadership can play a pivotal role in achieving this goal by fostering a positive and productive work environment, enhancing employee motivation and engagement, and ultimately improving supply chain efficiency and effectiveness (petroleum.gov.eg; ECHEM, 2021).

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Exploring the impact of transformational leadership on performance, with job satisfaction as a mediator, could offer practical insights for knowledge-intensive Egyptian firms undergoing transformation in this strategically important sector. Addressing gaps in the emerging markets literature (Khan et al., 2020).

While most studies focus on transformational leadership's impact within teams and firms, emerging research examines its role in supply chain management. Effective supply chain management requires coordinating flows of products, services, finances, and information across a network of organizations (Mentzer et al., 2001).

Transformational leaders can facilitate supply chain integration by promoting inter-organizational collaboration, knowledge exchange, and unified problem-solving (Defee et al., 2010). For example, they can motivate supply chain partners to work together to overcome challenges related to variability, speed, costs, and risks (Ojha et al., 2018). Studies suggest transformational leadership enables the development of resilient supply chains (Singh et al., 2019).

Developing economies face unique supply chain management challenges including skills shortages and technological barriers (World Bank, 2020). Yet the role of leadership and human capital variables remain relatively unexplored in these contexts.

Although limited, empirical evidence supports the positive impact of transformational leadership on supply chain performance. Liao et al. (2009) found transformational leadership improved coordination and operational performance between manufacturers and suppliers. Overall, transformational leadership shows promise for integrating disparate supply chain entities toward shared goals and optimizing end-to-end processes.

Egypt's petrochemical industry plays a significant role in the country's economy. Understanding the factors that influence supply chain performance in this context is vital (petroleum.gov.eg; ECHEM, 2021). However, limited research has focused on the specific challenges and opportunities faced by Egyptian petrochemical companies. To address this gap, this paper is conducted to examine the relationship between transformational leadership, job satisfaction, and supply chain performance in context of Egyptian Petrochemical Companies

Literature Review

The independent variable in this research paper is (Transformational Leadership), the mediator variable is (Job Satisfaction) and the dependent variable is (Supply chain performance).

Transformational Leadership: Definition and Dimensions

Transformational leadership according to (Chen et al., 2021) is a style of leadership that inspires and motivates followers to achieve higher levels of performance and commitment by appealing to their values, ideals, and aspirations. Transformational leaders articulate a vision of the future that is shared with their followers, intellectually stimulate their followers to think of innovative solutions for problems, and pay attention to the individual differences and needs of their followers (Khan et al., 2020). The authors also added that, transformational leadership is generally measured by four dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (ibid).

1- **Idealized Influence**

Idealized influence is a foundational component of transformational leadership, embodying a leader's ability to inspire and motivate followers through exemplary behavior (Bass & Riggio, 2006). This leadership

dimension is characterized by the establishment of a strong leader-follower relationship built on trust, respect, and a shared sense of purpose.

While most studies examine idealized influence in organizational behavior research, scholars have recently investigated its role in supply chain management. Effective supply chain management requires unity of purpose, close partnerships, and information sharing between suppliers, manufacturers, distributors, and customers (Mentzer et al., 2001).

Idealized influence facilitates these supply chain integration processes by establishing a shared vision and common values between entities (Defee et al., 2010). Leaders can use idealized behaviors to motivate supply chain partners to work collaboratively and make decisions benefitting the entire chain rather than narrowly optimizing single links (Fritch, 2013). By fostering commitment to shared goals, idealized leaders enable resilient, adaptive supply chains (Singh et al., 2019).

2- **Inspirational Motivation**

Inspirational motivation is a key attribute of transformational leadership and refers to leaders who inspire and motivate their followers through providing a compelling vision and setting high expectations (Bass & Riggio, 2006). This leadership style has been associated with higher employee commitment, engagement, and job satisfaction (Nanjundeswaraswamy, 2023). In the context of supply chain management, leaders who exhibit inspirational motivation can effectively communicate a shared vision and motivate their team members to achieve supply chain objectives.

Inspirational motivation (IM) is one of the dimensions of transformational leadership that refers to the ability of leaders to articulate a compelling vision, express confidence and optimism, and communicate high expectations to their followers (Bass &Avolio, 1994). IM has been linked to positive outcomes such as follower satisfaction, commitment, trust, and performance (Podsakoff et al., 1990; Judge and Piccolo, 2004; Wang et al., 2012). However, the impact of IM on supply chain performance (SCP), which is the degree to which a supply chain achieves its objectives of efficiency, effectiveness, and responsiveness (Li et al., 2005), has not been adequately explored. SCP is a critical factor for achieving competitive advantage and customer satisfaction in today's dynamic and uncertain business environment (Gunasekaran et al., 2004; Chopra and Meindl, 2016).

3- **Intellectual Stimulation**

Intellectual stimulation is the degree to which the leader challenges the followers to question the status quo and encourages them to be creative and innovative . Intellectual stimulation reflects the leader's ability to stimulate and facilitate the followers' learning and problem-solving processes . Previous studies have used various scales to measure intellectual stimulation, such as the Multifactor Leadership Questionnaire , the Global Transformational Leadership Scale , and the Conger-Kanungo Charismatic Leadership Scale (Khan et al., 2020) .

Intellectual stimulation (IS) is one of the dimensions of transformational leadership that refers to the ability of leaders to challenge and inspire their followers to be innovative, creative, and problem-solving (Bass & Avolio, 1994). IS has been found to have positive effects on various organizational outcomes, such as employee performance, motivation, satisfaction, and commitment (Gumusluoglu & Ilsev, 2009; Wang et al., 2012). However, few studies have examined the impact of IS on supply chain performance (SCP), which is the degree to which a supply chain achieves its objectives of efficiency, effectiveness, and responsiveness (Li et al., 2005). SCP is a critical factor for achieving competitive advantage and customer satisfaction in today's dynamic and uncertain business environment (Chopra and Meindl, 2016).

4- **Individualized Consideration**

Individualized consideration (IC) refers to a leadership style that emphasizes the development and mentoring of individual employees, taking into consideration their unique abilities, needs, and aspirations. Bass (1985) introduced the concept of transformational leadership, which encompasses individualized consideration as one of its core components. Several studies have demonstrated the positive impact of individualized consideration on employee motivation, commitment, and overall job satisfaction (Avolio & Gardner, 2005; Hoch et al., 2018).

Research has shown that individualized consideration has a positive impact on various organizational outcomes. For example, a study by Judge and Piccolo (2004) found that individualized consideration was positively related to employee job satisfaction. Additionally, a study by Wang et al. (2019) showed that individualized consideration was positively associated with knowledge sharing behavior among employees. Therefore, it can be anticipated that individualized consideration will have a positive influence on supply chain performance in Egyptian petrochemical companies.

Job Satisfaction

Job satisfaction is a central factor influencing employee motivation and productivity (Deng, 2020). Studies have demonstrated that employees who experience high job satisfaction are more likely to be engaged in their work, show commitment to their organizations, and contribute positively to achieving organizational goals (Joo & Park, 2010). In the context of supply chain management, job satisfaction can significantly affect employee performance and their contribution to supply chain success.

Job satisfaction is a crucial factor influencing employee motivation, commitment, and productivity (Ali& Anwar, 2021). Research has demonstrated that employees with high job satisfaction are more likely to be engaged in their work and committed to their organizations (Ćulibrk et al., 2018). In the context of supply chain management, job satisfaction is closely linked to employee performance and their contribution to supply chain success.

Supply Chain Performance (SCP)

SCP refers to the extent to which an organization achieves its objectives in terms of cost, quality, delivery, flexibility, and responsiveness (Mentzer et al., 2001). In the petrochemical industry, supply chain performance is critical for ensuring the timely and efficient delivery of raw materials, intermediates, and finished products.

SCP is a critical determinant of an organization's success, especially in industries like petrochemicals where efficient and effective supply chain management is essential. Performance metrics typically include cost efficiency, responsiveness, and overall process effectiveness (Gunasekaran et al., 2004). Improved supply chain performance can lead to cost savings, better customer service, and enhanced competitive advantage.

SCP is the outcome of the effective and efficient management of the flow of materials, information, and funds across the supply chain, from the suppliers to the customers (Sundram al., 2020). SCP can be evaluated by various indicators, such as cost, quality, delivery, flexibility, and innovation (Abdallah et al., 2021).

Previous studies have suggested that transformational leadership can enhance SCP by providing access to diverse and timely information, facilitating knowledge sharing and transfer, supporting learning and innovation processes, enabling the identification and exploitation of valuable opportunities, fostering the adaptation and integration of resources, and enhancing the alignment and coordination of activities. For example, Ojha et al., (2018) found that transformational leadership was positively associated with supply

chain agility, which is the ability of the supply chain to sense and respond to changes in the environment quickly and effectively.

Conceptual Framework and Hypotheses

The conceptual framework was established after analyzing existing theories and models and was applied to the data collection and data analysis. The aim of this research was to gain a deeper insight into the field of interest by examining the relationship between the independent variable (Transformational Leadership), mediator variable (Job Satisfaction) and dependent variable (Supply chain performance). Based on the literature review discussed above, the research conceptual framework was formulated as below:

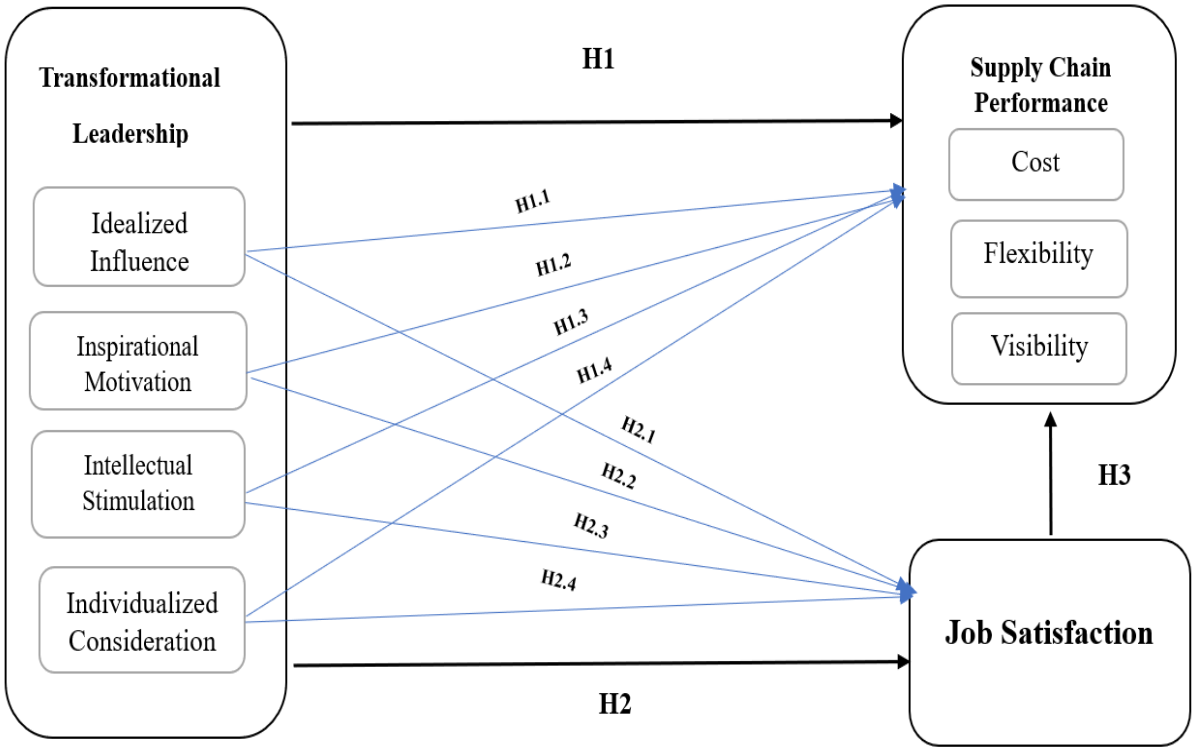

Figure 1- Conceptual Framework

Research Hypotheses

Based on the conceptual framework, the hypothesized model and reviewing of the related studies and theories, the study hypotheses were formulated as below:

- **H1:** Transformational Leadership has an impact on Supply chain performance in the Egyptian petrochemical companies.
  - **H1.1:** Idealized Influence has an impact on Supply chain performance in the Egyptian petrochemical companies.
  - **H1.2:** Inspirational Motivation has an impact on Supply chain performance in the Egyptian petrochemical companies.
  - **H1.3:** Intellectual Stimulation has an impact on Supply chain performance in the Egyptian petrochemical companies.
  - **H1.4:** Individualized Consideration has an impact on Supply chain performance in the Egyptian petrochemical companies.

- **H2:** Transformational Leadership has an impact on Job Satisfaction in the Egyptian petrochemical companies.
  - **H2.1:** Idealized Influence has an impact on Job Satisfaction in the Egyptian petrochemical companies.
  - **H2.2:** Inspirational Motivation has an impact on Job Satisfaction in the Egyptian petrochemical companies.
  - **H2.3:** Intellectual Stimulation has an impact on Job Satisfaction in the Egyptian petrochemical companies.
  - **H2.4:** Individualized Consideration has an impact on Job Satisfaction in the Egyptian petrochemical companies.
- **H3:** Job Satisfaction has an impact on Supply chain performance the Egyptian petrochemical companies.
- **H4:** Job Satisfaction mediates the relationship Transformational Leadership and supply chain performance in the Egyptian petrochemical companies.
  - **H4.1:** Job Satisfaction mediates the relationship Idealized Influence and supply chain performance in the Egyptian petrochemical companies.
  - **H4.2:** Job Satisfaction mediates the relationship Inspirational Motivation and supply chain performance in the Egyptian petrochemical companies.
  - **H4.3:** Job Satisfaction mediates the relationship Intellectual Stimulation and supply chain performance in the Egyptian petrochemical companies.
  - **H4.4:** Job Satisfaction mediates the relationship Individualized Consideration and supply chain performance in the Egyptian petrochemical companies

The operational definitions for the conceptual framework are illustrated in Table (1).

Operational Definitions

Table 1- Operational Definition

Variables	Dimensions	Source(s)
Independent Variable: Transformational Leadership	- Idealized Influence	Podsakoff et al., (2000); Howell & Shamir (2005). Lai et al., (2020); Valeri & Baggio (2022)
	- Inspirational Motivation	Podsakoff et al., (2000); Lai et al., (2020) Avolio & Bass (1991), Hinse & Mathieu (2023).
	- Intellectual Stimulation	Podsakoff et al., (2000); Lai et al., (2020) Avolio & Bass (1991); Hinse & Mathieu (2023).
	- Individualized Consideration	Podsakoff et al., (2000); Bass & Riggio (2006); Lai et al., (2020); Sergent & Stajkovic (2020)
Mediator Variable: Job Satisfaction		Pang and Lu (2018)
Dependent Variable: Supply Chain Performance	**Cost**	Ganga & Carpinetti (2011)
	Flexibility	Lee, 2002; Prater & Biehl, 2007
	Visibility	Sahin & Robinson, 2002; Gilmore & Pine, 1997; Lee et al., 1997; Mishra et al.,2018.

Research Methodology

According to Creswell (2012) quantitative research is an investigation method that may be used to describe trends and explain the relationship between variables found in the literature. A questionnaire is utilised to collect data for this research. The researchers drew a convenience-sample out of the population

regarding employees working in Egyptian petrochemical companies, because of the ease of data collection and sample selection, and due to the limited time and cost. The questionnaire is distributed via (google forms online surveys). The questionnaire data is analysed using the Statistical Package for Social Sciences (SPSS) to analyse quantitative data, including descriptive statistics (frequencies and percentages) and inferential statistics (correlations), and Structural Equation Model analyses (SEM) using Analysis Moment of Structures (AMOS) software to analyze the hypothesized model.

Results and Findings

The research questionnaire was administered to eight hundred (800) respondents, 518 questionnaires representing 64.8% were returned, and 52 questionnaires representing 6.5% were incomplete or ineligible or refusals and 282 (35.2%) were not reached. There were 466 acceptable responses, a response rate 58.3%, which is highly adequate for the nature of this study.

Measurement items have standardized loading estimates of 0.5 or higher (ranging from 0.506 to 0.934 at the alpha level of 0.05, indicating the convergent validity of the measurement model. Discriminant validity shows the degree to which a construct is actually different from other constructs.

The Average Variances Extracted (AVE) of the particular constructs (Idealized Influence = 0.609, Inspirational Motivation =0.553, Intellectual Stimulation=0.720, Individualized Consideration = 0.702, Job Satisfaction = 0.699, Cost=0.852, Flexibility=0.537 and Visibility=0.528) are more than 0.500. Overall, these measurement results are satisfactory and suggest that it is appropriate to proceed with the evaluation of the structural model.

Composite reliability (CR) is used to measure the reliability of a construct in the measurement model. the CR of (Idealized Influence = 0.861, Inspirational Motivation =0.822, Intellectual Stimulation=0.911, Individualized Consideration = 0.877, Job Satisfaction = 0.927, Cost=0.920, Flexibility=0.778 and Visibility=0.775). So, it clearly identified that in measurement model all construct have good reliability.

Assessment of Multicollinearity

Tolerance and Variance Inflation factor (VIF) were examined to identify multicollinearity issue. Hair et al. (2011) recommended that multicollinearity is a concern if VIF value is higher than 5 and tolerance value is <0.20. Table -2 indicates that multicollinearity did not exist among the exogenous latent constructs as all VIF values were <5 and tolerance values exceeded 0.20 as suggested by Hair et al. (2011). Thus, multicollinearity is not an issue in the present study.

Measurement model Results: The 8 factor was subjected to CFA using the AMOS software. DF was 457 (it should be more than 0), χ^2 /DF has a value of 2.604, that is less than 3.0 (it should be less than or equal 3.0). The RMSEA was .09 (it should be less than 0.08). The TLI index was .951 which is very close to 1.0 (a value of 1.0 indicates perfect fit). The CFI was .957. All indices are close to a value of 1.0 in CFA, indicating that the measurement models provide good support for the factor structure determined through the CFA.

Structural model summary: The results of structural' model using the AMOS software, shows that DF was 472)it should be more than 0), χ^2/DF has a value of 2.911, that is less than 3.0 (it should be less than or equal 3.0). The RMSEA was .064 (it should be less than 0.08). The TLI index was .915 which is very close to 1.0 (a value of 1.0 indicates perfect fit). The CFI was .924. All indices are close to a value of 1.0 in CFA, indicating that the measurement models provide good support for the factor structure determined through the CFA.

Table 2: Assessment of Multicollinearity

Variable	Tolerance	VIF
Idealized Influence	.653	1.531
Inspirational Motivation	.450	2.222
Intellectual Stimulation	.418	2.393
Individualized Consideration	.396	2.523

Structural Model

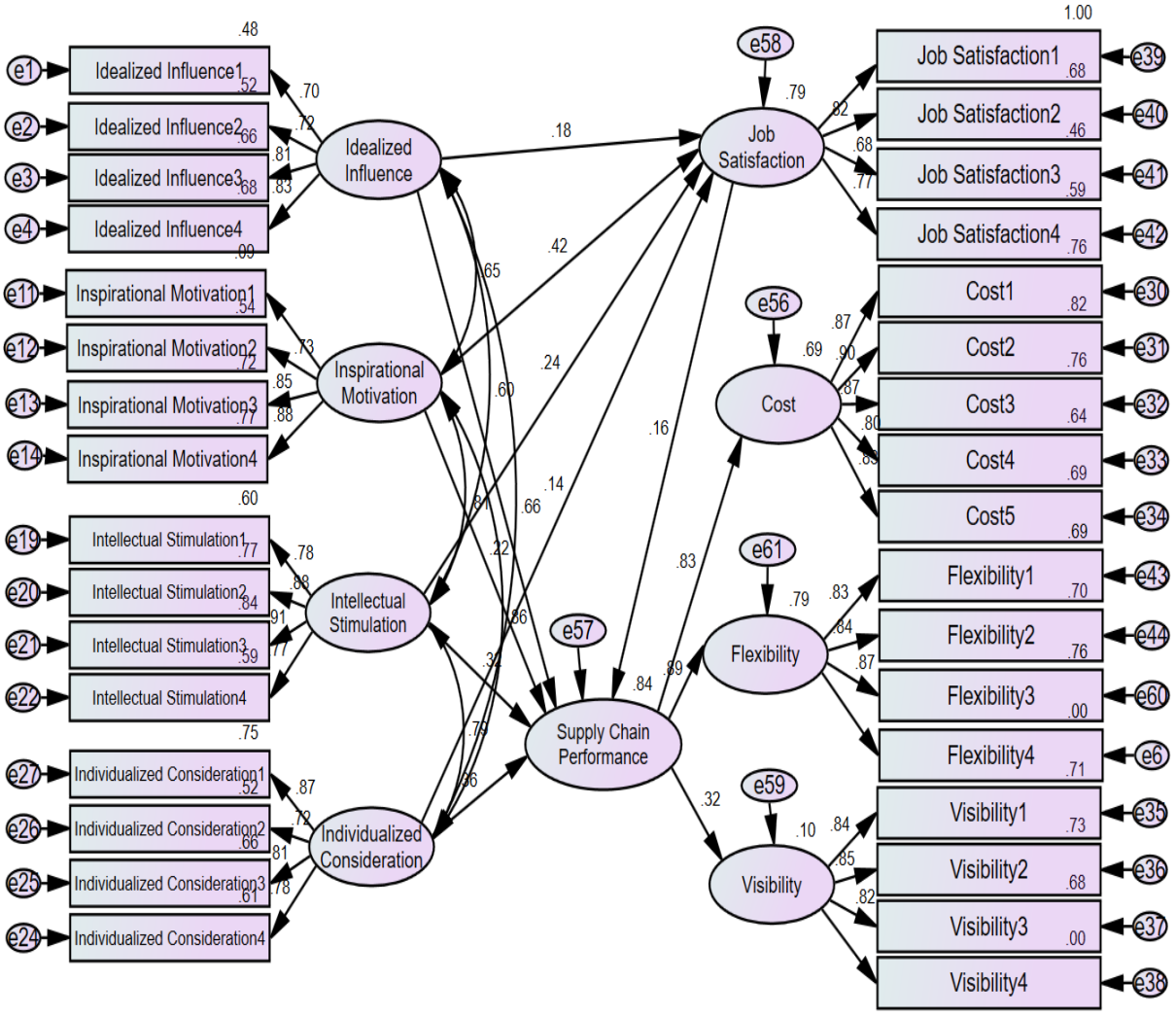

Figure (2) Structural Model (Final Result)

Discussion

This study explores the analytical part performed to test the hypotheses the researcher is seeking to fulfill the research objectives. A discussion of findings and conclusion could now be presented.

Regarding the first objective: To investigate how transformational leadership affects Supply chain performance in the Egyptian petrochemical companies.

Due to the individual tests of significance of the relationship between the variables. a relationship between Idealized Influence and Supply chain performance (β = 0.111, CR (Critical Ratio) = 2.367, CR > 1.96, p = 0.018, p<0.05). Therefore, (**$H1_{.1}$:** Idealized Influence has an impact on Supply chain performance in Egyptian Petrochemical Companies.) is supported. Idealized influence refers to leaders acting as role models, emphasizing values, and displaying high ethical standards (Bass, 1985). Research links it to enhanced supply chain capabilities and performance by building trust and alignment around shared goals, leaders with idealized influence foster collaboration and integration across supply chains (Mokhtar et al., 2019). Meanwhile, idealized influential leaders develop committed and empowered teams, driving continuous improvement in supply chain processes (Mokhtar et al., 2019).

Moreover, **$H1_{.2}$:** Inspirational Motivation has an impact on Supply chain performance in Egyptian Petrochemical Companies. (β = 0.225, CR (Critical Ratio) = 13.972, CR > 1.96, p = 0.000, p<0.05). is supported, as it predicts that " There is a relationship between Inspirational Motivation and Supply chain performance. ". The relationship between inspirational motivation and supply chain performance has been explored by several studies in different contexts and industries. For example, Sutia et al., (2020) examined the influence of supply chain performance and motivation on employee performance in the Indonesian banking sector. They found that supply chain performance had a positive impact on employee performance, and that motivation partially mediated this relationship. Inspirational leaders energize supply chain teams and foster collaboration by emphasizing shared meaning and purpose (Osula & Ng, 2014). similarly, Leaders using inspirational motivation encourage innovative thinking to enhance supply chain resilience, adaptation, and process improvements (Mokhtar et al., 2019).

Further, **$H1_{.3}$:** Intellectual Stimulation has an impact on Supply chain performance in Egyptian Petrochemical Companies. (β = 0.315, CR (Critical Ratio) = 19.593, CR > 1.96, p = 0.000, p<0.05). is supported, as it predicts that " There is a relationship between Intellectual Stimulation and Supply chain performance ". Intellectually stimulating leaders foster knowledge sharing, collaborative problem-solving, and continuous improvement among supply chain teams (Mokhtar et al., 2019). By driving exploration of new ideas, intellectual stimulation can enhance supply chain agility, resilience, and adaptation (Osula & Ng, 2014). Meanwhile, empirical research provides some evidence that transformational leadership positively impacts supply chain performance. Singh et al. (2019) surveyed Indian manufacturing firms and found intellectual stimulation indirectly improved supply chain resilience through organizational learning and innovation.

Furthermore, **$H1_{.4}$:** Individualized Consideration has an impact on Supply chain performance in Egyptian Petrochemical Companies. (β = 0.363, CR (Critical Ratio) = 22.480, CR > 1.96, p = 0.000, p<0.05). is supported, as it predicts that " There is a relationship between Individualized Consideration and Supply chain performance. ". In the context of supply chain management, individualized consideration can also have a positive impact on supply chain performance (Singh& Menon, 2023). Similarly, a study by Liao et al. (2018) found that individualized consideration was positively related to supply chain resilience in a sample of Taiwanese electronics firms. In the context of supply chain management, individualized consideration can also have a positive impact on supply chain performance. For instance, a study by Singh& Menon (2023) found that individualized consideration was positively related to supply chain performance in a sample of Chinese manufacturing firms. Similarly, a study by Liao et al. (2018) found that individualized consideration was positively related to supply chain resilience in a sample of Taiwanese electronics firms.

Based on the results "**H1:** Transformational Leadership has an impact on Supply chain performance in Egyptian Petrochemical Companies" is supported.

Regarding the second objective: To examine how transformational leadership Job satisfaction in the Egyptian petrochemical companies.

The result shows that **$H2_{.1}$:** Idealized Influence has an impact on Job Satisfaction in Egyptian Petrochemical Companies. (β = 0.182, CR (Critical Ratio) = 25.398, CR > 1.96, p = 0.000, p<0.05). is supported, as it predicts that " There is a relationship between Idealized Influence and Supply chain performance". Idealized leaders increase satisfaction by acting as role models and linking work activities to followers' values, thereby creating meaningful and rewarding work (Piccolo & Colquitt, 2006). Research shows positive relationships between idealized influence and satisfaction due to satisfying followers' esteem, self-actualization, and moral needs (Bojovic & Jovanovic, 2020). In turn, satisfied employees exhibit higher performance as an exchange for leaders fulfilling their needs (Cropanzano & Mitchell, 2005). Therefore, idealized influence provides an indirect boost to performance through enhanced job satisfaction.

Moreover, H2$_{.2}$: Inspirational Motivation has an impact on Job Satisfaction in Egyptian Petrochemical Companies. (β = 0.423, CR (Critical Ratio) = 7.375, CR > 1.96, p = 0.000, p<0.05). is supported, as it predicts that " There is a relationship between Inspirational Motivation and Supply chain performance". The research shows inspirational appeals significantly impact satisfaction. Leaders who communicate high expectations and meaning for work inspire pride, collective identity and satisfaction (Kark et al., 2003). Empirical studies across diverse contexts link inspirational motivation to increased satisfaction (Walumbwa et al., 2004; Harrison, 2011).

Further, **H2$_{.3}$:** Intellectual Stimulation has an impact on Job Satisfaction in Egyptian Petrochemical Companies. (β = 0.235, CR (Critical Ratio) = 14.149, CR > 1.96, p = 0.000, p<0.05). is supported, as it predicts that " There is a relationship between Intellectual Stimulation and Job Satisfaction. ". Studies show intellectual stimulation behaviors encourage creativity, autonomy and development, which enhances employees' psychological well-being and satisfaction at work (Podsakoff et al., 1990; Walumbwa et al., 2008). Furthermore, intellectual stimulation improves performance by empowering employees to participate in decision making and process improvements (Lorinkova et al., 2013). In a study of high-tech firms, Herman and Chiu (2014) showed that intellectual stimulation enabled employees to better leverage their knowledge and skills to enhance organizational performance. Overall, research indicates that by encouraging innovative thinking, intellectually stimulating leaders can unlock their followers' potential and improve their job performance.

Furthermore, **H2.4:** Individualized Consideration has an impact on Job Satisfaction in Egyptian Petrochemical Companies. (β = 0.140, CR (Critical Ratio) = 19.593, CR > 1.96, p = 0.000, p<0.05). is supported, as it predicts that " There is a relationship between Individualized Consideration and Job Satisfaction. ". Individualized consideration refers to leaders paying special attention to each employee's needs for achievement and growth (Northouse, 2018). Leaders act as coaches and mentors, providing support, encouragement and developmental experiences to followers. This leadership behavior has been linked to higher job satisfaction. For example, a study by Chou (2013) found that individualized consideration had a significant positive effect on job satisfaction among 346 hotel employees in Taiwan. The positive impact of individualized consideration on job satisfaction can be explained through social exchange theory, whereby employees reciprocate supportive leadership behavior through increased commitment and engagement (Northouse, 2018). However, a few studies have found non-significant or weak effects of individualized consideration on satisfaction (Gardner et al., 2011; Malik et al., 2017), indicating the relationship may depend on contextual factors.

Based on the results "**H2:** Transformational Leadership has an impact on Job Satisfaction in Egyptian Petrochemical Companies" is supported.

Regarding the third objective: To identify how Job satisfaction affects Supply chain performance in the Egyptian petrochemical companies.

The result shows that **H3:** Job Satisfaction has an impact on Supply chain performance in Egyptian Petrochemical Companies**.** (β = 0.159, CR (Critical Ratio) = 2.805, CR > 1.96, p = 0.005, p<0.05). is supported, as it predicts that "There is a relationship between Job Satisfaction and Supply chain performance". In supply chain contexts, satisfaction enhances productivity, quality, and delivery (Autry & Daugherty, 2003; Shin & Zhou, 2003). Satisfied employees exhibit higher motivation, discretionary effort, and willingness to embrace change initiatives critical to supply chain performance (Ali & Anwar, 2021). However, emerging markets present unique contextual challenges (World Bank, 2020).

Regarding the Fourth Objective: To investigate the mediation role of Job satisfaction between transformational leadership and Supply chain performance in the Egyptian petrochemical companies.

Results reveal that, a statistically significant indirect effect between Idealized Influence and Supply chain performance Through Job Satisfaction (P = 0.005, P<0.05), The results of the mediation effect indicate that there is partial mediation effect of the Job Satisfaction between the relationship of Idealized Influence and Supply chain performance. Therefore, (**H4$_{.1}$:** Job Satisfaction mediates the relationship between Idealized Influence and Supply chain performance in Egyptian Petrochemical Companies)is supported. The positive effects of idealized influence on performance may be explained by elevated job satisfaction. Leaders high in idealized influence increase satisfaction by instilling a sense of purpose and optimism (Breevaart et al., 2015). Resultant employee engagement, motivation and morale can translate into improved supply chain processes and outcomes. Testing this mediation hypothesis will uncover the intermediary role of job satisfaction. In addition, idealized influential leaders develop committed and empowered teams, driving continuous improvement in supply chain processes (Mokhtar et al., 2019). Examining this in emerging economies would provide insights. By building trust and alignment around shared goals, leaders with idealized influence foster collaboration and integration across supply chains (Osula & Ng, 2014).

Moreover, a statistically significant indirect effect between Inspirational Motivation and Supply chain performance Through Job Satisfaction (P = 0.006, P<0.05), The results of the mediation effect indicate that there is partial mediation effect of the Job Satisfaction between the relationship of Inspirational Motivation and Supply chain performance. Therefore, (**H4$_{.2}$:** Job Satisfaction mediates the relationship between Inspirational Motivation and Supply chain performance in Egyptian Petrochemical Companies) is supported. The positive relationship between inspirational motivation and supply chain performance is often mediated by job satisfaction. Job satisfaction has been recognized for its crucial role in influencing employee motivation, engagement, and productivity. Studies have shown that inspirational motivation can enhance job satisfaction levels by fostering a sense of purpose, shared values, and recognition within the organization. This enhanced job satisfaction, in turn, contributes to improved supply chain performance. For example, a study by Alkadash et al., (2020) found that inspirational motivation positively influenced supply chain performance through the mediating role of job satisfaction.

Further, a statistically significant indirect effect between Intellectual Stimulation and Supply chain performance Through Job Satisfaction (P = 0.006, P<0.05), The results of the mediation effect indicate that there is partial mediation effect of the Job Satisfaction between the relationship of Intellectual Stimulation and Supply chain performance. Therefore, (**H4$_{.3}$:** Job Satisfaction mediates the relationship between Intellectual Stimulation and Supply chain performance in Egyptian Petrochemical Companies) is supported. recent research has indicated that job satisfaction operates as a mediating mechanism through which intellectual stimulation influences various dimensions of supply chain performance. For example, in a study by Zhang et al.,(2023) it was found that job satisfaction partially mediates the relationship between intellectual stimulation and knowledge sharing among supply chain members, ultimately influencing operational effectiveness and adaptability. This highlights the significant role of job satisfaction in channeling the effects of intellectual stimulation on supply chain performance outcomes.

Furthermore, a statistically significant indirect effect between Individualized Consideration and Supply chain performance Through Job Satisfaction (P = 0.005, P<0.05), The results of the mediation effect indicate that there is partial mediation effect of the Job Satisfaction between the relationship of Individualized Consideration and Supply chain performance. Therefore, (**H4$_{.4}$:** Job Satisfaction mediates the relationship between Individualized Consideration and Supply chain performance in Egyptian Petrochemical Companies) is supported.

Based on the results (**H4:** Job Satisfaction mediates the relationship between Transformational Leadership and Supply chain performance in Egyptian Petrochemical Companies) is supported.

Conclusion

Based on the above discussion, the conclusion of this paper is drown as follows: the direct effect between Inspirational Motivation and Supply chain performance is statistically significant, the direct effect between Idealized Influence and Supply chain performance is statistically significant, the direct effect Individualized Consideration and Supply chain performance is statistically significant, the direct effect between Intellectual Stimulation and Supply chain performance is statistically significant, the direct effect Inspirational Motivation and Job Satisfaction is statistically significant, the direct effect between Idealized Influence and Job Satisfaction is statistically significant, the direct effect between Individualized Consideration and Job Satisfaction is statistically significant, the direct effect between Intellectual Stimulation and Job Satisfaction is statistically significant., and finally, the direct effect between Job Satisfaction and Supply chain performance is statistically significant.

Contribution

This paper is an attempt to fulfill the research gaps regarding the Influence of transformational leadership and job satisfaction on Supply chain performance in Egyptian Petrochemical Companies. Results shows show that, estimated structural model corroborated the nine hypotheses, as Transformational Leadership (Idealized Influence, Inspirational Motivation, Intellectual Stimulation and Individualized Consideration) construct explained 78.7% of Job Satisfaction variance ($R^2 = 0.787$), Besides, Transformational Leadership (Idealized Influence, Inspirational Motivation, Intellectual Stimulation and Individualized Consideration) through Job Satisfaction explained 83.6% of Supply chain performance variance ($R^2 = 0. .836$). In addition, this paper has shed the light on the crucial role of transformational leadership on job satisfaction and supply chain performance. The findings suggest that innovation capabilities should be developed and deployed with customer participation in mind. Moreover, A policy and practical area that this research can be applied is managing Tendering Systems. Whereas it is clear in managing tendering process and control over the efficiency and effectiveness of supply chain systems in the Egyptian Petrochemical Companies can improve job satisfaction to ensure the efficiency and effectiveness of supply chain within the industry.

Limitations and Suggestions for Future Research

First: Researchers in this study used cross-sectional time horizon. Hence, future study should therefore consider adopting a mixed approach to provide richer data and findings on this topic.

Second, because this study's sample was limited to one nation (Egypt) and one sector the Egyptian Petrochemical Companies, it is vital to proceed with attentiveness when interpreting the results. In spite of the fact that the research context is extremely specialized, it is thought that the conclusions spread over various fields and nations.

Third, Future studies can include more variables such as transactional leadership, laissez-faire and other contextual variables to study the effects on job performance in different sectors.

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