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## Effect of Transformation Leadership on Crisis Management in the Oil and Gas Sector in Libya

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### ABSTRACT

This study aims to investigate the effect of transformational leadership on crisis management in the Oil and Gas sector in Libya, the quantitative approach and questionnaire with a cross-sectional method were employed to collect the data from 354 employees at Akakus Oil Operations in Libya. The questionnaires have been distributed to individuals holding leadership and managerial roles, as well as those employed in the departments of security and safety, planning, follow-up and control, and engineering. The data was analyzed by using SEM. The result revealed that transformational leadership positively and significantly affects crisis management in the Oil and Gas sector in Libya. The study provides important insights into the critical role of transformational leadership in overcoming crises and exploiting employees' capabilities to achieve results that exceed expectations. The study provide practical implications, limitations, and direction for future studies were provided.

### INTRODUCTION

The oil and gas sector is crucial for boosting a nation's economy by contributing significantly to the GDP, which raises the overall worth of all created goods and services and the overall quality of life in the country. growth supports the development of essential infrastructure like hospitals, schools, and various government and private projects (Alsamawi et al, 2029; Karam & Tasmin, 2020; Ghumiem *et al.*, 2022). However, geopolitical challenges can threaten this development. To tackle these challenges, effective leadership is essential (Al-Sharif *et al.*, 2023), particularly transformational leadership. Transformational leadership provides a clear vision and mission, which enhances organizational culture and motivates individuals at all levels (Abualkhir, 2016; Abushrenta, 2022).

However, there are challenges in the oil sector in Libya, especially geopolitical issues like conflicts and political instability, which can hinder this development (Abualkhir, 2016; Abushrenta, 2022). To address these challenges, having effective leadership is crucial. In particular, transformational leadership is very effective in crisis management. This type of leadership involves having a clear vision and mission, which helps in shaping the culture of the organization and motivates individuals at all levels to work towards common goals (Alsamawi *et al.*, 2019; Karam & Tasmin, 2020; Alshuhumi *et al.*, 2024).

Transformational leadership is especially important when dealing with crises. It helps organizations navigate through tough times by making informed decisions and maintaining a clear direction (Tekin, 2014). Unlike transactional leadership, which is more about supervision and performance through rewards for good performance and punishments for mistakes (Odumeru & Ogbonna, 2013), transformational leadership is proactive and focuses on bringing about change. Transactional leadership aims to keep things as they are, ensuring that everyone follows

the rules and meets performance standards through a system of rewards and penalties (Bass, 1985; 1990; Algahtani, 2014; Anyigba, & Lartey, 2024)

Research shows that transformational leadership significantly boosts companies' performance and productivity. This is vital for the sustainability and profitability of oil and gas companies (Alsamawi et al, 2019b), especially in a market that can be very unpredictable (Karam & Tasmin, 2020). Transformational leaders encourage innovation and adapt to challenges, which improves the overall effectiveness of the organization (Bass *et al.*, 2003; Anyigba, & Lartey, 2024).

Crisis management involves planning ahead for unexpected negative events to minimize their impact and develop appropriate strategies (Jafar, 2017). In the oil and gas industry, managing crises effectively is crucial because unresolved crises can escalate, attract negative media attention, and make resolution efforts more complicated (ALHumeisat & ALBashabsheh, 2020). Transformational leadership, with its focus on innovation and proactive problem-solving, is well-suited to guide organizations through these challenging times and ensure long-term success and resilience in the face of crises.

In the specific context of Libya's oil and gas sector, transformational leadership can greatly enhance crisis management. This type of leadership allows organizations to respond quickly and flexibly to crises, making timely decisions based on the best available information (Aljuhmani & Emeagwali, 2017). Effective crisis management involves several steps, including detecting early warning signs, preparing for potential problems, and learning from past crises to avoid future issues (Labaš *et al.*, 2018; Mikusova & Horvathova, 2019; ALHumeisat & ALBashabsheh, 2020). However, the oil and gas industry is a major driver of economic growth and quality of life improvements (Alsamawi *et al.*, 2019). Effective

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leadership, especially transformational leadership, is key to navigating crises and ensuring the industry's success and stability, particularly in a complex and often volatile geopolitical landscape like Libya's. Several researchers have conducted extensive research on leadership styles and their impact on effective management in normal situations. However, there is a lack of relevant studies about the influence of leadership style during periods of crisis (Menon, 2021; Peter & Placido, 2023). The main objective of this study is to fill this gap by investigating the impact of transformational leadership on crisis management in the context of Libya's oil and gas sector.

## LITERATURE REVIEW

Transformational leadership is crucial in crisis management. For instance, if organizational leaders expect a substantial decrease in inflation compared to the present year, they may encounter what some perceive as a crisis (Maruhom *et al.*, 2024). The competence and skill of a leader are crucial for effectively handling crises and managing the shift from the existing scenario to one that emphasizes innovation and uniqueness (Jamil *et al.*, 2022). Crisis management includes proactive steps taken to prevent, control, and minimize the negative consequences of unexpected bad events inside an organization (Alharthi & Khalifa, 2019). This process involves the identification and assessment of potential risks, the implementation of steps to prevent them, the formulation of strategies to minimize damage, and the execution of these plans in times of crisis (Marques-Quinteiro *et al.*, 2019).

During crises, organizations encounter three primary management challenges: difficulties related to power, leadership, and decision-making; complications deriving from an increasing degree of coordination; and the loosening of command structures (Dhawan, 2020). Management issues with information flow and communication include obstacles in acquiring essential information caused by ineffective and inadequate communication procedures, both internally and externally (Petzold *et al.*, 2019). Crisis management offers organizations guidance on enhancing, adjusting, or modifying operational elements to diminish or eradicate their susceptibility to business crises (Falamarzi & Siam, 2021).

However, it is typically the leader who makes crucial decisions that are highly efficient, easily understood by all, and result in positive outcomes (Mahmood *et al.*, 2022; Nasser *et al.*, 2024). Hence, it is imperative to consider the leadership style, specifically transformational leadership, while making critical decisions, particularly in times of crisis (Maruhom, Minoza & Zosa, 2024). Transformational leadership significantly influences crisis management. It is evident that leaders must organize continuous training sessions for their followers on crisis management strategies, and implementing motivating strategies such as inspiring, recognizing, and providing rewards can be crucial in preparing followers for crisis management (Peter & Placido, 2023).

## METHODOLOGY

This study employed a descriptive quantitative approach and utilized a cross-sectional method for data collection and analysis. A deliberate sample of personnel from Akakus Oil Operations in Libya was chosen to examine the influence of transformational leadership on crisis management at Akakus Oil Operations in Libya. A questionnaire was employed to gather the data regarding transformational leadership and crisis management. The questionnaires have been distributed to individuals holding leadership and managerial roles, as well as those employed in the departments of security and safety, planning, follow-up and control, and engineering. The selection of this sample was predicated on the assumption that employees occupying these roles have an extensive understanding of the research variables within the organization, hence making a valuable contribution towards accomplishing the study's aims. 500 questionnaires were issued to the intended sample, and 73% of them were returned. A total of 354 valid responses were collected and used for analysis. The high response rate improves the dependability of the findings and helps to accomplish the intended research goals. The questionnaire also contained demographic queries regarding age, status, educational background, years of work experience, and employment sector type.

## Measure

### Transformational Leadership was Measured by Transformational Leadership

In this study, transformational leadership is measured through the Multifactor Leadership Questionnaire (MLQ 5X-Short), created by Bass and Avolio (2000), four dimensions measured transformational leadership developed by Bass and Avolio (2004), each consisting of six indicators: Idealized Influence, Intellectual Stimulation, and Individualized Consideration. The scale contains items adapted from Noor (2021). Nevertheless, the study variables were assessed using a five-point Likert scale, which required participants to indicate their level of agreement on a scale from one to five, with one indicating "strongly disagree" and five indicating "strongly agree."

### Crisis Management

Crisis management was measured by nine items adapted from Karaji and Aburghif (2019), and Al-Mulla & Al-Saadoun. (2022). The measurement of crisis management in this study includes information regarding how the company's management ensures the provision of precise reports and information regarding crises by establishing a dedicated task force to deliver comprehensive historical and up-to-date information. The management is actively focused on identifying tangible and personnel measures to address issues. In addition, the management provides awareness seminars for its staff and trains them in crisis management. Nevertheless, the crisis management was assessed using a five-point Likert scale, which required participants to indicate their level of agreement on a scale

from one to five, with one indicating “strongly disagree” and five indicating “strongly agree.”.

## RESULTS

### Sample Profile Description

The sample included employees from the top management, Security and Safety Management, Planning, Follow-up, Control, and Engineering Management departments at Akakus Oil Operations Company in Libya. The results revealed that the number of males was 314, (88.7%), while the females were 40(11.3%) of the total study sample. Regarding the age of the respondents, 19 (5.4%) were under 25 years. Employees aged 25-34 were 94 (26.6%), while those aged 35-44 numbered 132, (37.3%). Finally, employees over the age of 44 totaled 109(30.7%) of the sample. Results reveal that the majority of employees hold a bachelor’s degree 179(50.0%) of the total study sample. Followed by a diploma of 120 (34.3%). Employees with a postgraduate degree were 40 (11.4%) Finally, employees with a high school 15(4.3%) of the total study sample. Regarding the distribution of the study sample by job title, the number of executives or management members was 2 (0.6%). Consultants 32 (9.0%). Managers of departments 15, (4.3%). Department heads 78 (22.0%). Supervisory roles 135 (38.1%). Finally, employees in other positions

92 (26.0%) of the total study sample.

### Assessment Of Measurement Model

The measurement model, comprising transformational leadership, and crisis management, generated satisfactory results. The model fit indices showed indicated very good fit:  $\chi^2 = 915.654$ ,  $DF = 489$ ,  $CMIN/DF = 1.873$  ( $p < 0.000$ ),  $CFI = 0.962$ ,  $TLI = 0.959$ , and  $RMSEA = 0.050$ . These findings demonstrate excellent fit, as presented in Table (1) of the model fit assessment. Moreover, reliability, convergent validity, and divergent validity results summarized in Table (1) indicated that all factor loading exceeded the cut-off of 0.50, it was between 0.71 and 0.91 for all the items, composite reliability (CR) ranged from 0.934 for transformational leadership to 0.949 for crisis management, exceeding the recommended threshold of 0.70 (Al-refaei et al, 2019; Ateeq et al, 2024). The average variance extracted (AVE) surpassed 0.50, as suggested by prior research (Fornell & Larcker, 1981; Hair *et al.*, 2013; Abdulsamad *et al.*, 2020; Jandab *et al.*, 2020; Al-Zubaidi et al, 2022). Average shared variance (ASV) was higher than the maximum shared variance (MSV) thresholds (Malhotra & Dash, 2015; Al\_Refaei *et al.*, 2021; Zumrah et al, 2021), confirming the model’s reliability and validity according to Table (1).

**Table 1:** Overall reliability and validity of all constructs

Construct	CR	AVE	MSV	MaxR(H)
Transformational Leadership	.934	.78	.266	.935
Crisis Management	.949	.673	.266	.951

The second approach employed for the assessment of discriminant validity was the Heterotrait-Monotrait Ratio (HTMT), as recommended by previous studies (Henseler *et al.* 2015; Al-refaei et al, 2024; Alshuhumi et al, 2024). While the Fornell-Larcker Criterion (FLC) is traditionally regarded as an effective method for assessing discriminant validity (DV), it sometimes fails to detect a

lack of DV in certain research contexts (Al-refaei et al, 2023). Henseler *et al.* (2015) proposed HTMT as a new method to address this issue, suggesting that the HTMT value for constructs should be below 0.85. In the current study, the HTMT values for all constructs were indeed below the recommended threshold of 0.85, establishing DV for all constructs as indicated in Panel B of Table

**Table 2:** FLC and HTMT.

Variables	Panel A: FLC		Panel B: HTMT	
	TL	CM	TL	CM
Transformational leadership (TL)	0.821		-	
Crisis Management (CM)	0.515***	0.883	0.504	-

2. After verifying the reliability, convergent validity, and discriminant validity, the structural model was employed to assess the impact of transformational leadership on crisis management at Akakus Oil Operations Company in Libya. The hypothesized structural model indicated a positive and significant effect of transformational

leadership on crisis management. The path coefficients showed  $\beta = 0.453$ ,  $t = 8.837$ , and  $P = 0.000$ , supporting the hypothesis regarding the direct effects of transformational leadership on crisis management at Akakus Oil Operations Company in Libya. As shown in table

**Table 3:** Standardized regression estimation of direct effects

Path	Standardized	t-Value	P-Value	Result
TL → EP	0.3453	8.837	0.000	Supported

## DISCUSSION

The current study aimed to investigate the direct effect of transformational leadership dimensions on crisis management at Akakus Oil Operations Company in Libya. The results of testing this direct hypothesis showed a positive relationship between transformational leadership and crisis management at Akakus Oil Operations Company in Libya. This implies that the more transformational leadership is practiced within the company, the better the crisis management becomes. In other words, when Akakus Oil Operations Company emphasizes transformational leadership and implements it through idealized influence and inspirational motivation of its employees, addresses individual employee issues, and assists them in solving their personal problems, especially during crises, and convinces employees that the company's problem is their collective problem and that overcoming the crisis is a challenge for everyone, the employees will work more diligently, perform their duties with greater enthusiasm, and make significant efforts to overcome the crisis and challenges. This greatly contributes to the company's ability to face crises and manage them efficiently and effectively, avoiding the adverse consequences of crises, thereby allowing the company to continue operating during crises and achieve positive outcomes through the combined efforts of management and employees.

The findings of this study are consistent with previous research, such as Al-Ghamdi's (2023) study, which found that transformational leadership, including idealized influence, intellectual stimulation, and inspirational motivation, significantly impacts crisis management in King Abdullah Hospital in Bisha, both collectively and individually. The study also revealed that all dimensions measuring the application of transformational leadership were generally high, indicating that the hospital's leaders possess a strong ability to manage health crises effectively. Similarly, this study aligns with Al-Mahlawi's (2020) research, which identified a positive correlation between the dimensions of transformational leadership and the stages of crisis management during the COVID-19 pandemic in hospitals in Khartoum. Noor's (2020) study also supports these findings, showing that transformational leadership contributes to providing suitable alternatives for addressing crises faced by various economic units. This is achieved through the administrative flexibility available to transformational leadership and its timely response to change, along with determining the appropriate magnitude of change to manage crises efficiently.

Additionally, the results of this study concur with Atiya's (2019) research, which found that transformational leadership influences crisis management. The study demonstrated that the more open and encouraging the leadership style is towards ideas and suggestions, the higher the organization's success rate. Similarly, the study by Al-Farran and Abu Roman (2019) found a positive impact of practicing transformational leadership

dimensions on crisis management, particularly in applying the confrontation and containment approaches, while the practice of transformational leadership dimensions negatively affects the application of the avoidance approach.

## Practical Application

The practical contributions of this study are evident as it investigated the direct impact of transformational leadership on crisis management at Akakus Oil Operations Company in Libya. Therefore, this study provided an important practical application emphasizing that transformational leadership plays a significant role in crisis management. Whenever a company wishes to overcome a specific crisis, it needs a transformational leader who has the ability to persuade and inspire employees to perform well, thereby facing and overcoming the crisis. Emphasizing transformational leadership as an effective tool for implementing strategies is crucial due to its ability to motivate and inspire employees, address their problems, and solve them. This, in turn, encourages employees to exert extra effort to achieve high performance that exceeds expectations.

## LIMITATION

Despite the significance of the topic addressed by the current study, it is not without limitations. As there may be some constraints or gaps in covering certain aspects that the study could not address. The current study was limited to testing the relationship between its variables at Akakus Oil Operations Company in Libya and did not include other oil companies. Therefore, future studies could extend the research to include all Libyan companies and their branches across the country. This study focused on testing the relationship between transformational leadership and crisis management by collecting data over a specific period. Collecting data over different time periods might yield similar results, but they could be more generalizable. In addition, this study doesn't examine any mediating or moderator variable between transformational leadership and crisis management, examining mediating moderator variables such as employee commitment, satisfaction, organizational culture, digitalization, and technology (Weiss *et al.*, 2022; Alduhoori *et al.*, 2023; Martinez *et al.*, 2023; Ateeq *et al.*, 2024a; Ateeq *et al.*, 2024b) which could improve our understanding of how interactions between these variables affect crisis management.

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