Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6, 1391-1407
2025
Publisher: Learning Gate
DOI: 10.55214/25768484.v9i6.8128

An empirical investigation of relationship among transformational leadership, strategic agility and organizational performance in a developing economy

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Abstract: The purpose of this research is to explore the relationship between strategic agility and organizational performance through the mediating role of transformational leadership. A cross-sectional survey involving 380 senior managers working within various industrial sectors was conducted. The data were analyzed using factor analysis and construct correlation covariances; additionally, mediation analysis was performed using Stata 16 structural equation modeling. The results revealed that there is a significant direct effect between strategic agility and organizational performance, a significant direct effect between strategic agility and transformational leadership, and a significant direct effect between transformational leadership and organizational performance. Furthermore, the study found a significant indirect mediation effect of transformational leadership on the relationship between strategic agility and organizational performance. This study advances our understanding of the relationship between these variables. It is the first comprehensive study analyzing these variables in the Saudi industrial sectors. Practical implications are provided for industrial managers to cope with environmental changes. This study offers integrated insights and supports leaders' decisions and their effective interactions with strategic agility capabilities to increase performance and achieve sustainably oriented businesses in turbulent economic times.

Keywords: *Organizational performance, Saudi industrial sectors, Strategic agility, Transformational leadership.*

1. Introduction

In today's business environment, a firm's success is determined by the capabilities of its leadership to reshape business models and adopt bright approaches to strategic thinking; ultimately, its potential success is dependent upon its performance [1]. Several factors are known to influence organizational performance, such as human capital, leadership style, research and development [2] organizational assets [3] organizational culture [4, 5] and strategic agility [6]. The concept of performance defines the idea of achieving results through objective and economic aspects of efficiency and effectiveness [7]. Moreover, the rapid changes in the business environment in terms of technology, consumers' behavior, etc., require quick responses to external threats and new opportunities. In this context, strategic agility (SA) has emerged as a powerful strategic capability. The importance of strategic agility lies on its potential to empower organizations with the flexibility to respond swiftly to crises or shifts in the market [8]. Strategic agility, as defined by Junni, et al. [9] denotes an organization's capacity to continuously adapt and maintain flexibility while ensuring operational efficiency. Doz and Kosonen [10] stress the importance of applying contemporary management approaches toward environmental changes. However, these authors blame leaders who are unable to change their business behaviors to respond to new business environments. Indeed, the consequences of the COVID-19 pandemic called for firms' leaders to enhance their business strategies in responding to unstable market conditions [11, 12].

History: Received: 21 March 2025; Revised: 9 June 2025; Accepted: 12 June 2025; Published: 17 June 2025
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As a result, it became evident that many organizations that failed to incorporate strategic uncertainty into their planning strategies experienced adverse consequences, including the loss of their competitive edge. Prior research indicated that organizations possessing a deeper understanding of strategic agility, and its implications were better positioned to maintain their competitive edge and adapt to environmental fluctuations [13, 14].

Thus, volatile work environments necessitate leaders becoming more agile to face these changes and sustain their competitive advantage; agility is a critical issue for highly uncertain environments [15]. Therefore, businesses are seeking agile leaders to adapt and cope with this transformational era through enhancing their scanning ability and redeploying available resources. In parallel, leaders should have integrity, trust, knowledge, and vision for strategic responses that emphasize strategic behaviors involved in the process of achieving high performance, or to at least remain competitive. A report in McKinsey & Company conducted by D'Auria and De Smet [16] stressed the necessity for agile and exceptional leaders who can pave the way toward designing agile systems for organizations to underpin their performance.

Adopting an effective leadership style should rely on internal rather than external resources to motivate, influence, and encourage its followers [17]. To be a successful firm in terms of agility, and thus respond quickly to changes, a firm should become alert to its business behaviors by developing its culture and adjusting its system and structure [18]. A quick and appropriate response to a change or threat could mean the difference between success and failure, or at least surviving unstable conditions [19, 20]. Once a business cumulatively develops its capabilities and skills for rapid changes in the environment, it is considered an agile organization that may sustain long-term high performance. Thus, the growth of leaders' abilities and skills is necessary to take calculated risks on their own behalf, as well as for their organizations. Moreover, a growing body of published research provides evidence that for businesses to strategically respond to opportunities, lower the risks associated with unstable conditions, and achieve superior performance, transformational leadership is a key driver; thus, a human side is vital for strategic response or change [21-24].

There is an increasing concern that agile and ambidextrous managers are critical for faster strategic responses that can lead to greater advantages for a firm's market and financial performance [25-27]. That is why a combination of the current research's concepts is fruitful academically, and for commercial organizations. Moreover, the results of previous studies in relation to leaders' roles and styles have not been validated and have led to further controversy about research methodologies, due to the difficulty of its concepts and measurements. Addressing the dearth of such information within the Arab cultural context can bring new insights to this situation. Therefore, this study introduces a conceptual framework which integrates these focal variables and empirically tests the relationships among them.

Much of the research was conducted in developed countries such as the United States and Europe and has been based on single industries such as supply chain, automobile companies, telecom industry, healthcare, education, and Finnish companies [28-31]. The existing research of strategic agility is conceptual and descriptive in natural and previous studies about the effecting of strategic agility on firm performance have not been adequately studied. Therefore, empirical studies into how agility works in multi-industries with regards to another cultural context is needed more than ever. Therefore, the question of how and whether these factors influence performance is still open, the key research question is, how can companies in the Saudi industrial sector enhance their performance, and what role do leadership play in this dynamic?

The main contributions of this research lie in (1) stressing the significance of transformational leadership in mediating the interplay between agility and performance by provisioning an empirical conceptional framework to fill the gap. Therefore, these insights advance the theories of leadership and organizational development. (2) The current study is not only establishing a relationship pattern, but also brough considerable implications for managers. Practical contributions can be viewed in terms of how agile leaders can arm an organization with deep observations and understanding about market

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6: 1391-1407, 2025
DOI: 10.55214/25768484.v9i6.8128

specifications, thereby increasing the organization's ability to rapidly respond to external changes. This research differs from similar studies, as it focuses on the managers working in a variety of business sectors; thus, it generates a better sample size and a greater substantial effect in return; in addition, this study is important because it provides considerable empirical international evidence from a different cultural and industrial context.

2. Theoretical Background and Research Hypotheses

According to the resource-based view, the attributes of agility are the ability to integrate available resources that can be treated as sources of competitive advantage [32] which should be identified, developed, and deployed by management [33]. Agile capabilities become the new competitive advantage for organizations to innovate, and to rapidly adopt in a changing and unstable business economy [27, 34]. This may entail producing new items and benefits or initiating new plans of action; creative approaches; making fast and appropriate decisions to make incentives for a business firm [35].

Strategic agility can also be perceived from the dynamic capability view (DCV) that was developed by Teece, et al. [34]. It was originally developed based on the works of Wernerfelt [36] and Rumelt [37]. It is defined as "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" [34]. The DCV's assumption lies on a firm's ability to renew competences to cope up with changing market requirements, and the role of management to efficiently adopt, integrate, and reconfigure those innovative forms of competences and resources to respond to the changing business environment [34]. Moreover, some dynamic capabilities are meta-capabilities that allow firms to achieve strategic agility [38].

The bases of RBV and DCV are that intangible resources—a firm's specific assets and capabilities—are keys for creating sources of sustained competitive advantage that can lead to a firm's superior performance. Integrating resources is a central idea of strategic agility and is a critical role of leaders. Therefore, strategic agility is more visible to the resource-based view, dynamic capability view, and leadership. On other words, these theoretical theories have shaped the hypothesis and provided a robust theoretical foundation for this research.

2.1. Strategic Agility and Organizational Performance

Prior studies proposed three meta-capabilities of strategic agility; these are strategic sensitivity, resource fluidity, and collective commitment. Strategic sensitivity refers to the ability of an organization to sharpen its perception, and its intensity of awareness to strategic development [10]. Resource fluidity is defined as a company's internal capacity to rapidly tailor its capabilities and redeploy available resources [10, 39]. The third meta-capability, collective commitment, is one more crucial driver of strategic agility. It was originally labeled "leadership unity" by Doz and Kosonen [10] "as one determinant of a top team's ability to reach collective commitments and elicit true engagement toward them".

Several authors have proven that organizations respond more quickly when their agile capabilities were built and developed to exploit opportunities and mitigate risks by addressing changing environments. Strategic agility enhances firms' performance [4, 14, 34] increases the efficiency of strategies used to implement management decisions and financial performance [40, 41] and enhances market performance, which is closely related with service quality. Furthermore, strategic agility develops differentiation and competitive advantage, and enhances market orientation [42, 43]. Moreover, market performance has a significant indirect effect on organizational performance through product advantage and leaders' tactics [44]. The relationship between strategic agility and a firm's performance has been studied in numerous recent papers [40, 43]. Therefore, the first research hypothesis was the following:

Hypothesis 1 (H1). *Strategic agility has a positive influence on organizational performance.*

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2.2. Strategic Agility and Transformational leadership

Strategic agility requires leadership capabilities, smooth transformations, and human resources capabilities [45, 46]. An understanding of the role of leadership within strategic agility is vital, yet selecting the most effective leadership style to develop an agile system within an organization is problematic [47]. According to Holbeche [38] for an organization that wants to be more agile, the role of command leaders is not ideal; a more shared model of leadership is needed instead. In this regard, Wassenaar and Pearce [48] argued that the practical roles of a shared model of leadership can be identified in four types of leadership: directive, transactional, transformational, and empowering. Menguc, et al. [49] hypothesized that transformational leadership is a managerial-based competency whereby competencies generally refer to a firm's distinctive capabilities [32, 50]. It is important to know that strategic agility capabilities are linked with transformational leadership through creating a flexible structure and promoting a culture of innovation [51]. In other words, agile system bult in an organization influences the transformation leaders' behavior and action toward a new market structure and requirements. Agile strategy influence leadership' behaviors by dispelling outdated notions about hierarchy and emphasizing individual initiative and accountability [52]. In addition, agile methods are designed to encourage leaders to collaborate and grow in an uncertain environment [11].

Agility is a method that refers to an ability of the organization to respond to a change which would be reflected in quick response to the market's need. Thus, these environmental changes force an organization to be more agile, in turn, predicting to influence the behavior and action of leaders toward certain mindsets. This can be explained by the behaviorism theory where changes in environment should have an impact on leaders' behavior and action [53]. For instance, the pandemic of Covid-19 has affected almost all sectors and has changed the way business is operated. The new environment caused by the pandemic shaped the managerial practices and influenced business to adopt more effective skills of leadership [12].

Much of the literature on transformational leadership recognizes that it comes from leaders who possess charisma and offer intellectual stimulation, personal consideration, and inspirational motivation to the employees of an organization [54-58]. Highly agile organizations influence agile leaders who are quick, efficient responders to exploit changes and have a high ability to handle challenges [59]. It is also known that a leader's capabilities are a source of competitive advantages for superior performance [32, 60]. Therefore, the theory of transformational leadership was selected for consideration in this study, because its conceptual elements are related to organizational change and agility. The current study considered the Bass and Riggio [58] model of transformational leadership, which comprises four constructs: idealized influence, personal consideration, intellectual stimulation, as well as inspirational motivation. These constructs involve robust competency, and contain elements that are related to organizational agility and change, such as building work culture. For example, the factor of intellectual stimulation is related to a leader's ability to influence followers by causing them to look at problems in different ways and create innovative solutions. Agile strategies can be characterized as a new group of tactics that have an impact on leadership [11]. It also challenges leaders to change their behaviors because agility influences leaders' discipline toward resources commitments [52]. Therefore, the researcher hypothesized the following:

H_2. There is a significant positive relationship between strategic agility and transformational leadership.

2.3. Transformational Leadership and Organizational Performance

A study conducted by Howell and Avolio [61] discovered that transformational leadership underpins unit-level performance achieved by unifying followers and rallies them towards a common course of action. Such leaders create a clear and compelling vision, and in such a manner, they can rally employees to share the vision and perform beyond expectations. Their unique values and beliefs reflect what organizations need for optimal performance. These roles and behaviors are related to the leadership constructive model of Bass and Riggio [58]. In this regard, Harbott [27] proposed three key mindset shifts in agile leadership: Mindset shift 1: Focus less on the work and more on the culture,

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6: 1391-1407, 2025
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strategy, structures, and policies. Mindset shift 2: Decentralize as much of the decision making as possible. Mindset shift 3: Encourage and support the growth and development of those around you.

Several authors demonstrated that personal consideration has a positive influence on a firm's performance [27, 62]. Bill Joiner, author, and a CEO of Change Wise Inc., confirmed that leaders should emphasize strategic agility, leadership agility, and operational agility, including culture, structure, and system, in order to develop an agile organization suited to turbulent business environments [63]. In other words, these transformational-based competencies contribute to positive outcomes such as innovations, organizational culture, and ultimately organizational performance. The relationship between transformational leadership and organizational performance is positive, as found in various studies such as Alrowwad, et al. [64]. Transformational leadership has been found to have a significant positive effect on employee innovativeness, which in turn contributes to organizational competitiveness [65]. Therefore, the researcher hypothesized the following:

H_{2b}: There is a significant positive relationship between transformational leadership and organizational performance.

Organizational performance entails several variables, including efficiency, effectiveness of the business model, and outcomes [7]. It is also importantly related to the transformational-based competency in actualizing strategic change, market orientation, and motivating employees [49]. Organizational performance can be viewed from market performance in terms of customer satisfaction, and from a financial point of view in terms of return on investment and sales; hence, the indicators used to measure this are varied.

Firstly, market performance plays a central role for an organization to create a long-lasting competitive advantage in the entrepreneurial ecosystem. Market performance relates closely to service quality (SQ). Service quality exists to fill the void between what customers expect and how they perceive the service provider's performance [42]. By providing better SQ, an organization will create a loyal customer base and increase the traffic of new customers by creating positive word of mouth [66]. In a structural relationship study, Langerak, et al. [44] demonstrated that market performance has indirect effects on organizational performance through leaders' capabilities. However, concepts such as visionary and agile leadership are important for achieving the above objectives. This research argues that the prediction of a positive relationship between transformational leadership and market performance assumes that marketing orientation offers leaders a better understanding of the business environment and customer expectations, which can lead to enhanced customer satisfaction. In addition, the resource-based view indicates that transformational leadership has a positive relationship with market performance and hence contributes to a firm's superior performance [49].

Secondly, financial performance is an intuitive quantification of how effectively an organization utilizes its assets from its primary business model to produce revenue. Some variables are used to assess a company's financial performance, including profit, cash flow, and income [40]. Financial performance is informed by various factors, including the capabilities of a firm's leadership [67] and its strategic agility [68]. Primary influences of financial performance include the ability of management to be flexible to change, the effectiveness of processes utilized to make decisions concerning change, and the efficiency of strategies used to implement management decisions [26]. For optimal financial performance, it is imperative for organizations' managers to lead in a transformational leadership [62].

The creation of strategic agility assists leaders with the competency to identify market adjustments and implement novel ideas rapidly; this, in turn, can improve organizational performance. To develop a level of agility and achieve extraordinary performance for Saudi's business sectors in the current unstable economic environment, organizations require agile and capable transformational leaders. Since such leaders can develop strategies and build culture to facilitate a transition to organizational agility [25] this helps them face numerous internal challenges such as resources and employees, and external challenges that are hard to predict such as government policies and social aspects [49]. Strategic agility can be assumed to be a continuous defensive tendency to face these challenges; thus, transformational leadership competences are influenced by organizational agility that is required to meet new market

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ISSN: 2576-8484
Vol. 9, No. 6: 1391-1407, 2025
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requirements [69]. It is also known that transformational leaders convince their employees to aim for greater performance as well as better moral and ethical standards. In addition, Businesses face unavoidable stumbling blocks that require ambidextrous and agile leaders [33]. The external environment in which these leaders operate is crucial in executive actions, yet their flexibility helps a lot [2, 60]. In this regard, Barney [32] argues that a firm's higher-level performance is due to the efficiency of its leaders in exploiting its resources and competencies, rather than to the efforts of firms to create imperfect competitive conditions. The role of leadership in identifying, developing, protecting, and deploying key resources remains critical, as these steps are difficult [33]. The correlation between strategic agility, transformational leadership and business performance has consistently found positive in various reliable studies. Previous studies considered agility as mediator in this relationship, but transformational leadership can be served as a mediator and means for organizations to integrate ethical and behaviors practices into their business practices. Therefore, the intervention of transformational leadership in the agility-performance relationship is predicted to have a greater effect on overall performance Therefore, the researcher hypothesized the following:

H_3: Transformational Leadership has a mediating influence on the relationship between strategic agility and organizational performance.

An integrated framework was proposed to specify the relationship between the variables, using a set of specific and interrelated variables. A review of the related literature highlighted certain variables; accordingly, the conceptual framework was proposed, as illustrated in Figure 1.

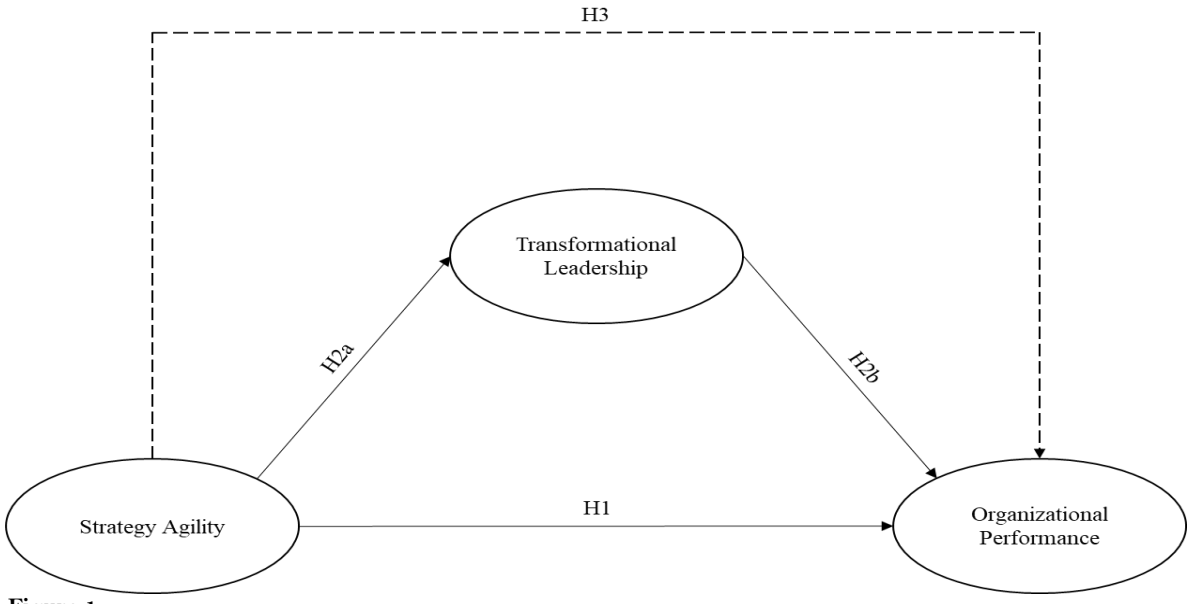

Figure 1.
The Research Model.

3. Research Methodology

3.1. Research Methods, Population, Sample, and Materials

The current study adopted a conceptual methodological approach. In operationalizing this research, a quantitative approach was conducted using a cross-sectional method. The questioner was distributed via email, as well as through other social network platforms including WhatsApp, LinkedIn, and Twitter, using a Google Form created for the purpose of collecting the data. A cover page was included at the beginning of the survey which included the research objectives, and a polite request for the recipient to participate in the study was made. (Section 4.2 and Appendix A provide details on these research instruments). This research' questionnaire aims to look out for employees' opinion about

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6: 1391-1407, 2025
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specific workplace variables. Moreover, confidentiality and voluntary were maintained and clearly explained at the beginning of the questionnaire. Informed consent from all study participants to use their data in scientific publications has been obtained and no minors were involved in this study. Senior managers working in Saudi Arabia's various sectors represented the research population. The managers had to meet two conditions: (1) they had to be aware of strategic issues in their organization; and (2) they had to have the capacity to declare and answer the questions. Therefore, the purposive sampling approach was the most appropriate means for the aims and objectives of the study. The sample encompassed 380 managers. There were 240 questionnaires that were answered and returned; out of these, 232 questionnaires were valid for statistical analysis, with a response rate of 61%.

The abundance of natural resources and raw materials in the Kingdom of Saudi Arabia offers significant business potential because there is a sizable domestic and global market for metals and petrochemical goods. The Kingdom understands that a formula based exclusively on cheap foreign labor and abundant crude oil would not be adequate to provide unique exports that would increase diversity and produce an abundance of wealth for a growing population. The outcome is that the sector is starting to implement strategic agenda that requires quick responses to external threats and discovers new opportunities by focusing on a more effective workforce though internal competency development, unique talent acquisition, domestic & forging direct investment, and capitalizing on the private sector.

In addition, recent research, Saudi Arabia's new economic shift calls for cutting-edge management techniques and innovative capabilities. The report also recommended that the Ministry of Human Resources concentrate on the following two goals: optimizing worker performance through Saudi workforce skill development and enabling the industrial sectors to serve as a driver of economic growth [70].

The Saudi industrial sector, the context of this study, is highly competitive in today's dynamic economic environment, which makes it more important than ever for businesses to invest in human capabilities and respond quickly in current dynamic economy. For instant, Saudi industrial cities increased from 3 to 35 industrial cities and zones over the ensuing three decades. In addition, the country enjoys a robust economy, currency stability and membership of the G20, Arab free trade Zone with low level tax which have all created competitive advantages.

3.2. Research Instrument

The questionnaire used for this study consisted of four sections. The first section was used to collect data on the subject's personal characteristics (e.g., gender, job experience, education level, age). Other sections were used to measure variables related to strategic agility, transformational leadership, and organizational performance. The questionnaire was designed using a five-point Likert scale (1 = strongly disagree; 5 = strongly agree).

Strategic agility (SA) represents the second-order independent construct of this research. It was measured through 13 items in accordance with Clauss, et al. [6]; Doz and Kosonen [10] and Doz [46]. Transformational leadership (TL) refers to seven leader behaviors and represents the first-order mediate construct of this research. It was measured through 7 items, in accordance with [71]. Organizational performance (OP) refers to financial and non-financial performance and represents the second-order dependent construct of this research, which was measured through 7 items in accordance with [72, 73].

4. Data Analysis

Primarily, each latent construct and its respective indicators were identified. Following that, we tested the items' reliability, which demonstrated that the scale validity and internal consistency were excellent (see Table 1).

Edelweiss Applied Science and Technology
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Table 1.
Reliability of constructs & correlation coef.

Latent variables	Cronbach´s alpha (α)	SA	FP	TL
Strategic Agility (13-items)	0.97	1		
Firm Performance (7-items)	0.96	0.891*	1	
Transformational Leadership (7-items)	0.97	0.872*	0.836*	1

Note: * p<0.1.

Latent constructs were derived, and met the reliability standard via Cronbach's Alpha for instrument assessments. The Cronbach Alpha for each construct in our study was found to be above 0.9, which indicates excellent item consistency [74]. Moreover, the item loadings were assessed independently using principal component analysis (see Tables 2, 3, and 4).

Table 2.
Dimensionality of Transformational Leadership

Items (Total variance explained by 1 component "TL" =84.58%) (KMO=.95)	Factor loadings
Transform L 1	0.90
Transform L 2	0.91
Transform L 3	0.91
Transform L 4	0.93
Transform L 5	0.94
Transform L 6	0.91
Transform L 7	0.94

A confirmatory factor analysis (CFA) was performed using AMOS 22.0 to test the measurement models. The factor loadings were assessed, and the indicators for firm performance, transformational leadership, and strategic agility loaded adequately onto their respective factors, with no loading below the 0.75 cutoff point [75]. Prior research by Carless, et al. [71] demonstrated that a TL 7-item scale required a 0.50 cutoff; our results did not drop below 0.90. That resulted in the extraction of one component capable of explaining 84.58% of the total variance among the transformational leadership items. The strategic agility construct, consisting of 13 items (strategic sensitivity, resource fluidity, and collective commitment), loaded adequately as well, where the item loadings ranged from 0.81 to 0.9, resulting in the extraction of one component capable of explaining 73.67% of the total variance among the strategic agility items. The organizational performance construct, comprising 7 items (financial performance and marketing performance), also had satisfactory loadings that ranged from 0.75 to 0.87, resulting in the extraction of one component capable of explaining 82.99% of the total variance among the organization performance items.

Descriptive statistics presented in the first section of the questionnaire (Table 3) show that the respondents were (>70%) above 40-year age group, which is illustrative of the Kingdom's median age. Most respondents possessed >11 years of professional experience, which provides a considerable and meaningful perspective of level within the industries. In addition, >50. % of the responding managers held undergraduate degrees and 34.5% held master's degrees, which added more validity to the responses, and illustrated the requirements of their positions. In terms of concentration within industry, oil and gas dominated the sample population with 36% representation, followed by healthcare and innovation/science and tech with 15% and 12.9%, respectively. For other subsectors, the tertiary industrial sector's representation varied between 5 and 7%, such as the banking and finance, construction, and service sectors. It was not surprising that males in Saudi Arabia's business community still dominated positions, with 66.8% of the sample population.

Edelweiss Applied Science and Technology
ISSN: 2576-8484
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Table 3.
Socio demographic characteristics.

Variable (n=232)	Frequency	%
Age (Years)		
<30	9	3.9
30-39	55	23.7
40-49	86	37.1
50+	82	35.3
Education		
High school	18	8.2
Undergraduate	122	52.5
Masters	80	34.5
Doctorate	12	4.8
Gender		
Male	155	66.8
Female	77	33.2
Industry Sector		
Agriculture	4	1.7
Banking & Finance	17	7.3
Construction	12	5.2
Innovation, science, and tech	30	12.9
Manufacturing	25	10.8
Electrical	10	4.3
Petrochemical (O&G)	84	36.2
Healthcare	35	15.1
Service Industry	15	6.5
Experience Level		
1-5 years	33	14.2
6-10 years	59	25.4
11-15 years	60	25.9
15+ years	80	34.5
	(n=232)	100%

Pearson's correlation coefficient calculations revealed that there is a strong correlation between the three constructs "OP", "SA", and "TL" at the 0.000 significance levels, suggesting that there is an association between the dependent variable OP and the regressors SA and TL. The statistical techniques tested reliability, factor loadings, factor analysis, constructs' correlation covariances, and goodness-of-fit for each measurement scale in the study.

4.1. Results

The correlation matrix in Table 4 reports significant correlations between our variables of interest, which initially suggests that there are associations between SA and TL, TL and OP, and SA and OP.

Table 5 displays the results of the ordinary least squares (OLS) model 1, which includes all exogenous variables except our main regressors, and evaluates the effect of the control variables on our variable of interest OP. The age of employees, education level, and years of experience had a significant impact on OP, with an R^2 of .371 (37.1% of variation in OP is explained by the variation in age, experience, and education level).

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Table 4.
Correlation matrix.

Variables	Age	Education	Gender	Experience	Sector	SA	TL	OP
Age	1							
Education	0.437*	1						
Gender	0.212*	-0.071	1					
Experience	0.744*	0.219*	0.392*	1				
Sector	0.128	0.031	0.045	0.1	1			
SA	0.337*	0.072	0.399*	0.449*	0.116	1		
TL	0.279*	0.148*	0.385*	0.369*	0.103	926*	1	
OP	0.366*	-0.038	0.363*	0.449*	0.068	0.894*	0.871*	1

Note: * p<0.1.

Table 5.
General Linear Regression (Model 1).

OP	Coef.	St. Err.	t-value	p-value	[95% Conf.	Interval]	Sig.
Age: base (<30) *	0	.	.	.	.	.	
30-39	0.181	0.19	0.95	0.343	0.194	0.556	
40-49	0.724	0.258	2.81	0.005	0.216	1.233	***
50+	0.964	0.503	1.92	0.056	0.027	1.955	*
Education: base (high school) *	0	.	.	.	.	.	
Undergraduate	0.671	0.239	2.81	0.00	0.2	1.143	***
Masters	0.115	0.269	0.43	0.67	0.415	0.645	
Doctorate	0.289	0.412	0.7	0.485	0.524	1.102	
Gender: base (Female)	0	.	.	.	.	.	
Male	0.435	0.138	3.15	0.002	0.163	0.707	***
Experience: base (1-5 years) *	0	.	.	.	.	.	
6-10 years	0.098	0.19	0.51	0.608	0.472	0.277	
11-15 years	0.227	0.231	0.98	0.327	0.228	0.682	
15+ years	.364	0.281	1.29	0.198	0.191	0.919	
Sector: base (Agricultural)	0	0.	.	.	.	.	
Banking & Finance	0.45	0.496	0.91	0.365	-0.527	1.428	
Construction	0.57	0.51	1.12	0.265	-0.436	1.576	
Innovation,science and tech	0.064	0.527	0.12	0.904	-1.102	0.974	
Manufacturing	0.381	0.468	0.81	0.417	-0.542	1.303	
Electrical	0.218	0.476	0.46	0.648	-0.72	1.155	
Petrochemical (O&G)	0.027	0.479	0.06	0.955	-0.916	0.971	
Healthcare	0.328	0.456	0.72	0.472	-0.571	1.227	
Service Industry	0.601	0.507	1.18	0.237	-0.399	1.601	
Constant	0.321	0.501	4.63	0	1.334	3.309	***
Mean dependent var	3.695						
R-squared	0.371						
F-test	6.973						
Number of obs	232						

Note: *** p<.01, * p<.1.

In model 2, our two main regressors were included, TL and SA, and demonstrated a significant effect (at .01) of both on OP, as shown in Table 6.

Table 6.
General Linear Regression (Model 2).

OP	Coef.	St. Err.	t-value	p-value	[95% Conf.	Interval]	Sig.
TL	0.4	0.069	5.75	0.000	0.263	0.536	***
SA	0.521	0.081	6.46	0.000	0.362	0.68	***
Education dummies	YES						
Age dummies	YES						
Experience dummies	YES						
Sector dummies	YES						
Gender dummies	YES						
Constant	1.096	0.243	4.51	0.000	0.617	1.575	***
Mean dependent var	3.695						
R-squared	0.860						
F-test	64.956						
Number of obs	232						

Note: *** p<.01.

Table 7 shows a summary between our primary two models and illustrates how much our R^2 change was enhanced from an explanatory percentage of 37.1% in model 1 to 86.1% in model 2.

Table 7.
Linear Regression Models Summary.

OP (Dependent Variable)	R^2	ΔR^2
Model 1 (Control variables)	0.37	
Model 2 (Predictors & control variables)	0.86	49***

Note: *** p<.01.

In models 1 and 2, we established a significant influence of SA and TL on OP. In model 3, a mediation analysis was conducted using the Stata 16 structural equation modeling "medsem" package [76] designed for testing and estimating mediation effects with either observed or latent variables. This statistical approach facilitates the ability to conduct path analyses between variables of interest to determine indirect effects at a 95 percent bias and accelerated confidence intervals, and Monte Carlo repetitions of 500—a standard in social sciences [76, 77]. The model is shown in Table 8.

Table 8.
Mediation Model.

OP	Coef.	St. Err.	t-value	p-value	[95% Conf.	Interval]	Sig.
TL	0.301	0.075	4.06	0	0.157	0.451	***
SA	0.612	0.073	8.34	0	0.468	0.75	***
Constant	0.36	0.113	3.14	0	0.133	0.577	***
R-squared	0.88						
F-test	564.86						
Number of obs.	232						

Note: *** p<.01.

Accordingly, our results in Table 9 demonstrate the following results:

Hypothesis 1 is supported. There is a significant direct effect between our independent variable, strategic agility, and our dependent variable of interest, organizational performance. The standardized coefficient for the direct effect (H1) of SA on OP (excluding the effect of the mediator) is $\beta = 0.61$; $p<0.05 = 0.000$). This means that strategic agility influences organizational performance.

Hypothesis 2a is supported. There is a significant direct effect between our independent variable of focus, strategic agility, and our mediating variable of interest, transformational leadership. The standardized coefficient for the direct effect (H2a) of SA on TL is significant, with $\beta = 0.93$; $p<0.05 = 0.000$. This means that strategic agility influences transformational leadership.

Hypothesis 2b is supported. There is a significant direct effect between transformational leadership and organizational performance. The standardized coefficient for the direct effect (H2b) of TL on OP is significant, with β = 0.30; p>0.05 = 0.000. This means that transformational leadership influences organizational performance.

Hypothesis 3 is supported. There is a significant indirect effect, a mediation effect of transformational leadership. Results show that transformational leadership improved the total influence between strategic agility and organizational performance (β = 0.89), with a direct effect (β = 0.61, p < 0.05) and an indirect effect (β = 0.28, p < 0.05). Thus, transformational leadership played a significant mediating role between strategic agility and organizational performance.

Table 9.
Mediation Analysis.

Observed variables	Total Effect	Direct Effect	Indirect effect	P
SA → OP	-	0.61	-	0.00
TL → OP	-	0.3	-	0.00
SA→ TL	-	0.93	-	0.00
SA → TL → OP			0.28	0.00
SA → TL → OP	0.89	-	-	0.00

5. Results and Discussion

The results of the current research show that the level of strategic agility and organizational performance in these sectors was significant, which is consistent with the findings of some previous studies O'Reilly, et al. [4] and AlTaweel and Al-Hawary [14] The level of transformational leadership was high, and this result corresponds to that obtained by Bassi and McMurrer [2]; O'Reilly, et al. [4]; Buil, et al. [20] and Jensen, et al. [62]. Therefore, the leaders of these Saudi companies should be alerted of the critical importance of adopting contemporary management approaches to assist them in rapidly changing the work and business environment through the renewal of their resources.

Firstly, the results indicated that strategic agility has a positive influence on organizational performance. Organizations enjoy both financial benefits in terms of profitability, return on investment and attain market position by increasing market share and customer satisfaction when agile strategies are adopted based on developing and deploying key resources combined with contemporary management approaches that derive from simultaneously sensing new opportunities. Similar previous studies found that strategic agility has a positive influence on organizational performance [4, 14, 78]. Prior studies in this regard [6, 10, 79] emphasized the critical role that strategic agility plays in improving organizational performance. Such research indicated that implementing agile strategies contributes to a firm's performance by assisting its capabilities to exploit its core competences while simultaneously sensing new opportunities.

Secondly, the results revealed that there is a significant direct effect between strategic agility and transformational leadership. To explain the link between these variables, the results suggested that strategic agility capabilities allow leaders to recognize the external environment (strategic sensitivity), acquire new resources (resource fluidity), and create robust motivational attitudes to be considered in organizational teamwork (collective commitment). Hence, strategic agility is viewed as a prerequisite of transformational leadership that can provide leaders with context-based inquiry for decisive actions in uncertain business environments. This finding is in line with that of [11].

Thirdly, the results pointed out that transformational leadership has a positive influence on organizational performance, which is consistent with the results of Harbott [27]. Previous researchers [61, 80] demonstrated that this style of leadership positively influences the level of enthusiasm, innovation culture, dedication, and work absorption by employees.

Finally, the results revealed that transformational leadership has a significant mediating influence on the relationship between strategic agility and organizational performance. This result is in line with

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6: 1391-1407, 2025
DOI: 10.55214/25768484.v9i6.8128

those of Akkaya and Tabak [22] and Attar and Abdul-Kareem [25]. This research found that that the intervention of transformational leadership increased the total effect of strategic agility on organizational performance. In other words, agile leadership arms an organization with deep observation and an understanding about market specifications, thereby increasing its ability to rapidly respond to internal and external changes and improve its ability to produce new innovative products and services. This can be achieved through a well-equipped leadership style that supports continuous and dynamic organizational objectives, which are reflected in individual performance, organizational culture, substantial innovativeness, and long-term financial and market performance. Therefore, this research argues that the impact of strategic agility on performance is greater when mediated by transformational leaders.

6. Theoretical Implications

This study contributes to the literature on strategic agility, transformational leadership, and organizational performance in several ways. Firstly, it confirmed what has been found in previous research; this study showed that strategic sensitivity, resource fluidity, and collective commitment are crucial strategic capabilities for boosting organizational performance. Strategic sensitivity enables organizations to scan and evaluate their ability to develop market opportunities. Resource fluidity refers to the effective utilization of existing resources, and collective commitment is a robust motivational attitude that is commonly grounded in organizational teamwork.

Secondly, this study advances our knowledge of the mechanism by which strategic agility effects organizational performance by examining the mediating role of transformational leadership as a link between strategic agility and organizational performance. Thus, this study demonstrated that transformational leadership is crucial in identifying, developing, and deploying organizational dynamic capabilities. This study contributes to the literature on organizational capabilities, strategic management, and leadership. Furthermore, the current study tested a suggested model for exploring leadership within dynamic capabilities. This model assisted in connecting aspects of strategic agility to the actions of management at the leadership level in a more visible way. Therefore, this study provided integrated insight and supported the roles of leaders and their fruitful interactions with strategic agility to increase performance and achieve sustainably oriented businesses in turbulent economic times.

Thirdly, this study was conducted in a country with a thriving economy, the Kingdom of Saudi Arabia, in which research in this context is scarce. Thus far, little research has been conducted on this area in the Saudi industrial sector. Nevertheless, the study was able to find applicable relationships between these variables through a mediating variable. Furthermore, this study contributes to our knowledge through conducting research in a multi-industry setting, while regarding another cultural context that brought different insights into how strategic agility suits various environments.

Fourthly, the study verified the importance of strategic agility for performance, while stressing the critical role of transformational leadership in enhancing both financial and market performance. The key features of agility are responding to environmental changes and integrating resources; both are of paramount importance to agile leaders. It is well established that the role of the management is to identify, deploy, and develop these resources to achieve superior performance. In other words, transformational leadership is a managerial-based competence that quickly determines appropriate decisions and efficient responses to market needs, in order to exploit changes.

7. Practical Implications

The practical implications of the current study include the following: First, this study agreed with Harbott [27] who proposed that in a changing and dynamic environment, leaders create shifts toward culture, structure, and policy. This also depends on the nature of change that the market needs, yet the root of market response seems to depend on leadership capabilities. Accordingly, re-shaping the whole organizational identity is a form of response that a firm can adopt. In times of uncertainty, such as during the COVID-19 pandemic, stakeholders become fearful and insecure; hence, increasing the level of

Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6: 1391-1407, 2025
DOI: 10.55214/25768484.v9i6.8128

trust in leadership can play a vital role in eliminating their concerns, which impact a firm's performance. This can be accomplished through appropriate decisions made with speed, and delivering reliable outcomes. It also implies that people voluntarily participate and effectively innovate in changing conditions when they perceive leadership behavior and skills. Second, this study demonstrated that there is a significant, indirect mediation effect of transformational leadership. It is proposed that firms lay the foundation to enhance environments that improve performance by creating a new mindset toward sustainability. Moreover, because leaders' skills and behavior are required to achieve the desired outcomes from strategic agility, management is recommended to adopt proactive agile systems that promote at all levels of the organization achievement of their unit goals, in alignment with corporate objectives to foster maximum performance. Sometimes, being an agile organization does not necessarily influence performance; the competence of leaders to determine the appropriate response is a critical aspect, for example, with structuring. Hence, both strategic agility and transformational leadership are imperative to increase performance and achieve organizational goals.

8. Limitations and Suggestions for Future Research

There are unavoidable limitations which need to be addressed. Firstly, the results based on a sample of 232 managers cannot be generalized; however, accessing managers in various industrial sectors is difficult. In addition, it is quite known that the Saudi' culture is cautioned and conservative, thus participating in business-related survey is considered as a formal investigation. Therefore, the results of this study should be considered with caution, solely as indicators regarding a specific context and culture. This study was conducted in Saudi Arabia; future studies should direct their efforts toward neighborhood countries in the region, such as Gulf countries that have similar businesses and cultural contexts, to provide more definitive and wide-ranging results to confirm these findings and validate and extend the model used in this study. Future studies should test the impact of other styles of leadership that have not been explored in this study. Moreover, different approaches to the research could be used, including a qualitative approach that could generate a deeper level of understanding about the application of strategic agility, and the role of leadership.

Transparency:

The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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Edelweiss Applied Science and Technology
ISSN: 2576-8484
Vol. 9, No. 6: 1391-1407, 2025
DOI: 10.55214/25768484.v9i6.8128