



Transformational Leadership Versus Strategic Alliances: Unpacking Organizational Adaptation Mechanisms in Jordanian Pharmaceutical Firm

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ABSTRACT

The role of organizational adaptation in global turbulence is vital to survival but the processes that drive it in the limited emerging market segment are poorly comprehended. This research provides a considerable gap in its exploration of how transformational leadership and strategic alliance affect the organisational adaptation in Jordanian pharmaceutical companies in the presence of top management commitment. The top and middle managers (325) in the sector were surveyed by a quantitative survey and the results were assessed through the partial least squares structural equation modeling (PLS-SEM). The findings indicate that transformational leadership is a very strong indicator of adaptation, and strategy alliances are not significant. Moreover, the best power commitment of top management serves as a strong force in the closeness of management and adaptability and cannot unlock value through alliances. Such results lead to the problem of the classical theory of strategy, which proves internal dynamics of leadership to be a more powerful sustaining mechanism than visiting alliances under strict conditions of regulation. The research contributes as long as there is an original contribution to theory and practice through the specification of the boundary conditions of strategic alliances and the fact that internal governance and leadership orchestration is the essential driver of creating adaptive capacity.

Keywords: Transformational Leadership, Strategic Alliances, Organizational Adaptation, Top Management Commitment, Pharmaceutical Sector

JEL Classifications: M12, M14, L14, L25, L65

1. INTRODUCTION

The turbulent environments that organizations the world over are faced with are becoming more and more demanding of constant adaptability. Changes have increased with globalization, technological upheaval, climate change and political turmoil forcing firms to build resilience and agility to keep up with competition (Teece, 2007; Eisenhardt and Martin, 2000; Hitt et al., 2023). Organizational flexibility is not anymore, a choice but a requirement to survive in a dynamic environment where companies need to constantly reorganize the strategies, restructure the resources and innovate to face the external demands (Doz and Kosonen, 2010; Heracleous and Werres, 2016). The significance of leadership and strategic orientation is chief when it comes to uncertainty navigation in organizations

that might be further complicated by regulatory issues, supply chain disturbances, and severe international competition, like in the pharmaceutical sector (Dubey et al., 2024; Musa et al., 2025). In the literature of the world, it is pointed out that the concept of adaptability is not merely based on the structural and operational flexibility, but also the vision of the leadership, the strategic alliances, and the ability to coordinate the resources (Barney, 1991; Wang and Ahmed, 2007; Boin and Hart, 2003). In this context, transformational leadership has become a very important source of the organizational adaptability. In contrast to the transactional strategy, transformational leadership recruits the vision, motivation, and creativity to drive organizations to the state of long-term sustainability (Bass and Riggio, 2006; Braun et al., 2013). Research indicates that transformational leaders increase the readiness of employees to take risks, promote knowledge

transfer, and innovate, which enhances the adaptive capacity (Buttigieg et al., 2023; Siddiq et al., 2023; Amrullah et al., 2022). Nevertheless, flexibility cannot be achieved only by leadership. Resource sharing, innovation and new market access also have been identified as critical and strategic alliances in industries where ideation of knowledge and changing technology prevail (Dyer and Singh, 1998; Gulati, 1998; Bresciani et al., 2021). Targeted at the Middle East, adaptability plays a particularly important role in context of economic flexibility, political instability, and reliance on foreign markets in its structure. Other challenges such as limited resources, variable regulations, and limited institutional capacity tend to be compounded in the emerging economies and increase the necessity of adapting the organizational strategies (Ahmed et al., 2021; Al-Abrow et al., 2021; Elbanna, 2021).

In this context, leadership and alliances assume a dominant role in the development of organization resilience. According to scholars, companies in the region start to rely on collaborative networks as a way of surviving shocks that may be caused by regional disputes as well as breaks in the supply chain (Alshurideh et al., 2020; Hussein et al., 2023; Garrido-Vega et al., 2023). However, there has not been much empirical research to determine the relationship between leadership styles and alliance strategies, with the burden of existing studies being placed on either a Western environment or non-theoretical accounts of the how, why, and what (Alhaddad et al., 2023; Bamel et al., 2023; Khairy et al., 2023). The pharmaceutical industry in Jordan is one area that offers a good example in the study of these dynamics. The industry forms an essential part of the national economy, as it contributes almost 9% to the export level and tens of thousands of jobs, but at the same time, it has a high level of regulation and manages to be competitive in the global market (JCB, 2021; JFDA, 2025). Among the problems that face pharmaceutical companies in Jordan, one may single out such aspects as fluctuating pricing conditions, the vulnerability of the supply chain, and the necessity to adhere to national licensing agreements (Al-Mahayreh et al., 2023; Harahsheh et al., 2021). These companies rely on using strategic alliances with the global players, as well as powerful internal leadership to innovate and adjust according to the available resource limits (Al-Zu'bi and Tsinopoulos, 2021; Abufardeh and Albloush, 2025). The peculiarity of the interaction between local cultural processes, strictness of regulations, and international dependencies render this sector one of the most valuable areas to study how the transformational leadership, alliances, and top management engagement influence the process of adaptation (Al-Awamleh et al., 2022; Alshurideh et al., 2020; Alhaddad et al., 2023). Irrelevant as it is, gaps are critical in the literature on the topic of Jordanian adjustment in organizations.

Extensive of the research has been descriptive analyzing not the interconnections between leadership traits or outcomes of alliances but rather in a spontaneous manner without the established theoretical constructs like a resource-based view (RBV) and dynamic capabilities theory (Barney, 1991; Peteraf and Barney, 2003; Zahra et al., 2006). The research of Jordan pharmaceutical sector has been able to recognize leadership impact, alliance forms of practices yet the overall has tended to be deficient in integrating the commitment by the top management as means of

moderation (Harahsheh et al., 2021; Alhaddad et al., 2023; Al-Hawary et al., 2017). Moreover, there has been limited empirical research to understand the interplay of these variables to promote organizational adaptation at the firm level. This is concerning because the Jordanian firms are under mounting competitiveness pressure due to digital transformation, coronavirus-related issues, and its trade relationships, which may soon be destabilized (Ly, 2024; Ramadan et al., 2023; Dubey et al., 2024). To counter these shortcomings, this research will examine how transformational leadership, and strategic alliances affect the organizational adjustment of the Jordanian pharmaceutical companies using top management commitment as an intervening factor. The research also transcends individual characteristics and examines collective leadership practices, collective alliance capabilities, and collective strategic processes in a dynamic environment by considering organizational-level analysis (Doz and Kosonen, 2021; Alshurideh et al., 2020; Aboiyassin and Abood, 2013).

The paper incorporates both RBV and dynamic capabilities theoretical viewpoints, as it demonstrates the use of leadership and partnerships to develop adaptive capacity by the firms, deal with environmental uncertainties, and maintain performance. By doing so, it contributes to both theories, by making clear the mechanisms of linkage between leadership and alliances and adaptation, and practice, by providing evidence-based information on how Jordanian managers could strengthen resilience and competitiveness in the pharm pharmaceutical industry (Teece, 2007; Eisenhardt and Martin, 2000; Hitt et al., 2023). Although there has been a growing insight into the value of adaptability in turbulent business contexts, there has been little empirical knowledge on how internal leadership and inter-organizational processes are combined to affect adaptation in emergent market situations. In the pharmaceutical industry here Jordan presents a lack of regulatory rigidity, global dependency, resource limitation has harnessed in most of the previous studies, which have been descriptive or partial, emphasizing leadership or alliance, as opposed to the interactive effects of the two or moderating influence of top management commitment (Harahsheh et al., 2021; Alhaddad et al., 2023; Al-Hawary et al., 2017). This lack indicates a major research gap on how transformational leadership and strategic alliances work to adapt an organization where the top managers are committed to their roles despite the institutional and environmental pressure.

Moreover, although the theory of Resource-Based View (Barney, 1991) and Dynamic Capabilities Theory (Teece, 2007) provide a rather good conceptual framework to explain how firms manage to make use of supplied internal resources to maintain competitiveness, their synthesis in the context of leadership and alliance typical of regulated, developing-country industries has not been adequately studied. It is especially acute in Jordan where pharmaceutical companies cannot remain competitive, effectively innovate, and adequately address the environmental volatility without a steady theoretical and empirical framework that would tie the internal leadership power, the alliance management strategies and the executive commitment. In order to fill this gap, the current research paper focuses on the effects of transformational leadership and strategic alliance on

organizational adaptation having top management commitment as the moderating factor. The goal is to apply theoretical convergence between RBV and DCT by showing how the leadership and alliance-based resources are orchestrated dynamically with managerial commitment in order to raise the adaptive capacity and maintain long-term competitive advantage. The contribution contributes to the development of strategic management discussion in the developing economies and gives practical advice to Jordanian pharmaceutical companies that need to enhance their resilience, innovation and performance in the face of ever-changing-environment turbulence.

2. LITERATURE REVIEW

A review of international literature on the need to ensure organizational adaptation as critical in turbulent environments is made in this section. The two components: leadership and strategic alliances have been identified as the driving forces, but it is the interaction and particularly within the narrow environment of the pharmaceutical industry in Jordan that is highly important and under-researched.

2.1. Underpinning Theories

This part discusses the fact that the research is based on the Resource-Based View that views leadership and alliances as strategic resources, and the Dynamic Capabilities Theory that describes the re-organization of these resources in response to change. The two in combination offer a solid theoretical prism in which to analyze the process of adaptation of organizations.

2.1.1. The resource-based view (RBV) theory

RBV offers a theoretical background on interpreting how organizations maintain the lead in competitiveness with their own resources and capabilities that are unique. Barney (1991) and Wernerfelt (1984) argue that firms win over their competitors due to the presence of resources that are valuable, rare, inimitable and non-substitutable. In the environment of the pharmaceutical sector in Jordan, RBV points to the fact that leadership, knowledge, and strategic partners are intangible resources critical in defining the ability of firms to survive in changing environments. Transformational leadership acts as an instrument that fosters innovation, motivates the employees, and enhances the organizational culture, which improves adaptive responses (Braun et al., 2013; Siddiq et al., 2023). In the same vein, strategic alliances are the inter-organizational resources which allow firms to have access to new technologies, market resources and production capabilities that could not have been acquired internally (Doz, 1996; Jiang and Li, 2020). The relevance of RBV to the present study is that it conceptualizes transformational leadership and alliances as a strategic resource embedded in the organizational fabric, which defines the innovativeness and adaptability to adopt in resource-deprived conditions. The application of these intangible resources is a necessity in the Jordan pharmaceutical industry where strict regulation, limited economies of scale, and intensive competition pose major challenges to surviving in the long run and continuing to grow after the initial phases (Harahsheh et al., 2021; Alhaddad et al., 2023).

2.1.2. The dynamic capabilities theory (DCT)

DCT is a complement to RBV because it deals with the way organizations can transform their resources and capabilities in changing environments that occur at a quick rate. According to Teece (2007) and Eisenhardt and Martin (2000), the dynamic capabilities enable firms to integrate, build, and restructure both internal and external competencies with the changing environments. Although, RBV underlines the strategic resource endowment, DCT underlines the renewal of the resources and its implementation to achieve the sustainability of the competitiveness. In the context of the presented research, DCT describes how transformational leadership allows promoting endless learning, experimentation, and knowledge recombination to give firms the ability to react to external shocks (Doz and Kosonen, 2010; Hitt et al., 2023). In addition, the governance capability to coordinate resources and harmonize strategic responses on organizational levels with adaptive responses is reinforced by the top management commitment as a moderating factor (Ramadan et al., 2023; Musa and Enggarsyah, 2025). Within the Jordanian pharmaceutical industry, DCT throws fresh light into the mechanisms of companies to face the world pricing subjugation, regulatory shifts and technological instability by restructuring networks, generating new products, and upheavals in structures. DC is therefore an interesting prism through which the significance of resources will be understood to go hand in hand with how leadership and partnerships interrelate in a dynamic way to create resilience and successful adaptation.

The Resource-Based View and the Dynamic Capabilities Theory give a wholesome perspective in explaining what resources are important and how adaptations are achieved as a result of the resources. RBV recognizes the transformational leadership, strategic alliances as a good and unique resource that support organizational advantage, but DCT explains the influence of resources mobilization, reorganization, and utilization to maintain nimbleness in the dynamic context (Teece, 2007; Barney, 1991). Such theoretical combination is quite relevant to the case of the Jordanian pharmaceutical industry, where the companies must not only have the strategic resources but also cultivate the managerial potential to utilize it with the restriction of the regulatory framework and resources. Top management commitment is the mechanism at which these theories come together transforming the strategic intent into responsive action. The collaboration of the RBV and DCT allows the study to contribute to an integrative perspective of the interaction between leadership and alliances in the context of managerial placement of the interactions to develop organizational adaptation. There is a basis of this integrated framework based on the subsequent hypotheses that empirically test these relationships in a dynamic and competitive industrial environment.

2.2. Hypotheses Development

This section comes up with testable hypotheses that transformational leadership and strategic alliances have a positive effect on the adaptation of organizations. It also assumes that the commitment of the top management enhances these relationships, constructing a very abstract model that explains the cause of flexibility in a fluctuating industry.

2.2.1. Transformational leadership

Transformational leadership has always been associated with the adaptability and performance of organizations at various settings. It has been found that transformational leaders inspire and encourage their employees to embrace change, to become innovative and to ensure that all employees work towards a long-run strategic objective (Bass and Riggio, 2006; Braun et al., 2013). Transformational leaders develop a vision in dynamic settings that enables workers to accept uncertainty, which therefore makes it a group process in an organization, but not an individual (Buttigieg et al., 2023; Amrullah et al., 2022). The Middle Eastern research has also emphasized the importance of transformational leadership in building organizational resilience, which fosters knowledge sharing and promotes the culture of constant improvement (Harahsheh et al., 2021; Al-Abrow et al., 2021). Nonetheless, a lot of this work is descriptive and only looks mainly at the leadership characteristics without considering the interaction of the leadership with other strategic processes to influence the adaptability. The importance of leadership in developing adaptability in the context of the Jordanian pharmaceutical industry and the inability of the firms to operate in a globally competitive market due to the constrained competitive opportunities, regulatory frameworks, and financial resources is a question that needs more empirical research. In this research, the next hypothesis is formulated:

- H_1 : Transformational leadership has a positive effect on organizational adaptation.

2.2.2. Strategic alliances

Another mechanism that is vital in the process of determining the adaptability of an organization is strategic alliances. Through the formation of alliances, the firms are able to share resources, access new technologies and be in markets that would otherwise be inaccessible (Dyer and Singh, 1998; Gulati, 1998). According to previous studies, alliances improve learning, develop relational trust, and increase the ability of firms to respond to external shocks (Bresciani et al., 2021; Jiang and Li, 2020). Alliances help to achieve resiliency in the volatile environment by allowing firms to be flexible in their supply chains, have a chance to co-innovate, and gain access to global expertise (Dubey et al., 2024; Garrido-Vega et al., 2023; Clauss et al. 2019). The case of emerging economies proves that alliances are especially valuable to companies that are limited by resources and scale because they can offset local drawbacks by using collaborative networks (Ahmed et al., 2021; Shams et al., 2021; Alshurideh et al., 2020). Although other previous studies support the use of alliances, they fail to describe the interactive effects of alliances with leadership practices to create resource-constrained industries adaptation. Alliances are one of the key sources of competitiveness and survival in the case of Jordanian pharmaceutical companies that largely rely on international licensing and collaborations. In this research, the next hypothesis is formulated:

- H_2 : Strategic alliances have positive effects on organization adaptation.

2.2.3. Top management commitment

The commitment of the top management effectively contributes to whether leadership vision and alliance strategies have positive organizational results. It has been shown that the top management

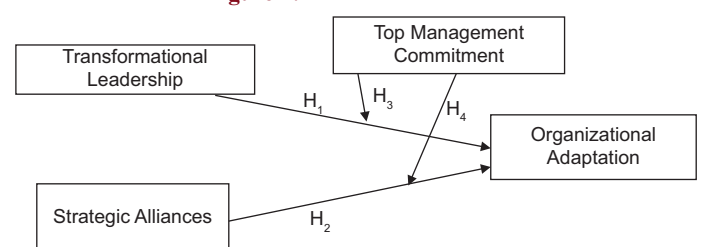
support is the key that makes adaptive initiatives to be properly equipped with resources and policy support and integrated into the organizational work processes in the long term (Bamel et al., 2023; Ramadan et al., 2023). Vision can be declared by leaders, and alliances can be established, yet the involvement of top management is necessary to make integration initiatives more decentralized and dynamic (Doz and Kosonen, 2010; Alhaddad et al., 2023). Research in the Middle East points out that commitment at the top management level enhances trust, accountability, and coordination between different levels in an organization and this enforces adaptive capacity (Al-Abrow et al., 2021; Alshurideh et al., 2020). Meanwhile, the minimal empirical evidence has also been used to test the moderating effect of top management commitment as the variable connecting transformational leadership, alliances, and adaptation within the context of pharmaceutical industry, which has a highly regulated environment. Top management commitment in Jordan, where managerial organization generally experiences resource constraints, will enhance the benefits of leadership and alliances. The hypothesis developed in this study is as follows:

- H_3 : Top management commitment positively moderates the relationship between transformational leadership and organizational adaptation.
- H_4 : Top management commitment positively moderates the relationship between strategic alliances and organizational adaptation.

Table 1 summarizes the key constructs, theoretical foundations, conceptual focus, and proposed relationships underpinning the study framework. Drawing on the Resource-Based View (RBV) and Dynamic Capabilities Theory (DCT), the model posits that Transformational Leadership (TL) and Strategic Alliances (SA) function as critical organizational resources that enhance Organizational Adaptation (OA). Furthermore, Top Management Commitment (TC) is conceptualized as a dynamic managerial capability that strengthens the effects of TL and SA on OA. Collectively, the framework suggests that firms with strong leadership, effective strategic partnerships, and committed top management are better positioned to adapt to changing business environments and sustain organizational competitiveness.

According to the development of above hypotheses, the Figure 1 shows the research framework, which puts the transformational leadership and strategic alliances in connection with organizational adaptation moderated by the commitment of the top management. This framework is informed by two under theories. The direct links between leadership and alliances are anchored on the Resource-Based View (RBV) and establish them as precious strategic

Figure 1: Research framework



assets. The moderating effect of top management commitment is a representation of the Dynamic Capabilities Theory (DCT) which depicts that the worth of such resources is not an automatic process. Instead, their productive implementation and restructuring adjusting to change are crucially relying on the orchestrating and governance ability of the dedicated top management.

3. RESEARCH METHODOLOGY

In this research, the survey design used is quantitative methodology to examine the correlation among transformational leadership, strategic alliances, commitment of top management and adaptation of the organization in the Jordanian pharmaceutical industry. The industry presents a strong setting given its economic impact, having close 9% as the contribution to national exports, and more than 26,000 professionals and at the same time being in an unstable environment of regulation changes, international trade, and technological stress (JCB, 2021; Harahsheh et al., 2021; Alhaddad et al., 2023).

The population that is targeted will be all of the pharmaceutical companies registered in Jordan, counting 585 pharmaceutical companies listed in the Jordanian Ministry of Industry and Trade Pharmaceutical Companies Directory (JMIT, 2024). Such organizations comprise local companies and international subsidiaries working in the production, distribution, and research and development. The selection of top and middle managers explains their direct participation in the decisions and alliances, as well as adaptive strategies, which qualifies them as the appropriate respondents of the research (Al-Abrow et al., 2021; Alhaddad et al., 2023).

The stratified random sampling method was used to allow proportionate representation of the important subgroups with such factors as the type of organization, the ownership, and the level of management. The method offers a representative

sample of different firms and reduces sampling bias (Sekaran and Bougie, 2016; Saunders et al., 2019). According to the determination of a sample size based on the sample which was determined by Krejcie and Morgan (1970), the sample used was to be at least one-fifth of the population of 585, or a minimum population of 233. To enhance the reliability and to reduce the risk of non-responses, 350 questionnaires were sent to four large pharmaceutical centers (Amman, Zarqa, Irbid, and Aqaba). Out of the 335 returned responses (95.71 response rate), 325 responses proved to be usable, resulting into a high response rate of 92.86. This is greater than the necessary sample size and has adequate statistical power to analyze (Hair et al., 2019). The survey tool was based on previously tested scales that found their place in the measures of the constructs of the study: Transformational leadership (Bass and Riggio, 2006), strategic alliances (Gulati, 1998), top management commitment (Bamel et al., 2023), and organizational adaptation (Doz and Kosonen, 2010).

Five scholarly professionals and industry professionals that were involved in pre-testing helped to help refine the item clarity and context such that they became more related. They provided feedback, and a number of amendments were made based on it: The wording of three items of the transformational leadership scale was simplified to make the item culturally understandable; one of the items of strategic alliance has been re-worded to suit the Jordanian regulatory environment; the response anchors have been edited through a few minor alterations, to make the response provide questions more consistent with local managerial language. The internal consistency was validated through a pilot test with 30 managers whose values of Cronbach alpha were above 0.80 in all constructs (Table 2). Pilot feedback also mentioned that the sequence of the items could be more transparent, so sections were reshuffled in order to create a better flow and increase the level of engagement among participants. The refinements made guaranteed good content validity and contextual appropriateness before complete scale data collection.

Table 1: Summary of key constructs, theoretical foundations, and expected relationships

Construct	Theoretical base	Conceptual focus	Expected relationship
Transformational leadership (TL)	Resource-based view (RBV)	Represents an internal strategic resource that enhances innovation, employee motivation, and collective vision for organizational change.	Positively influences Organizational Adaptation (OA).
Strategic alliances (SA)	Resource-based view (RBV)	Denote inter-organizational resources that facilitate access to external knowledge, technology, and markets under resource constraints.	Positively influences Organizational Adaptation (OA).
Top management commitment (TC)	Dynamic capabilities theory (DCT)	Reflects managerial capability to orchestrate, integrate, and reconfigure internal and external resources to ensure adaptive alignment.	Positively moderates the relationships between TL–OA and SA–OA.
Organizational adaptation (OA)	Integrative RBV–DCT perspective	Represents the firm’s capacity to respond to environmental changes through strategic flexibility, innovation, and internal alignment.	Serves as the dependent construct influenced by TL, SA, and TC interactions.

Table 2: Reliability analysis

Construct	Source	Code	Items	Cronbach’s alpha
Transformational leadership	Bass and Riggio (2006)	TL	12	0.873
Strategic alliance	Gulati (1998)	SA	6	0.928
Top management commitment	Bamel et al. (2023)	TC	8	0.765
Organizational adaptation	Doz and Kosonen (2010)	OA	8	0.819

SmartPLS 4 was used to perform data analysis that implements the Partial Least Squares Structural Equation debugging (PLS-SEM) procedure. This type of variance approach is best applied in an exploratory study that requires investigation of a complex structural model with mediating and moderating variables, which include mutually affecting the variables of transformational leadership, strategic alliances, top management commitment, and organizational adaptation (Hair et al., 2019; Sarstedt et al., 2014). PLS-SEM, as compared to covariance-based SEM (CB-SEM), which assumes multivariate normality and large samples, shows good performance with non-normal data and small samples, thus it is suitable to application in survey-based studies conducted in a variety of organizational settings (Hair et al., 2019). The performance of the model fit indices indicated satisfactory performance as the Standardized Root Mean Square Residual (SRMR) value was 0.062, which indicated an acceptable overall model fit according to the 0.08% recommended by Hair et al. (2019). Moreover, the measurement model had high scores on indicator reliability, convergent, and discriminant validity at all constructs, which proves the strength and appropriateness of the data to be used in a further hypothesis test (Hair et al., 2019; Sarstedt et al., 2014).

The Universiti Malaysia Terengganu (UMT) Research Ethics Committee gave this study ethical approval with the reference number UMT/JKEPM/2024/227 within the same date September 4th, 2024. The involvement was voluntary, and a well-informed consent was taken by all the respondents before data was collected.

4. DATA ANALYSIS AND FINDINGS

The demographic profile of the respondents given in Table 3 show that there is a high tendency towards locally owned companies (61.5%), and a high number of firms were well established as 40% were 11-20 years old and 18.4% were older than 20 years old. The sample largely consists of small-sized companies (61.5% with 6-20 employees) based in Amman (83.1%), which is also why this city is a central hub of the Jordanian pharmaceutical industry (JCB, 2021; JMIT, 2024). The respondents consisted mostly of males (88%), fell within the age of 36-45 (55.4%), and were well educated, 66.8% had bachelor's degree and 33.2% had postgraduate degree. Majority were senior jobs and 61.5% owners and 29% managers and had very long tenure in the organization with 75.7% having a tenure of 2-10 years. This population density implies that the result is only an image of the experienced senior male executives in smaller well established local companies in Amman. Although it offers an understanding of a prominent group of decision makers, it might restrict the applicability of findings to various organizational sizes, geographical areas, and diverse levels of management as other similar research studies have done on the industry (Alhaddad et al., 2023; Harahsheh et al., 2021).

Table 4 of the Harman one-factor test indicates that only 1 factor reveals 30.732 total variance, which is considerably lower than 60%. It means that the issue of common method bias is not very important in the data (Hair et al., 2019; Podsakoff et al., 2003). The fact that the first component extracted a relatively low variance also works in favor of the validity of the analysis itself

Table 3: Demographic data

Demographic	Frequencies	Percentage
Type of company		
Local company	200	61.5
Foreign company	100	30.8
Joint venture	25	7.7
Age of the company		
<1 year	20	6.2
2-5 years	25	7.7
6-10 years	90	27.7
11-20 years	130	40
More than 20 years	60	18.4
Other	0	0
Number of employees in your company		
Between 6 and 20 employees (small)	200	61.5
Between 21 and 100 employees (Medium)	95	29.3
Between 101 and 250 employees (Large)	30	9.2
Location of company		
Amman	270	83.1
Irbid	25	7.7
Al-Zarqa	30	9.2
Al-Aqaba	0	0
Others (Please specify)	0	0
Gender of respondent		
Male	286	88
Female	39	12
Age of the respondent		
<25 years	5	1.5
26-35 years	60	18.5
36-45 years	180	55.4
45 years and above	80	24.6
Education		
Diploma	0	0
Bachelor	217	66.8
Master	64	19.7
PhD	44	13.5
Other (Please specify)	0	0
Current job position		
Owner	200	61.5
Manager/Senior manager	94	29
General manager/Director/CEO	30	9.2
Senior executive	1	0.3
Other (Please specify)	0	0
Tenure		
<1 year	39	12
2-10 years	246	75.7
11-20 years	35	10.8
More than 20 years	5	1.5

since it establishes the fact that the respondents did not choose to bias their response in a systematic way, and the constructs that were measured are different. This observation brings about methodological rigor, and hence, gives more confidence in the interpretation of the structural model associations among the transformational leadership, strategic alliances, and organizational adaptation.

The measurement model represented in Table 5 has poor psychometrics since they have strong reliability and convergent validity. Construct scores exceeded the critical levels, and the scores of Cronbach Alpha and Composite Reliability were far beyond 0.7 and 0.8 respectively. More importantly, the motif of the Average Variance Extracted (AVE) per construct was >0.5 point, zesting convergent correctness. Although the outer loading

Table 4: Harman one-factor test

Component	Initial eigenvalues			Extraction sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	13.215	30.732	30.732	13.215	30.732	30.732

Table 5: Measurement model

Constructs	Items	Indicator reliability	Internal consistency		Convergent validity
		Outer loadings >0.5	Cronbach's alpha >0.7	Composite reliability >0.6	AVE >0.5
TL	TL1	0.857	0.949	0.953	0.644
	TL2	0.871			
	TL3	0.835			
	TL4	0.760			
	TL5	0.696			
	TL6	0.690			
	TL7	0.789			
	TL8	0.773			
	TL9	0.852			
	TL10	0.867			
	TL11	0.824			
	TL12	0.789			
SA	SA1	0.824	0.819	0.851	0.538
	SA2	0.767			
	SA3	0.822			
	SA4	0.564			
	SA5	0.514			
	SA6	0.840			
TC	TC1	0.824	0.890	0.918	0.568
	TC2	0.848			
	TC3	0.723			
	TC4	0.523			
	TC5	0.624			
	TC6	0.804			
	TC7	0.846			
	TC8	0.775			
OA	OA1	0.854	0.920	0.934	0.641
	OA2	0.824			
	OA3	0.725			
	OA4	0.808			
	OA5	0.843			
	OA6	0.783			
	OA7	0.725			
	OA8	0.830			

TL: Transformational leadership, SA: Strategic alliance, TC: Top management's commitment, OA: Organizational adaptation

Table 6: HTMT results

Constructs	OA	SA	TC	TL	TC×TL	TC×SA
OA						
SA	0.165					
TC	0.337	0.205				
TL	0.194	0.681	0.219			
TC×TL	0.260	0.184	0.263	0.187		
TC×SA	0.109	0.379	0.268	0.168	0.589	

TL: Transformational leadership, SA: Strategic alliance, TC: Top management's commitment, OA: Organizational adaptation

Table 7: R-square and Q-square

Variables	R-square	Q-square
Organizational adaptation	0.179	0.139

that they explain on average on their indicators. Thus, although the performance of some items is not so high, the constructs measure their intended conceptual areas, and it is sufficiently stated that the model is sufficient to be used to test the structural associations.

The results of the Heterotrait-Monotrait (HTMT) ratio are provided in Table 6 and they demonstrate the validity of the measurement model (discriminant) because each of the ratios is significantly less than the conservative reasonable value of 0.85. Consecutive low values of the agreeableness of transformation as shown by the main constructs namely Transformational Leadership (TL) and Organizational Adaptation (OA) at 0.194, and Strategic Alliances (SA) and OA at 0.165 indicate that the constructs of TL and OA are empirically different. Yet, the correlation between TL and SA

in item SA4 (0.564), SA5 (0.514) and TC4 (0.523) was hardly above the 0.5 minimum, it is understandable that they were retained. PLS-SEM places more emphasis on the construct level of construct validity in terms of the composite reliability and AVE, not on the covariates of single indicator loadings (Hair et al., 2019). The positive composite reliability scores confirm the consistency in measures of constructs, and the satisfactory scores in AVE confirm that the constructs yield more than half of the variance

of 0.681 is not high but indicates that transformational leaders are also likely to be the firm that is more eager to enter strategic partnerships. Moreover, the terms of interaction ($TC \times TL$ and $TC \times SA$) demonstrate a discriminant validity of their mother constructs and warrant their admission as their own independent moderating variables within the model. This high measure of evaluation solidifies the basis of the interpretation of results of the following structural model with no fears of multicollinearity or redundant constructs (Hair et al., 2019).

Table 7 indicates that 17.9% ($R^2 = 0.179$) of variance in Organizational Adaptation is attributed to the model and thus the model possesses a rather weak explanatory value. This number might seem small, but it agrees with previous studies on organizational adaptation in turbulent or well-entrenched markets, in which many of the external conditions of markets can and do obstruct the level of control of a single firm (e.g., market volatility, institutional uncertainty, policy changes, etc.) (Heracleous and Werres, 2016; Dubey et al., 2024; Hitt et al., 2023). Eventually, in these settings, the results of adaptation are usually influenced by many environmental and structural variables that are not limited to internal leadership and alliance processes. A smaller R^2 is, therefore, not uncharacteristic but an indication of the fact that the concept of vaccination is multifactorial and unique to the emerging markets such as the pharmaceutical industry of Jordan. Notably, its predictive relevance of the predictive model (a value of 0.139 proved to be statistically

significant with a Q^2 of 0.139) is above the zero mark (Hair et al., 2019), which indicates an acceptable predictive accuracy. This result means that though transformational leadership, strategic alliances, and top management commitment play a significant role in the adaptation, a significant amount of variance is still controlled by the unmeasured contingences in the environment, institutions, and operations. Therefore, these broader contextual variables should be included in future research to enable one to understand the full range of adaptive determinants in dynamic industrial environments.

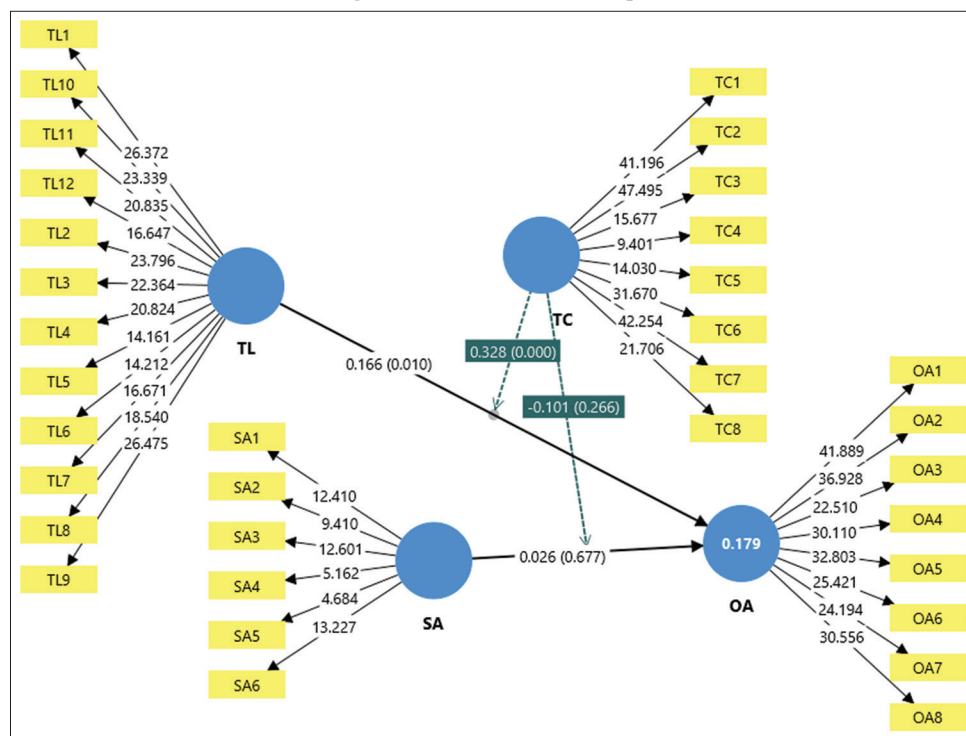
According to the results of structural model presented in Table 8 and Figure 2 H_1 is accepted and discarded H_2 . The trend between Transformational Leadership (TL) and Organizational Adaptation (OA) is positive relationship (beta value = 0.166, $P = 0.010$), which helps to support H_1 . This result is consistent with the resource-based view (RBV) according to which transformational leadership is seen as a productive, nonmaterial resource that fosters the innovation and encourages employees to be open to change thus making them more adaptive (Barney, 1991; Braun et al., 2013). It supports research in Middle Eastern settings that follow a similar result linking such leadership to resilience (Al-Abrow et al., 2021) and business research in Jordanian pharmaceuticals that relates leadership to the development of adaptive capacity to regulatory and competitive pressures (Harahsheh et al., 2021). In contrast, the strategic alliance between Strategic Alliances (SA) and OA has non-significant values (beta value = 0.026, $P = 0.677$), which

Table 8: Structural model results

Relationship	BETA	LL	UL	S.E	T-stat	P-value	F-square	Effect	Result
TL->OA	0.166	0.045	0.298	0.065	2.574	0.010	0.021	None	Significant
SA->OA	0.026	-0.090	0.158	0.063	0.416	0.677	0.000	None	Insignificant

TL: Transformational leadership, SA: Strategic alliance, OA: Organizational adaptation

Figure 2: Structural model output



rejects H_2 . A dynamic capabilities theory (DCT) viewpoint of this would imply that having the resources that are available in the form of an alliance is not enough, but it is the way firms restructure and combine such outside resources to develop an adaptive capacity (Teece, 2007). This insignificant outcome compares to literature on the alliances that highlights stable and developed economies (Gulati, 1998; Dyer and Singh, 1998) and even some emerging markets (Ahmed et al., 2021), which might uncover a paradox of certain industry. The extreme licensing requirements in the highly regulated and volatile pharmaceutical industry in Jordan might be potential source of the rigidities, high coordination costs, knowledge asymmetry, which stifles instead of facilitates the rapid internal reconfiguration necessary to adapt. The implication of this result is that in the case of Jordanian companies, alliances are not always practical benefits of learning and flexibility, and the character of partnerships can be on the side of compliance rather than strategic flexibility.

The results of Table 9 and the Figures shown allow accepting H_3 and rejecting H_4 . Top Management commitment (TC) (with Organizational Adaptation, OA) as an interaction effect on relationship between Transformational Leadership (TL) and Organizational Adaptation, OA) is positive and significant (beta value = 0.328, $P = 0.000$). This result is incredibly corroborating H_3 , and it can be graphically verified as in Figure 3, the slope of high TC is steeper which proves that the effect of TL on OA is a lot stronger in a situation where senior management is highly

committed. This Foucaults the dynamic capabilities theory (DCT) that focuses on how top management plays the role of organizing and reorganizing internal resources including the influence of the leadership team to respond to environmental change (Teece, 2007; Doz and Kosonen, 2010). It empirically confirms the statements of the Middle East researchers that the support of senior management significantly helps to transform the vision of leadership into the real adaptive results (Al-Abrow et al., 2021; Bamel et al., 2023). On the other hand, the moderate or moderating mechanism of TC on Strategic Alliances (SA) and OA relationship is not significant (beta value = -0.101 , $P = 0.266$), whereas H_4 is rejected. This insignificance is reflected in Figure 4, where the slope of the high and low commitment is almost parallel. This implies that despite the excellent support at the top level, alliances in this regard do not bring a higher adaptation. This is contrary to the findings in the more stable industry or the developed economy where the top management governance is critical in deriving the value of partnerships. It suggests that in the case of the Jordanian pharmaceutical companies, the obstacles posed by alliances that may inherently be inflexible in nature or the inequity of power contributed by the international partners are so deep that local commitment cannot make it through in isolation, being a restriction of the resource-based view (RBV) in this particular inter-organizational scenario as well as the unique restrictions of the sector to more malleable industries.

Table 9: Moderation results

Moderators	BETA	LL	UL	S. E	T-Value	P-value	Effect	Decision
TL*TC->OA	0.328	0.178	0.458	0.072	4.561	0.000	0.058	Supported
SA*TC->OA	-0.101	0.273	0.078	0.090	1.113	0.266	0.005	Not supported

TL: Transformational leadership, TC: Top management’s commitment, OA: Organizational adaptation

Figure 3: Slope charts for significant moderating effect of TC on TL and QA

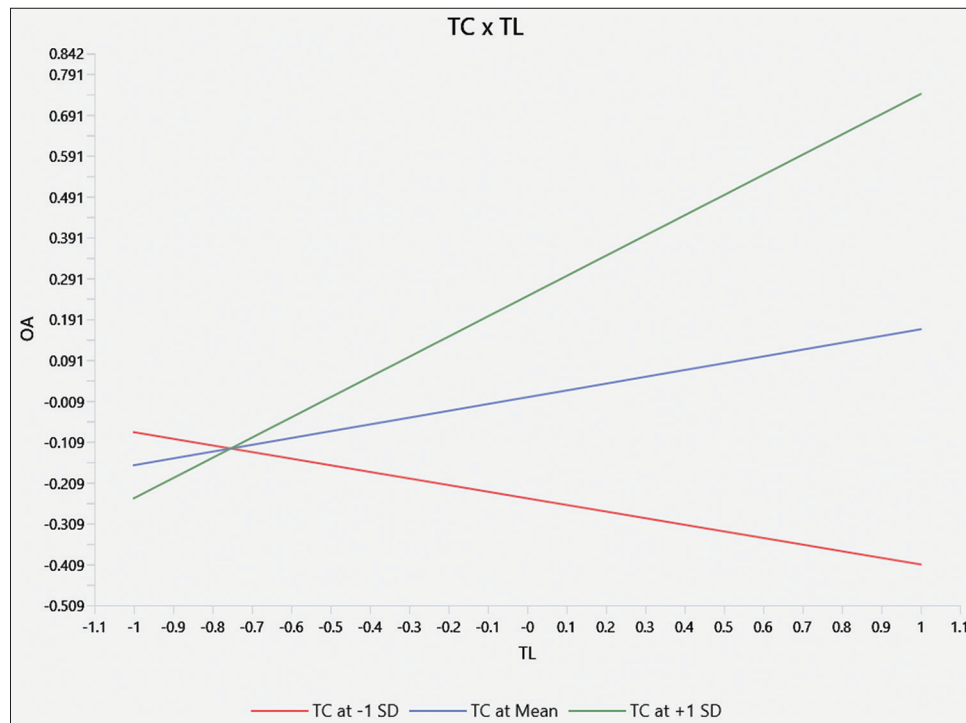
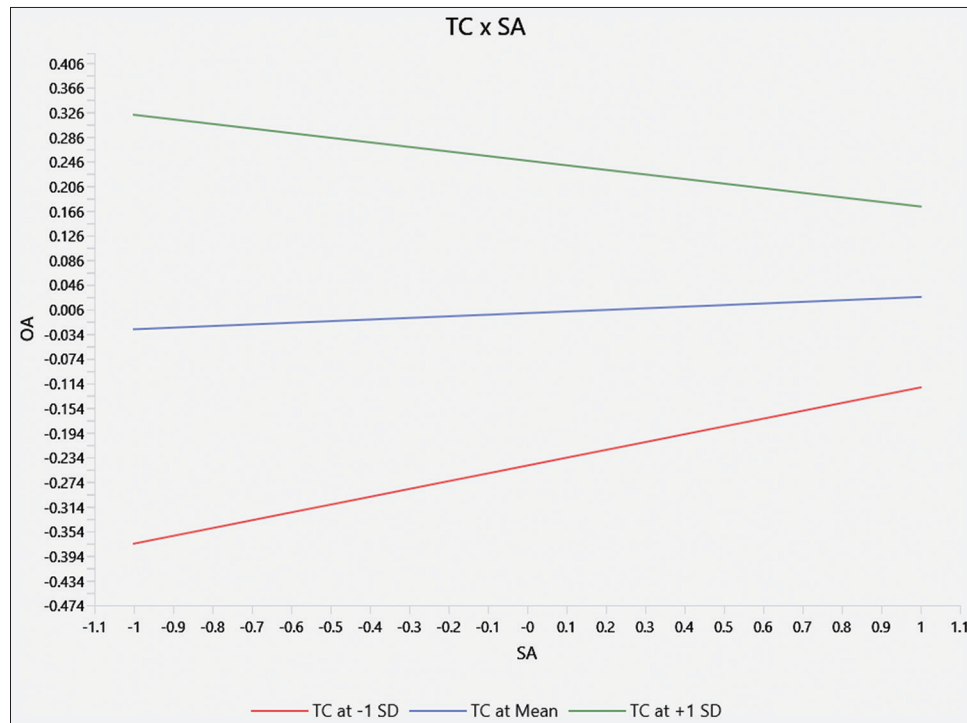


Figure 4: Slope charts for insignificant moderating effect of TC on SA and QA

5. DISCUSSION OF THE STUDY

The results of the structural model and moderation model give important details about the process of organizational adaptation to the specific situation in the Jordanian pharmaceutical companies. Transformational leadership has a substantial, but modest direct impact that highlights its importance as an internal resource of base as the resource-based view suggests (Barney, 1991). Such a leadership style probably shapes the organizational culture and motivational climate that could help the employees accept change and innovation, thus developing the adaptive capacity internally (Braun et al., 2013). Nevertheless, the fact that the overall explanatory power of the model is limited is a strong indicator that leadership is not a sufficient condition of adaptation suggesting the effect of the influence of unmeasured external or structural variables. Alternatively, the non-significance of strategic alliances throws down a gage to one of the strategic management literatures, which states that alliances are the important resource sharing and learning means (Gulati, 1998). The dynamic capabilities theory can be applied to this unforeseen outcome (Teece, 2007). It implies that the firm has failed miserably in its ability to bring together, create and refinance the resources obtained via alliances into an adaptable capability that is sustainable. Ideally, the type of alliances that Jordanian companies can adopt, which is in most cases prompted by the necessity to meet international licensing and regulatory requirements, may inherently be fixed and asymmetrical in nature (Al-Zu'bi and Tsinopoulos, 2021). Partnerships of this kind can offer an entry mode in the market but cannot offer the strategic flexibility or the ability to transfer knowledge as much as would be necessary to create or allow internal companies to be adaptable and instead it puts them into mutually dependent relationships that serve to stifle rather than to enable internal agility.

The moderation analysis also explains the conditions of boundaries of these relationships. The eminent positive moderating effect of top management commitment on leadership-adaptation relationship points out the invaluable role of senior executives as the coordinators of dynamic capabilities. This result confirms the thesis that leadership vision must have the material support of the top management in order to be successfully implemented into the adaptive results within the organization (Doz and Kosonen, 2010; Bamel et al., 2023). They are dedicated and thus enable allocation of the required resources, strategic priorities, and organizational focus required to operate in a turbulent environment and start the shift presented by transformational leadership. On the other hand, the failure of the commitment of the top management to moderate the relationship between alliance and adaptation is an in-depth observation. It does mean that barriers to extracting adaptive value of alliances do not lie within internal governance failures but, most probably, in the very nature and very purpose of the alliances themselves. Through the internal commitment, the firms are still unable to break the extrinsic barriers of the partnerships which are not developed to adapt to one another. This has immediate practical relevance to the suggestion that critical analysis of the strategic intent of alliances by managers is beyond entry mode and that dynamic capabilities and developing internal leadership are more valid sources of adaptation. On a theoretical level, this finding implies that the resource-based perspective and dynamic capabilities should be applied to inter-organizational relationships in constrained settings with a more delicate approach and where the quality and nature of the partnership can be an even stronger determinant of value than its very existence.

5.1. Implications of the Study

5.1.1. Theoretical implications (RBV vs. DCT Insights)

The research adds to the current theory of strategic management by elucidating the complementary functions of the Resource-

Based View (RBV) and Dynamic Capabilities Theory (DCT) in explaining organizational adaptation. The RBV identifies transformational leadership as well as strategic alliances as rather important, rare, and inimitable, and these resources may create sustained competitive advantage (Barney, 1991; Peteraf and Barney, 2003). Nevertheless, the findings indicate that having such resources is not enough in attaining adaptive performance. The DCT point of view builds upon this realization by focusing on the mechanisms by which the top management-commitment coordinates and reorganizes these resources to manage effectively environmental volatility (Teece, 2007; Doz and Kosonen, 2010). The large moderating effect of top management commitment on the leadership to will adaptation relationship is an empirical confirmation of the claim in DCT that dynamic managerial capabilities are extremely important in transforming the strategic resources to adaptive results. On the other hand, the insignificant influence of alliances shows a boundary condition in which RBV-based resources could not provide their benefits on the stability of the same without dynamically operated, which supports the importance of considering both RBV and DCT to comprehend the adaptation in the context of limited, emerging-market situations.

5.1.2. Practical implications (for managers in emerging markets)

The findings have several implications that managers in resource-constrained and volatile environments like the pharmaceutical industry in Jordan can apply. Transformational leadership appears as the surest way to flex and improves the adaptability, the necessity to develop leadership procedures which would enhance the vision, empowerment and innovations. Furthermore, the robust moderatory action of top management dedication indicates that any initiatives that the executive makes to ensure organizational change should be backed by steady executive compatibility, allocation of resources, and strategic implementation to support long-term organizational change. Companies are advised to focus on developing internal dynamic competencies including learning orientation and knowledge integration rather than increasing its externality. This has become especially important in the emerging markets, where instability of regulations and insufficient institutional backing may limit the usefulness of alliances. The managers are thus advised to work on internal cohesion, strategic flexibility and human capital investment as the major resiliency avenues and long-term competitiveness.

5.1.3. Unexpected findings (why alliances failed)

A significant and contrary surprising result of the experiment is that strategic alliances do not have a significant effect on the organizational adjustment. On one hand, alliances have been hypothetically cited as significant sources of learning and development (Gulati, 1998; Dyer and Singh, 1998); on the other hand, however, they failed to be helpful in this regard due to structural asymmetries, inflexible contract-based structures, and low levels of absorptive capacity on the local supplier's side. Compliance rat-based alliances are often a common practice in the pharmaceutical sector in Jordan, where the primary use of alliances is to comply with international licensing standards instead of to engage in actual knowledge sharing and strategic co-creation (Al-Zu'bi and Tsinopoulos, 2021). Even though they provide access to external markets, these alliances tend to create

dependency and restrict a firm to strategic flexibility, which restricts its adaptive ability. Such discoveries undermine the traditional theory of alliance because they indicate that at the level of high regulation and hierarchy in the organization, the external collaboration can suppress instead of facilitating organizational agility. It also highlights why firms should re-evaluate alliance strategies and create internal processes that will enhance learning, independence, and value generation. Further studies to investigate the effects of alliance governance structures, partner symmetry and relational trust on adaptive outcomes in similar constrained sectors are therefore suggested in the future.

5.2. Limitations and Further Recommendations

The research is limited in several ways. Its specialization on the pharmaceutical industry of Jordan with details restricts the generalization of the data to other industries or cultural settings with varying regulatory and market forces. The cross-sectional research design presents relationships at 1 time and not a conclusive argument of the causality and a long-term development of dynamic processes. Moreover, the use of perceptual information based on self-reported data by the managers creates the possibility of the common method bias, although statistical procedures indicate it was not that big of an issue. A low percentage of adaptation was also explained by the model meaning that other serious aspects like organizational structure, external institutional pressure or financial resources were not taken into consideration. Longitudinal designs should, thus, be used in the future to follow causal mechanisms and develop objective performance measures. It would be beneficial to have expansion of the study to the other volatile sectors in the emerging economies to test the transferability of the results. Exploring the qualitative features of alliances like partner symmetry and contractual flexibility may also provide a finer insight into at what point and how partnerships do indeed facilitate organizational adaptation.

6. CONCLUSION

This paper shows that within the complicated and limited context of the pharmaceutical industry in Jordan, internal leadership processes are a greater force influencing organizational change as compared to external relationships. Transformational leadership offers the necessary change vision and motivation, which is, however, crucially reliant on even the top management commitment to get resources moving and keep the strategy on track. On the contrary, strategic alliances, which are created in cases of external pressure, do not provide adaptive benefits, and even high internal commitment does not help to open their potential. This shows a severe weakness of the trend of external orientation of strategies within volatile markets. It is concluded that the task of resilience is largely developed internally. In leading the firms in the world of uncertainty, leadership should be prioritized, and the senior management must facilitate that leadership as opposed to depending heavily on alliances which may provide access but drain away agility.

7. FUNDING

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8. DATA AVAILABILITY

The data supporting this study's findings are available from the corresponding author upon reasonable request.

9. CONFLICT OF INTEREST

The authors declare no conflicts of interest. All authors consent to this submission and confirm no competing interests.

10. ETHICS/INFORMED CONSENT

The university's ethics committee granted ethical approval. Participation was voluntary, informed consent was obtained, and anonymity and confidentiality were assured. All data were collected and handled according to institutional ethical standards.

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