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The role of adaptive leadership in achieving strategic alignment in healthcare organizations: A field study on hospitals in the Riyadh region

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Abstract: This study examines the role of adaptive leadership in achieving strategic alignment within healthcare organizations in Riyadh, Saudi Arabia, addressing the critical need for leadership frameworks capable of navigating rapid healthcare transformations. A quantitative research design was employed using a structured questionnaire distributed to healthcare professionals across public and private hospitals in Riyadh. Data from 312 valid responses (out of 327) were analyzed using descriptive statistics, correlation analysis, and multiple regression to assess relationships between adaptive leadership dimensions and strategic alignment. Results revealed high levels of both adaptive leadership practice and strategic alignment, with a statistically significant, strong positive correlation ($r > 0.70$, $p < 0.001$) between the constructs. Key adaptive leadership dimensions, observation, interpretation, learning ability, innovation, and environmental leadership, emerged as significant predictors of strategic alignment, collectively explaining substantial variance in alignment outcomes. Adaptive leadership serves as a critical enabler of strategic alignment in dynamic healthcare environments, with leaders' ability to observe, interpret, learn, innovate, and navigate environmental complexities directly influencing organizational strategic coherence. Healthcare administrators should prioritize developing adaptive leadership competencies through targeted training programs, establish mechanisms for continuous environmental scanning, and integrate adaptive practices into strategic planning processes to enhance organizational responsiveness and sustained performance in evolving healthcare landscapes.

Keywords: *Adaptive Leadership, Strategic Alignment, Healthcare Organizations, Riyadh Hospitals.*

1. Introduction

Leadership has garnered significant attention in recent times, with multiple modern disciplines, such as management, sociology, and psychology, focusing on its importance. Adaptive leadership, in particular, is regarded as a cornerstone for the advancement and development of organizations in general and healthcare institutions in particular. Al-Rubaie [1] posits that the ever-changing and developing business environment, shaped by transformative global shifts, has compelled organizations to continuously adapt and respond to dynamic environmental developments. To ensure their sustainability, organizations are required to leverage innovations and recent creative measures, which in turn call for modern leadership models that correspond to these changes and move away from traditional hierarchical structures in favor of flexible, efficient, and entrepreneurial designs.

This leadership approach is considered one of the most significant and influential styles affecting organizational strategic performance, introducing a fresh approach to instigating change and progress. It stands as one of the most potent leadership theories for transforming organizations into innovative and modern entities, as it empowers leaders to inspire employees, motivate them, enhance and cultivate their skills, influence them positively, and foster creative thinking, thereby increasing the organization's capacity for sustainability and continuity [2-4]. Adaptive leadership plays a vital role in encouraging employees to participate in shaping a long-term vision, setting clear and realistic objectives for the

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organization, and utilizing flexible leadership approaches. Through adaptive leadership, organizations can effectively respond to recent global changes by boosting employees' creative abilities and encouraging them to address workplace challenges in pursuit of strategic innovation [5].

The diverse changes organizations have encountered have created an urgent need to adopt modern management practices, establishing a coherent framework that is more creative in seizing opportunities and avoiding threats to realize their aspirations [6]. Traditional management methods have proven to be inadequate in addressing environmental changes, leading to the emergence of new administrative approaches, most notably strategic alignment, which is rooted in contingency and adaptation theories, aiming to harmonize organizational resources and strategies to provide senior management with vision, flexibility, and the ability to unify all resources and capabilities to elevate organizational performance and achieve strategic goals [7].

According to Ateş et al. [8], strategic alignment enables organizations to identify opportunities and threats, giving them the means to address these challenges, as well as supporting the formulation and implementation of policies and strategies, which ultimately lead to substantial success and core results. Strategic alignment also reflects the capacity to develop appropriate strategies to confront future environmental impacts.

In Saudi Arabia, the healthcare sector is particularly susceptible to rapid changes and transformations in the business environment. Since performance in this crucial sector constitutes the foundation of its survival and growth, the current study seeks to identify the role of adaptive leadership in achieving strategic alignment within the Saudi healthcare sector, specifically through field application to hospitals in the Riyadh region.

1.1. Study Problem

Leadership is viewed as a crucial pillar for the advancement and development of nations across economic and social domains, as it contributes to finding solutions to various challenges and enhancing work mechanisms through the innovation of modern approaches Arbab [9]. Bosch [10] indicated that traditional leadership models are insufficient to address the complexities, problems, and organizational crises prevalent in today's business environment. There is a need for a new leadership approach that seeks meaningful progress in confronting these persistent challenges, which undermine organizations' abilities to fulfill their missions and goals. This premise is reinforced by the study of Aron Said and Castillo Jara [11], which asserts that leaders must possess the keen insight to thoroughly and thoughtfully decipher their surroundings, thereby steering their organizations towards safety and averting existential threats.

Nebiyu and Kassahun [12] assert that many organizations lack leaders capable of adaptive expertise, leaders who can change values, norms, and beliefs to make organizations more responsive to ever-changing work environments. This assertion is further supported by the study of Salam et al. [13], which finds that adaptive leadership is premised upon successful adaptive transformations built on past experiences, rather than discarding them, by actively engaging employees to maximize the use of previous wisdom and expertise in confronting defined adaptive challenges. This process relies on values, competencies, orientations, and future aspirations that must endure within the organization, making adaptive leadership more effective as a result.

Through the review of prior literature, the researcher identified a knowledge gap concerning the role of adaptive leadership in achieving strategic alignment in healthcare organizations. Accordingly, the study problem can be formulated in the following central question:

- To what extent is adaptive leadership practiced in hospitals in the Riyadh region?
- To what extent is strategic alignment implemented in hospitals in the Riyadh region?
- To what extent does practicing adaptive leadership impact the achievement of strategic alignment in hospitals in the Riyadh region?

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1.2. Significance of the Study

The scientific importance of this study lies in its contribution to bridging the knowledge gap by exploring the role of adaptive leadership in achieving strategic alignment within healthcare organizations in Saudi Arabia and by providing results that can inform future studies and research. This study is among the first to examine the relationship between such leadership and strategic alignment in healthcare organizations, given the novelty of this line of inquiry. This constitutes a substantive knowledge contribution in the fields of adaptive leadership and strategic alignment, as the study tracks, reviews, analyzes, and interprets both theoretical literature and prior empirical studies. The researcher anticipates that the findings and recommendations will open new avenues for scholars and writers to probe the topic from perspectives other than those addressed by the current study. The practical importance of this study is also derived from the expectation that its findings will assist healthcare administrators in Saudi Arabia by providing solutions and alternatives for dealing with future variables, organizational challenges, and crises, by seizing opportunities and mitigating adverse effects on performance and organizational sustainability.

1.3. Study Objectives

The primary aim of the study is to identify the role of adaptive leadership in achieving strategic alignment within healthcare organizations in the Kingdom of Saudi Arabia. This aim will be addressed through the following objectives:

To determine the extent to which adaptive leadership is practiced in hospitals in the Riyadh region.

To measure the extent to which strategic alignment is implemented in hospitals in the Riyadh region.

To assess the impact of practicing adaptive leadership on achieving strategic alignment in hospitals in the Riyadh region.

2. Theoretical Framework of the Study:

2.1. Adaptive Leadership

Organizations require leaders who possess mastery of technical skills coupled with an adaptive mindset, enabling them to thrive amid unexpected changes, foster the practice of adaptive leadership among employees at all levels, motivate others, and confront challenges en route to organizational excellence [14]. The concept of adaptive leadership is relatively modern within the management sciences and has been defined in various ways by scholars. Dohamid et al. [15] define adaptive leadership as the art, capability, and skill set of those in leadership positions to influence, persuade, inspire, and guide employees toward achieving organizational objectives. According to Al-Salmi [16], adaptive leadership is the capacity to lead organizations through challenges and difficulties toward realizing opportunities in ambiguous and uncertain business environments, with a keen sense of responsibility and accountability for resulting outcomes, distinguishing between indispensable essentials and dispensable, obsolete components.

From the foregoing, the researcher concludes that adaptive leadership is a practical framework enabling individuals and organizations to adapt and thrive in changing and complex environments by understanding behaviors and actions, rather than relying solely on personality traits. Modern workplace transformations have made adaptive leadership a principal means for ensuring sustained organizational success. Numerous studies, such as Anna and Niinistö-Sivuranta [17], Al-Bladi [18], and Al-Dhahli and Al-Taani [19] have outlined the core importance of adaptive leadership as follows:

The adaptive leader encourages listening to diverse viewpoints from various administrative levels within the organization, not limited to upper management alone.

Adaptive leadership enhances collaboration among employees in different departments by fostering cross-cultural and cross-disciplinary cooperation through participation in multiple initiatives and meetings.

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Responsibility for decision-making does not rest solely with the leader; rather, team members are involved in analyzing problems, understanding their dimensions, and proposing suitable solutions.

Adaptive leadership strengthens the sense of responsibility and yields more effective solutions, focusing on long-term change by promoting flexibility, learning from errors, encouraging out-of-the-box thinking, and integrating different solutions to achieve optimal outcomes.

Adaptive leadership emphasizes a multidirectional relationship, involving dynamic and reciprocal interactions between leaders and subordinates, allowing individuals to alternate between leadership and followership based on group task requirements.

Scholars have discussed various dimensions of adaptive leadership. Al-Salmi [16], Ghulam et al. [20], and Daoud Zaki Daoud [14] have identified the most significant dimensions as follows:

Observation and anticipation: This involves identifying opportunities and threats facing the organization, forecasting scenarios and probable future trends, and acknowledging the organization's operation in an uncertain business environment.

Analysis and Interpretation: This dimension focuses on the continuous assessment of the business environment, collecting relevant data and information, and analyzing them to derive clear interpretations and insights amidst uncertainty and ambiguity.

Learning Ability: Reflects the degree to which adaptive leaders embrace lifelong learning, nurture a learning-oriented environment, value self-directed learning, and seek innovative ways of thinking.

Leadership in the Business Environment: Refers to the adaptive leader's ability to influence others to achieve desired objectives, relying on principles of collaboration, excellence, responsibility, and accountability, and enforcing the highest degree of transparency in decision-making, along with identifying techniques that facilitate development and change in alignment with both internal and external environmental conditions.

Innovation: Embodies the leader's drive to cultivate a new culture grounded in innovation and collaboration among employees, positively impacting the achievement of organizational goals through novel and unconventional practices.

Heifetz and Linsky [21] posited a set of attributes that characterize the adaptive leader:

Goal orientation: Adaptive leaders link systematic change to long-term organizational objectives, taking action with a clear outcome in focus.

Appreciation of Challenges: Adaptive leaders understand and value challenges, prepare team members to address problems, and recognize that enduring solutions may require multiple attempts.

Experimentation: Adaptive leaders value experimentation and learning from mistakes, acknowledging that tackling complex and ambiguous issues necessitates trial and error. They identify challenges and invest resources early to address them, and have the ability to connect organizational change to values and capabilities.

Commitment: Adaptive leaders understand that change requires time and are willing to dedicate the necessary effort to build a better organization.

Open-mindedness: Adaptive leaders create an open and progressive workplace environment, accepting mistakes as part of the process and fostering risk-taking and openness to new experiences.

Embracing the Unknown**:** Adaptive leaders accept uncertainty, recognizing that the absence of immediate answers is a natural part of positive change.

2.2. Strategic Alignment

According to Webster's Dictionary, "alignment" refers to arranging in a straight line, i.e., the harmonious convergence of perspectives among a group of individuals regarding a particular issue. In business management, alignment functions as an indicator of organizational success or failure, while strategic alignment serves as a measure of harmony and consistency among organizational objectives, leading to the elevation and distinctiveness of the organization compared to its competitors Al-Zalemy [22]. Al-Ma'bqi [23] defined strategic alignment as the adoption of necessary mechanisms and approaches that contribute to supplying the organization with promising plans, thereby ensuring the

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integration of internal and external components. As such, the researcher defines strategic alignment as the effective alignment of organizational strategies to support business strategies, enabling increased investment and enhanced organizational competitiveness.

Strategic alignment is among the most effective methods for achieving organizational goals; however, it does not necessarily imply unanimity or perfection. Its importance extends beyond immediate organizational performance, contributing to the effectiveness of pioneering long-term performance, Hammoud et al. [24]. Frank et al. [25] argue that strategic alignment aids the reengineering of organizational activities in accordance with organizational structure and available capabilities through:

Ensuring functional integration across various organizational departments.

Enhancing deep understanding of human resources within the organization and fostering cohesion derived from organizational knowledge.

Improving competitiveness by increasing organizational strength, allowing flexible and effective competition that yields appropriate returns in strategic choices.

The studies of Pashutan et al. [26] and Omar [27] identified mechanisms that support the management of strategic alignment in organizations as follows:

Strategic flexibility refers to an organization's ability to adapt and respond quickly to changes in the external environment by acquiring new knowledge and embracing innovation for continuous improvement.

Technological vigilance: pertains to monitoring and tracking technological developments, gathering and organizing information from primary sources, analyzing, and disseminating scientific and technical advancements.

Strategic commitment implies a willingness to exert voluntary joint effort, cooperation, and support from employees at all organizational levels to effectively implement the strategy.

The researcher sees that managing strategic alignment using the aforementioned mechanisms fosters harmony and compatibility between the organizational infrastructure, business strategy, and information technology strategy, enabling the organization to contend with continuous environmental change and capitalize on available opportunities to reinforce strengths and enhance performance consistently. Strategic alignment also unifies effort and cooperation among all organizational resources, establishing a single reference point for all employees in the form of organizational strategy, vision, and values.

Several studies, including Omar [27], have indicated two types of strategic alignment:

Vertical alignment focuses on linking strategy to individuals responsible for its execution, taking into account environmental variables, organizational capacity, and resources. It is closely tied to organizational objectives and metrics, disseminates the strategy to all employees, and involves them in the planning process.

Horizontal alignment emphasizes processes and activities that serve to create value for customers by linking operational procedures to customer needs.

Jacobsen and Johnsen [28] classified the dimensions of strategic alignment as follows:

Strategic and Intellectual Dimension: Refers to the degree of integration between business strategy planning/execution and IT strategy.

Organizational (Structural) Dimension: Indicates the alignment between IT and business structures, influenced by decision-making preferences, centralization, and IT staff distribution.

Social Dimension: Reflects the state of communication between business executives and IT managers within the organizational unit, with a focus on shared commitment to business and IT plans.

Cultural Dimension: Highlights the importance of intellectual alignment on strategic issues between business and IT as a prerequisite for successful information systems planning.

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2.3. Previous Studies

The study by Karatu [29] examined the impact of strategic alignment on employee performance in the medical sector, applying the research in hospitals in Kenya. The questionnaire tool was utilized to collect relevant data needed to address the study's questions. The study reached several conclusions, notably that the practice of strategic alignment in the surveyed hospitals was at a high level, which had a significant and positive effect on employee performance in those hospitals.

The study by Salah Eldin and Hamada [30] aimed to determine the degree to which strategic alignment dimensions and decision effectiveness were achieved at Sadat City University and Sultan Qaboos University. The questionnaire was adopted as the main data collection tool. Key findings included that the level of strategic alignment attainment was weak.

Abukalusa and Oosthuizen [31] sought to design an adaptive leadership framework using systems thinking to confront challenges in uncertain, complex, and ambiguous environments. This study combined a systematic literature review with interviews involving 16 expert leaders from various sectors. The research identified a three-component adaptive leadership framework: the leader, followers, and organizational context, with adaptive leadership, future-oriented thinking, mental models, and adaptive change management forming its structural foundation. The results demonstrated that the framework enhances strategic responses to complex challenges.

Mohan et al. [32] focused on examining the relationship between strategic alignment, the balanced scorecard, and optimal performance in multi-specialty hospitals in India. Both quantitative and qualitative data collection approaches were used. The study established a relationship between strategic alignment and the balanced scorecard and its application in the surveyed multi-specialty hospitals.

Eshete and Kassahun [33] explored the mediating role of employee participation in the relationship between adaptive leadership and service quality in the Ethiopian healthcare sector. The study relied on questionnaires distributed to healthcare employees and found that adaptive leadership indirectly boosted service quality through increased employee participation; adaptive leadership positively influenced employee engagement, which in turn enhanced service quality in the surveyed organizations.

Smith and Thomas [34] investigated the effects of alignment and strategic clarity on employee performance in multidimensional tasks. The study highlighted the importance of strategic alignment in performance measurement systems, also noting a reciprocal relationship, whereby alignment can mitigate the negative effects of strategic ambiguity, and strategic clarity can help overcome the drawbacks of misaligned performance measures.

The study by Pesce and Neirotti [35] examined the impact of strategic alignment between information technology (IT) and business on company performance, emphasizing the evolving role of IT across industries. This research was based on the economic and competitive characteristics of four distinct industry types and the strategic role of IT within each. The findings indicated that in industries where products/services are digital, firms attaining higher economic returns are those leveraging IT to support dual strategies of cost leadership and differentiation. Conversely, in other industries (excluding manufacturing), firms achieving superior returns tend to use IT to support differentiation. The results provide managers with guidance for making informed decisions regarding competitive strategies and IT investments, tailored to the business sector for instituting transformative change.

Ali and Mohammed [36] aimed to identify the availability of adaptive leadership in hospitals affiliated with the Medical City Directorate in Iraq, focusing on five adaptive leadership dimensions: adaptability, teamwork orientation, ethical conduct, openness to change, and motivation. The descriptive approach based on questionnaires was used to gather information, with 158 questionnaires distributed among a sample of doctors in the designated hospitals. The findings revealed considerable attention from Medical City hospitals to environmental adaptability, ensuring the continuous provision of optimal services.

Daoud Zaki Daoud [14] explored the effect of adaptive leadership in achieving organizational integration and its influence on innovative behavior among employees in hospitals and specialized medical centers at Mansoura University. The study investigated multiple adaptive leadership

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dimensions, including influence and motivation, organizational vision, management, human capital development, learning, ethical conduct, collaboration, initiative, communication, decision-making, and change. Adopting a descriptive methodology and utilizing questionnaires, the field study encompassed a sample of 384 employees and found meaningful effects of adaptive leadership dimensions on organizational integration.

Haniff and Galloway [37] focused on identifying the challenges facing strategic alignment in collaborative organizations as they attempt to harmonize multiple strategic objectives through a single construction project. The research developed a hierarchical model of strategic objectives based on empirical findings from four construction projects, uncovering internal and external tensions influencing project strategy. The study concluded that effective project governance, leadership, and attention to client complexities are vital factors for strategic alignment across organizations.

Reviewing previous studies reveals that research has often focused on the association of adaptive leadership with various variables, as well as the relationship of strategic alignment with other factors. Of greatest relevance, previous studies have largely linked one of the current study's variables, performance, with either adaptive leadership or strategic alignment, such as Mohan et al. [32], which examined the relationship between strategic alignment, the balanced scorecard, and optimal performance. However, no previous studies, to the best of the researcher's knowledge, have specifically explored the relationship between adaptive leadership and strategic alignment. This represents a research gap that the current study seeks to address. Additionally, insights from earlier studies have benefited the present research across several dimensions, including the theoretical framework, research problem and objectives, and result comparisons.

3. Methodological Procedures of the Study

The study population comprised all hospitals operating in the Riyadh region, totaling 109 hospitals (65 public and 44 private). The entire study population was covered, with three questionnaires sent to each hospital, making a total of 327 questionnaires distributed. Of these, 312 valid questionnaires were returned for statistical analysis, distributed as follows: 210 from public hospitals and 111 from private hospitals. Drawing on relevant literature, the researcher developed a questionnaire to identify the role of adaptive leadership in achieving strategic alignment within the studied healthcare organizations. The questionnaire consisted of three sections:

Section One included personal data about the study participants.

Section Two consisted of statements intended to measure the extent of adaptive leadership practices in the hospitals under study.

Section Three: Contains statements aimed at measuring the extent of strategic alignment implementation in the same hospitals.

Table 1 presents the reliability and construct validity coefficients for the study variables as follows:

Table 1.
Reliability and Construct Validity Values for Study Variables.

No.	Variable	Cronbach's Alpha (Reliability)	Construct Validity ($\sqrt{\alpha}$)	No. of Items
–	Adaptive Leadership *(Independent Variable)*	0.937	0.968	15
1	Observation & Anticipation	0.826	0.909	3
2	Analysis & Interpretation	0.814	0.902	3
3	Learning Ability	0.785	0.886	3
4	Leadership in the Work Environment	0.809	0.899	3
5	Innovation	0.881	0.939	3
–	Strategic Alignment *(Dependent Variable)*	0.933	0.966	12
–	Overall Questionnaire Scale	0.958	0.979	27

Source: Prepared by the researcher based on the results of the statistical analysis of the field study.

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Table 1 reveals that all reliability coefficients for the scales measuring the current study variables are high and acceptable, as an accepted level of reliability exceeds 0.7 [38]. The data demonstrated high validity coefficients for all study variables (validity coefficient = square root of the reliability coefficient). Furthermore, the overall reliability and validity coefficients for the full questionnaire are both high, at 0.958 and 0.979, respectively. These results indicate that the measurement tool used is both reliable and statistically and logically appropriate for collecting data in the field study.

3.1. Descriptive Characteristics of the Study Sample

Table 2 presents the demographic characteristics of the study sample, as follows:

Table 2.
Descriptive Characteristics of the Study Sample.

Characteristic	Category	Frequency	Percentage
Hospital Type	Government Hospital	201	64.4%
	Private Hospital	111	35.6%
	Total	312	100%
Gender	Male	223	71.5%
	Female	89	28.5%
	Total	312	100%
Educational Level	Diploma or lower	73	23.4%
	Bachelor's Degree	61	19.6%
	Master's Degree	132	42.3%
	Doctorate	46	14.7%
	Total	312	100%
Years of Experience	Less than 5 years	19	6.1%
	5 to <10 years	100	32.1%
	10 to <15 years	46	14.7%
	15 to <20 years	79	25.3%
	20 years or more	68	21.8%
	Total	312	100%
Job Type	Medical	90	28.8%
	Technical	119	38.1%
	Administrative	103	33.0%
	Total	312	100%

Source: Prepared by the researcher based on the statistical analysis of the field study data.

Hospital Type: The statistical analysis shows that the majority of respondents are from government hospitals, accounting for 64.4% of the total sample, while private hospitals represent 35.6%.

Gender: There is a noticeable gender disparity in the sample, with males representing 71.5% and females 28.5% of the respondents.

Education Level: The largest proportion of respondents holds a postgraduate (Master's) degree (42.3%), followed by diploma or lower-level qualifications (23.4%), then bachelor's degrees (19.6%), while the lowest proportion holds a doctorate (14.7%).

Years of Experience: Experience levels varied among respondents. The highest proportion (32.1%) has between 5 and 10 years of experience, followed by 15 to <20 years (25.3%), then those with over 20 years (21.8%), and 10 to <15 years (14.7%). The smallest group (6.1%) has less than 5 years of experience.

Job Type: The sample shows a relatively even distribution across job roles, with technical staff comprising the largest group (38.1%), followed by administrative staff (33.0%), and medical professionals (28.8%).

3.2. Means and Standard Deviations for the Study Variables

Table 3 describes the indicators for the current study variables, specifically the means measured on a five-point Likert scale, along with standard deviations, as follows:

Table 3.
Means and Standard Deviations of Study Variables.

No.	Variable	Mean	Standard Deviation
–	Adaptive Leadership (Independent Variable)	3.688	0.685
1	Observation & Anticipation	3.757	0.675
2	Analysis & Interpretation	3.748	0.777
3	Learning Ability	3.606	0.745
4	Leadership in the Work Environment	3.684	0.765
5	Innovation	3.647	0.795
–	Strategic Alignment (Dependent Variable)	3.720	0.644

Source: Prepared by the researcher based on the statistical analysis of the field study data.

The means shown in Table 3 indicate a clear convergence among all study variables based on the total sample values; all means were greater than the theoretical mean of 3.0. Overall, the mean scores for the study variables ranged from 3.606 to 3.757. This reflects a clear awareness among sample individuals regarding all study variables, and the consistently low standard deviations indicate a substantial degree of consensus among respondents in their perception of these variables.

3.3. Bivariate Linear Correlations Among Study Variables

To determine the statistical significance of correlations among the study variables, the bivariate linear Pearson correlation test was conducted. See Table 4:

Table 4.
Pearson Correlation Coefficients Between Study Variables.

No.	Variable	Adaptive Leadership	Observation & Anticipation	Analysis & Interpretation	Learning Ability	Leadership in the Work Environment	Innovation	Strategic Alignment
1	Adaptive Leadership	1						
2	Observation & Anticipation	0.902**	1					
3	Analysis & Interpretation	0.918**	0.778**	1				
4	Learning Ability	0.887**	0.820**	0.809**	1			
5	Leadership in the Work Environment	0.948**	0.804**	0.835**	0.743**	1		
6	Innovation	0.903**	0.732**	0.756**	0.681**	0.927**	1	
7	Strategic Alignment	0.914**	0.827**	0.869**	0.902**	0.794**	0.779**	1

Note: $p < 0.01$
Source: Prepared by the researcher based on the statistical analysis of the study data.

Table 4 reveals statistically significant positive linear bivariate correlations among all study variables. Generally, Ratner [39] indicated that a correlation coefficient below 0.3 represents a weak

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correlation, values from 0.3 to less than 0.7 indicate a moderate correlation, and values greater than or equal to 0.7 signify a strong correlation.

3.4. Confirmatory Factor Analysis for the Proposed Study Model

Figure 1 presents the measurement model via confirmatory factor analysis (CFA) for the study variables, after modification and refinement according to predefined criteria. Some non-conforming statements were omitted, and error terms were correlated in line with accepted standards, as follows:
Figure 1. Measurement Model – CFA.

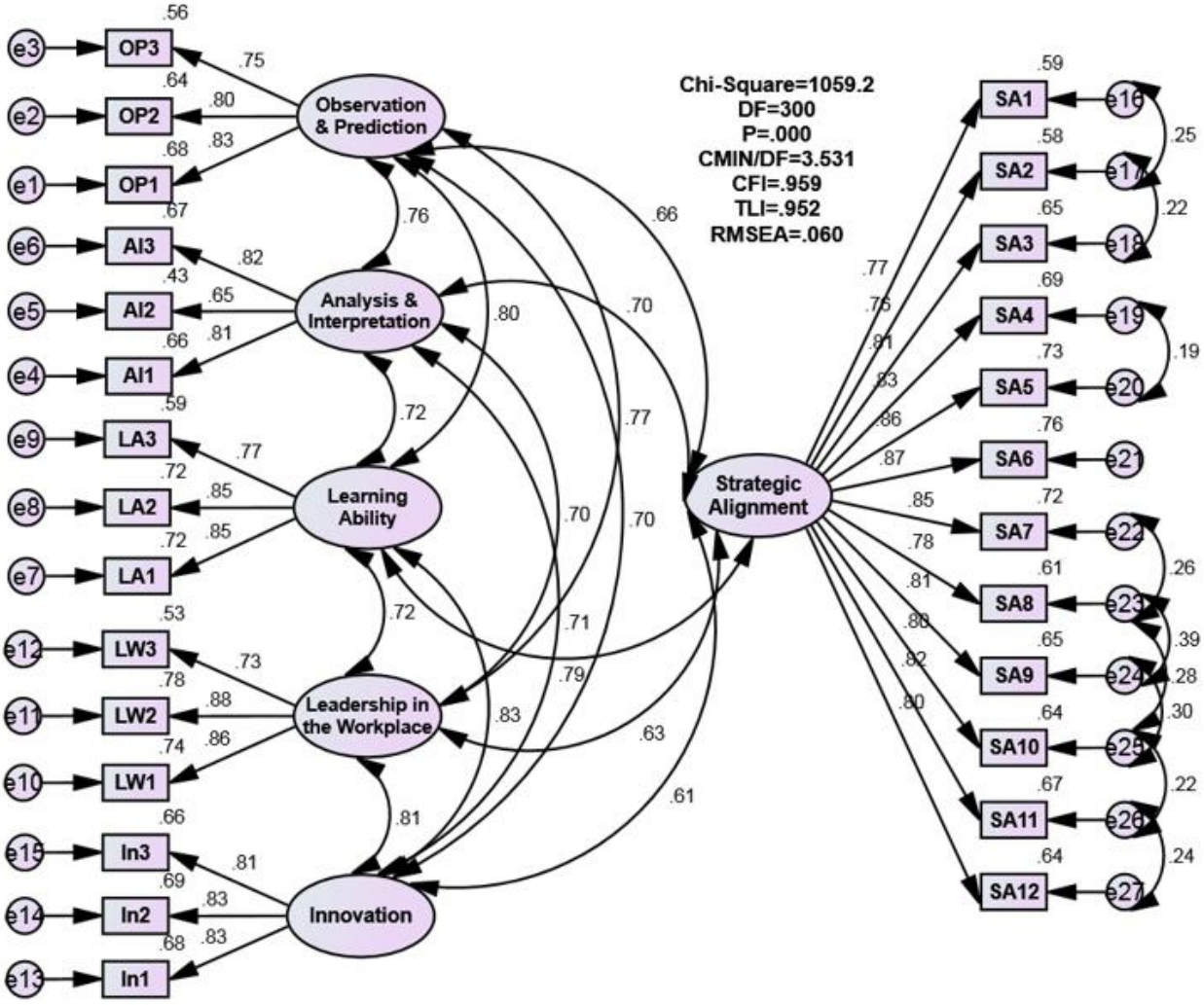

Figure 1.
Confirmatory Factor Analysis of the Study Model.
Source: Statistical analysis outputs using AMOS software.

The CFA results depicted in Figure 1 demonstrate that all statements are highly loaded on their respective latent constructs, with each factor loading exceeding 0.5. This is further clarified in Table 5, which details the convergent construct validity coefficients for the study variables:

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3.5. Construct Validity – Standardized Loadings and Composite Measures

Table 5.
Construct Validity for the Measurement Model Variables Construct.

	Item Code	Standardized Loading (λ)	CR (Critical Ratio)	Significance	Squared Loading (λ^2)	Composite Reliability (CR)	Average Variance Extracted (AVE)
Observation & Anticipation	OP1	0.826	–	–	0.682	0.835	0.628
	OP2	0.798	23.870	***	0.637		
	OP3	0.751	22.001	***	0.564		
Analysis & Interpretation Learning Ability	AI1	0.813	–	–	0.661	0.837	0.631
	AI2	0.753	22.190	***	0.567		
	AI3	0.816	25.300	***	0.666		
	LA1	0.848	–	–	0.719	0.863	0.677
	LA2	0.850	28.050	***	0.723		
	LA3	0.768	24.043	***	0.590		
Leadership in the Work Environment	LW1	0.857	–	–	0.734	0.865	0.682
	LW2	0.881	29.612	***	0.776		
	LW3	0.732	22.369	***	0.536		
Innovation	In1	0.826	–	–	0.682	0.864	0.679
	In2	0.834	25.275	***	0.696		
	In3	0.811	24.464	***	0.658		
Strategic Alignment	SA1	0.773	–	–	0.598	0.959	0.662
	SA2	0.762	23.176	***	0.581		
	SA3	0.808	24.487	***	0.653		
	SA4	0.828	24.164	***	0.686		
	SA5	0.856	25.216	***	0.733		
	SA6	0.872	25.875	***	0.760		
	SA7	0.851	25.078	***	0.724		
	SA8	0.784	22.558	***	0.615		
	SA9	0.807	23.430	***	0.651		
	SA10	0.797	23.071	***	0.635		
	SA11	0.816	23.733	***	0.666		
	SA12	0.802	23.258	***	0.643		

Note: *** indicates significance at $p < 0.001$, CR = Critical Ratio; AVE = Average Variance Extracted,
*Source: Developed by the researcher based on statistical analysis results. *$p < 0.01$.

Interpretation: All standardized loadings for the study constructs are acceptable, with values above the 0.50 threshold for convergent validity, indicating strong associations between items and their intended constructs (high convergent validity). This confirms that each item adequately measures its respective factor without cross-loading on others.

All critical ratios (CR) for the items exceed the accepted value of 1.964, and all standardized loadings are statistically significant at $p < 0.001$.

Composite reliability values for all study variables are high (greater than 0.70 per [40]), confirming the internal consistency of each scale.

All AVE (Average Variance Extracted) coefficients range between 0.628 and 0.682; per Bagozzi and Yi [41], AVE values above 0.5 indicate that the construct explains more variance than error, confirming convergent validity for the measurement tool.

After verifying model validity for internal consistency and convergent validity between each study variable and its observed indicators, the next step is testing discriminant validity, which assesses the distinctiveness between the study's latent constructs. Discriminant validity is confirmed when the AVE

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for each construct is greater than the shared variances between it and other constructs [42, 43]. Table 6 presents the shared variance matrix between study constructs, along with the AVE for each variable.

Table 6.
Shared Variance Matrix Among Study Variables as an Indicator of Discriminant Validity.

No.	Variable	Observation & Anticipation	Analysis & Interpretation	Learning Ability	Leadership in the Work Environment	Innovation	Strategic Alignment
1	Observation & Anticipation	(0.628)					
2	Analysis & Interpretation	0.578	(0.631)				
3	Learning Ability	0.633	0.518	(0.677)			
4	Leadership in the Work Environment	0.593	0.492	0.521	(0.682)		
5	Innovation	0.490	0.494	0.340	0.649	(0.679)	
6	Strategic Alignment	0.436	0.489	0.484	0.397	0.372	(0.662)

Note: Diagonal values in parentheses represent the AVE (Average Variance Extracted) for each construct; off-diagonal values represent the squared correlations between constructs.
Source: Prepared by the researcher based on the statistical analysis of the study data.

Table 6 shows that, for most constructs, the AVE is greater than the shared variance with other variables, confirming discriminant validity among the study constructs.

After affirming convergent and discriminant validity, model quality was evaluated using key model fit indices to assess the correspondence between the theoretical model and empirical data. Table 7 presents the goodness-of-fit indices before and after model refinement.

Table 7.
Goodness-of-Fit Indices for the Confirmatory Factor Analysis Model of the Study Variables.

Model	CMIN/DF	*p*-value	GFI	AGFI	NFI	CFI	TLI	RMR	RMSEA
Original Model	4.715	0.000	0.835	0.791	0.908	0.924	0.917	0.084	0.072
Fit Evaluation	Acceptable	Significant	Acceptable	Not Acceptable	Acceptable	Acceptable	Acceptable	Not Acceptable	Acceptable
Modified Model *(Revised)*	3.531	0.000	0.900	0.873	0.936	0.959	0.952	0.051	0.060
Fit Evaluation	Acceptable	Significant	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

Note: CMIN/DF: Chi-square/df ratio, GFI: Goodness-of-Fit Index, AGFI: Adjusted Goodness-of-Fit Index, NFI: Normed Fit Index, CFI: Comparative Fit Index, TLI: Tucker-Lewis Index, RMR: Root Mean Residual, RMSEA: Root Mean Square Error of Approximation.
Source: Prepared by the researcher based on the results of the statistical analysis of the study data.

As shown in Table 7, most original model fit indices are statistically significant and generally acceptable, although some indices fall below the desired thresholds. Therefore, model modifications were implemented, guided by statistical analysis software, such as removing certain statements and correlating residual errors for items within the same construct, in accordance with accepted criteria.

Following these refinements, the final measurement model achieved fit indices within acceptable ranges, indicating strong associations between all statements and their latent variables. This confirms the validity of the proposed measurement model and its suitability for measuring the study variables and testing the study's hypotheses.

4. Results Analysis and Discussion

4.1. Analysis and Discussion of Results Related to the First Study Question

Descriptive analysis was conducted for the independent variable (adaptive leadership) to address the first sub-question, which aimed to determine the extent to which adaptive leadership is practiced in hospitals in the Riyadh region. Adaptive leadership was measured using 15 items across five dimensions: observation and anticipation, analysis and interpretation, learning ability, leadership in the work environment, and innovation. The extent to which these dimensions are present was assessed using a five-point Likert scale, ranging from "completely present" to "not present at all." The scale intervals (minimum and maximum) were determined by calculating the range (1-5=4) and dividing it by the highest value on the scale to obtain the correct cell length (4/5=0.8). This value was then added to the lowest scale value (which is 1), resulting in the following scale categories [44]:

One to less than 1.8 represents "not present at all."

1.8 to less than 2.6 represents "not present."

2.6 to less than 3.4 represents "moderately present."

3.4 to less than 4.2 represents "highly present."

4.2 to 5 represents "completely present."

A one-sample statistics test was also used to calculate the T-test value to confirm the statistical significance of the results obtained. Table 8 presents the descriptive analysis of the items related to this variable:

Table 8.
Descriptive Analysis of Adaptive Leadership Dimensions and Their Items Based on Study Sample Responses.

No.	Item Code	Mean	Std. Dev.	Relative Importance Index (RII)	Availability Level	Rank	*t*-Value	Significance
1	X1-1	3.686	1.044	0.737	High	2nd	11.601	0.000**
2	X1-2	4.074	0.808	0.815	High	1st	23.457	0.000**
3	X1-3	3.513	0.998	0.703	High	3rd	9.074	0.000**
Observation & Anticipation (Overall)		3.757	0.675	0.751	High	–	19.818	0.000
1	X2-1	3.936	0.908	0.787	High	1st	18.195	0.000**
2	X2-2	3.449	0.984	0.690	High	3rd	8.054	0.000**
3	X2-3	3.859	0.855	0.772	High	2nd	17.728	0.000**
Analysis & Interpretation (Overall)		3.748	0.777	0.750	High	–	16.983	0.000
1	X3-1	3.760	0.750	0.752	High	1st	17.888	0.000**
2	X3-2	3.570	0.995	0.714	High	2nd	10.119	0.000**
3	X3-3	3.487	1.069	0.697	High	3rd	8.044	0.000**
Learning Ability (Overall)		3.606	0.745	0.721	High	–	14.348	0.000
1	X4-1	3.820	0.871	0.764	High	1st	16.639	0.000**
2	X4-2	3.593	0.895	0.719	High	3rd	11.698	0.000**
3	X4-3	3.638	0.982	0.728	High	2nd	11.469	0.000**
Leadership in the Work Environment (Overall)		3.684	0.765	0.737	High	–	15.782	0.000
1	X5-1	3.593	0.828	0.719	High	3rd	12.647	0.000**
2	X5-2	3.622	0.862	0.724	High	2nd	12.734	0.000**
3	X5-3	3.728	0.994	0.746	High	1st	12.917	0.000**
Innovation (Overall)		3.647	0.795	0.729	High	–	14.377	0.000
Adaptive Leadership (Overall)		3.688	0.685	0.738	High	–	17.740	0.000

Note: $p < 0.01$ () • $p < 0.05$ (*) • NS: Not Significant**
Source: Prepared by the researcher based on the results of the statistical analysis. Significance levels:

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Interpretation: The results in Table 8 indicate clear convergence among the means for all items measuring the five dimensions of adaptive leadership in Riyadh hospitals, based on total sample values. The overall means for each dimension (observation and anticipation, analysis and interpretation, learning ability, leadership in the work environment, and innovation) as aggregate variables are higher than the theoretical mean, with respective values of 3.757, 3.748, 3.606, 3.684, and 3.647, all at the "highly present" level. The overall mean for adaptive leadership was also higher than the theoretical mean, at 3.688, confirming a high level of adaptive leadership practice in Riyadh hospitals.

This result aligns with the findings of Guntner et al. [45], Salam et al. [13], and Al-Salmi [16], but differs from Kaid [46] and Sahweil [47].

The T-test values indicate statistically significant awareness among respondents regarding the presence of all items related to this variable, with significance levels below 0.01, confirming the acceptance of all previous findings indicating high awareness among respondents of all dimensions of adaptive leadership. This underscores that Riyadh hospitals recognize the importance of adaptive leadership and its role in the success of strategic alignment.

4.2. Analysis and Discussion of Results Related to the Second Study Question

Descriptive analysis was conducted for the dependent variable (strategic alignment) to address the second sub-question, which aimed to identify the extent to which strategic alignment is implemented in hospitals in the Riyadh region. Strategic alignment was measured by 12 items. Means, standard deviations, and the Relative Importance Index (RII) were calculated to determine the degree to which each item reflects the application of strategic alignment in Riyadh hospitals, according to the sample's viewpoints. A One-Sample Statistics test was used to calculate the T-test value to confirm the statistical significance of the obtained results. Table 9 presents the descriptive analysis for this axis.

Table 9.
Descriptive Analysis of Strategic Alignment Dimensions and Their Items Based on Respondents' Views.

No.	Item Code	Mean	Std. Dev.	Relative Importance Index (RII)	Availability Level	Rank	*t*-Value	Significance
1	Y1-1	4.045	0.702	0.809	High	2nd	26.281	0.000**
2	Y1-2	3.856	0.585	0.771	High	4th	25.830	0.000**
3	Y1-3	3.551	1.104	0.710	High	8th	8.819	0.000**
4	Y1-4	3.510	0.910	0.702	High	11th	9.884	0.000**
5	Y1-5	3.660	0.995	0.732	High	7th	11.719	0.000**
6	Y1-6	3.542	0.899	0.708	High	9th	10.640	0.000**
7	Y1-7	3.353	1.118	0.671	High	12th	5.567	0.000**
8	Y1-8	3.756	0.792	0.751	High	6th	16.852	0.000**
9	Y1-9	3.766	0.789	0.753	High	5th	17.135	0.000**
10	Y1-10	4.090	0.604	0.818	High	1st	31.865	0.241 NS
11	Y1-11	3.978	0.602	0.796	High	3rd	28.666	0.241 NS
12	Y1-12	3.535	1.147	0.707	High	10th	8.238	0.241 NS
	Strategic Alignment (Overall)	3.720	0.644	0.744	High	–	19.748	0.008

Note: Significance levels: $p < 0.01$ () • $p < 0.05$ (*) • NS: Not Significant**
Source: Prepared by the researcher based on the statistical analysis of the study data.

Interpretation: Results in Table 9 indicate clear convergence of means for all items measuring the implementation of strategic alignment in Riyadh hospitals, based on total sample values. All means exceeded the theoretical mean of 3; overall, item means for this axis ranged from 3.353 to 4.090. This demonstrates that, in the view of the study respondents, all items measuring this variable are recognized as present to a high degree. The consistently low standard deviations point to substantial agreement among sample members regarding the availability of all strategic alignment items. The overall score for

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strategic alignment (mean = 3.720) also exceeds the theoretical mean and is rated as "highly present," confirming that Riyadh hospitals implement strategic alignment to a high degree. This finding supports those of Karatu [29], Hamza and Hasan [48], and Abdulwahab and Al-Moula [49] but contrasts with Salah Eldin and Hamada [30].

T-test values indicate statistically significant awareness among sample respondents regarding most items for this variable, with results at significance levels below 0.01, confirming previous findings that Riyadh hospitals are highly recognized by respondents for their implementation of strategic alignment.

4.3. Analysis and Discussion of Results Related to the Third Study Question

To address the third sub-question, which aimed to measure the statistically significant impact of adaptive leadership dimensions (observation and anticipation, analysis and interpretation, learning ability, leadership in the work environment, and innovation) as independent variables on strategic alignment as the dependent variable in Riyadh hospitals, the following main hypothesis was formulated:

H1: There is a statistically significant positive effect of adaptive leadership dimensions (observation and anticipation, analysis and interpretation, learning ability, leadership in the work environment, and innovation) on achieving strategic alignment in Riyadh hospitals.

To test this hypothesis, the Structural Equation Modeling (SEM) approach was employed. Figure 2 depicts the structural model paths used to examine the hypothesis:

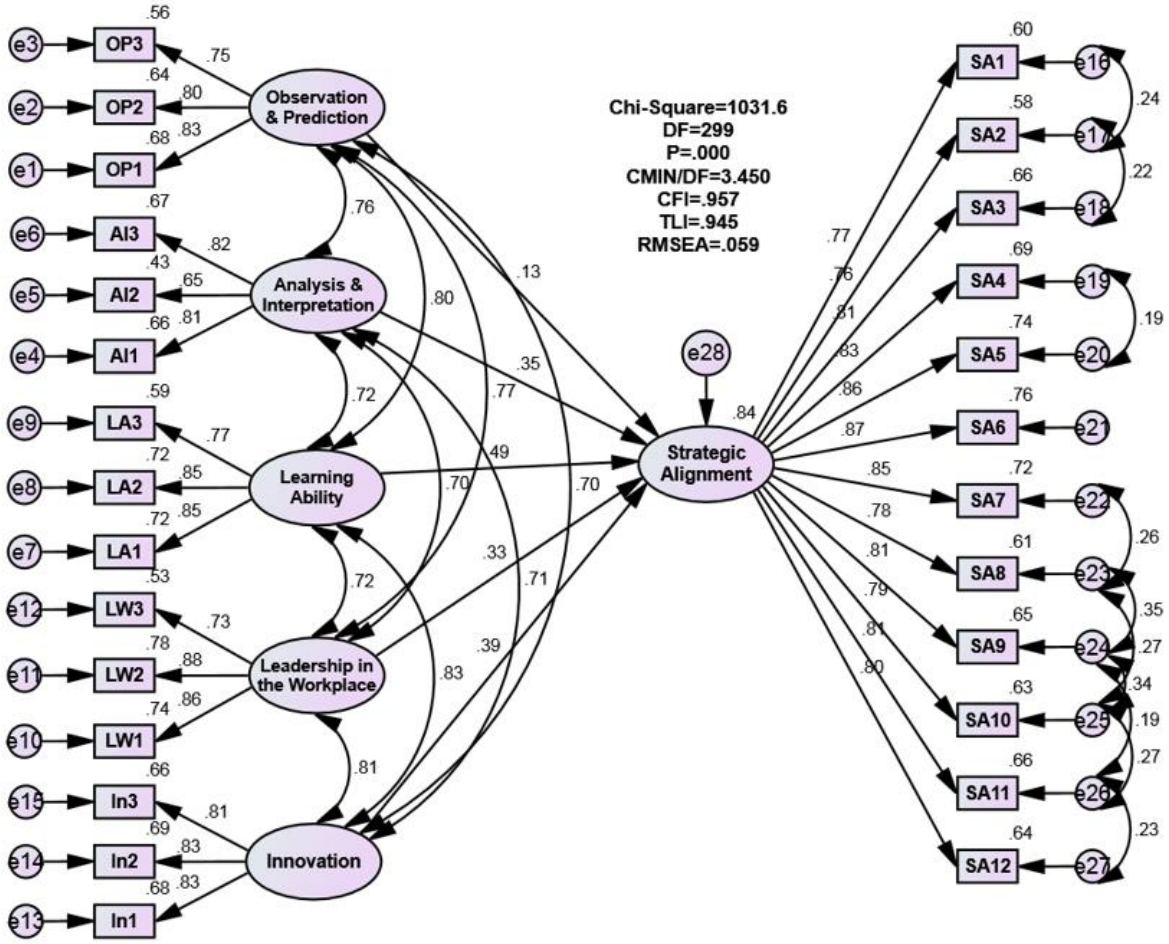

Figure 2.
Path Diagram of the Structural Model.

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It is apparent from Figure 2 that the collected data fit the proposed model, with all fit indices for the improved model falling within the acceptable range. The value for the Normed Chi-Square (CMIN/DF) was 3.450, which meets the acceptable threshold of less than 5. The key fit indices, including the Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI), both exceeded the accepted threshold of 0.90. Additionally, the Root Mean Square Error of Approximation (RMSEA) did not exceed the acceptable range of 0.05–0.08. Collectively, these indicators confirm a good fit between the proposed model and the collected data, establishing the model's suitability for measuring relationships among variables.

Furthermore, Figure 2 shows that the dimensions of the independent variable, adaptive leadership (observation and anticipation, analysis and interpretation, learning ability, leadership in the work environment, and innovation), accounted for 84% of the variance in the dependent variable, strategic alignment. Thus, the independent variable explains a substantial portion of the variation observed in the dependent variable. Table 10 details the structural model paths for testing this hypothesis as follows:

Table 10.
Results of Direct Effects of Adaptive Leadership Dimensions on Strategic Alignment Based on the Structural Model

Hypothesis	Pathway	Standardized Path Coefficient	Standard Error	*t*-Value (CR)	Significance Level
H1/1	Observation & Anticipation → Strategic Alignment	0.130	0.035	3.530	0.000**
H1/2	Analysis & Interpretation → Strategic Alignment	0.350	0.032	9.054	0.000**
H1/3	Learning Ability → Strategic Alignment	0.491	0.031	13.597	0.000**
H1/4	Leadership in Work Environment → Strategic Alignment	0.326	0.051	5.391	0.000**
H1/5	Innovation → Strategic Alignment	0.387	0.039	7.959	0.000**

Note: Significance levels: p < 0.01 () • p < 0.05 (*) • NS: Not Significant**
Source: Prepared by the researcher based on the results of the statistical analysis.

Interpretation: The results for sub-hypothesis H1/1 indicate a statistically significant positive effect of observation and anticipation as a dimension of adaptive leadership on strategic alignment, with a standardized effect coefficient of 0.130 at the 0.05 significance level; thus, H1/1 is accepted.

H1/2 results confirm a statistically significant positive effect of analysis and interpretation on strategic alignment (coefficient: 0.350; p<0.05), supporting the acceptance of H1/2.

H1/3 results show a statistically significant positive effect of learning ability on strategic alignment (coefficient: 0.491; p<0.05), and H1/3 is supported.

H1/4 reveals a significant positive effect of leadership in the work environment on strategic alignment (coefficient: 0.326; p<0.05), supporting H1/4.

H1/5 confirms a statistically significant positive effect of innovation on strategic alignment (coefficient: 0.387; p<0.05), thus H1/5 is accepted.

Collectively, these results demonstrate a significant positive effect for all dimensions of adaptive leadership on strategic alignment. Learning ability emerges as the most influential dimension, followed by innovation, analysis and interpretation, leadership in the work environment, and finally observation and anticipation as the least influential. With the acceptance of the five sub-hypotheses derived from the main hypothesis, the principal hypothesis is also entirely accepted: "There is a statistically significant positive effect of adaptive leadership dimensions (observation and anticipation, analysis and interpretation, learning ability, leadership in the work environment, and innovation) on achieving strategic alignment in Riyadh hospitals."

This finding is consistent with Al-Salmi's [16] results, which evidenced a significant positive impact of adaptive leadership on the quality of crisis management in organizations, and with Nebiyu and Kassahun [12] showing that increased practice of adaptive leadership corresponded with greater

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organizational effectiveness. The result also aligns with Al-Fawaz [4], who recommended enhancing adaptive leadership dimensions in organizations due to their observable beneficial impact on achieving organizational objectives.

5. Recommendations

The researcher proposes several recommendations and implementation suggestions as follows:

Table 11.
Recommendations and Proposed Implementation Mechanism.

Proposals	Recommendations
Organize seminars and workshops for hospital leaders to instill the concepts of adaptive leadership. It is proposed that implementation begin at the start of the calendar year 2026.	• Institutionalize the principles of adaptive leadership in hospitals across the Kingdom of Saudi Arabia.
Develop strategic plans by top management to enhance adaptive leadership dimensions through the following directions: - First Direction: Encourage subordinates to identify challenges and future opportunities using workplace-specific methods and strategies. - Second direction: Motivate employees through a deep understanding of their personalities, goals, and viewpoints to provide alternatives for problem-solving. - Third Direction: Form work teams capable of exploration and facing challenges, while promoting a culture of commitment and initiative through quarterly training and continuous education. - Fourth Direction: Empower staff to confront environmental challenges and opportunities by fostering a flexible work environment and embracing cognitive diversity. - Fifth Direction: Conduct ongoing leadership training programs for hospital leaders to adopt innovative management practices that generate creative solutions for workplace emergencies.	• Strengthen the dimensions of adaptive leadership (observation and anticipation, analysis and interpretation, learning ability, leadership in the work environment, and innovation) within hospitals in the Kingdom of Saudi Arabia.
- Encourage hospital leadership to promote teamwork among employees. - Establish cross-functional committees to ensure collaboration across departments in pursuit of shared goals. - Continuously communicate organizational objectives to all hospital staff. - Consistently align operational roles and responsibilities across all departments and units.	• Enhance strategic alignment in hospitals across the Kingdom of Saudi Arabia.

Source: Prepared by the researcher based on the findings of the study.

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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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