

The Mediating Role of Governance in the Relationship between Strategic Orientation and Competitive Advantage in Private Universities

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Abstract: Objective: This study aimed to examine the mediating role of governance between strategic orientation (SO) and competitive advantage (CA) of private universities in the Capital Municipality of Sana'a. **Methodology:** The quantitative approach was followed. The questionnaire was used to collect data from the study sample, consisting of 239 individuals. A total of 290 questionnaires were distributed, and 230 were retrieved, of which 205 were valid. Data were analyzed using SPSS version 28 and SmartPLS version 4.08.6. **Results:** SO has a statistically significant role in achieving CA in the surveyed universities. Moreover, there is a significant mediating role of governance in the relationship between SO and CA. **Conclusions:** SO and governance are key strategies to thrive within a competitive landscape in higher education. The adoption of governance principles in the presence of a robust SO plays a substantial role in achieving CA in higher education. **Recommendations:** Yemeni private universities are recommended to enhance CA through developing comprehensive training programs for faculty and staff focused on SO, implementing robust governance frameworks to ensure transparency and accountability, and facilitating improved communication and collaboration among departments. **Keywords:** Strategic orientation, competitive advantage, mediating role of governance, quality and excellence, private universities.

الدور الوسيط للحوكمة في العلاقة بين التوجه الاستراتيجي والميزة التنافسية في الجامعات الخاصة

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ملخص: الهدف: هدفت الدراسة إلى معرفة الدور الوسيط للحوكمة في العلاقة بين التوجه الاستراتيجي والميزة التنافسية للجامعات الأهلية بأمانة العاصمة صنعاء. **المنهجية:** اتبعت الدراسة المنهج الكمي، واستخدمت الاستبانة لجمع البيانات من عينة الدراسة، والتي تكونت من 239 فرداً، وتم توزيع 290 واسترداد 230 استبانة، وكانت 205 منها صالحة، وتم تحليل البيانات باستخدام برنامج SPSS الإصدار 28 وبرنامج SmartPLS الإصدار 4.08.6. **النتائج:** توصلت الدراسة لعدة نتائج، أهمها: 1. وجود دور إيجابي وذو دلالة إحصائية للتوجه الاستراتيجي في تحقيق الميزة التنافسية في الجامعات محل الدراسة. 2. هناك دور وسيط وذو دلالة إحصائية للحوكمة في العلاقة بين التوجه الاستراتيجي والميزة التنافسية. **الاستنتاجات:** توصلت الدراسة إلى عدة استنتاجات، أهمها: 1. يُعد كل من التوجه الاستراتيجي والحوكمة من الاستراتيجيات الرئيسية للنجاح في ظل المنافسة بين مؤسسات التعليم العالي. 2. يلعب تبني مبادئ الحوكمة في وجود توجه استراتيجي قوي دوراً كبيراً في تحقيق الميزة التنافسية في مؤسسات التعليم العالي. **التوصيات:** توصي الدراسة الجامعات الخاصة اليمنية بضرورة تعزيز الميزة التنافسية من خلال تطوير برامج تدريبية شاملة لأعضاء هيئة التدريس والموظفين تركز على التوجه الاستراتيجي، وتنفيذ أطر حوكمة قوية لضمان الشفافية والمساءلة، وتسهيل تحسين التواصل والتعاون بين الإدارات. **الكلمات المفتاحية:** التوجه الاستراتيجي، الميزة التنافسية، الدور الوسيط للحوكمة، التخطيط والفعالية، الجامعات الخاصة.

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Introduction

In today's rapidly evolving business landscape, organizations encounter significant strategic and competitive challenges. These dynamics compel businesses to reassess their strategic options and orientations continuously, striving to achieve a competitive advantage (CA) that enhances their market standing. Organizations must actively seek tools and methods to sustain this advantage while remaining attentive to innovations that foster success in a competitive environment (Mohammed & Mahmood, 2018).

For higher education institutions in Yemen, having a CA is crucial amid a landscape marked by rapid change. Saeed (2020) indicated that the pursuit of excellence shows a significant aspect of contemporary management and poses significant challenges for those institutions. According to Al-Nashmi and Aldois (2017), the large increase in the number of private universities, including their branches, has increased the intensity of competition. This scenario requires these universities to adopt innovative strategies to support their growth and ensure their survival as well as meet students' evolving needs while keeping pace with modern specializations to provide distinctive value to the community.

To keep up with the rapid developments witnessed by regional and international universities, various standards for quality and academic accreditations have been established. However, these standards impose many challenges on Yemeni universities that seek to achieve them. The effects of these challenges are evident in the roles expected of these institutions, as they face increasing expectations related to improving the quality of education, encouraging scientific research, and enhancing community service.

Despite the significant increase in the number of Yemeni universities and the increasing number of students enrolled in them, multiple studies, including those by Zaid and Al-Shuja'a (2021) and Musallam (2017), indicate that Yemeni universities suffer from weak institutional capacities. Their outputs often do not match development needs, and there is a noticeable decline in the quality of education. In addition, many institutions face challenges such as lack of a clear strategic vision, traditional academic leadership, limited financial resources, inadequate policies and infrastructure, insufficient educational and research support, and an urgent need to update curricula. Consequently, many of these institutions are ill-equipped to compete effectively, keep pace with scientific progress, or achieve excellence in education, research, and community service.

As a result, Yemeni universities rank low in global assessments, often finding themselves at the bottom of various international rankings. World university rankings reveal that many of these institutions, at both the national and regional levels, do not perform adequately in terms of quality of services compared to their counterparts elsewhere. This performance gap hampers their ability to fulfill essential roles in human development and to enhance the knowledge, skills, and experiences of their participants. As a result, a persistent divide exists between these universities and those at the regional and international levels, despite ongoing efforts to bridge this gap, as highlighted by human development reports and numerous global rankings. For instance, the 2021 Shanghai Ranking of Universities identified only 14 Arab universities within the top 500 globally, including six from Saudi Arabia, five from Egypt, one from Qatar, one from Oman, and one from Tunisia. Unfortunately, Yemeni universities did not appear in this ranking (Shanghai Ranking Consultancy, 2021).

The 2022 British Times Higher Education ranking revealed that only 41 Arab universities were among the world's best, out of a total of 1,258 institutions. Unfortunately, no Yemeni university made the list (Times Higher Education, 2022). Similarly, the QS Higher Education ranking for 2022 included only 49

Arab universities in the top 1,000, again with no representation from Yemen (QS World University Rankings, 2022). The 2019 Global Competitiveness Report also highlighted a decline in CA and innovation among Arab countries, including Yemen (Schwab, 2019).

Therefore, Yemeni private universities face a gap between their aspirations and reality, which prevents them from achieving academic accreditation. This gap is due to the challenges of globalization, the ongoing crises in the country, and the resulting difficulties for universities, which are exacerbated by the rapidly changing environment and the increasing number of students whose needs and desires evolve with technological, administrative, and educational developments. Under these circumstances, Yemeni private universities must overcome these daunting problems to achieve not only survival but also excellence and growth. This requires adopting effective strategies to deal with environmental changes, keeping pace with global developments, enhancing a strategic orientation (SO) characterized by optimal use of resources, flexibility, and CA creation (Al-Aqeel, 2019; Saeed, 2020).

In addition, many studies have reported the significant impact of SO on improving institutions' CA. Al-Taha (2021), Laghisem and Al-Zoubi (2020), Al-Moawadhi (2019), Titrawi and Zubeiri (2019), Al-Sharifi (2019), and Alammari (2017) all support this view.

Zaid and Al-Shuja'a (2021) also found that entrepreneurial orientation enhances institutional excellence by enhancing innovation and CA. Furthermore, studies by Matlawi (2021), Abu Arab (2017), and Al-Senussi (2016) concluded that governance has a significant positive impact on achieving CA. Abdul Nabi et al. (2019) also showed that good governance contributes to CA by leveraging core capabilities, delivering activities in a unique way, and meeting beneficiaries' expectations better than competitors.

Implementing a strategic approach to university development is incomplete without good governance, accountability and transparency. Good governance includes setting performance standards and mechanisms, implementing transparency, disclosing information, measuring performance, holding officials accountable, and involving stakeholders in decision-making, monitoring and evaluation. Studies by Kariuki et al. (2021) and Andrades et al. (2021) show that governance in higher education is critical to improving the quality and outcomes of education. Alsaad and Mohsin (2020) found that university governance helps balance improvement possibilities with implementation requirements and ensures effective control over systems and procedures for enhancing educational service quality.

Given these findings, the research gap in this study pertains to a lack of local-level studies on these variables and an applied gap in addressing the interconnectedness of SO, CA, and governance. Besides, previous research has typically focused on either the impact of SO on CA or the role of governance in CA, without addressing all three variables together. Furthermore, despite ongoing efforts to improve higher education quality in Yemen, aligned with the national vision to have five Yemeni universities among the best in the Arab world, there is a pressing need to conduct a comprehensive study investigating all three variables together. Therefore, the study aims to identify the role of SO (as an independent variable) in achieving CA (as a dependent variable) within the framework of Arab university governance standards (as a mediating variable) in Yemeni private universities.

This study is significant both theoretically and practically. Theoretically, it is one of the few investigations into the role of SO in achieving CA within university governance in Yemeni private universities. By exploring this underexamined area, the study aims to enhance understanding in these fields and serve as a reference for future research, thus contributing to academic discourse in Yemen and the broader Arab context. Practically, the study addresses the growing importance of universities in the

competitive educational landscape, where global rankings necessitate high standards. It emphasizes the need for a clear SO and effective governance to improve university outputs and secure CA. By applying the Arab University Governance Guide (Nasereddin, 2018), the study seeks to enhance performance and align with national goals for modernizing Yemen's educational system. The findings and recommendations aim to support decision-makers in implementing modern practices that improve quality and productivity in higher education.

Literature Review

Strategic Orientation (SO)

SO has become increasingly vital for organizations across all sectors, as it significantly influences their growth, survival, and overall progress. It serves as a foundation for long-term strategies aimed at safeguarding and investing organizational resources. Younis (2006) defines SO as an analytical process in which organizations choose their future position based on changes in the external environment and their ability to adapt to these changes. Additionally, Mekkrache (2015) describes it as the overarching orientation an organization takes to achieve its objectives, while considering both the external conditions it faces and the resources available to it, thereby emphasizing alignment with its existing capabilities.

For this study, SO is defined as the foundational principles and methods through which Yemeni private universities guide their activities to establish their values, vision, mission, and strategic objectives, ultimately aiming to foster development, drive growth, enhance performance, and gain CA amid a changing environment.

Governance

The concept of governance has recently extended to universities, leading to the emergence of university governance as a critical element in social, economic, administrative, political, and health development across the globe, reflecting the vital role universities play in their communities (Al-Khadiri, 2005). University governance is defined as the framework through which values are determined within the university, the system it uses for decision-making and resource allocation, its mission and tasks, patterns of authority, and its relationships with both the academic world and the broader society and business environment (Alsaad and Mohsin, 2020). It is described by Al-Mufeez (2018) as the practices that express how authority is exercised and how the university operates, emphasizing the importance of structure, oversight, and the roles and responsibilities of university management to ensure independence, accountability, and transparency. In addition, Al-Maslat (2017) defines governance as an integrated system of regulations and instructions designed to enhance the quality of processes and outcomes by promoting interactive administrative practices and stronger relationships with relevant community institutions.

In this study, governance refers to a framework of rules and behaviors that regulate the operations of Yemeni private universities, including their interactions with local communities and supervisory institutions, integrating management, planning, effectiveness measurement, financial control, university activities, stakeholders, and adherence to standards of transparency, disclosure, and accountability.

Competitive Advantage (CA)

CA is vital for a company's success, achieved through superior efficiency, quality, innovation, and customer responsiveness. These elements enhance productivity, build reputation, drive new

developments, and adapt to market needs, shaping positive perceptions and improving operations (Alnasr et al., 2025). CA is defined as is a company's ability to excel in marketing and finance by understanding customer needs, efficiently delivering products or services through a robust supply chain, and optimizing operational capabilities (Obaid, 2017).

CA in university education refers to an institution's ability to deliver high-quality educational and research services, which enhances the capabilities and advantages of its graduates and faculty in the labor market. This CA is reflected in the community's trust in the institution, fostering collaboration, and increasing student enrollment interest (Al-Khawaldeh, 2018). Additionally, CA can be viewed as a significant factor of superiority, highlighting the university's capacity to offer distinguished educational and research services that positively influence its scientific outputs (Al-Luqan, 2016). In the university context, CA is defined as the enhancement and development of university performance to align with its goals, ultimately distinguishing it from competing institutions (Bisaria, 2013). This study defines CA as the ability of Yemeni private universities to innovate and excel in delivering educational, research, and community services.

Empirical Review

Numerous studies have investigated the impact of SO on achieving CA. Notable examples include research by Sondhi et al. (2025) has identified significant links between SO, knowledge integration capability, service innovation, and sustainable CA, and revealed that knowledge integration capability and service innovation serve as mediators in the relationship between SO and achieving sustainable CA of firms in India. Moreover, Al Khalifa and Al-Mahasneh (2024) revealed a statistically significant relationship between entrepreneurial orientation and CA in Bahraini commercial banks, and the dimensions of entrepreneurial orientation (innovation, risk tolerance, and proactivity) also significantly contribute to achieving CA in this sector. Besides, Alghamdi (2023) aimed to examine the impact of entrepreneurial orientation on CA in King Saud University and revealed that entrepreneurial orientation significantly influences CA in the respective university. In addition, Almadadyeh and Abu-Qaoud (2022) conducted a field study on Jordanian public universities aiming at identifying the impact of SO on enhancing CA. They found a significant impact of SO on enhancing CA in the respective universities. Additionally, SO dimensions (entrepreneurial orientation, market orientation, and technological orientation) each have a significant impact on CA in this context. In Rivers State of Nigeria, Akani et al. (2022) examined the impact entrepreneurial orientation on sustainable CA of private secondary schools. Their findings indicated a positive and significant impact of entrepreneurial orientation, with the dimensions of innovation and competitive aggressiveness each demonstrating a moderate, positive, and significant contribution to competitive advantage. Yang et al. (2022) conducted a study to explore how CA plays a mediating role between SO and economic sustainability under unpredictable circumstances in halal SMEs in Indonesia. They found a significant and positive mediating role of CA in this relationship and that CA plays a significant mediating role between every SO dimension (customer orientation, competitor orientation, technology orientation, network orientation, and innovation orientation) and economic sustainability in this context. Moreover, Lee et al. (2019) stated that SO boosts different levels of CA, and different types of SO potentially improve the performance of SMEs.

In addition, several studies have addressed the impact of SO on CA. Al-Taha (2021) determined that SO, including market orientation and entrepreneurial orientation—has a statistically significant impact on achieving and sustaining CA at Asia Cell Mobile Communications Company in Iraq.

Laghisem and Al-Zoubi (2020) also found a statistically significant impact of SO and its dimensions (analytical orientation, offensive orientation, defensive orientation, proactive orientation, and future orientation) on CA in universities in the Eastern Province of Saudi Arabia. Moreover, Al-Moawadhi (2019) concluded that SO and its dimensions (analytical orientation, responsive orientation, defensive orientation, and technological orientation) significantly enhances CA in Jordanian companies that received the King Abdullah II Award for Excellence. Alammari (2017) also revealed a significant impact of SO in its dimensions (market orientation, leadership orientation, technological orientation, and alignment of vision, mission, and goals) on CA in Yemeni universities. Among these dimensions, alignment of vision, mission, and goals, as well as leadership orientation were found to be the most influential, while technological orientation and market orientation were the least influential.

Moreover, several studies have examined the impact of SO on the application of governance principles. For instance, research by Setiarini et al. (2023) examined the effect of SO on environmental, social and governance (ESG) practices based on a sample of 2373 observations from 2004 to 2022 in several companies in the ASEAN countries (Indonesia, Malaysia, Singapore, the Philippines, Thailand, and Vietnam). The findings show that the SO encourages an increase in ESG practices, which means that companies with a SO are willing to practice ESG because they have strategic resources. In addition, Al-Hammadi (2022) and Rajeh (2019) found that SO (including vision, mission, values, goals, and strategic objectives) has a positive and statistically significant impact on the implementation of governance principles in banks operating in Yemen.

Additionally, numerous studies have explored the relationship and impact between governance and CA. Al-Darwish (2024) reported a statistically significant relationship between the application of governance principles – specifically transparency, accountability, justice, and participation – and the achievement of CA in secondary schools in Hama Governorate. In the US, Nelson (2023) conducted a comprehensive review of the literature exploring the relationship between corporate governance and CA. He concluded that there is substantial evidence indicating that effective corporate governance serves as a significant source of CA for organizations. High-quality governance not only yields beneficial internal impacts within firms but also enhances their external relationships. Furthermore, the growing body of literature outlines various mechanisms through which corporate governance can be transformed into competitive advantages.

Al-Alimi and Al-Sanabani (2023) similarly found a statistically significant impact of governance in its various dimensions (transparency, independence, participation, accountability, and effectiveness) on CA in Yemeni private universities. Moreover, the study by Darweesh and Abuareish (2023) concluded that all dimensions of corporate governance, including commitment to corporate governance, management structure and functions, transparency and disclosure, and stakeholder engagement, significantly influence CA in Jordanian industrial companies listed on the Amman Stock Exchange, with transparency and disclosure identified as the most influential dimension. Omar (2021) reported a strong positive and statistically significant relationship between the application of good governance (encompassing accountability, transparency, justice and equality, and participation), and the achievement of sustainable CA in kindergarten institutions in Egypt. In addition, Mansour (2018) found a statistically significant impact of governance principles on creating and enhancing CA in public and private universities in the Gaza Strip. Similarly, Abu Arab (2017) identified a significant role for the application of governance principles—specifically transparency, participation,

accountability, and organizational effectiveness—in increasing the competitiveness of technical colleges across the Gaza Strip governorates.

Based on the empirical review and previous studies, Figure 1 shows the conceptual framework of this research.

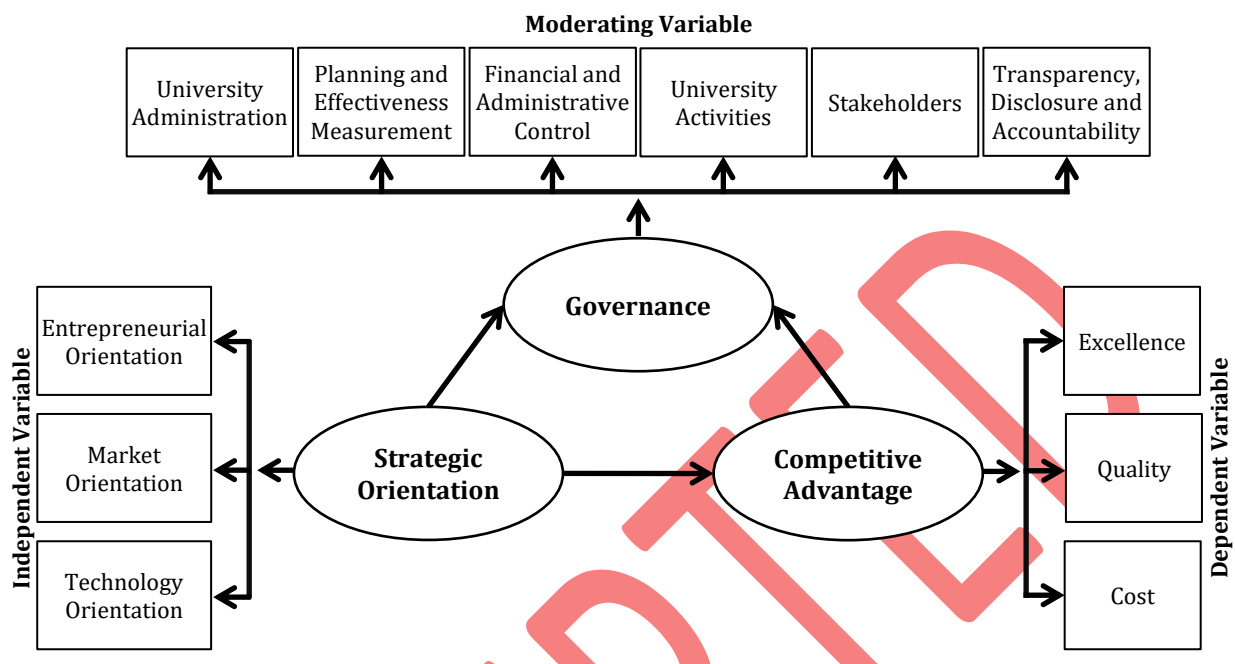


Figure (1): Conceptual framework.

Further, the study formulated the following four main null and alternative hypotheses:

Null hypotheses are:

H₀₁ There is no significant effect of SO on CA.

H₀₂ There is no significant effect of SO on governance.

H₀₃ There is no significant effect of governance on CA.

H₀₄ There is no significant mediating role of governance between SO and CA.

Alternative hypotheses are:

H₁ There is a significant effect of SO on CA.

H₂ There is a significant effect of SO on governance.

H₃ There is a significant effect of governance on CA.

H₄ There is a significant mediating role of governance between SO and CA.

Methodology

Research Design

To fulfill the objectives of this study, a quantitative research approach was employed, utilizing the descriptive method. This approach is commonly used in humanities and social sciences research due to its effectiveness in detailing specific cases and examining relationships among the study's variables and their dimensions (Cooper and Emory, 1995). By applying this methodology, the study aims to interpret the results it generates, providing valuable insights into the phenomena being analyzed.

Population and Sample

The study targeted academic and administrative leaders from 24 private Yemeni universities in the Capital Municipality of Sana'a, specifically those with three or more colleges and established for at least five years, resulting in a total population of 628 individuals. Using Krejcie and Morgan's (1970) sample size table, 239 individuals were chosen through stratified random sampling for a diverse representation. To account for potential loss or non-response, 290 questionnaires were distributed, reflecting a 20% increase over the sample size. After reminders to encourage participation, 230 questionnaires were returned; 25 were excluded due to invalid responses, leaving 205 for analysis. The characteristics of respondents are detailed in Table (1).

Table (1): Characteristics of the respondents.

Characteristic		N	%
Gender	Male	174	84.9%
	Female	31	15.1%
Age	30 years or less	14	6.8%
	31-40 years	66	32.2%
	41-50 years	81	39.5%
	More than 50 years	44	21.5%
Educational qualification	High school or less	2	1.0%
	Diploma	1	0.5%
	Bachelor	41	20.0%
	Master	45	22.0%
	PhD	116	56.6%
Current position	Chairman of the Board of Trustees	3	1.5%
	Member of the Board of Trustees	1	0.5%
	University President	16	7.8%
	Dean	54	26.3%
	Vice Dean	6	2.9%
	Head of the Scientific Department	33	16.1%
	University Secretary General	9	4.4%
	Administration Director	47	22.9%
	Head of an Administrative Department	13	6.3%
	Other	23	11.2%
Work experience	5 years or less	31	15.1%
	6-10 years	53	25.9%
	11-15 years	42	20.5%
	More than 15 years	79	38.5%
Total		205	100.0%

Study Instrument

The research utilized a questionnaire for data collection, which was first evaluated by 15 experienced experts from academic, administrative, and statistical fields across various Yemeni universities. Their feedback was aimed at assessing the wording and relevance of the questionnaire items, ensuring clarity and appropriateness for the study.

The questionnaire consisted of two sections. The first gathered demographic information, including gender, position, age, education, and years of experience. The second section focused on the key study variables, examining three main constructs:

1. **Strategic Orientation** (assessed through entrepreneurial, market, and technology orientation). Entrepreneurial orientation was measured through opportunity identification, implementation of creative initiatives, innovative leadership decisions, strategic flexibility, leadership and innovation skill development, and stakeholder engagement in decision-making. Market orientation was measured through alignment with labor market needs, professional skills development, quality of student support services, collaboration with institutions, and beneficiary satisfaction of delivered services. Technology orientation was measured through effective technology utilization, availability of electronic platforms and applications, comprehensiveness of electronic systems, training on technology implementation, and access to digital educational resources.
2. **Governance**: It was evaluated through six dimensions (university administration, planning and effectiveness, financial and administrative control, university activities, stakeholder engagement, and transparency, disclosure, and accountability) depending on the Arab University Governance Guide (Nasereddin, 2018). University administration was measured through integration of councils and frameworks, oversight by the Board of Trustees, composition of governance council, supervisory role of the University Council, compliance in membership and powers, clarity of organizational structure, and existence of internal regulations. Planning and effectiveness measurement was measured through clarity of strategic plan, frequency of updates, availability of strategic options, use of evaluation results, adoption of innovative evaluation methods, and stakeholder evaluation perspectives. Financial and administrative control was measured through efficiency and effectiveness of internal control system, frequency of contract reviews, performance of internal audit, ongoing verification of internal control efficiency, risk management capability, job performance evaluation systems, and auditors' independence. University activities were measured through alignment with National Academic Standards, adoption of teaching and evaluation methods, stakeholder involvement in social and environmental responsibility, investment in qualification and growth, research environment quality, publication of peer-reviewed scientific journals, and support for extracurricular activities. Stakeholders were measured through regulatory compliance and rights protection, attraction and retention of distinguished students, stakeholder representation in governance, transparency in recruitment processes, and stakeholder involvement in policy development. Transparency, disclosure, and accountability were measured through availability of governance information, timeliness of communication, public disclosure of financial reports, code of conduct clarity, and accountability mechanisms for stakeholders.
3. **Competitive Advantage** (measured through excellence, quality, and cost). Excellence was measured through exceptional educational services, attraction of qualified faculty, employee skill levels, diversity and creativity in environment, support for student development, and scholarships and financial aid. Quality was measured through commitment to educational quality, culture of quality training, dedicated quality unit, adherence to accreditation standards, periodic quality reviews, response to requests and complaints, and utilization of quality feedback. Cost was measured through affordability of tuition fees, installment payment plans, cost efficiency of services, alignment of services and tuition fees, cost rationalization procedures, and sustainability and cost-effectiveness of community services.

For a detailed overview, Table (2) presents the study variables, their associated dimensions, the number of measurement items for each, and their respective sources.

Table (2): Study variables with associated dimensions, number of measurement items, and their respective sources.

No.	Variable	Dimension	Items No.	Sources
1.	SO	Entrepreneurial orientation	6	(Alammari, 2017; Al-Sharifi, 2019; Al-Moawadhi, 2019)
		Market orientation	5	(Alammari, 2017; Al-Moawadhi, 2019; Faraj Allah, 2017)
		Technology orientation	5	(Alammari, 2017; Al-Moawadhi, 2019)
2.	Governance	University administration	7	(Al-Dahiani, 2015; Alsaad and Mohsin, 2020)
		Planning and effectiveness measurement	6	(Al-Dahiani, 2015; Nasereddin, 2018)
		Financial and administrative control	7	(Al-Dahiani, 2015; Nasereddin, 2018)
		University activities	7	(Al-Dahiani, 2015; Nasereddin, 2018)
		Stakeholders	5	(Nasereddin, 2018)
		Transparency, disclosure, and accountability	5	(Al-Dahiani, 2015; Nasereddin, 2018; Alsaad and Mohsin, 2020)
3.	CA	Excellence	6	(Al-Moawadhi, 2019; Laghisem and Al-Zoubi, 2020)
		Quality	7	(Alammari, 2017; Aldosari, 2021; Nasser, 2019)
		Cost	6	(Al-Moawadhi, 2019; Laghisem and Al-Zoubi, 2020)
Total			72	

Data Collection and Scale Used

Data were collected using the questionnaire. The seven-point Likert scale was employed to measure respondents' responses to the questionnaire items, ranging from (1) "Strongly Agree" to (7) "Strongly Disagree".

To provide a clear and concise representation of how respondents perceive and appreciate the items in the questionnaire, the calculated mean and relative importance index (RII) were interpreted regarding their relative importance as explained in Table (3).

Table (3): Interpretation of mean and relative importance.

Mean	Verbal appreciation	Relative Importance Index (RII)	Label
1.0 – 1.86	Strongly Disagree	14.3% – 26.6%	Very low
1.87 – 2.71	Disagree	26.61% – 38.7%	Low
2.72 – 3.57	Somewhat Disagree	38.71% – 51.0%	Slightly Low
3.58 – 4.43	Neutral	51.01% – 63.3%	Moderate
4.44 – 5.29	Somewhat Agree	63.31% – 75.6%	Slightly High
5.3 – 6.14	Agree	75.61% – 87.7%	High
6.15 – 7.0	Strongly Agree	87.71% – 100.0%	Very high

Data Analysis

The study data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 28. This included evaluating the data, conducting descriptive analysis, examining modeling assumptions, and performing multiple variance analysis. Additionally, SmartPLS version 4.08.6 was utilized to assess reliability, convergent and discriminant validity, and test the study hypotheses.

Results and Discussion

Reliability and Validity

The reliability of internal consistency of study dimensions and items were assessed using PLS-SEM factor loading estimates, Cronbach's alpha, composite reliability (CR), and rho_A test. Cronbach's alpha assesses internal consistency, confirming that items within a construct are related and measure the same concept. CR provides a more precise reliability estimate by accounting for the variance of each indicator, while rho_A, particularly relevant in PLS-SEM, offers an accurate reliability measure for constructs with varying factor loadings. These analyses are essential to validate the dependability of the constructs, ensuring credible and replicable findings.

Besides, the convergent validity of the study dimensions was assessed using average variance extracted (AVE), whereas the discriminant validity was assessed using the Heterotrait-Monotrait ratio of correlations (HTMT). The findings are shown in Tables (4) and (5).

Table (4): Reliability and validity assessment.

Dimension	Indicator	Factor loading	Cronbach's alpha	CR	AVE
Entrepreneurial orientation	Opportunity identification	0.679	0.899	0.909	0.667
	Implementation of creative initiatives	0.838			
	Innovative leadership decisions	0.871			
	Strategic flexibility	0.861			
	Leadership and innovation skill development	0.778			
	Stakeholder engagement in decision-making	0.855			
Market orientation	Alignment with labor market needs	0.765	0.885	0.887	0.685
	Professional skills development	0.851			
	Quality of student support services	0.851			
	Collaboration with institutions	0.814			
	Beneficiary satisfaction of delivered services	0.854			
Technology orientation	Effective technology utilization	0.786	0.880	0.885	0.675
	Availability of electronic platforms and applications	0.798			
	Comprehensiveness of electronic systems	0.868			
	Training on technology implementation	0.854			
	Access to digital educational resources	0.799			

Dimension	Indicator	Factor loading	Cronbach's alpha	CR	AVE
University administration	Integration of councils and frameworks	0.813	0.895	0.902	0.622
	Oversight by the Board of Trustees	0.744			
	Composition of governance council	0.574			
	Supervisory role of the University Council	0.824			
	Compliance in membership and powers	0.861			
	Clarity of organizational structure	0.838			
	Existence of internal regulations	0.828			
Planning and effectiveness measurement	Clarity of strategic plan	0.834	0.930	0.932	0.742
	Frequency of updates	0.869			
	Availability of strategic options	0.898			
	Use of evaluation results	0.870			
	Adoption of innovative evaluation methods	0.861			
	Stakeholder evaluation perspectives	0.835			
Financial and administrative control	Efficiency and effectiveness of internal control system	0.861	0.942	0.944	0.742
	Frequency of contract reviews	0.867			
	Performance of internal audit	0.875			
	Ongoing verification of internal control efficiency	0.892			
	Risk management capability	0.831			
	Job performance evaluation systems	0.857			
	Auditors' independence	0.846			
University activities	Alignment with National Academic Standards	0.699	0.894	0.906	0.615
	Adoption of teaching and evaluation methods	0.836			
	Stakeholder involvement in social and environmental responsibility	0.869			
	Investment in qualification and growth	0.750			
	Research environment quality	0.832			
	Publication of peer-reviewed scientific journals	0.649			
	Support for extracurricular activities	0.830			
Stakeholders Engagement	Regulatory compliance and rights protection	0.863	0.920	0.922	0.759
	Attraction and retention of distinguished students	0.861			
	Stakeholder representation in governance	0.885			
	Transparency in recruitment processes	0.889			
	Stakeholder involvement in policy development	0.857			

Dimension	Indicator	Factor loading	Cronbach's alpha	CR	AVE
Transparency, disclosure, and accountability	Availability of governance information	0.825	0.908	0.909	0.730
	Timeliness of communication	0.870			
	Public disclosure of financial reports	0.872			
	Code of conduct clarity	0.862			
	Accountability mechanisms for stakeholders	0.843			
Excellence	Exceptional educational services	0.800	0.903	0.910	0.673
	Attraction of qualified faculty	0.848			
	Employee skill levels	0.817			
	Diversity and creativity in environment	0.871			
	Support for student development	0.808			
	Scholarships and financial aid	0.774			
Quality	Commitment to educational quality	0.820	0.917	0.925	0.669
	Culture of quality training	0.799			
	Dedicated quality unit	0.698			
	Adherence to accreditation standards	0.806			
	Periodic quality reviews	0.861			
	Response to requests and complaints	0.852			
	Utilization of quality feedback	0.877			
Cost	Affordability of tuition fees	0.621	0.865	0.884	0.597
	Installment payment plans	0.777			
	Cost efficiency of services	0.851			
	Alignment of services and tuition fees	0.740			
	Cost rationalization procedures	0.846			
	Sustainability and cost-effectiveness of community services	0.777			

Table (4) indicates that the factor loading values of the indicators exceed 0.707, confirming that each item explains more than 50% of the variance in a single indicator, ensuring high reliability (Hair et al., 2013; Solihin and Ratmono, 2013). While some items fall below this threshold, they are still deemed acceptable since the average variance extracted (AVE) remains above 0.500 (Vandenberg, 1996). The Cronbach's alpha values for all dimensions range from 0.700 to 0.950, demonstrating internal consistency across all study variable dimensions. Additionally, composite reliability (CR) values also range between 0.700 and 0.950, reaffirming overall reliability for each dimension. The results reveal convergent validity, with all AVE values exceeding 0.500, indicating the validity and reliability of the study's variable scale and their interrelationships. This supports the scale's careful design for consistency and accuracy, with varied items enhancing its reliability and validity.

Table (5): Discriminant validity assessment using the HTMT method.

	SH	UAC	UAD	PEM	CO	EX	EO	QU	FAC	TDA	TO	MO
SH												
UAC	0.863											
UAD	0.73	0.776										
PEM	0.792	0.865	0.820									
CO	0.535	0.610	0.696	0.574								
EX	0.693	0.743	0.866	0.748	0.623							
EO	0.683	0.757	0.762	0.724	0.619	0.773						
QU	0.683	0.781	0.847	0.773	0.696	0.879	0.731					
FAC	0.857	0.820	0.733	0.79	0.553	0.662	0.659	0.661				
TDA	0.895	0.861	0.719	0.8	0.564	0.644	0.666	0.66	0.878			
TO	0.615	0.674	0.691	0.74	0.473	0.785	0.757	0.709	0.614	0.658		
MO	0.660	0.716	0.74	0.73	0.540	0.795	0.893	0.714	0.599	0.649	0.794	

SH: Stakeholders, UAC: University activities; UAD: University administration; PEM: Planning and effectiveness measurement; CO: Cost; EX: Excellence; EO: Entrepreneurial orientation; QU: Quality; FAC: Financial and administrative control; TDA: Transparency, disclosure, and accountability; TO: Technology orientation; MO: Market orientation

Table (5) demonstrates that all values of the Heterotrait-Monotrait ratio of correlations (HTMT) were recorded at less than 0.900 for conceptually unrelated dimensions and below 0.850 for the variables involved. These findings confirm a high level of discriminant validity among the study dimensions, indicating that each dimension effectively measures its intended construct without any redundancy or overlap with other dimensions. Overall, this analysis suggests that the distinct dimensions assessed in the study capture unique and specific aspects with considerable precision. This, in turn, enhances the reliability of the results and the conclusions drawn from the research. Furthermore, the use of varied items for each dimension further contributed to strengthening the discriminant validity. The diversity of the sample targeted in the study also played a crucial role in increasing the accuracy of the results. Finally, achieving demonstrable discriminant validity underscores the overall quality of the study's design and implementation, lending additional credibility to the research findings.

Descriptive Statistics

Descriptive statistics, including mean, standard deviation (SD), and Relative Importance Index (RII) were used to identify the participants' agreement level of SO, governance, and CA at private universities. The descriptive statistics of the "SO" variable and its dimensions are shown in Table (6).

Table (6): Descriptive statistics of SO.

Construct	Rank	Mean	SD	RII	Label
Entrepreneurial orientation	2	5.902	0.871	84.3%	High
Market orientation	1	5.984	0.908	85.5%	High
Technology orientation	3	5.802	0.879	82.9%	High
SO		5.877	0.793	84.0%	High

From Table (6), market orientation ranks highest in terms of the respondents' approval with an average of 5.984 (SD = 0.908), indicating a strong endorsement of its implementation. In contrast, technology orientation ranks lowest with an average of 5.802 (SD = 0.879), though it still reflects high approval, albeit less than market and entrepreneurial orientations. Overall, the average for SO is 5.877

(SD = 0.793), showing a strong consensus among university leaders and staff on the effective implementation of SO, particularly market orientation. This emphasis on market demand is crucial for the sustainability of private universities, as indicated by their focus on enrolling students and offering educational programs that align with market needs.

The descriptive statistics of the “Governance” variable and its dimensions are shown in Table (7).

Table (7): Descriptive statistics of governance.

Construct	Rank	Mean	SD	RII	Label
University administration	1	6.047	0.811	86.4%	High
Planning and effectiveness measurement	2	5.859	0.973	83.7%	High
Financial and administrative control	4	5.693	0.999	81.3%	High
University activities	3	5.732	0.951	81.9%	High
Stakeholders	6	5.586	1.052	79.8%	High
Transparency, disclosure, and accountability	5	5.624	1.030	80.3%	High
Governance		5.763	0.862	82.3%	High

According to Table (7), university administration received the highest approval rating from the study sample, averaging 6.047 (SD = 0.811), while stakeholders ranked lowest with an average of 5.586 (SD = 1.052). The overall governance average was 5.763 (SD = 0.862), indicating high governance practices in Yemeni private universities, particularly in the university administration dimension. This suggests that university leaders recognize the importance of effective governance systems for guiding operations and ensuring high-quality educational services that meet student needs, distinguishing them from competitors.

The descriptive statistics of the “CA” variable and its dimensions are shown in Table (8).

Table (8): Descriptive statistics of CA.

Construct	Rank	Mean	SD	RII	Label
Excellence	3	6.149	0.788	87.8%	Very High
Quality	2	6.186	0.793	88.4%	Very High
Cost	1	6.192	0.754	88.5%	Very High
CA		6.176	0.688	88.2%	Very High

From Table (8), the dimension of cost received the highest approval from the study sample, with an average of 6.192 (SD = 0.754), indicating strong acknowledgment of cost leadership as a CA in Yemeni private universities. The excellence dimension ranked lowest, averaging 6.149 (SD = 0.788), reflecting high approval but slightly less than cost and quality dimensions. The overall CA average was 6.176 (SD = 0.688), demonstrating a strong consensus among university leaders and staff on the importance of pursuing CA. This emphasis on cost suggests that these universities aim to deliver superior educational and research services at competitive prices, thereby attracting students and enhancing their overall success.

Hypotheses Testing

Bootstrapping in structural equation modeling (SEM) is essential to ensure the robustness and reliability of the results. This non-parametric resampling technique generates confidence intervals and p-values for model estimates without relying on strict normality assumptions, making it suitable for small or non-normal datasets. By validating the significance of path coefficients and other parameters,

bootstrapping enhances the credibility and generalizability of the study's findings (Cheung and Lau, 2008). Therefore, bootstrapping in SEM was used to test the research hypotheses as follows

1. Testing the total effect of SO on CA, SO on governance, and governance on CA.
2. Testing the direct effect of SO on CA.
3. Testing the indirect effect of SO on CA after the introduction of governance as a mediating variable.

Table (9) shows the findings of testing the total, direct and indirect effects using the structural model analysis.

Table (9): Structural model analysis using PLS-SEM.

Effect	Path	Beta	SD	T	P-value
Total	SO → CA	0.793	0.039	20.512	<0.001
	SO → Governance	0.781	0.034	22.770	<0.001
	Governance → CA	0.506	0.092	5.491	<0.001
Direct	SO → CA	0.398	0.095	4.206	<0.001
Indirect	SO → Governance → CA	0.395	0.069	5.71	<0.001

Table (9) shows that SO has a positive effect on CA ($\beta = 0.793$, t-value = 20.512, p-value < 0.001); therefore, the first null hypothesis is rejected while accepting the alternative hypothesis which states that there is a significant effect of SO on CA. Moreover, SO has a positive effect on governance ($\beta = 0.781$, t-value = 22.770, p-value < 0.001); therefore, the second null hypothesis is rejected while accepting the alternative hypothesis which states that there is a significant effect of SO on governance. Besides, governance has a positive effect on CA ($\beta = 0.506$, t-value = 5.491, p-value < 0.001); therefore, the third null hypothesis is rejected while accepting the alternative hypothesis which states that there is a significant effect of governance on CA. After introducing governance as a mediating variable, the total effect was broken into two parts: the direct and indirect effect. The results in Table (9) show that the direct effect of SO on CA in the absence of governance is significant ($\beta = 0.398$, t-value = 4.206, p-value < 0.001); therefore, the fourth null hypothesis is rejected while accepting the alternative hypothesis which states that there is a significant mediating role of governance between SO and CA. In addition, the indirect effect of SO on CA through governance is significant ($\beta = 0.395$, t-value = 5.71, p-value < 0.001); therefore, the mediation effect of governance here is called “partial mediation” (Baron and Kenny, 1986).

Discussion

Testing the first main hypothesis revealed a statistically significant effect of SO on CA in Yemeni private universities. This suggests that effective implementation of SO encompassing entrepreneurial, technology, and market orientations is crucial for these universities to enhance their success and navigate challenges. This finding is consistent with previous studies, including that of Alkawadyeh and Abu-Qaoud (2022), which showed a significant effect of SO on CA in Jordanian public universities, as well as studies by Al-Taha (2021), Laghisem and Al-Zoubi (2020), Al-Sharifi (2019), and Alammari (2017), which confirmed that SO has a positive effect on improving the CA in higher education institutions. It is indicated that SO helps define the university's mission and long-term goals, align efforts across departments, and adapt to internal and external factors that affect performance, thus enhancing institutional excellence. Therefore, high levels of achievement in all SO dimensions are associated with this CA.

The second main hypothesis test revealed a statistically significant effect of SO on governance principles in Yemeni private universities. This indicates that a clear SO is crucial for effective governance since this helps direct universities towards their strategic goals and enhance their overall performance. This finding confirmed what was reported by previous studies, including Al-Hammadi (2022) which indicated a significant positive effect of SO on governance implementation, Rajeh (2019) which revealed that SO has a significant effect on governance standards, and Toma (2009) which confirmed that there is a significant relationship between SO and governance functions. This indicates that SO ensures that governance principles are aligned with the university's mission, promoting planning, transparency, accountability, and stakeholder interests. This alignment strengthens internal and external relationships, facilitating excellent governance performance.

The third main hypothesis test confirmed that there is a statistically significant role of the application of governance principles in achieving CA in Yemeni private universities. This finding is consistent with several studies, including Al-Darwish (2024) which identified a significant relationship between the application of governance and CA in public schools, Darweesh and Abuareish (2023) who found that corporate governance elements affect CA, and Al-Alimi and Al-Sanabani (2023) who confirmed the significant impact of governance on CA in Yemeni private universities. Moreover, Matlawi (2021) highlighted the essential role of governance dimensions in CA, and Omar (2021) indicated a significant relationship between good governance and sustainable CA. Additionally, Mansour (2018) and Al-Senussi (2016) have also confirmed the importance of governance principles in enhancing CA. This suggests that effective governance promotes better planning and performance measurement, leading to increased profitability, reduced costs, enhanced customer satisfaction, and competitive pricing – all of which are important for obtaining a CA over the other competitors.

The fourth main hypothesis test revealed a significant partial mediating role of governance in the relationship between SO and CA in private universities. This suggests that governance plays a vital role in translating SO into CA and strengthens the relationship between them. This means that more effective governance in the university leads to a stronger relationship between SO and CA. It also enhances the collaboration between university units, which is essential for achieving CA, while creating a regulatory environment that promotes innovation and stability at the structural and financial levels, and ensures independence, transparency, and accountability. Resource dependence theory emphasizes that governance guides institutional strategies, attracts investment, and builds strong relationships with stakeholders. Key factors include providing essential resources and support to enhance administrative and academic capabilities, encouraging innovation to improve resource utilization, and improving coordination between units to reduce costs and enhance efficiency, all of which contribute to achieving greater CA.

This finding aligns with the Resource-Based View (RBV) theory introduced by Penrose (1959), which is apt for examining the connections between SO and CA. The core proposition of RBV is that a firm can enhance its performance and achieve sustained CA by acquiring and leveraging valuable, rare, inimitable, and non-substitutable resources and capabilities (Barney, 2001). Given that the resource-based theory suggests that a company's CA and long-term success stem from its unique resources and capabilities, this is particularly important for governance practices, as effective governance enhances market positioning, attracts values-driven investors, and mitigates risks that could harm reputation and financial performance. By prioritizing governance, companies build trust and loyalty among stakeholders while improving CA (Setiarini et al., 2023). Additionally, resource-

based theory highlights the link between SO and governance practices. A company's resources inform its strategic direction; thus, integrating governance into SO and planning is essential for ensuring long-term sustainability and competitiveness.

Conclusions

The findings from this study underscore the significant interaction between SO, governance, and CA in higher education institutions. These results emphasize the importance of SO as a crucial component for universities to enhance their success and navigate challenges, aligning with previous research that highlights the positive influence of SO on CA across various educational settings. The effective implementation of dimensions such as entrepreneurial, technological, and market orientations is essential for establishing long-term objectives and promoting institutional excellence. Additionally, the study reveals that a well-defined SO is vital for the successful application of governance principles, which in turn fosters transparency, accountability, and ethical management. This alignment allows universities to improve overall performance and strengthen relationships with stakeholders. Furthermore, the results indicate that the adoption of governance principles plays a substantial role in achieving CA. Institutions that prioritize governance are likely to develop a robust regulatory framework that enhances quality, reputation, and compliance, ultimately leading to better strategic planning, performance evaluation, and increased customer satisfaction. In summary, these findings highlight that universities across similar contexts must prioritize SO and governance as key strategies to thrive within a competitive landscape in higher education.

Recommendations

The study recommends that Yemeni private universities should develop comprehensive training programs for faculty and staff that focus on SO, establish strong governance frameworks to ensure transparency and accountability, and facilitate improved communication and collaboration between departments. In addition, they are recommended to invest in technology and innovation, actively engaging stakeholders to obtain feedback, benchmarking best practices, establishing key performance indicators for monitoring, and fostering a culture of continuous improvement, since these are critical steps that will align with efforts to achieve the university's long-term goals and drive sustainable growth.

Disclosure Statement

- **Ethical approval and consent to participate:** The participants have given consent to participate in this study. Their personal details were kept anonymous.
- **Availability of data and materials:** The data that support the findings of this study are available upon request.
- **Author contribution:** FAAA and JDAZ developed the introduction and literature review and designed the research methodology. FAAA collected and analyzed the data, and contributed to the interpretation of the results. Both authors highlighted the conclusions and recommendations and read and approved the final manuscript.
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