The Role of Institutional and Regulatory Environments, CEO Characteristics, and Entrepreneurial Competitiveness in Driving the Success of SMEs in Oman

Sulaiman Al Salhi[♣], Cem Tanova, Steven Bayighomog and Sirin Atakan Duman
Business Administration Department, Cyprus International University, Haspolat-Lefkosa, Mersin 10, Turkey

ABSTRACT

This research investigated the impact of Chief Executive Officer (CEO) characteristics, institutional environments, and entrepreneurial competitiveness on the performance of Small and Medium Enterprises (SMEs) in Oman, with a focus on exploring the mediating role of entrepreneurial competitiveness. The study employed quantitative methods to analyze data collected from a sample of 351 SMEs operating in Oman. The results revealed that CEO relational capital and polychronicity positively influenced entrepreneurial competitiveness, which in turn significantly impacted SME performance. Moreover, the institutional and regulatory environment emerged as a key determinant of entrepreneurial competitiveness and SME performance. The findings highlight the importance of fostering a conducive institutional environment to support SME growth and innovation. The mediation analysis further demonstrated the mediating role of entrepreneurial competitiveness in transmitting the effects of CEO characteristics and institutional environments on SME performance. This study contributes to both theoretical understanding and practical implications for policymakers, practitioners, and entrepreneurs seeking to foster SME development and economic diversification in Oman and similar emerging markets.

Keywords: SME, Relational Capital, Polychronicity, Competitiveness, Performance, Institutional and Regulatory Environment, Oman

ARTICLE INFO

Article History:
Received: 18 September 2024
Accepted: 28 March 2025
Available online: 1 August 2025

♣ Corresponding Author: Sulaiman Al Salhi; Business Administration Department, Cyprus International University, Haspolat-Lefkosa, Mersin 10, Turkey; Email: sulalsalhi@hotmail.com; Tel: +96899314543

INTRODUCTION

Small and medium-sized enterprises (SMEs) have a significant impact on economic development and innovation in the ever-changing global business environment. SMEs are generally acknowledged as the fundamental driving force behind economic growth and development worldwide (Acs & Storey, 2004). They represent the majority of firms globally and play a crucial role in generating employment, fostering global economic growth, and contributing to national revenue. They also account for over 90% of all firms and over 50% of global employment (World Bank, 2019).

SMEs in developing countries, such as Oman, frequently encounter distinct obstacles, including insufficient funding, challenges in leveraging technology, limited managerial skills, low productivity, and regulatory burdens (Kanaan & Baharudin, 2013). In order to tackle these difficulties, governments need to ensure that the regulatory, legal, and financial systems are favorable for entrepreneurship and that the establishment and expansion of small businesses are of utmost importance (Gibson & Vaart, 2008). In addition, owners and Chief Executive Officers (CEOs) need to understand the importance of personal and professional characteristics that influence competitiveness and business performance (Gibson & Vaart, 2008).

This study therefore aimed to analyze the relationship between institutional and regulatory environment (IRE), CEO relational capital (CEO RC), CEO polychronicity, and entrepreneurial competitiveness (EC). Then, the study analyzed the direct relationship between EC and SME performance. At the same time, the study tested the mediating role of EC on the relationship between IRE, CEO RC, CEO polychronicity, and SME performance (see Figure 1).

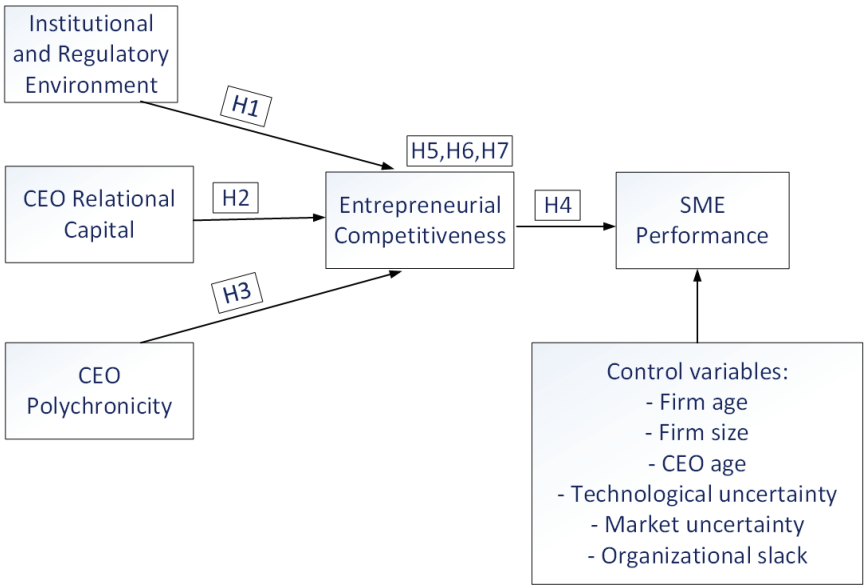

Figure 1: Hypothesized Conceptual Model

Previous studies have extensively examined different factors that affected the performance of SMEs. However, there is a significant gap in the existing literature when it comes to understanding how the characteristics of CEOs, institutional factors, and EC collectively impact the performance of SMEs, especially in the specific context of Oman. This research aimed to fill this void by providing a complete framework that combined these aspects and clarified their interconnections. In addition, the investigation of the mediating influence of EC brought a new aspect to the current knowledge base, enhancing our comprehension of the processes that drove the performance of SMEs in Oman.

HYPOTHESES DEVELOPEMENT

Institutional and Regulatory Environment and Entrepreneurial Competitiveness

The Institutional and Regulatory Environment and Entrepreneurial Competitiveness (IRE) refers to a combination of formal bodies (such as political and economic groups and systems) and informal institutions (such

as culture and social networks) that create socio-political environmental factors. These factors have a significant influence on the encouragement of entrepreneurial activities in any country (Muhammad et al., 2016).

Prior research has emphasized the beneficial impact of a supportive institutional environment on entrepreneurial activity and the expansion of SMEs (Franczak et al., 2024). An enabling IRE, including both official and informal structures, may have a pivotal impact on enhancing SMEs and fostering entrepreneurial activities (Aidis, 2023). Informal institutions, such as cultural norms and values, have the ability to shape how people see, assume, and judge things. These perceptions and judgments may then become deeply ingrained in society and turn into social norms that encourage entrepreneurial behavior (Junaid et al., 2020).

The IRE establishes the framework in which SMEs function, impacting their ability to get resources, seize market opportunities, and exhibit entrepreneurial behavior. A conducive IRE may facilitate entrepreneurship and bolster competitiveness, while an antagonistic or constraining environment can impede entrepreneurship and deter the establishment of new businesses. An optimal business climate is a fundamental need for the sustainable economic growth of a nation. Therefore, the following hypotheses were formulated.

H_1: The institutional and regulatory environment has a significant influence on entrepreneurial competitiveness.

CEO Relational Capital and Entrepreneurial Competitiveness

Relational Capital and Entrepreneurial Competitiveness (RC) encompasses the process of creating, sustaining, and enhancing relationships, which includes measuring customer, supplier, and strategic partner satisfaction, as well as the integration of value and consumer loyalty (Delgado, 2011). These relationships have a significant impact on the functioning of the firm's operational processes (Jalali et al., 2022). In order to enhance their performance and increase profits, firms need to give priority to acquiring information about the requirements and desires of their customers and suppliers. This may be achieved by active engagement, personal visits, regular contact, and gaining insights into overseas markets (Jalali et al., 2022).

Empirical research has demonstrated that there is a strong correlation between RC and the long-term competitiveness of SMEs (Febrian et al., 2020). RC enables SMEs to create favorable circumstances for sustainable growth and the integration of knowledge-based economy and society. This conclusion is supported by the study conducted by Cabrita et al. (2017). Accumulating RC over time may provide SMEs with competitive advantages (Herrero, 2018). Perez and Pablos (2003) recognized RC as a fundamental element, together with knowledge and human resource management, for achieving a competitive edge in the market. Lafuente et al. (2020) highlighted the significance of RC in enhancing competitiveness, alongside networks, technology, and online engagement.

Robust business networks and relationships can furnish entrepreneurs with resources, insights, and opportunities for collaboration, thereby bolstering their competitive advantage in the market. Therefore, the following hypothesis was suggested:

H_2: CEO relational capital has a significant influence on entrepreneurial competitiveness.

CEO Polychronicity and Entrepreneurial Competitiveness

The capacity to handle numerous activities concurrently, known as CEO polychronicity, is an important attribute in the context of strategic decision-making and corporate success (Ling et al., 2008). A CEO of a firm that follows a polychronic work style has the freedom to switch between projects as necessary, seeing unexpected jobs as a normal part of the day rather than something to be avoided (Chen, 2022). CEOs who are polychronic may promote many entrepreneurial ventures by distributing resources among various projects without showing a preference for one over the others (König & Waller, 2010).

The personality traits of a CEO significantly influence the decision-making process and, to some extent, the organizational strategy (He & Wong, 2004). Personal characteristics have a significant role in understanding the variations in how businesses function. This is because CEOs usually have considerable influence on the behavior and processes of a company (House, 1996). Studies have indicated that polychronicity had a positive

correlation with organizational performance, suggesting that it might be a useful characteristic in some situations (Lee et al., 2005).

CEOs who possess a high level of polychronicity are capable of adjusting to dynamic business environments, making prompt decisions, and promoting innovative practices, thereby enhancing competitiveness. Therefore, the following hypothesis was suggested:

H_3: CEO polychronicity has a significant influence on entrepreneurial competitiveness.

Entrepreneurial Competitiveness and SME Performance

Entrepreneurial competitiveness (EC), which refers to a firm's capacity to innovate, distinguish itself, and take advantage of market possibilities, plays a crucial role in determining the success of SMEs. The competitiveness of SMEs in the market is strongly connected to their ability to innovate, differentiate their products, and take advantage of market possibilities (Bhawsar, 2015).

Research has shown that companies that possess greater degrees of EC have better financial performance, market share, and sustainability (Hove-Sibanda & Pooe, 2017). This is corroborated by research that underscores the favorable influence of entrepreneurial competencies on the performance of SMEs, emphasizing the significance of innovation, differentiation, and the capacity to capitalize on market opportunities in augmenting competitiveness and propelling firm success (Galindo-Martín et al., 2023). Companies that possess a more robust EC plan compared to their rivals are generating higher levels of profitability (Rehman & Anwar, 2019). Liu and Atuahene-Gima (2018) proposed that organizations with effective EC achieve greater performance compared to their rivals due to the competitors' inability to simply replicate the intangible resource.

It is evident that a competitive entrepreneurial approach, marked by innovation, adaptability, and resilience, can lead to increased market share, profitability, and sustainability for SMEs. Therefore, the following hypothesis was formulated:

H_4: Entrepreneurial competitiveness has a significant influence on SME performance.

Mediating Role of Entrepreneurial Competitiveness

EC may assist SMEs in overcoming institutional obstacles and enhancing their performance, considering the limitations imposed. Several studies have investigated how competition influences the connection between the IRE and the performance of SMEs. The legal framework, namely the ease of doing business, has a favorable effect on global competitiveness and experienced company owners have a beneficial role in stimulating early-stage entrepreneurial endeavors (Raposo et al., 2014). Moreover, research indicates that the distinctiveness and enforceability of the institutional environment increase the synergistic impact of organizational and technical innovation on the international performance of SMEs (Donbesuur et al., 2020). Turi et al. (2014) found that the IRE in the European Union (EU) has a significant influence on the operational and financial performance of the food sector supply chain in Europe.

While a supportive IRE may assist in the functioning of SMEs, it is ultimately the competitive character of entrepreneurial endeavors, fueled by innovation and flexibility that transforms this environment into measurable results for SME performance. Therefore, it is crucial to comprehend how competition influences the connection between the IRE and the performance of SMEs. Therefore, the following hypothesis was formulated:

H_5: Entrepreneurial competitiveness mediates the relationship between institutional and regulatory environment and SME performance.

The link between CEO RC and SME success may be influenced by EC, as it enables the CEO to make more effective strategic choices and use their network to benefit the firm. Research indicates that competitive advantage plays a partly mediating role in the association between management abilities and the financial success of SMEs (Sualeh et al., 2021). Masood et al. (2018) introduced a framework that focuses on SMEs in developing countries which shows the competitive environment influences the connection between knowledge management, human capital, and performance. In related literature, studies also showed that entrepreneurial leadership has a positive

impact on the performance of SMEs (Nguyen et al., 2021). This effect is achieved via the intermediaries of team creativity, dynamic capacities, and competitive advantage (Nguyen et al., 2021).

CEOs who possess a greater degree of EC as a result of their RC are more likely to possess the necessary skills and abilities to make strategic decisions and effectively allocate resources, ultimately leading to improved performance. However, it is their EC that enables them to fully utilize these advantages and convert them into tangible performance results. Therefore, the following hypothesis was formulated:

H_6: Entrepreneurial competitiveness mediates the relationship between CEO relational capital and SME performance in Oman.

The competitiveness of entrepreneurs may act as a mediator in the link between the polychronicity of CEOs and the success of SMEs. Those who have a more competitive stance tend to beat their competitors by taking measures such as introducing new products or services, setting aggressive prices, and running focused marketing efforts. CEOs will have to juggle a lot of tasks in order to maintain tis competitive drive. EC serves as a strategic mechanism that converts the CEO's polychronic inclinations into improved performance of SMEs. Although there is little existing research on this specific mediation relationship, Mubeen and Han (2020) conducted a study on the connection between CEO traits and business success. The results of this study showed that market rivalry completely mediated the association between CEO dualism and firm performance.

SMEs, headed by CEOs who have a high degree of polychronicity, are more inclined to achieve superior performance if they possess a competitive edge. This is because CEOs who have a high degree of polychronicity are more likely to possess qualities such as innovation, proactivity, and risk-taking, which are essential for EC. Thus, the following hypothesis was formulated:

H_7: Entrepreneurial competitiveness mediates the relationship between CEO polychronicity and SME performance.

METHODOLOGY

Study Population and Sample

The population of the study was 104,000, the number of registered SMEs in Oman, according to the Authority of Small and Medium Enterprises Development (ASMED, 2023). The minimum sample size for the study was determined to be 383 SMEs at 95% confidence level and 5% margin of error, using the online Survey Monkey sample size calculator (SurveyMonkey, 2023). A simple random sampling technique was used in selecting the SMEs for the survey.

Material and Methods

This study used a quantitative research strategy and utilized a survey instrument in the form of a structured questionnaire based on constructs found in the existing literature to investigate the proposed research model. A total of 500 questionnaires were distributed, and 351 viable replies were received over a period of 2 months.

Data Collection Instruments

Dependent Variable

The SME performance was measured using indicators derived from Zhao et al. (2023). Each item was measured on a 5-point scale.

Independent Variables

Institutional and Regulatory Environment: The study utilized the Global Entrepreneurship Monitor (GEM) Survey of National Experts (NES) to measure the IRE (GEM Consortium, 2020). The instrument consists of 5 dimensions: financial environment, government policy and support, government programs, internal market dynamics, and cultural, and social norms supportive. Each item in the 5 dimensions was measured on a 9-point Likert scale.

Relational Capital: The 10-item measurement instrument adopted from Edvinsson and Malone (1999) was used to evaluate RC. Each item was measured on a 5-point scale.

CEO Polychronicity: In order to measure polychronicity into practice, 10-item assessment instrument developed by Bluedorn et al. (1999) of polychronic values was employed. Each item was measured on a 7-point scale.

Mediating Variable

EC was the mediating variable in this study. EC was measured by six items, adopted from the study of Marín et al. (2012). Each item was measured on a 7-point scale.

Control Variables

The age of the CEO was used as the CEO control. Also, the study used SME controls to account for 3 in business characteristics which were number of employees, the size of the business, and the age of the firm. In addition, technological uncertainty (TU) (Jaworski & Kohli, 2012), market uncertainty (MU) (Jaworski & Kohl, 1993), and organizational slack (OS) (De Luca & Atuahene-Gima, 2007) were included as control variables. Each construct was measured on a 5-point Likert scale.

RESULTS

Construct Reliability

The Cronbach alpha values for RC, CEO Polychronicity and IRE were 0.722, 0.875, and 0.425 respectively. Although the Cronbach's alpha value for the IRE construct was 0.425, which fell below the commonly accepted threshold of 0.70, we chose to retain this construct. This decision was based on the nature of the items within this construct, which encompassed diverse aspects such as the financial environment and government policy and support. These elements did not necessarily have to exhibit strong internal consistency, as they represented different facets of the IRE that may not align closely with one another.

The Cronbach alpha values for EC was 0.813 which indicated that the items were rated consistently. However, our dependent variable, SME performance was rated based on two items namely "In the past year, my sales market share growth rate is among the highest in our sector" and "In the past year, my sales profit rate is among the highest in our sector" the

alpha value for this scale was 0.457. This was due to the fact that there were only two items, and the items measured different aspects of performance and did not necessarily have to be in agreement.

Mean, Standard deviation, and Correlations

Table 1 presents the means, standard deviations, and correlations among the study variables. The IRE (M = 5.54, SD = 1.22) showed a significant positive correlation with EC (r = 0.482, p < .001). CEO RC (M = 3.55, SD = 0.61) was also positively correlated with EC (r = 0.841, p < .001). CEO polychronicity (M = 5.07, SD = 1.36) had a significant positive correlation with EC (r = 0.629, p < .001). EC (M = 3.75, SD = 1.39) was significantly correlated with SME performance (r = 0.703, p < .001).

Table 1: Mean, Standard Deviation, and Correlation Coefficients of the Variables

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Firm age	2.13	0.968										
2. Firm size	2.08	0.677	0.062									
3. CEO age	2.96	0.851	0.062	0.055								
4. TU	2.87	0.473	0.037	-0.055	-0.147**							
5. MU	2.9	0.402	-0.004	-0.070	-0.078	0.346***						
6. OS	2.66	0.483	-0.044	0.093	-0.009	-0.055	0.017					
7. IRE	5.54	1.222	-0.076	0.044	-0.089	-0.077	-0.064	-0.069				
8. RC	3.55	0.613	-0.082	-0.011	-0.078	-0.076	-0.021	0.033	0.515***			
9. CEO Polychronicity	5.07	1.359	-0.072	0.019	-0.149**	-0.008	-0.058	-0.067	0.719***	0.629***		
10. EC	3.75	1.389	-0.127*	-0.037	-0.068	-0.042	-0.034	-0.058	0.482***	0.841***	0.629***	
11. SME Performance	3.35	1.108	-0.083	-0.003	-0.062	-0.082	-0.034	0.014	0.585***	0.77***	0.703***	0.726***

Notes: * p < .05, ** p < .01, *** p < .001; SD=Standard Deviation; Firm Age in years, Firm Size is based on number of employees 1=1 to 5, 2=6 to 25, 3=26 and above; CEO Age is 1=below 20, 2=between 20 and 30, 3=between 30 and 40, and 4= above 40

Hierarchical Regression Analysis

Entrepreneurial Competitiveness as the Dependent Variable

For EC as the dependent variable, Model 1b included the same control variables and explained 2% of the variance (R^2 = .02). According to Hypotheses 1, 2 and 3, the IRE, CEO RC and the CEO polychronicity respectively each had a significant influence on EC.

Adding IRE, RC and CEO Polychronicity in Model 2b increased the explained variance to 73% (ΔR^2 = .71). Although the data as in Table 1 showed a significant correlation (r= 0.482, p<.001) between the IRE and EC, when we viewed the multiple regression results where the control variables

were taken into consideration the remaining effect of the IRE on the EC was not significant (β = -0.05, p< ns), thus failing to support Hypothesis 1. However, from the regression table we could see that the CEO RC (β = 1.70, p < .001) and CEO polychronicity (β = 0.18, p < .001) had significant positive effects on EC, supporting Hypotheses 2 and 3, respectively.

Table 2: Hierarchical Regression Results with SME Performance and Entrepreneurial Competitiveness as Dependent Variables

Variable	SME Performance						Entrepreneurial Competitiveness					
	Beta	SE	95% CI for Beta		R2	ΔR2	Beta	SE	95% CI for Beta		R2	ΔR2
			LL	UL					LL	UL		
Model 1a					0.02	0.02	Model 1b				0.02	0.02
Intercept	4.52***	0.69	3.16	5.88			5.70***	0.86	4.00	7.39		
Firm age	-0.09	0.06	-0.21	0.03			-0.18*	0.08	-0.33	-0.03		
Firm size	0.01	0.09	-0.17	0.18			-0.05	0.11	-0.26	0.17		
CEO age	-0.10	0.07	-0.24	0.04			-0.11	0.09	-0.29	0.06		
TU	-0.19	0.14	-0.46	0.07			-0.12	0.17	-0.46	0.21		
MU	-0.06	0.16	-0.37	0.26			-0.10	0.20	-0.49	0.29		
OS	0.01	0.12	-0.23	0.25			-0.18	0.15	-0.49	0.12		
Model 2a					0.68	0.66***	Model 2b				0.73	0.71***
Intercept	-1.80***	0.47	-2.72	-0.87			-2.24***	0.54	-3.30	-1.18		
Firm age	-0.01	0.04	-0.08	0.06			-0.09*	0.04	-0.16	-0.01		
Firm size	-0.01	0.05	-0.11	0.09			-0.04	0.06	-0.16	0.07		
CEO age	0.04	0.04	-0.04	0.12			0.03	0.05	-0.06	0.13		
TU	-0.07	0.08	-0.22	0.09			0.05	0.09	-0.12	0.23		
MU	0.01	0.09	-0.17	0.19			-0.05	0.11	-0.25	0.16		
OS	0.05	0.07	-0.09	0.19			-0.21*	0.08	-0.37	-0.05		
IRE	0.08*	0.04	0.00	0.16			-0.05	0.05	-0.14	0.05		
RC	0.94***	0.07	0.80	1.08			1.70***	0.08	1.53	1.86		
CEO Polychronicity	0.26***	0.04	0.18	0.34			0.18***	0.05	0.09	0.28		
Model 3a					0.69	0.01**						
Intercept	-1.49	0.48	-2.43	-0.55								
Firm age	0.00	0.04	-0.07	0.07								
Firm size	-0.01	0.05	-0.11	0.09								
CEO age	0.03	0.04	-0.05	0.11								
TU	-0.07	0.08	-0.23	0.08								
MU	0.02	0.09	-0.16	0.20								
OS	0.08	0.07	-0.06	0.22								
IRE	0.09*	0.04	0.01	0.17								
RC	0.71***	0.11	0.50	0.92								
CEO Polychronicity	0.23***	0.04	0.15	0.31								
EC	0.14**	0.05	0.05	0.23								

SME Performance

Hypothesis 4 argued that EC had a significant influence on SME performance. To test this hypothesis, we looked at the result of our hierarchical regression analysis with the SME performance as the dependent variable (Table 2).

In Model 1a, control variables including firm age, firm size, CEO age, TU, MU, and OS were entered. This model explained only 2% of SME performance ($R^2 = .02$). In Model 2a, IRE, RC and CEO Polychronicity were added, which increased the explained variance to 68% ($\Delta R^2 = .66$). In Model 3a, was EC was introduced to the model, further increasing the explained variance to 69% ($\Delta R^2 = .01$). The EC had a significant positive effect on SME performance ($\beta = .14$, $p < .01$) supporting the Hypothesis 4.

Testing the Mediation Hypotheses

To test the mediation hypotheses, we conducted a general linear model mediation analysis using the Mediation package in R statistics and the Flexplot package for visualization. The results as shown in Table 3 displayed the indirect effects of EC on the relationship between IRE, CEO RC, and CEO polychronicity with SME performance by applying bootstrapping. To verify the mediating role of EC among the independent variables and the dependent variable, this study followed the formula which was proposed by Preacher and Hayes (2008). Initially, the indirect effect of independent variables on the dependent variable was calculated. Based on their suggestions, the first condition for the existence of mediating effect can be met if the p-value is significant. After that, both lower bound as well as upper bound values should be calculated. The mediating effect of the independent variables on the dependent variable can be confirmed and proved if the lower bound and upper bound values do not have zero between them with Confidence Intervals (CIs) of 95%. Or else, there is no proof to confirm the mediating effect.

Institutional and Regulatory Environment

The indirect effect of the IRE on SME performance via EC was not statistically significant, (Estimate=−0.00518, SE=0.00623, 95% CI [−0.01738, 0.00703], p=0.406). The confidence interval included zero, indicating no significant mediation effect.

CEO Polychronicity

The indirect effect of CEO Polychronicity on SME performance via EC was statistically significant, (Estimate=0.02489, SE=0.01061, 95% CI [0.0041, 0.04569], p=0.019). The confidence interval did not include zero, suggesting a significant mediation effect. This indicated that CEO polychronicity positively impacted SME performance through the mediator of EC.

Relational Capital

The indirect effect of RC on SME performance via EC was statistically significant, (Estimate=0.21609, SE=0.0773, 95% CI [0.0646, 0.3676], p=0.005). The confidence interval did not include zero, indicating a significant mediation effect. This suggested that RC had a positive impact on SME performance through EC.

Table 3: Indirect Effects of Institutional and Regulatory Environment, CEO Polychronicity, and Relational Capital on SME Performance via Entrepreneurial Competitiveness

Path	Est.	SE	95% CI (Lower, Upper)	p-value
InstRegEnv ⇒ EntCompMean ⇒ SMEPerfMean	-0.0052	0.0062	-0.0174, 0.007	0.406
CEOPoly ⇒ EntCompMean ⇒ SMEPerfMean	0.0249	0.0106	0.0041, 0.0457	0.019
RelCapMean ⇒ EntCompMean ⇒ SMEPerfMean	0.2161	0.0773	0.0646, 0.3676	0.005

DISCUSSION

The findings of this study shed light on the intricate interplay between CEO characteristics, institutional environments, EC, and SME performance in Oman. Hypothesis 1 posited that the IRE significantly influences EC. Our results did not support this hypothesis, suggesting that the direct impact of IRE on EC in Oman may be less pronounced than anticipated. This finding was surprising given the emphasis in existing literature on the importance of institutional factors in shaping entrepreneurial activities (Junaid et al., 2020). This outcome might reflect a complex interplay of factors where the IRE did not directly translate into competitive advantages for entrepreneurs. It is possible that other factors, such as the quality of infrastructure or access to

resources, played a more crucial role. Alternatively, the existing regulatory frameworks might not yet fully align with the needs and expectations of entrepreneurs, leading to a disconnect between regulatory policies and actual entrepreneurial practices.

However, the results supported the hypotheses regarding the significant influence of CEO RC and CEO polychronicity on EC and SME performance, supporting Hypothesis 2 and Hypothesis 3, respectively. These findings aligned with previous studies that showed that CEOs with extensive RC were better positioned to access resources, information, and opportunities, thereby enhancing the firm's competitiveness and performance (Durán et al., 2023). By actively building and nurturing relationships with key stakeholders, CEOs can tap into a wealth of resources, knowledge, and support that can drive innovation, strategic decision-making, and overall organizational success. Similarly, CEOs with higher levels of polychronicity exhibited greater flexibility, adaptability, and innovation, contributing to the firm's competitive advantage.

Hypothesis 4 of the study, which examined the direct relationship of EC on SME performance, was also supported by the study's results. This was in line with results from previous studies that have discovered a positive correlation between competitiveness and SME performance. Research has indicated that SME competitiveness is vital for their growth and success, with innovation playing a key role in stimulating competitors to remain competitive and responsive to market demands (Inegbedion et al., 2024).

Contrary to our Hypothesis 5, EC did not mediate the relationship between the IRE and SME performance. This aligned with the lack of direct effect observed in Hypothesis 1 and further suggesting that Omani SMEs might be less dependent on or affected by formal institutional structures than previously thought.

In addition, this study advanced the literature to understand the relationship between RC and SME performance via EC (Hypothesis 6). The results suggested that SMEs should use RC to derive EC, which, in turn, promoted SME performance (Adomako, 2020). Likewise, EC was found to mediate the relationship between CEO polychronicity and SME performance (Hypothesis 7). This is in line with previous research which have found a link between CEO polychronicity and SME performance (Lin et al., 2022).

Theoretical and Practical Implications of the Study

Theoretical Implications

This study contributes to theoretical advancements by elucidating the complex interplay between CEO characteristics, institutional environments, EC, and SME performance. By investigating these factors within the specific context of Oman, the study provides valuable insights for researchers and policymakers working in developing economies with similar characteristics. The findings can inform the development of theoretical frameworks that account for the unique challenges and opportunities faced by SMEs in these environments. In addition, the findings of this study contribute to the literature on mediation analysis by demonstrating the mediating role of EC in the relationships between CEO characteristics, institutional environments, and SME performance. This extends existing mediation frameworks and highlights the importance of considering intermediary mechanisms in understanding firm outcomes.

Practical Implications

The findings of this study have important implications for policymakers in Oman and other emerging economies. By highlighting the importance of creating a conducive institutional environment for entrepreneurship, policymakers can design and implement supportive policies, regulations, and infrastructure to foster SME growth and innovation. For practitioners and business leaders, the insights from this study offer actionable guidance for enhancing SME performance. By recognizing the significance of CEO characteristics, such as RC and polychronicity, firms can invest in developing and leveraging these attributes to gain a competitive edge. Moreover, understanding the mediating role of EC can inform strategic decision-making aimed at fostering innovation, differentiation, and market responsiveness. Entrepreneurship development initiatives can leverage the findings of this study to design targeted interventions aimed at enhancing entrepreneurial competencies among SMEs in Oman and beyond. By focusing on capacity-building programs, networking opportunities, and mentorship schemes, stakeholders can nurture a vibrant ecosystem conducive to entrepreneurial success.

Limitations and Future Research

The use of self-reported data and a convenience sampling approach may introduce potential biases. Additionally, the research focused on a specific timeframe, and longitudinal studies could provide a more nuanced understanding of the evolving relationships between these factors. Furthermore, in-depth qualitative studies could delve deeper into the specific challenges and opportunities faced by SMEs in Oman, informing more targeted support initiatives.

Future research could explore these relationships in different cultural, institutional, and economic settings to enhance the external validity of the findings. Additionally, qualitative studies can provide a richer understanding of the lived experiences of entrepreneurs, informing the development of more targeted support programs. Finally, this study was conducted in the newly emerging yet under researched context of Oman. Though Oman shares some common characteristics with other countries in the Middle East, understanding the contextual peculiarities of other developing countries can offer additional insights for the development of theory. For example, future studies can investigate how contextual differences among developing countries, especially in the Middle East, can promote the environmental performance of SMEs.

CONCLUSION

This research investigated the influence of IRE, CEO characteristics, and EC on SME performance in Oman, with a focus on exploring the mediating role of EC. Employing a quantitative approach and surveying a sample of SMEs, the study yielded significant findings that contribute to our understanding of factors driving SME success in this specific context. Notably, while the IRE did not demonstrate the expected direct influence on EC, CEO characteristics, specifically RC and polychronicity, emerged as crucial drivers of both competitiveness and performance. These findings highlight the significance of human capital within the entrepreneurial environment of Oman.

By acknowledging the unique challenges and opportunities faced by SMEs in Oman, this study provides valuable insights for policymakers and stakeholders. Policy initiatives aimed at streamlining regulations, facilitating access to resources, and promoting entrepreneurial education can create a more fertile ground for SME growth. Furthermore, encouraging the development of CEO skills in network building and resource acquisition can further empower SMEs. On the organizational level, cultivating a culture of innovation, opportunity identification, and proactive behavior can enhance EC, ultimately leading to improved performance.

The limitations of the study, including the use of self-reported data and a convenience sample, acknowledge the need for further research. Future studies could explore the moderating effects of industry type, firm size, and technological intensity. Additionally, in-depth qualitative studies can provide a richer understanding of the challenges and experiences of Omani entrepreneurs, informing the development of more targeted support programs.

REFERENCES

Acs, Z., & Storey, D. (2004). Introduction: Entrepreneurship and Economic Development. *Regional Studies*, *38*, 871–877.

Adomako, S. (2020). Environmental Collaboration, Sustainable Innovation, and SME Growth in sub-Saharan Africa: Evidence from Ghana. *Sustainable Development*, *28*.

Aidis, R. (2023). *Do institutions matter for entrepreneurial development?* (Vol. 334). IZA World of Labor.

ASMED. (2023). *Number of SMEs, by enterprise size*. https://sme.gov.om/en/

Bhawsar, P., & Chattopadhyay, U. (2015). Competitiveness: Review, Reflections and Directions. *Global Business Review*, *16*, 665–679.

Bluedorn, A. C., Kalliath, T. J., Strube, M. J., & Martin, G. D. (1999). Polychronicity and the Inventory of Polychronic Values (IPV): The development of an instrument to measure a fundamental dimension of organizational culture. *Journal of Managerial Psychology*, *14*, 205–231.

Chen, J. (2022). A juggling act: CEO polychronicity and firm innovation. *Leadership Quarterly*, *33*(3), 101380.

De Luca, L. M., & Atuahene-Gima, K. (2007). Market knowledge dimensions and cross-functional collaboration: Examining the different routes to product innovation performance. *Journal of Marketing*, *71*(1), 95–112.

Delgado, M. (2011). *The role of intellectual capital assets on the radicalness of innovation: Direct and moderating effects*. UAM-Accenture Working Papers, 5, 1-27.

Donbesuur, F., Boso, N., & Hultman, M. (2020). The effect of entrepreneurial orientation on new venture performance: Contingency roles of entrepreneurial actions. *Journal of Business Research*, *118,* 150-161.

Durán, W. F., Aguado, D., & Perdomo-Ortiz, J. (2023). Relationship between CEO's strategic human capital and dynamic capabilities: A meta-analysis. *Management Review Quarterly*, *73*(4), 1631–1666.

Edvinsson, L., & Malone, M. (1999). *Intellectual Capital: Realizing Your Company's True Value by Finding Its Hidden Brainpower*. Maxima.

Febrian, A. C., Sukresna, I. M., & Ghozali, I. (2020). Relational capital and marketing performance: The mediating role of SMEs networking in Indonesia. *Management Science Letters, 10*(14), 3405-3412.

Franczak, J., Gyensare, M. A., Lanivich, S. E., Adomako, S., & Chu, I. (2024). How and when does founder polychronicity affect new venture performance? The roles of entrepreneurial orientation and firm age. *Journal of Business Research*, *172*, 114408.

Galindo-Martín, M. Á., Castaño-Martínez, M. S., & Méndez-Picazo, M. T. (2023). Digitalization, entrepreneurship and competitiveness: An analysis from 19 European countries. *Review of Managerial Science, 17*(5), 1809-1826.

GEM Consortium. (2020). *NES coding*. https://www.gemconsortium.org/wiki/1172

Gibson, T., & Vaart, H. J. Van De. (2008). Defining SMEs: A less imperfect way of defining small and medium enterprises in developing countries. *Brooking Global Economy and Development*, *September*, 1–29.

He, Z.-L., & Wong, P. K. (2004). Exploration vs. Exploitation: An Empirical Test of the Ambidexterity Hypo. *Organization Science*, *15*, 481–494.

Herrero, I. (2018). How Familial Is Family Social Capital? Analyzing Bonding Social Capital in Family and Nonfamily Firms. *Family Business Review*, *31*, 441–459.

House, R. J. (1996). Path-goal theory of leadership: Lessons, legacy, and a reformulated theory. *The Leadership Quarterly*, *7*(3), 323–352.

Hove Sibanda, P., Sibanda, K., & Pooe, D. (2017). The impact of corporate governance on firm competitiveness and performance of small and medium enterprises in South Africa: A case of small and medium enterprises in Vanderbijlpark. *Acta Commercii*, *17*.

Inegbedion, H. E., Thikan, P. R., David, J. O., Ajani, J. O., & Peter, F. O. (2024). Small and medium enterprise (SME) competitiveness and employment creation: The mediating role of SME growth. *Humanities and Social Sciences Communications*, *11*(1), 11.

Jalali, A., Abhari, S., & Jaafar, M. (2022). Indirect effect of extra-industry network and innovativeness on performance through proactiveness. *Journal of Facilities Management*, *22*(3), 382-401.

Jaworski, B. J., & Kohli, A. K. (2012). Market Orientation: Antecedents and Consequences. *Developing a Market Orientation*, *57*(3), 103–134.

Junaid, D., Yadav, A., Afzal, F., Shah, I. A., Shanmugam, B., Jonkman, M., Azam, S., & De Boer, F. (2020). The Configurations of Informal Institutions to Promote Men's and Women's Entrepreneurial Activities. *Frontiers in Psychology*, *11*, 1909.

Kanaan, A., & Baharudin, A. (2013). *Factors Affecting Small and Medium Enterprises Success: An Exploratory Study*. *64*, 69–72.

König, C., & Waller, M. (2010). Time for Reflection: A Critical Examination of Polychronicity. *Human Performance*, *23*, 173–190.

Lafuente, E., Szerb, L., & Rideg, A. (2020). A system dynamics approach for assessing SMEs' competitiveness. *Journal of Small Business and Enterprise Development*, *27*, 555–578.

Lee, W., Tan, T. M. K., & Hameed, S. S. (2005). Polychronicity, the Internet, and the Mass Media: A Singapore Study. *Journal of Computer-Mediated Communication*, *11*(1), 300–316.

Lin, H.-E., Shinnar, R. S., Shi, Y., & Hsu, D. (2022). Polychronicity, decision-making and entrepreneurial self-efficacy of venture team founders: An exploratory study. *New England Journal of Entrepreneurship*, *25*(2), 144–160.

Ling, Y.A.N., Simsek, Z., Lubatkin, M. & Veiga, J. (2008). Transformational Leadership's Role in Promoting Corporate Entrepreneurship: Examining the CEO-TMT Interface. *Academy of Management Journal*, *51*, 557-576.

Liu, W., & Atuahene-Gima, K. (2018). Enhancing product innovation performance in a dysfunctional competitive environment: The roles of competitive strategies and market-based assets. *Industrial Marketing Management*, *73*, 7–20.

Marín, L., Rubio, A., & de Maya, S. R. (2012). Competitiveness as a Strategic Outcome of Corporate Social Responsibility. *Corporate Social Responsibility and Environmental Management*, *19*(6), 364–376.

Masood, K., Shariff, M. N. M., & Lazim, H. (2018). Moderating Role of Competitive Environment between Knowledge Management, Human Capital and SMEs' performance: Emerging Countries' Perspective. *Journal of Management and Research*, *5*(2), 1–16.

Mubeen, R., & Han, D. (2020). The effects of market competition, capital structure, and CEO duality on firm performance: A mediation analysis by incorporating the GMM model technique. *Sustainability, 12*(8), 3480.

Muhammad, N., Ullah, F., & Warren, L. (2016). An institutional perspective on entrepreneurship in a conflict environment. *International Journal of Entrepreneurial Behavior & Research*, *22*(5), 698–717.

Nguyen, P. V., Huynh, H. T. N., Lam, L. N. H., Le, T. B., & Nguyen, N. H. X. (2021). The impact of entrepreneurial leadership on SMEs' performance: The mediating effects of organizational factors. *Heliyon*, *7*(6), e07326.

Perez, J., & Pablos, P. (2003). Knowledge management and organizational competitiveness: A framework for human capital analysis. *Journal of Knowledge Management*, *7*, 82–91.

Preacher, K., & Hayes, A. (2008). Asymptotic and Resampling Strategies for Assessing and Comparing Indirect Effects in Multiple Mediator Models. *Behavior Research Methods*, *40*, 879–891.

Raposo, M., Rodrigues, R., Dinis, A., Do Paço, A., & Ferreira, J. J. (2014). The Influence of Competitiveness and Regulations on Entrepreneurial Activity in Emerging and Advanced Economies. *Innovar*, *24*(1Spe), 113–128.

Rehman, M., & Anwar, A. U. (2019). Mediating role of enterprise risk management practices between business strategy and SME performance. *Small Enterprise Research*, *26*(2), 207–227.

Sualeh, M., Asgher kamal, & Akram, M. (2021). The Impact of Managerial competencies on Financial performance of SME's with mediating role of Competitive Advantage. *NICE Research Journal*, *14*(4), 1–18.

SurveyMonkey. (2023). *Sample size calculator*. https://www.surveymonkey.com/mp/sample-size-calculator/.

Turi, A., Goncalves, G., & Mocan, M. (2014). Challenges and Competitiveness Indicators for the Sustainable Development of the Supply Chain in Food Industry. *Procedia - Social and Behavioral Sciences*, *124*, 133–141.

World Bank. (2019). *Small and Medium Enterprises (SMEs) Finance*. https://www.worldbank.org/en/topic/smefinance.

Zhao, X., Lin, C., Knerr-Sievers, B., Lu, Q., & Mardani, A. (2023). The impact of institutional environment on entrepreneurial performance in micro E-commerce for Women: The mediating role of entrepreneurial network. *Journal of Business Research*, *154*(January 2022).