

MANAGERIAL COMPETENCE AND INNOVATION PERFORMANCE: THE MEDIATING ROLE OF WILLINGNESS TO CHANGE, ENTREPRENEURIAL ORIENTATION AND CULTURE

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Abstract

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Small and medium-sized enterprises (SMEs) significantly influence Saudi Arabia's economic stability and growth. However, this industry faces significant managerial competence (MC) and innovation performance (IP) obstacles. Based on the findings of previous studies, i.e., Kellermanns and Eddleston (2006), De Clercq et al. (2015), Vafaei-Zadeh et al. (2019) and Renwarin et al. (2023) and the dire need for further exploration, the researchers developed the conceptual framework and model for confirmation in the context of Saudi Arabia. The study aims to investigate the direct and indirect linkages between MC and IP, mediated by a willingness to change (WTC), entrepreneurial orientation (EO), and entrepreneurial culture (EC) among SMEs in Saudi Arabia. The study used responses from 368 managers of Saudi Arabian SMEs. The structural equation modeling (SEM) analysis results confirmed that MC has a significant positive effect on WTC, IP, EO and EC. Besides, the factors such as WTC, EO, and EC positively and significantly affect IP. Finally, the mediation analysis through path analysis suggests a mediating role of WTC, EO and EC between MC and IP. The findings of this study can assist SME managers in making informed resource allocation decisions that can lead to maximum outcomes for their businesses. Besides, this study can help SME managers overcome challenges while improving their organizations' innovation performance.

Keywords: Managerial Competence, Willingness to Change, Entrepreneurial Orientation, Entrepreneurial Culture, Innovation Performance, SMEs

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1. INTRODUCTION

In the current era, managerial competence (MC) plays a crucial role in developing companies and unleashing their human resource potential to achieve organizational goals. Managers strive to enhance their organization's innovation performance (IP) by implementing robust policies, fostering entrepreneurial orientation (EO), and creating an entrepreneurial culture (EC) that aligns with its objectives. The managerial vision and MC are instrumental in achieving organizational tasks and success (Năstase, 2009).

In small and medium-sized enterprises (SMEs), managers are the significant agents who make considerable efforts to ensure the success of their organizations (Koe et al., 2015). In Saudi Arabia, SMEs are robust tools and mainstays for economic stabilization (Achoui, 2009). Resolving management-related issues, EO, willingness to change (WTC), and EC are the significant pillars contributing to enhancing IP. However, despite the vital role of SMEs in Saudi Arabia, they confront significant uncertainties and economic crunches (Achoui, 2009). On the other hand, the Saudi Arabian government is making efforts to boost SMEs and keep them at the top of its 2030 Vision (Alsughayer, 2021). In this regard, SMEs' success depends on the efficiency of management and managers (Al-Adl, 2016). Keeping this in view, the present study proposes to investigate IP through MC, WTC, EO, and EC among Saudi Arabian managers. Specifically, MC helps managers allocate resources and make rational decisions to enhance SMEs' IP (Chandler & Hanks, 1994). MC boosts managers' ability to tackle organizational challenges and run smoothly. WTC highlights managers' readiness to take on new challenges in their firms and generate new ideas to achieve IP (Kellermanns & Eddleston, 2006). The EO factor focuses on research and development to introduce new products and bear the risk (De Clercq et al., 2015). These factors enhance the IP significantly. Finally, the EC brings responsiveness to change and creativity with innovation, ultimately leading to firms' IP (Danish et al., 2019). Based on these observations, we raise the following research questions:

RQ1: Do the variables MC, WTC, EO, EC and IP have significant relationships, with respect to the managers of SMEs in Saudi Arabia?

RQ2: Do WTC, EO, and EC individually mediate the association between MC and IP in Saudi Arabia?

The remainder of this paper is organized as follows. Section 2 provides a comprehensive review of the relevant literature. Section 3 details the methodology employed in the research. Section 4 presents the findings derived from the analysis. Subsequently, Section 5 delves into a comprehensive discussion of the findings. Lastly, the final Section 6 incorporates a conclusion of the study.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The MC significantly influences how companies develop and channel their human resource potential towards achieving their goals (Martin & Frost, 1999). The management vision and MC have a close relationship, which will show in how its tasks are carried out and, ultimately, in how the organization

develops (Năstase, 2009). According to Raz and Fadlon (2006), researchers can better understand how organizational learning is socially constructed by analyzing the members' reactions to a management-imposed teaching program that shattered fundamental beliefs about professional identity.

Among employees of the United Arab Emirates (UAE), EO induces organizational members' WTC and will favour an improvement culture in SMEs. WTC, EO, and EC can also encourage small businesses to explore new product opportunities (Dayan et al., 2016). According to Ostroff and Clark (2001), employees can move anywhere for different opportunities.

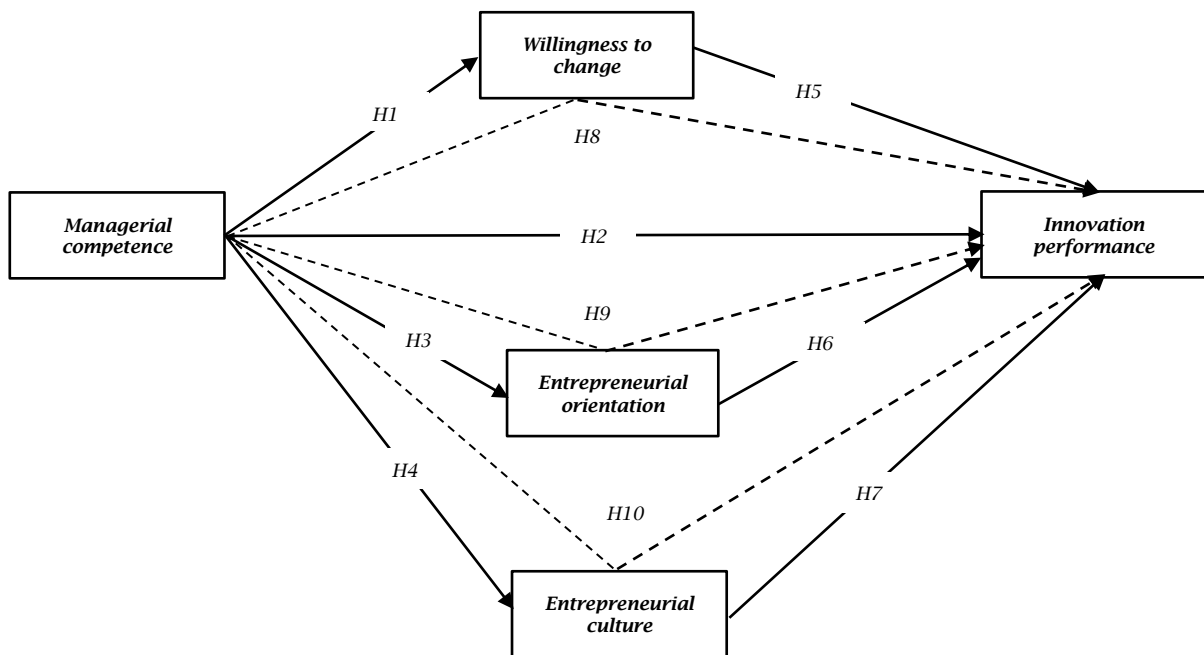
The research discovered that EO had a favourable and significant impact on strategic entrepreneurship and the financial performance of the companies. Additionally, EO has no discernible effects on non-financial outcomes. Instead of non-financial performance, strategic entrepreneurship arbitrates the association between EO and financial success (Soomro & Shah, 2020). Entrepreneurial resilience and EO have a perfect relationship. All eco-label strategies significantly increased thanks to EO, but not every approach improved sustainable tourism practices (Salem et al., 2023). According to Upadhyay et al. (2023), the relationship between culture and flexible design, EO and technology orientation with adoption intention is partially mediated by company innovativeness. According to the research, EO has a corollary in organizational learning and business performance. The study discovered that organizational learning serves as a partial mediator between the effects of EO on company performance (Mantok et al., 2019).

A partial mediating influence from product development suggests that entrepreneurial culture directly impacts long-term competitive advantage through product development support. According to the research, businesses should modify the EC to cope with the information technology upheaval (Pratono, 2022). The presence of creativity as a mediator and the positive effects of self-efficacy and openness to change on EC are examples of substantial direct relationships among the variables (Danish et al., 2019).

The incremental and radical innovation degree is positively correlated with the firms' renewal capital. The association between the firm's IP and renewal capital is adversely moderated by knowledge protection. A similar moderating impact is not statistically supported for radical IP (Ritala et al., 2023). Government subsidies partially mediate the substantial promotion of firms' IP by digital finance (Jiang et al., 2022).

The literature reviewed above has significant gaps that require attention. First, there is a lack of research that investigates the effect of MC on IP in the presence of WTC, EO, and EC. Second, the literature should explore the mediating role of WTC, EO, and EC integration between MC and IP. Third, the current models are not focused on the managers of SMEs in Saudi Arabia. Finally, the quantitative methods used in previous studies need to integrate the factors of MC, WTC, EO, EC, and IP. Based on these gaps and the existing relationships, we have developed Figure 1 to confirm the model among the managers of SMEs in Saudi Arabia.

Figure 1. Conceptual research model



Source: Authors' conceptualization.

2.1. Relationship between managerial competence (MC), willingness to change (WTC), innovation performance (IP), entrepreneurial orientation (EO) and entrepreneurial culture (EC)

Individuals' ability to perform creative tasks increases due to their willingness to engage in creative tasks (Pettersen et al., 2019). According to González-Varona et al. (2021), SMEs can identify and create the digital capabilities required to advance in the digital transformation by having organizational competency for that transition.

MC is significant for business growth and success (Mitchelmore & Rowley, 2010). Previous scholars like Yang and Li (2011), Park and Rhee (2012) and Lopez-Morales et al. (2023) confirmed the positive association of practice in competence with performance benefits. Competence is "an underlying characteristic of an individual which results in effective action and superior performance" (Mitchelmore & Rowley, 2010, p. 93). MC recognizes specific skills or competencies to propagate the business (Joensuu-Salo et al., 2022). Concentration in MC derives from its connection to business growth and sustainability, which provide economic gains (Renwarin et al., 2022; Caldana et al., 2023). The competencies and skills are indispensable to starting a venture (Adams et al., 2023). However, other studies recommend that managerial skills positively and significantly enhance the performance of small enterprise ventures and growth (Guo et al., 2020; Mashavira et al., 2022; Long et al., 2023). Similarly, in a small enterprise context, MC indirectly affects performance by mediating EO and willingness (Zacca & Dayan, 2018).

The owner/managers' EO background traits directly impact their entrepreneurial competencies (Wickramaratne et al., 2014). High EO significantly influences how competent entrepreneurs exhibit

entrepreneurial traits and how well their businesses perform. High autonomy owners and managers greatly desire to become self-sufficient to significantly affect their company's success (Aisyah et al., 2017). The most substantial direct relation existed between risk-taking propensity and enterprise performance. Besides, EO enhances enterprise performance directly and indirectly through entrepreneurial competencies (Khan et al., 2021).

The MC plays a pivotal role in developing a conducive business culture and environment. In SMEs, managers' skills and learning competencies help develop an EC and platforms for the success of firms (Caldana et al., 2023). Ng and Kee (2013) find a positive connection between competencies and firm performance through the moderating effect of organizational culture. In a similar direction, the study of Pulka et al. (2021) demonstrates the moderating influence of the external environment on the association between entrepreneurial competencies, EO, government business support, entrepreneurial network and SMEs performance. At the business school, fostering innovation is accessible through EC (Charrón Vías & Rivera-Cruz, 2020). Consequently, based on the existing relationships and the need for confirmation of these associations among managers of SMEs in Saudi Arabia, we hypothesize the existence of the following:

- H1: MC is a positive and significant predictor of WTC.
- H2: MC is a positive and significant predictor of IP.
- H3: MC is a positive and significant predictor of EO.
- H4: MC is a positive and significant predictor of EC.

2.2. Relationship between willingness to change (WTC) and innovation performance (IP)

A firm's WTC relates to the benefits of enterprises in terms of performance (Robertson & Chetty, 2000).

The EO induces organizational members' WTC and favours improving a development culture in SMEs. Moreover, EO, WTC and EC can lead to new product assessment (Dayan et al., 2016). In small businesses, MC indirectly affects performance by prompting EO, and WTC contributes to the EO's improvement process (Zacca & Dayan, 2018). As a result, literature proves the associations between WTC and IP, rather than the confirmation in SMEs of Saudi Arabia. Hence:

H5: WTC is a positive and significant predictor of IP.

2.3. Relationship between entrepreneurial orientation (EO) and innovation performance (IP)

EO significantly impacts firm IP (Hanifah et al., 2022). According to Moustaghfir et al. (2020), human resource management practices and EO enhance the firm performance robustly. EO, market orientation, learning orientation and entrepreneurship orientation indirectly significantly and positively affect business performance with the support of knowledge and innovation competencies (Wahyuni & Sara, 2020). The success of small firms is significantly impacted by entrepreneurial competence, both directly and indirectly. Among the moderating factors of organizational capability, entrepreneurial competence has the most impact on the competitive sphere. Although the competitive environment substantially influences business success more than managerial skill, it still seems to be a strong (quality and flexibility) predictor (Sari & Sari, 2022). The EO positively mediates the connection between adaptive capability and impacting strategic business unit performance, and the success trap negatively moderates the adaptive capacity and affects strategic business relationships (Rangaswamy & Chaudhary, 2022). Dada and Watson (2013) claim a direct predictive power of EO on performance. Based on the existing connection between EO and IP in the literature, we proposed:

H6: EO is a positive and significant predictor of IP.

2.4. Relationship between entrepreneurial culture (EC) and innovation performance (IP)

Quality management, information technology, and EC are interconnected and impact SMEs' performance (Basu & Bhola, 2022). IP is further enabled by the appropriate alignment of culture, capability, strategic orientation, and EC (Storey & Hughes, 2013). The empirical study of Laforet (2016) suggests a paternalistic and founder culture type does not affect family firm IP, but an entrepreneurial-like culture affects family firm IP. Knowledge management capability, ambidexterity capability, entrepreneurial intensity, EC and entrepreneurial creativity significantly influence firm performance in the food industry (Mokhtarzadedeh et al., 2022). An EO affects organizational commitment positively and significantly, but not enough to impact employee performance (Soomro & Shah, 2019). Based on connections and the need for confirmation in Saudi Arabia SMEs, we suggest the following:

H7: EC is a positive and significant predictor of IP.

2.5. Willingness to change (WTC), entrepreneurial orientation (EO) and entrepreneurial culture (EC) as mediators

Employee empowerment substantially impacts one's self-efficacy regarding readiness for change and partially mediates that effect (Emsza et al., 2016). According to Zacca and Dayan (2018), MC indirectly affects performance and indirectly through EO and WTC.

EO encourages WTC among organizational members and helps small businesses progress in a development culture (Dayan et al., 2016). Cultural diversity is significantly associated with a firm's operational performance (Aljanabi et al., 2019). According to Soares and Perin (2020), EO predicts positive organizational performance. Besides, there are partial mediation effects of learning orientation and innovativeness in bridging relationships between EO and firm performance. The connection between EO and success is mediated by market orientation (Mahrous & Genedy, 2019). The EO directly impacts adopting the total quality management plan and the company's performance. The SME owner's cultural intelligence positively affects firm performance through the mediating role of EO (Kadam et al., 2019).

Liu et al. (2019) find a positive influence of Tanzania's culture on entrepreneurial risk-taking behaviour. The EC has a positive association with the career readiness of the youth towards business enterprises.

Consequently, the literature demonstrates the direct and mediating effect of WTC, EO and EC in developing the association of the diffract constructs, i.e., exploitation decisions, entrepreneurial opportunity, career readiness, social capital, entrepreneurial attitudes, learning orientation and innovativeness, etc., with performance. However, the mediating contribution of WTC, EO and EC in developing the association between MC and IP further needs confirmation in the Saudi context. Thus, we hypothesize the existence of the following:

H8: WTC mediates the association between MC and IP.

H9: EO mediates the association between MC and IP.

H10: EC mediates the association between MC and IP.

3. RESEARCH METHODOLOGY

3.1. Approach, respondents and sample

In the diverse disciplines such as psychology, environmental sciences and management, several methods, i.e., mixed methods, qualitative and quantitative methods, can be applied to investigate management and SMEs performance concerns. In this way, every method has its pros and cons or chances of bias, such as common method bias and response bias. However, in the present study, the researchers preferred to apply the survey strategy (quantitative approach) since it involved a larger sample and only needed a relatively short time for data collection. We applied a survey

questionnaire to collect the cross-sectional data. We used the quantitative methods, which tremendously validate and are reliable, assuring the respondents' privacy and secrecy (Soomro & Shah, 2020; Abdelwahed et al., 2022). Similarly, several scholars, such as Pettersen et al. (2019), González-Varona et al. (2021), Joensuu-Salo et al. (2022), Lopez-Morales et al. (2023), Renwarin et al. (2022), and Caldana et al. (2023), have applied similar methods to investigate the relationship between IP and MC. The study context is Saudi Arabia, where we targeted the managers of SMEs owing to actively contributing to economic development through numerous business successes or the result of sustainable management, profit, and sustainability (Koe et al., 2015). Saudi Arabia's SMEs are well known for stabilizing and accelerating the nation's economic development, creating long-term jobs (World Economic Forum, 2018). However, due to managerial issues, EO and IP, Saudi SMEs are also experiencing major economic downturns and uncertainty in their enterprises (Achoui, 2009). The Saudi Arabian Government has steadfastly placed the development of SMEs at the top of its 2030 Vision (Alsughayer, 2021), ultimately endorsing the SMEs' current position as the essential driver of economic diversity. SMEs' success in this respect depends upon the efficiency of management and managers (Dayan et al., 2016; Al-Adl, 2016). The managers' roles and responsibilities vary, but they contribute significantly to the company's success by working hard to overcome obstacles (Achoui, 2009).

Out of the 650 surveys we distributed, we received 370 raw responses, which translates to a response rate of 58%. After data cleaning, we had 368 usable samples to analyze and derive our final results.

3.2. Reliability assessment

Before gathering larger samples, we accomplished a pilot study (mini version) to assess the tool's reliability. We collected 28 samples and used Cronbach's alpha (α) to verify it. We discovered that the overall alpha response was 0.78, and we also observed that the reliability of each factor fell within the acceptable ranges (> 0.60) (Hair et al., 2019). We also ensured the loading scores were accurate to notice the connection between the items and their corresponding constructs. They were both positive and linked, as we discovered.

3.3. Data collection methods

We used the survey questionnaire to gather the data with great legitimacy and to make it simpler for the study units. The most widely used method in social and management sciences is a survey questionnaire because it is a cost-effective means to gather data. We used convenience sampling because it was quick, affordable, and simple to reach a broad range of Saudi Arabian SMEs (Alsughayer, 2021). Finally, we focused on all categories of management agents for this research, including top managers and middle managers, and we used both personal and email services to collect the data. To contact the respondents, we applied both methods (personal visits and online surveys). Before releasing the poll, we got the respondents' permission. They were informed via email of the goals and purpose of the study and were requested to return the filled-out form.

3.4. Measures

We adapted the items of all constructs from domain literature. We applied a five-point Likert scale starting from *strongly agree* = 1 to *strongly disagree* = 5. Details of the general research instrument are provided in Table 1 below.

Table 1. Measurement scales

Variable	Items' description	Reference
Managerial competence (MC)	<ol style="list-style-type: none"> 1. Managers make resource allocation decisions that achieve maximum results. 2. One of our greatest strengths is achieving results by organizing and motivating people. 3. One of our greatest strengths is organizing resources and coordinating tasks. 4. One of our greatest strengths is our ability to supervise, influence and lead people. 5. One of our greatest strengths is our ability to delegate effectively. 6. One of our greatest strengths is our ability to keep this organization running smoothly. 	Chandler and Hanks (1994)
Willingness to change (WTC)	<ol style="list-style-type: none"> 1. Managers are ready to take on any new challenges that our firm faces. 2. Managers are generally open to trying new things for our firm. 3. Managers are generally fascinated by novel ideas. 4. Managers generally find it hard to change (R). 	Kellermanns and Eddleston (2006)
Entrepreneurial orientation (EO)	<ol style="list-style-type: none"> 1. Our firm spends more time on long-term research and development (R&D) (3 + years) than on short-term R&D. 2. Our firm is usually among the first in the industry to introduce new products. 3. Our firm rewards risk-taking. 4. Our firm shows a great deal of tolerance for high-risk projects. 5. Our firm takes bold, wide-ranging strategic actions rather than minor changes in tactics. 6. Our firm favors "tried-and-true" procedures, systems, and methods. 7. Our firm challenges, rather than responds to, its major competitors. 	De Clercq et al. (2015)
Entrepreneurial culture (EC)	<ol style="list-style-type: none"> 1. Our firm is open and responsive to change. 2. Changes in society often give us new ideas for products and services. 3. Our firm encourages creativity. 4. Our firm publicly recognizes those who are innovative. 	Danish et al. (2019)
Innovation performance (IP)	<ol style="list-style-type: none"> 1. Our firm is more effective in marketing new products compared to our competitors. 2. Our firm is more effective in adopting the innovation of new products compared to our competitors. 3. Our firm is better than our competitors at managing product lifecycles consistent with customer's needs. 	Vafaei-Zadeh et al. (2019)

4. RESEARCH RESULTS

4.1. Descriptive statistics and correlations

We noticed descriptive statistics to observe the representation of samples of the study (Hair et al., 2019). In the analysis, we detected a higher mean (3.512) level for the *IP* factor and a lower level

(3.121) for *EO*. Likewise, the highest scores for standard deviation remained (1.389) for *WTC* and the lowest (1.010) for *EO* (Table 2). Moreover, the correlational analysis suggests all components (independent) were associated with the dependent variables with maximum strength up to 0.409, which shows no multicollinearity (Hair et al., 2019).

Table 2. Descriptive statistics and correlation

Variables	Mean [SD]	IP	MC	WTC	EO	EC
IP	3.512 [1.052]	-				
MC	3.372 [1.119]	0.376**	-			
WTC	3.278 [1.389]	0.399**	0.312**	-		
EO	3.121 [1.010]	0.340**	0.409**	0.371**	-	
EC	3.198 [1.298]	0.299**	0.384**	0.316**	0.329**	-

Note: SD = standard deviation. ** Correlation is significant at the 0.01 level (2-tailed).

4.2. Evaluation of measurement model

4.2.1. Reliability (indicator and construct level)

A shared association among constructs is gauged with the scores of high loading (Hair et al., 2019). However, in case an item appears with loading less than 0.70 (< 0.70), it needs to be excluded or deleted to maintain the improvement of composite reliability (CR) and the average variance extracted (AVE) (Hair et al., 2019). In the case of this study, we observed most of the items containing loading values of > 0.70 (see Table 3) except for only two items, i.e., *mc4* and *eo6*, which did not qualify for the recommended scores. Therefore, we decided to exclude them and not consider them for further analysis. Further, in construct reliability, the researchers noticed that CR values (ranging from 0.816 (*IP*) to 0.840 (*EC*)) greater than the proposed score of 0.70 (Hair et al., 2019) are fair and acceptable. Finally, Cronbach’s α coefficients for individual factors range from 0.792(*IP*) to 0.882(*EC*),

which is exactly higher than the recommended ranges, i.e., 0.70 (Hair et al., 2019). Thus, the attained CR and Cronbach’s α for all constructs reflect a fittingly error-free model (Table 3).

4.2.2. Convergent validity

Convergent validity (CV) measures the positivity of association with an auxiliary evaluation of the same variable. In this aspect, renowned scholars apply AVE to assess CV (Hair et al., 2019). A higher or equality of AVE than 0.50 underlines the variable possesses more than half of the variance of its items. On the contrary, lower (< 0.50) scores of AVE suggest that existence error exists in items than the variance explained by the variable (Hair et al., 2019). In the present case, the scores of AVE appear as higher than 0.50 for all constructs as 0.782(*IP*), 0.762(*MC*), 0.799 (*WTC*), 0.772(*EO*) and 0.759(*EC*) (Table 3). Hence, we got the CV of the entire model variables with satisfaction.

Table 3. Measurement model

Variables	Item code	Factor loadings Above 0.70	CR > 0.70	AVE Above 0.50	α Above 0.70
Managerial competence (MC)	mc1	0.872	0.827	0.781	0.828
	mc2	0.860			
	mc3	0.822			
	mc5	0.802			
	mc6	0.789			
Willingness to change (WTC)	wtc1	0.888	0.819	0.761	0.859
	wtc2	0.862			
	wtc3	0.859			
	wtc4	0.846			
Entrepreneurial orientation (EO)	eo1	0.879	0.838	0.809	0.813
	eo2	0.861			
	eo3	0.855			
	eo4	0.847			
	eo7	0.812			
Entrepreneurial culture (EC)	ec1	0.876	0.840	0.799	0.882
	ec2	0.852			
	ec4	0.837			
	ec3	0.802			
Innovation performance (IP)	ip1	0.898	0.816	0.769	0.792
	ip2	0.858			
	ip3	0.849			

4.2.3. Discriminant validity

The degree to which a construct correctly differs from others according to pragmatic standards is measured by discriminant validity (DV). Making DV implies that a construct is unique to the model and that other constructs do not represent the circumstances of internment (Hair et al., 2019). In light of this, we used the Fornell and Larcker (1981) test to validate DV. As a result, the correlation coefficient between the primary constructs ranges from 0.327 to 0.503, which is lower than the square root of AVE, which runs from 0.759 to 0.799 (Table 4). As a result, these scores guarantee good DV.

Table 4. Discriminant validity

Variables	IP	MC	WTC	EO	EC
IP	0.782				
MC	0.503	0.762			
WTC	0.401	0.492	0.799		
EO	0.392	0.444	0.486	0.772	
EC	0.419	0.327	0.410	0.458	0.759

4.3. Evaluation of structural model

4.3.1. Model fitness

At the initial stage of a structural model, the researchers noticed Chi-square (χ^2) statistics with non-significant values of χ^2 (CMIN/df = 2.682 (< 3 or $p > 0.005$)) (Figure 2 and Table 5) of available data (Hair et al., 2019). Moreover, additional model fit indicators appeared within the acceptable range (Figure 2 and Table 5).

4.3.2. Hypotheses assessment

In assessing the hypothesized paths, we applied structural equation modeling (SEM) as the best analysis for hypotheses confirmation (Hair et al., 2019). The analysis appeared with a positive significant impact of MC on WTC, IP, EO and EC ($H1 = \beta = 0.412$; CR = 6.272; $H2 = \beta = 0.382$; CR = 5.271; $H3 = \beta = 0.489$; CR = 7.118; $H4 = \beta = 0.641$; CR = 7.482). Accordingly, $H1-H4$ are accepted. Furthermore, the analysis demonstrated a significant positive impact of WTC, EO and EC on IP ($H5 = \beta = 0.362$; CR = 5.008; $H6 = \beta = 0.466$; CR = 7.005; $H7 = \beta = 0.425$; CR = 6.071). Therefore, $H5-H7$ are supported (Table 6 and Figure 2).

Table 5. Model fitness

Model fit indicators (suggested scores)	CMIN/df	GFI	AGFI	NFI	CFI	RMSEA
	2.682 (< 3)	0.919 (> 0.90)	0.928 (> 0.90)	0.941 (> 0.90)	0.919 (> 0.90)	0.048 (< 0.05)

Note: CMIN/df or (χ^2/df) = relative Chi-square index, df = degrees of freedom, GFI = goodness-of-fit index, AGFI = adjusted goodness-of-fit index, NFI = normed fit index, CFI = comparative fit index, RMSEA = root mean square error of approximation.

Table 6. Path coefficients (direct paths)

Hypotheses	Independent variable	Path	Dependent variable	Estimate β (path coefficient)	SE	CR (t-value)	Decision
H1	MC	→	WTC	0.412	0.562	6.272***	Supported
H2	MC	→	IP	0.382	0.442	5.271***	Supported
H3	MC	→	EO	0.489	0.074	7.118***	Supported
H4	MC	→	EC	0.641	0.040	7.482***	Supported
H5	WTC	→	IP	0.362	0.382	5.008***	Supported
H6	EO	→	IP	0.466	0.070	7.005***	Supported
H7	EC	→	IP	0.425	0.538	6.071***	Supported

Note: SE = standard error, CR = critical ratio; *** $p < 0.001$.

Regarding mediating effects, the path analysis ensured a mediating impact of WTC, EO and EC in developing the relationship between MC and IP ($H8 = \beta = 0.389$; CR = 5.681; $H9 = \beta = 0.419$;

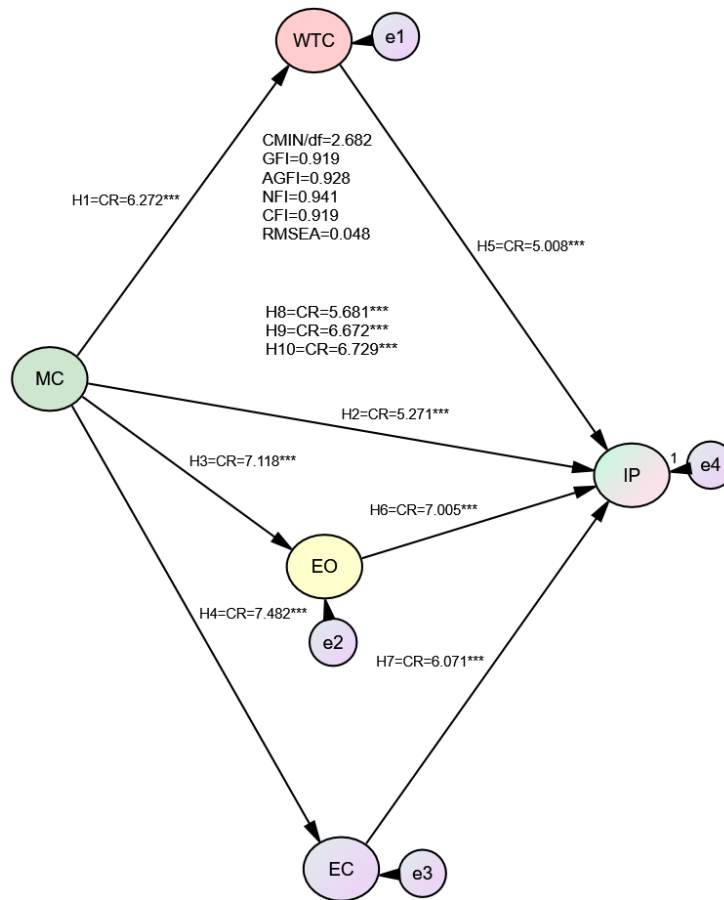
$H10 = \beta = 0.512$; CR = 6.729). As a result, $H8-H10$ are accepted by the data (Table 7 and Figure 2).

Table 7. Path coefficients (indirect paths)

Hypothesis	Independent variable	Path	Mediating variables	Path	Dependent variable	Estimate β (path coefficient)	SE	CR (t-value)	Decision
H8	MC	→	WTC	→	IP	0.389	0.498	5.681***	Supported
H9	MC	→	EO	→	IP	0.419	0.062	6.672***	Supported
H10	MC	→	EC	→	IP	0.512	0.036	6.729***	Supported

Note: SE = standard error, CR = critical ratio; *** $p < 0.001$.

Figure 2. SEM path model



Note: CR = critical ratio. *** $p < 0.001$.

Source: Study conceptual model and survey data.

5. DISCUSSION

The study examined the linkage between MC and IP through WTC, EO and EC. Based on the vigorous literature, we developed a conceptual framework and a few hypotheses. Concerning the conformation of the proposed associations, we found a significant positive influence of MC on WTC, IP, EO and EC (H1-H4 are accepted). In the previous investigations, these connections harmonized with numerous researchers like Pettersen et al. (2019), González-Varona et al. (2021), Joensuu-Salo et al. (2022), Lopez-Morales et al. (2023), Renwarin et al. (2023) and Caldana et al. (2023) who found the similar conclusions in their studies. These findings imply that managers should allocate resources to maximize results. One of their most incredible talents is organizing and inspiring others to achieve goals. Besides, they possess the ability to coordinate duties and organize resources. They are capable of managing, influencing, and leading others. They can successfully delegate as well. Additionally, they stand ready to take on any fresh difficulties their company encounters. In general, managers are willing to attempt new things for their company. They typically find new ideas fascinating and usually resist change.

Besides, research from EO suggests that their company devotes more time to long-term R&D than to short-term R&D. When new goods are introduced,

their business is frequently among the first in its sector. Their company encourages taking risks and highly tolerates initiatives that could go wrong. Instead of slightly adjusting tactics, the company adopts bold, comprehensive strategy actions. Their company prefers “tried-and-true” protocols, frameworks, and techniques. Additionally, the company takes on its main rivals rather than merely responding to them. They think their business is adaptable and flexible. They frequently develop new concepts for goods and services due to social changes. They are more inspired by a company that promotes innovation. Their company awards those who are creative in public.

Furthermore, the study confirmed the positive and significant relationship between WTC and IP. These results are in line with Robertson and Chetty (2000), Dayan et al. (2016) and Zacca and Dayan (2018), who suggest the positive influence of WTC on IP. These positive associations demonstrate that the managers are always willing to take on any new challenges in terms of IP for their firms. To get the IP of their firms, they always remain engaged to generate novel ideas to make their firms thrive. Comparatively, they find effective ways to compete with their rivals in the market. They adopt the innovation of new products and manage the product lifecycle consistent with customers’ needs.

Similarly, the association between EO and IP was found to be positive. These associations are also

accorded to the literature, i.e. Moustaghfir et al. (2020), Wahyuni and Sara (2020), Hanifah et al. (2022), Sari and Sari (2022), and Rangaswamy and Chaudhary (2022) who found the predictive effect of EO on performance, IP and financial performance. The associations between EO and IP suggest that their firm devotes more time to long-term research development and is usually among the first in the industry to introduce new products. They know about the firm that rewards risk-taking by producing more products. Their firm shows excellent tolerance for high-risk projects, which ultimately ensures IP.

Regarding the connection of EC with IP, it appears significant and positive. In the literature, the results following earlier investigations like Laforet (2016), Soomro and Shah (2019), Mokhtarzadeh et al. (2022) and Basu and Bhola (2022). These societal changes often give them new ideas for services and products, leading to IP. Creativity had a constructive contribution in enhancing a firm's IP.

The existence of mediating contribution of WTC, EO and EC between MC and IP in the present study is also reinforced by the literature (Dayan et al., 2016; Mahrous & Genedy, 2019; Kadam et al., 2019; Aljanabi et al., 2019; Soares & Perin, 2020). These factors work like a bridge in developing the relationships between MC and IP. More specifically, WTC mediates the relationship (MC and IP) as WTC helps achieve maximum profits for the organization in resource allocation and rational decisions. Individuals become motivated through the strength of managers. WTC encourage individuals to contribute and overcome any challenge in their firm. They constantly develop new ideas to tackle the challenges and improve IP. Likewise, EO appeared robustly indirectly, as it encouraged the business to announce new merchandise. This factor is helpful in risk-taking and getting a great arrangement of broad-mindedness for high-risk schemes. Finally, EC reinforced the connection between MC and IP as it opened and rapidly changed society. It frequently gives them new ideas for products and services with great creativity and innovation. These ultimately lead to IP in the firms.

6. CONCLUSION

This study offers several influential contributions to the literature on management and business, particularly in Saudi Arabia. First, it highlights the critical role of MC in developing WTC, EO, IP and EC among managers of the SME sector of Saudi Arabia, which is the core sector responsible for the development of Saudi Arabia. Second, the study demonstrates the crucial mediating role of WTC, EO and EC in linking MC to IP. These findings suggest that in addition to developing MC, efforts should be made to promote more IP among managers of SMEs. Finally, this study sheds light on the context of

managers and SMEs in Saudi Arabia, where SMEs confront significant challenges of sustainability and survival. The study's findings could inform policies and programs to increase IP in SMEs.

This study has numerous implications for policymakers, educators, and business leaders. First, the study would assist managers in making resource allocation decisions that may be favourable for achieving maximum outcomes. The study would enhance the ability, motivation and strength to run the organization smoothly. The study supports managers in overcoming any new challenges that may occur in the firm. It would help generate novel ideas in bringing further innovations to the organization. This study would help launch an effective market with new products, innovate new products to compete with the other firms and manage product lifecycle consistent with customer's needs. Finally, policymakers could consider implementing policies and initiatives that address the social and cultural barriers that resist SME development in Saudi Arabia, such as providing access to financing, improving the legal and regulatory environment and providing raw materials, etc.

One of its limitations is this study's use of cross-sectional data, which restricts our ability to infer causative relationships between variables, i.e., MC, WTC, EO, EC and IP. Future research could use longitudinal designs or experimental methods to establish causal relationships between these variables. Additionally, this study focused only on managers of SMEs in Saudi Arabia, and, therefore, the results may not generalize to other contexts or populations. Future studies could explore the relationships between these variables in different individuals, such as employees, working professionals, or entrepreneurs. We did not apply the MacKinnon and Luecken (2011) or Sobel test to assess the mediating relations, as these were confirmed through path analysis using AMOS/SPSS. Finally, this study did not examine the influence of contextual factors, such as the social and cultural environment, on the relationships between these variables. Future research could explore how these contextual factors shape the relationships between MC, WTC, EO, EC and IP among managers of SMEs in Saudi Arabia and other contexts.

To sum it up, the overall outcome of the assessment shows a positive and significant effect of MC on WTC, IP, EO and EC. The impact of WTC, EO and EC is also significant and positive on IP. Moreover, the mediating path analysis suggests that the factors such as WTC, EO and EC significantly mediate the connection between MC and IP among Saudi Arabian managers. The study would support policymakers in developing plans to enhance SME development, particularly in the Middle East and Saudi Arabia.

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