Exploring entrepreneurial orientation dimensions in the property business: A scale development

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Abstract: This study investigates the dimensions of entrepreneurial orientation (ENO) within the context of property business. A survey was conducted with 355 respondents to explore various dimensions of EO, including innovation, resilience quality, organisational culture, entrepreneurial capability, innovative marketing strategy, customer care, scalability, and effort. Results showed that the majority of respondents were male (54.90%) and belonged to Generation X (68.20%), with a significant portion from the Upper Northeast zone (53.50%). The study employed Principal Axis Factoring (PAF) with Promax rotation to identify EO dimensions, resulting in eight unique factors explaining 60.8% of the variance. These dimensions included Innovation Technology, Resilience Quality, Organizational Culture, Entrepreneurial Capability, Innovative Marketing Strategy, Customer Care, Scalability, and Effort. The study also conducted a Confirmatory Factor Analysis (CFA), confirming the reliability and validity of the proposed model. The calculated Average Variance Extracted (AVE) and composite reliability values met the convergent and discriminant validity criteria. Overall, this research contributes to a deeper understanding of EO in the property sector and provides insights for property businesses and policymakers to foster entrepreneurial behaviour and drive performance.

Keywords: Entrepreneurial orientation, Property business, Dimensions, Exploratory factor analysis.

1. Introduction

Strategic entrepreneurship merges various elements to improve company performance and achieve business success [1]. Recognising the significance of understanding entrepreneurship within its broader societal context emphasises acknowledging the underlying rationale behind entrepreneurial actions for comprehending and participating in entrepreneurship in contemporary society [2]. Entrepreneurial orientation (ENO) encompasses the cognitive, behavioural, and strategic dimensions that drive individuals or organisations toward entrepreneurial activities and opportunities [3]. ENO has been introduced into four dimensions: innovation, proactiveness, risk-taking, and flexibility in bank sectors. It also increases domains of ENO's approach to green concepts [4].

The dimensions of ENO vary significantly across different businesses due to factors such as industry dynamics, organisational culture, market position, and the influence of owners or founders [5], [6], [7]. Industries with high levels of competition and rapid innovation, such as technology, often exhibit a strong ENO characterised by risk-taking and a focus on disruptive ideas. Conversely, businesses in more traditional sectors may have lower ENO but emphasise operational efficiency and stability. The size and age of a business also play a role, with younger and smaller companies typically displaying higher levels of ENO compared to larger, more established ones [8]. ENO's diverse nature across different businesses is essential for tailoring strategies to foster entrepreneurial behaviour and drive growth. In today's rapidly changing and fiercely competitive business environment, more than a

one-size-fits-all strategy is needed. Instead, tailored strategies have emerged as the preferred approach for businesses to effectively navigate market dynamism and competitive intensity [9].

Tailored strategies allow businesses to adapt quickly to evolving market conditions, capitalise on emerging opportunities, and differentiate themselves from competitors [10], [11]. Moreover, tailored strategies enable companies to optimise their resources, allocate investments strategically, and maintain agility and responsiveness in the face of market shifts[12], [13]. Ultimately, these customised approaches foster long-term sustainability by creating deeper customer connections, building competitive advantages, and ensuring adaptability to changing circumstances [14], [15].

Small and Medium-sized Enterprises (SMEs) operate in highly competitive markets where innovation is critical to survival and growth [16]. ENO encourages SMEs to continuously innovate, develop new products or services, and find creative solutions [17]. SMEs need to be proactive in identifying and exploiting market opportunities. Entrepreneurial orientation enables SMEs to anticipate changes in the market environment, stay ahead of competitors, and take initiative in pursuing new ventures or expanding into new markets. In essence, entrepreneurial orientation is a mindset that drives SMEs to think and act like entrepreneurs. EN) helps them to be more agile, innovative, and competitive in dynamic business environments, ultimately leading to sustainable growth and success [18].

The research aims to explore the dimensions of ENO within the context of the property business. This involves examining how property businesses exhibit entrepreneurial behaviours. The study provides a comprehensive understanding of how ENO operates in the property sector, identifying the factors that influence ENO. This research contributes to filling the gap in the literature regarding ENO, specifically within the property industry, offering insights that can inform strategic decision-making for property businesses and policymakers.

2. Literature Review

2.1. Entrepreneurial Orientation (ENO)

ENO is a strategic posture or mindset organisations adopt that emphasises innovation, risk-taking, proactiveness, and competitiveness. ENO encompasses the qualities required for individuals to pursue real estate entrepreneurship professionally. These qualities can be distilled into five dimensions, as outlined by Pratono and Pudjibudojo (2016) [19]. Firstly, Creativity involves generating original ideas regarding products, services, and innovative technologies, often through thinking outside conventional boundaries and devising novel problem-solving approaches. Secondly, Risk-taking entails the willingness to undertake business risks, such as exploring unknown territories, investing significant resources into business initiation, and borrowing substantial capital. However, while risk-taking is associated with success, the relationship could be more straightforward, as excessive risk may lead to failure. Thirdly, Reactiveness denotes entrepreneurs' proactive approach towards their businesses, striving for advancement and actively seeking growth opportunities.

Additionally, Competitive Aggressiveness is vital for creating barriers to entry for competitors, driven by the determination to outperform rivals and employing strategic moves, innovative marketing, and continuous improvement of products or services. Finally, Autonomy signifies the ability and determination to pursue opportunities independently, enabling entrepreneurs to make decisions autonomously and maintain control over their destinies despite external influences. These dimensions collectively shape the entrepreneurial mindset required for success in real estate entrepreneurship.

Enhancing competitive capability derived from applying various innovation concepts is imperative to achieve successful outcomes. This leads to the creation of novelty in products, services, or processes and business strategies with long-term competitive implications [20]. Innovation is recognised as a pivotal component in creating new things to meet business goals, with entrepreneurs or business owners prioritising its importance. Hence, innovation capability plays a significant and necessary role in businesses. To enhance competitiveness, companies must utilise their capabilities and resources to foster innovation that will impact long-term success. Building and developing innovation depends on the capabilities of the business, where knowledge and abilities are utilised to create innovative capabilities.

Therefore, factors emphasising innovation capability are crucial in studying organisational behaviour and culture. Innovation creation influences the innovation capability of the business and helps businesses understand the direction of operation management under innovation management [21].

2.2. Exploratory Factor Analysis (EFA)

EFA is pivotal in pioneering research endeavours because it can elucidate latent structures and patterns within intricate datasets. By reducing data dimensionality and discerning underlying factors, EFA aids researchers in comprehending the complicated interrelationships among variables that may remain obscured otherwise. This is particularly significant in unexplored domains where the fundamental structure is nebulous. Moreover, EFA catalyses hypothesis generation by unveiling latent constructs, providing a foundation for subsequent testing and refinement. It also contributes to construct validity by aligning observed variables with theoretical constructs, a critical aspect of developing novel theories or frameworks. Furthermore, EFA facilitates data reduction for subsequent analyses and fosters theory development by furnishing empirical evidence for the existence of factors and their interconnections. Thus, EFA emerges as an indispensable tool for researchers venturing into pioneering investigations, enabling them to navigate the complexities of data and propel advancements in their respective fields.

3. Methods

The population used in the research consists of small and medium-sized real estate businesses in the northeastern region of Thailand, totalling 1,613 establishments [22]. The sample used in the research comprises small and medium-sized real estate businesses in the northeast region of Thailand, totalling 400 establishments. The sample was selected using the Krejcie and Morgan table [23] and categorised by province in the northeast region of Thailand. The respondents to the questionnaire were business owners and accounting managers. The survey aims to gather opinions regarding the entrepreneurial focus of small and medium-sized enterprises (SMEs) in the northeastern region of Thailand using a rating scale questionnaire of 30 items. These items cover factors such as self-reliance (5 items), innovation (5 items), risk-taking (5 items), management practices (5 items), consistency and commitment to learning (5 items), and determination for success (5 items).

A series of systematic steps were followed. Initially, a comprehensive review of relevant literature was conducted to gather insights into theories concerning entrepreneurial focus, innovation in accounting management, and business success. Guidance from qualified experts was sought to establish the conceptual framework. Subsequently, a draft questionnaire was formulated based on the findings of the literature review, ensuring that it addressed the research objectives and hypotheses. The thesis advisor then reviewed this draft to assess its appropriateness, linguistic accuracy, and content coverage. Feedback from the advisor was utilised to refine the questionnaire further. Following revisions, the questionnaire was presented to five experts for their evaluation of the Index of item objective congruence (IOC). This iterative process aimed to ensure the research tools' robustness and alignment with the study's objectives, thereby enhancing the reliability and validity of the research findings.

Evaluating these opinions will provide insights into the attitudes and perspectives of SMEs in the northeastern region towards entrepreneurial focus, which is crucial for their business development and future growth. Emphasis on innovation, risk-taking, and continuous learning is essential for SMEs to adapt to changing circumstances and prepare for market challenges in the long run. Enhancing management efficiency and utilising existing resources effectively are vital factors to ensure competitiveness in the market and build confidence in business development for the future.

4. Results and Discussion

In total, 355 respondents participated in the survey. The table presents demographic data on respondents' gender, generation, zone, education level, and business duration. Regarding gender, 54.90% are male, while 45.10% are female. Generation-wise, the majority (68.20%) belong to Generation

X, with 31.80% being Baby Boomers. Regarding zones, 53.50% are from the Upper Northeast, while 46.50% are from the Lower Northeast. Regarding education level, 5.50% have a bachelor's degree, 56.80% have a bachelor's degree, and 37.70% have education levels above a bachelor's degree. Finally, business duration shows that 23.10% have been in business for less than five years, 45.10% between 6-10 years, 24.50% between 11-15 years, and 7.30% for more than 16 years. See Table 1.

Table 1.
Sample characteristics.

Items	Frequency (n)	Percentage
Gender		
Male	195	54.90
Female	160	45.10
Generation		
X	242	68.20
Babyboomer	113	31.80
Zone		53.50
Uper Northeast	190	46.50
Lower Northeast	165	
Education level		
Below bachelor's degree	22	5.50
Bachelor's degree	227	56.80
Above bachelor's degree	151	37.70
Business duration		
Less than 5 years	82	23.10
Between 6-10 years	160	45.10
Between 11-15 years	87	24.50
Above 16 years	26	7.30
Total	355	100.00

Principal axis factoring with Promax rotation was employed to identify the dimensions of EO. The *Cronbach's α= .83 (30 items), KMO = .762, Chi-Square = 3552.745, df = 435, Sig. =.000.* This rotation method was good for a large dataset [24]. With the normality assumption, the PAF extraction method is suitable and fit for primary data in common variance [25]. This study ruled out that factor loading should be lower than .40 for appropriate contraceptive use in Ghana [26]. The retention criteria should meet the eigenvalue greater than one and a commonalities threshold over .40. The scree plot observed that the above elbow considers the retention of items [27].

The results of the EFA have been presented in Table 2. The KMO value of *.762* illustrates that the 355 exploratory sample size was adequate and suitable for the study. Also, Bartlett's test of sphericity of *Chi-Square = 3552.745, df = 435, Sig. =.000, they* depicted the factorability of the measurement model. The factors were extracted based on an eigenvalue of ≥ 1 and a communality threshold of ≥ 0.4. Based on these, three items were removed.

The EFA revealed seven unique dimensions with 27 well-fitted items, and they explained. 60.8% of the variance in EO. Communalities in these dimensions ranged from 0.42 to 0.84, which suggests 42% to 82% in the specific dimensions. The Cronbach's alpha score for each dimension was above 0.70, indicating satisfactory internal consistency [28]. The seven factors were labelled "Innovation Technology", "Resilience Quality", "Organizational Culture", "Entrepreneurial Capability", "Innovative Marketing Strategy", "Customer Care", and "Scalability".

Table 2.
 EFA entrepreneurial orientation (n=355).

Domains and items	Communalities	Factor loadings	Mean
Domain 1: Innovation technology (Eigenvalue= 5.108, Variance explained= 17.03%, Cronbach's α= .79, Grand mean= 4.15)			
(E6) Knowledge of new technologies for improving products or services is close to you.	0.439	0.639	4.18
(E7) Information about products or services through various modern channels is valuable.	0.523	0.759	4.16
(E8) Innovating to improve products or services is easy and achievable.	0.475	0.690	4.14
(E9) You often suggest innovative methods that are effective in manufacturing or improving products or services for customers.	0.523	0.687	4.12
(E10) You can always launch products or services to the market before your competitors	0.496	0.637	4.14
Domain 2: Resilience quality (Eigenvalue= 3.633, Variance explained= 12.11%, Cronbach's α= .79, Grand mean= 4.40)			
(E27) Even in the face of obstacles, you remain determined to successfully complete the task.	0.503	0.576	4.42
(E28) High standards ensure quality and customer satisfaction.	0.446	0.653	4.41
(E29) Failures and mistakes are seen as opportunities for improvement and ensuring successful outcomes.	0.490	0.824	4.35
(E30) Once a decision is made, you'll persist until success is achieved.	.398	0.616	4.39
Domain 3: Organizational culture (Eigenvalue= 2.355, Variance explained= 7.85%, Cronbach's α= .77, Grand mean= 4.27)			
(E21) Employees adhere to the principles of correctness, rules, and regulations while performing their duties.	0.396	0.575	4.24
(E22) Employees work with care and continually develop themselves.	0.379	0.595	4.34
(E23) Your business has transparent and accountable workflow processes.	0.487	0.733	4.28
(E24) Your business provides information and news to stakeholders.	0.509	0.676	4.26
(E25) Your business frequently solicits and listens to feedback and suggestions.	0.503	0.635	4.25
Domain 4: Entrepreneurial capability (Eigenvalue= 1.804, Variance explained= 6.01%, Cronbach's α= .71, Grand mean= 4.31)			
(E2) The success of business growth is due to your own capability.	0.335	0.599	4.44
(E3) You possess the capability to take control of your life and advance it according to your aspirations.	0.478	0.788	4.30

(E4) You have overcome various work-related crises with your own capability.	0.404	0.662	4.25
(E5) You possess work independence and are entrepreneurial, generating business ideas independently.	0.363	0.597	4.28
Domain 5: Innovative marketing strategy (Eigenvalue= 1.641, Variance explained= 5.48%, Cronbach's α= .72, Grand mean= 4.20)			
(E11) You regularly organize promotions for products or services.	0.364	0.473	4.14
(E12) You offer special price reductions during festivals or special occasions.	0.453	0.694	4.11
(E13) You consistently use new and innovative products or services.	0.512	0.738	4.00
Domain 6: Customer care (Eigenvalue= 1.392, Variance explained= 4.64%, Cronbach's α= .73, Grand mean= 4.10)			
(E18) Customer complaints and suggestions are promptly addressed.	0.421	0.748	4.19
(E19) Complaints are resolved and improvements are made according to customer needs.	0.462	0.735	4.22
(E20) You have up-to-date knowledge to continuously convey technological changes to employees within the organization to adapt and implement	0.368	0.547	4.19
Domain 7: Scalability (Eigenvalue= 1.238, Variance explained= 4.13%, Cronbach's α= .67, Grand mean= 4.07)			
(E14) You always use modern equipment or tools.	0.497	0.616	4.09
(E15) You increase the number of employees when the number of customers increases.	0.464	0.684	4.05
(E16) Overall, your business has appropriate workflow processes.	0.369	0.477	4.18

Evaluating construct reliability within latent variable models heavily relies on Construct Reliability (CR). CR is calculated by dividing the sum of the squared factor loadings of indicators by the sum of the squared factor loadings plus the sum of the error variances [29]. Acceptable CR levels typically suggest a threshold of 0.7 or higher, indicating good internal consistency and reliable measurement of the intended latent variable [30]. This threshold ensures that the construct is accurately represented by its indicators, making CR valuable for validating measurement models. Researchers using CR can confidently interpret their latent constructs, knowing they reflect a reliable aggregation of indicators [31].

The Confirmatory Factor Analysis (CFA) results indicate a reasonably good fit for the proposed measurement model. The Parsimonious Comparative Fit Index (PCMIN/DF) value of 1.824, although slightly higher than the ideal of 1, suggests a reasonable fit. The Goodness of Fit Index (GFI) of 0.901, Comparative Fit Index (CFI) of 0.915, and Root Mean Square Error of Approximation (RMSEA) of 0.048 all fall within acceptable ranges, indicating that the model explains a significant portion of the observed variance and covariance. The Standardized Root Mean Square Residual (SRMR) value of

0.0563, though slightly higher than the recommended threshold of 0.08, still suggests a reasonably good fit. Overall, while some indices deviate slightly from conventional thresholds, the collective results indicate that the proposed model adequately fits the data, supporting the validity of the measurement model.
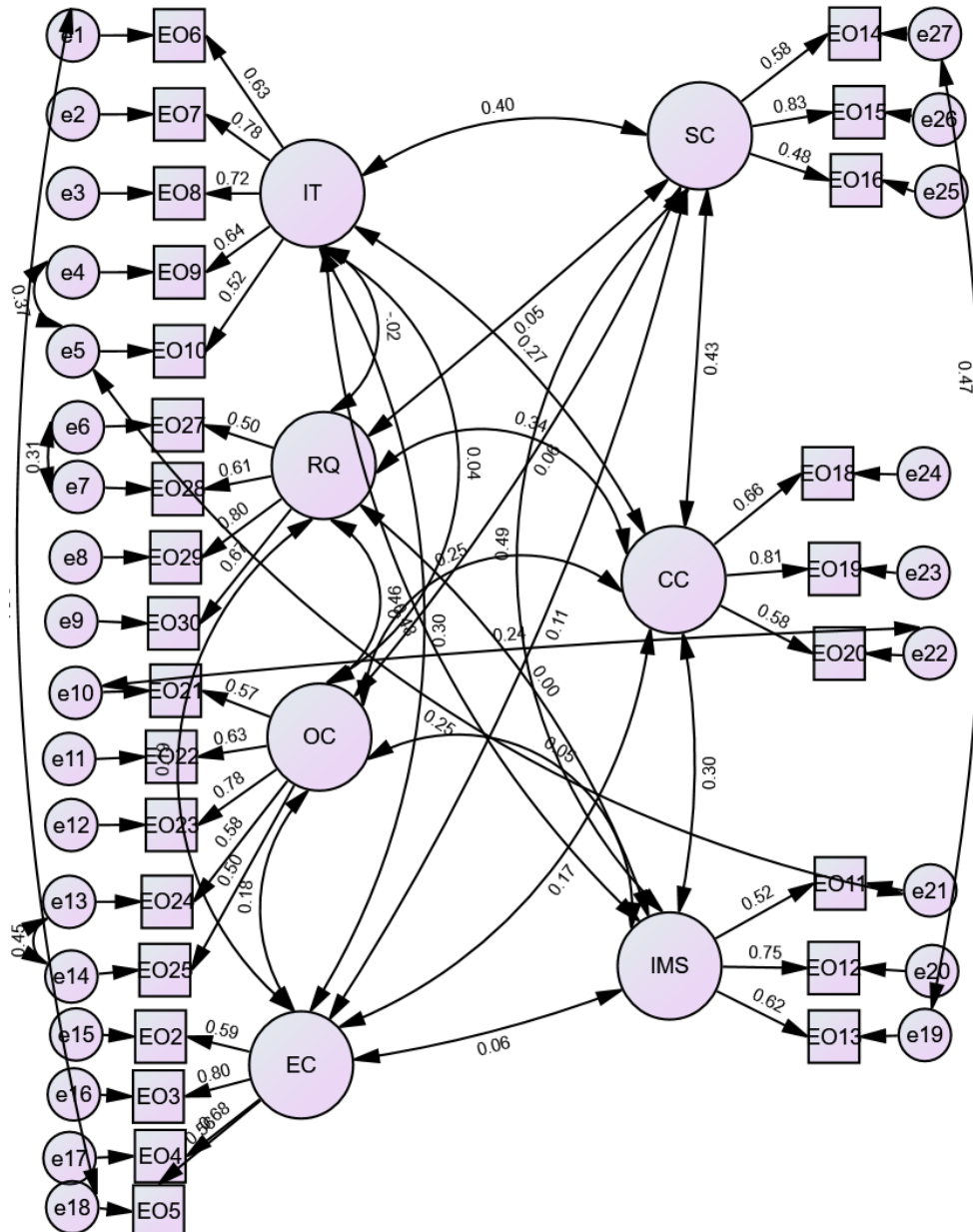

Figure 1.
Confirmatory factor analysis.

Average Variance Extracted (AVE) is crucial for evaluating remarkably convergent construct validity [32]. AVE represents the average variance a construct captures from its indicators relative to the variance due to measurement error. It is calculated by dividing the sum of the squared loadings of indicators on the construct by the number of indicators [33]. Acceptable AVE values typically exceed

0.50, indicating that, on average, the construct explains more than half of the variance of its indicators. However, in exploratory or less defined research contexts, slightly lower AVE values may still be acceptable [34]. Researchers should interpret findings cautiously in such cases and consider opportunities for construct measurement improvement. Lower AVE values suggest that the construct does not account for a significant portion of the variance in indicators, indicating the need to refine the measurement model or reevaluate the construct's indicators [33], [35].

Table 3.
Construct reliability.

Construct	Items	Estimate	Standard error	t-value	p- value	Standardized factor loading	AVE	CR
Innovation technology	(E6)	1.000		-		0.634	0.442	0.796
	(E7)	1.204	0.110	10.946	***	0.777		
	(E8)	1.137	0.108	10.521	***	0.722		
	(E9)	1.016	0.105	9.645	***	0.641		
	(E10)	0.878	0.107	8.199	***	0.521		
Resilience quality	(E27)	1.000		-		0.498	0.429	0.745
	(E28)	1.256	0.140	8.961	***	0.613		
	(E29)	1.727	0.221	7.800	***	0.801		
	(E30)	1.408	0.184	7.642	***	0.671		
Organizational culture	(E21)	1.000		-		0.572	0.383	0.752
	(E22)	1.095	0.130	8.448	***	0.631		
	(E23	1.236	0.135	9.140	***	0.776		
	(E24)	.936	0.118	7.961	***	0.578		
	(E25)	.814	0.113	7.190	***	0.504		
Entrepreneurial capability	(E2)	1.000				0.589	0.443	0.757
	(E3)	1.508	0.159	9.506	***	0.802		
	(E4)	1.291	0.142	9.086	***	0.680		
	(E5)	1.047	0.129	8.138	***	0.564		
Innovative marketing strategy	(E11)	1.000		-		0.517	0.666	0.404
	(E12)	1.459	0.192	7.585	***	0.746		
	(E13)	1.211	0.163	7.429	***	0.624		
Customer care	(E18)	1.000				0.657	0.729	0.478
	(E19)	1.283	0.133	9.646	***	0.813		
	(E20)	.848	0.096	8.823	***	0.583		
Scalability	(E14)	1.000				0.585	0.676	0.422
	(E15)	1.469	0.179	8.228	***	0.832		
	(E16)	.823	0.115	7.148	***	0.483		

Discriminant validity analysis assesses whether these constructs are distinct from each other. Ideally, the correlation between any two constructs should be lower than the square root of each construct's Average Variance Extracted (AVE). Upon examination, it is observed that the correlations between most constructs are indeed lower than the square root of their respective AVEs, indicating good discriminant validity. However, exceptions, such as the high correlation between IT and RQ (0.664) and between OC and RQ (0.457), exceed the AVE's square root for each construct. This suggests potential issues with discriminant validity between these pairs of constructs. Further refinement of the measurement model may be required, particularly for IT and RQ, as well as OC and RQ, to ensure the distinctiveness of these constructs in the analysis.

Table 4.
Correlation, square root of AVE.

	IT	RQ	OC	SC	CC	IMS	EC
IT	0.664						
RQ	–0.020	0.654					
OC	0.039	0.457	0.618				
SC	0.397	0.052	0.059	0.822			
CC	0.269	0.337	0.254	0.429	0.853		
IMS	0.478	0.003	0.050	0.488	0.298	0.816	
EC	0.302	0.186	0.059	0.106	0.173	0.062	0.665

5. Conclusion

The confirmatory factor analysis (CFA) has successfully validated the exploratory factor analysis (EFA) findings, confirming the presence of seven distinct factors in the measurement model. These factors are labelled as "Innovation Technology", "Resilience Quality", "Organizational Culture", "Entrepreneurial Capability", "Innovative Marketing Strategy", "Customer Care", and "Scalability". The CFA results indicate that these factors effectively capture the underlying dimensions of the measured constructs.

Furthermore, all-fit criteria have been met, indicating that the model fits the data well. This implies that the relationships between the observed variables and their corresponding factors are consistent with the hypothesised model. The goodness-of-fit indices all fall within acceptable ranges, suggesting that the model adequately represents the data. In conclusion, the CFA results strongly support the measurement model's structure and validity. The identified factors represent critical dimensions of the constructs under investigation, and the model adequately explains the relationships between the observed variables and their underlying factors. These findings offer valuable insights into the entrepreneurial characteristics and organisational dynamics within the context of the study, contributing to a deeper understanding of the factors influencing business success in the examined region.

6. Recommendation

These results offer valuable insights into the EO framework within the property sector, highlighting areas such as innovation and resilience as critical drivers for fostering entrepreneurial behaviour. Specifically, innovation enables property businesses to adapt to shifting market trends, integrate emerging technologies, and develop creative solutions to resource scarcity or regulatory constraints. Conversely, resilience ensures that businesses can withstand market fluctuations and economic downturns while maintaining operational efficiency and strategic focus. By understanding the interplay between these dimensions, property businesses can enhance their ability to innovate sustainably, maintaining a competitive edge in a dynamic market environment.

The findings also provide actionable guidance for both property businesses and policymakers. Encouraging innovation through targeted initiatives such as research and development grants or tax incentives can empower firms to explore new business models, digital transformation opportunities, and customer-centric services. Supporting scalability is equally important, as it allows entrepreneurial firms to expand operations while maintaining flexibility, which is vital in a sector characterised by large-scale investments and long project timelines. Furthermore, enhancing organisational culture by promoting entrepreneurial capability and leadership development can foster a mindset of continuous improvement, collaboration, and proactive problem-solving. Ultimately, these strategies enhance firm-level performance and contribute to broader economic growth and the long-term sustainability of the property sector.

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