Effect of Innovation Resources on Sustainable Competitive Advantage: The Moderating Role of Responsible Innovation from Evidence of Hospitality Industry in Vietnam

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Abstract: - This paper presents a study on the role of innovation resources, innovation capabilities, and especially the mediating role of responsible innovation in increasing sustainable competitive advantage (SCA) of enterprises in the competitive environment. This study is quantitative research that is applied in 1-5-star hotels in Hanoi, Vietnam. Research results indicate that innovation resources have positive effects on product and process innovation capabilities, responsible innovation, and SCA; Product and process innovation capabilities have positive effects on responsible innovation; Responsible innovation has a positive effect on SCA and plays the mediating role that strengthens the positive effect of innovation resources and innovation capabilities on SCA. These results make a theoretical contribution in providing empirical evidence demonstrating the important role of innovation resources, innovation capabilities, and especially responsible innovation. Therefore, useful information is delivered to managers to create innovation resources, strengthen innovation capabilities, and responsible innovation to increase enterprises' SCA.

Key-Words: - Responsible Innovation, Competitive Advantage, Sustainable Competitive Advantage, Product Innovation Advantages, Process Innovation Advantages, Innovation Resources

Received: April 14, 2023. Revised: November 6, 2023. Accepted: November 19, 2023. Published: December 1, 2023.

1 Introduction

In an increasingly fierce competitive environment, all enterprises are striving to achieve sustainable competitive advantage (SCA). By competitive advantage, an enterprise can protect itself against competitors, create a difference, distinguish from its competitors in the market, [1], achieve economic benefits, reputation, position, and other business goals; deliver value to its customers; and contribute benefits to the community. Therefore, enterprises always strive to achieve SCA.

Thus, SCA has increasingly captured the attention of various fields of business studies. RBV proposed by, [2], states that the innovation resources of enterprises are different, and this resource can bring a competitive advantage to enterprises. SCA is obtained by creating or developing the resources and capabilities of an enterprise to respond to an ever-changing environment, [3]. However, not all resources help enterprises achieve competitiveness. Thus, it is necessary to identify the resources and capabilities that bring SCA to enterprises, [4]. Many studies have focused on this issue. A study of, [5], has shown the positive impact of innovation on SCA. Researching more specifically on each innovation capability, [6], demonstrated the positive impact of process innovation on SCA, [7], proved the positive impact of product innovation on SCA. Synthetically, [8], researched the combined impact of innovation capabilities, including product innovation, process innovation, management innovation, and marketing innovation capabilities on SCA. Studies have shown the necessary resources and capabilities for enterprises to establish SCA. However, RBV also points out that resources and capabilities are not enough for enterprises to gain

SCA in the best way. It is important that these resources and capabilities are exploited effectively. Enterprises achieve SCA when they outperform their competitors by using their resources more efficiently or specifically than their competitors, [4], [9]. The study, [10], also supposed that to ensure SCA, enterprises must continuously innovate themselves to better meet their needs and their stakeholders' needs. This means innovation must be associated with the interests of all stakeholders. In other words, innovation must be associated with corporate responsibility. Responsible innovation has been researched by a number of studies in relationship with competitive advantage such as, [11], product innovation performance, [12], and sustainability performance, [13]. However, these studies have not clarified the relationship and interaction between innovation resources, innovation capacity, and especially responsible innovation with SCA.

Therefore, empirical studies mainly focused on the individual relationship between the above factors. There is no study on the overall relationship between these factors, the role of responsible innovation in promoting innovation resources to increase SCA for enterprises has not received much research attention, especially in the hospitality sector. Many hotels in Hanoi (Vietnam) have been innovating, but not all of them are interested in responsible innovation due to the lack of adequate assessment of its impacts on business performance. This study clarifies the role of innovation resources, innovation capabilities, and responsible innovation in increasing SCA, thereby implying solutions for hotels in Hanoi and other enterprises in general.

2 Literature Review and Research Hypotheses Development

2.1 Sustainable Competitive Advantage

In most definitions of competitive advantage, competitors and customers are the objects of focus. Comparison with competitors, benefits, and values brought to customers are used as criteria to evaluate the competitive advantage of enterprises. SCA introduced by, [4], [9], is one of the most used theories in the study of strategy. [9], assumed that enterprises gain a competitive advantage when they add value to customers, have cost and market solutions that competitors cannot imitate, and must achieve market leadership. Competitive advantage refers to unique resources and capabilities that competitors do not have, leading to performance better than those of competitors, [14].

According to, [9], SCA should be "permanent", "timeless", and "unique". An enterprise has SCA when competitors cannot duplicate or cost much to imitate, [7]. [15], agreed and believed that SCA is the value that an enterprise has but their competitors cannot easily or quickly imitate. Thus, an enterprise achieves SCA if the execution of its strategy cannot be carried out by its existing and potential competitors, [16], even if following and executing, they cannot achieve the same or superior benefits, [17], thereby enterprises capture and maintain a leading position in the market.

Competitive advantage is the enterprise's ability to achieve better performance than competitors in the same industry or market. This view is shared by many authors. [18], found that enterprises with competitive advantages have higher economic values and maintain above-average profits. [19], showed that competitive advantage allows enterprises to achieve higher profit margins than their competitors sustainably.

SCA is reflected by "differentiation capability", "cost leadership", "superior resources", "excellence reputation", and "relational bonding", [20], [21]. Low cost, competitive price, quality, and product differentiation are also factors that many authors mention when assessing the sustainable competitiveness of enterprises such as, [20], [21]. The lower production costs help enterprises achieve higher productivity and competitive prices. Competitive price is the ability of an enterprise to adjust its price according to the market price, [22]. Besides, competitive advantage is obtained when enterprises' customers have a higher perceived value for their products than for others, [15]. Competitive advantage includes the ability of enterprises to provide customers with products or services of outstanding value in terms of quality and support service.

2.2 Innovation Resources

Resource is any attribute, tangible or intangible, physical or human, intellectual or relational, that is used by an enterprise to efficiently produce or sell a product of value, [23]. Enterprises can only implement innovation and responsible innovation if they have suitable resources. Therefore, it is important to identify resources for responsible innovation of enterprises.

According to the demand level of enterprises which includes "survival demand", "development demand", and "self-realization demand", [24], enterprises only consider taking on social responsibility to meet the interests of stakeholders

after they accumulate enough finance, [25]. So, financial support for innovation activities is an important innovation resource, [26].

The next important resource that many authors are interested in is knowledge and people. However, humans can be carriers of knowledge and technology, so innovation resources are identified by Cao et al (2020) in humans. [27], also identifies resources for enterprise innovation, including R&D human resources. Therefore, innovation resources of the enterprise's human resources are reflected in "a strong R&D team", "team members can communicate with other members according to their knowledge accumulation to maximize the use of team knowledge"; "the R&D personnel of enterprises have higher scientific research quality", and they "can usually complete innovation projects with high quality", [26].

The relationship with stakeholders is also focused on by the authors and considered as a resource for innovation activities. [28], argued that the relationship between enterprises and their stakeholders affects responsible innovation. Enterprises need to have close relationships with stakeholders such as suppliers, distributors, and the government...; cooperate with other R&D organizations to develop technologies, [26].

2.3 Innovation Capabilities

Innovation capabilities have been an issue that many authors have been interested in researching. They supposed that innovation capabilities focused on product and process capability. [29], noted that innovation capabilities include product and process capability, which refers to the development or significant changes of products and processes. [30], thought that "innovation is usually explained in terms of changes in what an enterprise introduces to the market (product/service innovation) and the approaches it employs to create and deliver those offerings (process innovation)". [31], defined innovation as "the generation, acceptance, and implementation of new ideas, processes, products, or services".

Product innovation capability measures an enterprise's ability to introduce new products to meet market demand, [32], or use new technology for commercial purposes, [33]. Product innovation capability measures an enterprise's ability to develop or significantly improve products, [34], expressed in the ability to "replace obsolete products", "extend the range of products", "develop environmentally friendly products", "improve product design", and "reduce the time to develop a new product", [29].

Process innovation reflects the introduction of new inputs or processes which are used to manufacture products, [35]. Process innovation capability reflects an enterprise's ability to develop or significantly change production processes or technologies, [34], expressed in the ability of enterprises to "create and manage a portfolio of interrelated technologies", "master and absorb the basic and key technologies of business", "develop programs to reduce production costs", have "valuable knowledge for innovating manufacturing and technological processes", have "valuable knowledge on the best processes and systems for work organization", "organize production efficiently", "assign resources to the production department efficiently", "offer environmentally friendly processes", "manage production organization efficiently", and "integrate production management activities", [29].

2.4 Responsible Innovation

Many authors have put forward the view of responsible innovation. [36], proposed that responsible innovation is "a future-oriented, uncertain, complex, and collective behavior and that the results of innovation need to effectively meet social, moral, and ethical needs". [37], agreed that responsible innovation is the process of creating mutually beneficial and sustainable value for enterprises and their stakeholders, including both private and social values. From a business perspective, responsible innovation involves a new or significantly improved product, service, or business model that solves or reduces environmental or social problems, [38]. Thence, these authors argued that responsible innovation is different from traditional innovation and manifests in four aspects: "Inclusion", "anticipation", "responsiveness", and "reflexivity".

"Inclusion" is the involvement of different stakeholders in the innovation process. The behavior of enterprises should conform to a series of standards behaviors and maximally address the interests and needs of their stakeholders, [39], therefore, responsible innovation considers both internal and external stakeholders that may participate in the innovation process, [40]. [41], recognized that enterprises need to listen to the innovation needs of their stakeholders, coordinate stakeholders, and achieve compatibility in innovation to promote responsible innovation.

"Anticipation" reflects a forward-looking analysis of innovation. Enterprises use forward-looking analytics to discover and evaluate possible consequences of innovation, control and predict risks of innovation, and ultimately drive responsible innovation implementation. [26], supposed that

enterprises need to "make forward-looking analysis on the future impact of activities" in the early stage of innovation activities to "guide innovation activities to the direction of moral acceptability and social satisfaction", and "realize the controllable risk".

"Responsiveness" reflects the ability to identify and react to potential risks, recognizing and re-testing innovation processes and structures. In the innovation process, enterprises "reflect on the assumptions, requirements, objectives, implementation process and results of innovation itself" that helps them reassess upheaval issues, [26].

"Reflexivity" reflects the establishment of a process of continuous adaptation between the innovation subject and the external, to adjust deviations of innovation, [42]. The innovation behavior subject and governance mode are established in "the process of interaction, sustainability, and adaptability, to realize the correct guidance and real-time correction of innovation activities", [26].

2.5 Relationships between Sustainable Competitive Advantage and Innovation Resources, Innovation Capabilities, Responsible Innovation

2.5.1 Innovation Resources and Sustainable Competitive Advantage

RBV is a theory that is commonly used in studies on competitive advantage. [2], developed the fundamental theory of resources based on studying how enterprises own, deploy, and use resources to explain the competitive advantage of enterprises. This theory was later developed by other authors such as, [4], [9].

[2], proposed that an enterprise's resources include all assets associated with enterprises divided into tangible assets and intangible assets. [4], divided enterprise's resources into 3 types: tangible resources include factory, location, and raw materials; human resources include knowledge, intuition, judgment, experience, and ability to learn; and organizational resources include organizational structure, and informal relationships inside and outside the business, [4]. Meanwhile, [19], divided resources into 6 groups: financial resources, tangible resources, human resources, technological resources, brand, and organizational resources. Although there are many different ways to classify resources, these authors agree that different enterprises have different resources, and not all resources can create a competitive advantage. [4], pointed out the attributes required for resources to create competitive advantage: valuable, rare, hard to imitate and irreplaceable, these resources create SCA through new values and differences. The set of unique resources and capabilities that protect enterprises from imitation by competitors and provide the accumulation of profits through product or service differentiation, [9].

Based on RBV, many authors assumed that innovation resources and competitive advantage are connected, and the relationship between them has been studied and analyzed. Market-focused invisible resources including direction, reputation, and innovation are the most influential resources for creating an SCA, [43]. [44], noted that the innovation efforts of enterprises are evidence of their growing awareness of innovation as a source of competitive advantage.

Many studies focused on the relationship between innovation and outcomes. They showed that high innovation leads to superior competitive advantage, [45], is the main driver of solid success, [46], and is seen as a strategic asset to improve an enterprise's competitive advantage and operational efficiency, [47]. Based on the above analysis, the hypothesis is proposed:

H1: Innovation resources are positively associated with SCA.

2.5.2 Innovation Resources and Innovation Capabilities

Although resources can affect performance directly, many studies suggest that the influence of valuable resources on performance may require other factors, [34], in which capability receives attention from many researchers, [48], [49]. The theoretical basis given by these authors is that valuable resources can enhance capabilities through the integration of these resources, [34]. Therefore, hypotheses are proposed:

H2: Innovation resources are positively associated with product innovation capability.

H3: Innovation resources are positively associated with process innovation capability.

2.5.3 Innovation Capabilities and Responsible Innovation

According to RBV, core competencies determine SCA outcomes, therefore enterprises need to develop their resources and capabilities to adapt to evolving opportunities, [50]. Enterprises gain SCA through the ability to develop key capabilities to serve their target customers better than their competitors. Key capabilities refer to unique capabilities that are developed by enterprises to help them to outperform their competitors, [21].

H4: Product innovation capability is positively associated with responsible innovation.
H5: Process innovation capability is positively associated with responsible innovation.

2.5.4 Innovation Resources and Responsible Innovation

According to RBV, the implementation of responsible behavior of enterprises depends on whether they have abundant resources or not. Many studies have shown a significant relationship between resources and responsible behavior, [51]. Therefore, being resourceful in optimizing resources to make them better, and enterprise resources are very important for responsible innovation. Innovative resources can improve enterprises' risk prediction ability, introspection ability, and responsiveness to the external environment to promote responsible innovation, [26]. [28], also argued that finance and the relationship with stakeholders impact responsible innovation. So, the hypothesis is proposed:
H6: Innovation resources are positively associated with responsible innovation.

2.5.5 Responsible Innovation and Sustainable Competitive Advantage

Responsible innovation has become increasingly important due to its impact on society, and stakeholders and has been identified as one of the key competencies of enterprises. [52], noted that enterprises should expand their innovation capabilities to strengthen their competitive advantage. Implementing socially and environmentally responsible innovation and increasing productivity, efficiency and cost savings directly contribute to enterprises' competitive advantage and financial performance, [53]. Responsible innovation brings various competitive benefits such as stakeholder satisfaction, social image, [54], and sustainable performance, [55]. However, few empirical studies have demonstrated the important role of responsible innovation as a capability to contribute to an enterprise's competitive advantage, particularly in the hospitality sector. Therefore, the hypothesis is proposed:
H7: Responsible innovation is positively associated with SCA.

2.5.6 Innovation Capability and Sustainable Competitive Advantage: The Mediating Role of Responsible Innovation

According to RBV, researchers argue that an enterprise achieves SCA when it outperforms its competitors by using its resources more efficiently or specifically than its competitors, [9]. [56], also emphasized the capability of enterprises to deploy resources. Owning unique resources is not enough to gain competitive advantage, enterprises must also have the ability to exploit those resources, [57]. Thus, the resources themselves are not enough to create a competitive advantage, they need to be used effectively by enterprises. The capability to implement innovation determines the achievement of outstanding performance of enterprises, [58]. However, how responsible innovation affects SCA and the mediating role in the relationship between innovation capabilities and SCA have not been studied. Therefore, the following hypotheses are proposed:
H8a: Product innovation capability is positively associated with SCA.
H8b: Product innovation capability is indirectly and positively associated with SCA via responsible innovation.
H9a: Process innovation capability is positively associated with SCA.
H9b: Process innovation capability is indirectly and positively associated with SCA via responsible innovation.

2.5.7 Innovation Resources and Sustainable Competitive Advantage: The Mediating Role of Responsible Innovation and Innovation Capabilities

The proposed conceptual model is presented in Figure 1. Innovative resources, innovation capabilities, and responsible innovation have been identified as being able to positively affect SCA. Previous studies mainly research the relationship between these factors individually, the overall relationship, and the mediating role of responsible innovation in the relationship between innovation resources. Innovation capabilities and SCA have not been considered. We will further clarify the contribution of responsible innovation to effectively exploiting innovation resources and promoting innovation capabilities to increase the enterprise's SCA. Therefore, the hypothesis is proposed:
H10: Innovation resources are indirectly and positively associated with SCA via responsible innovation and innovation capabilities.

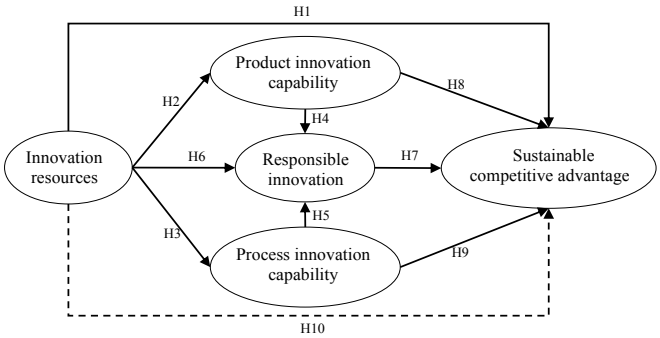

Fig. 1: The proposed conceptual model

3 Research Methodology

3.1 Research Context

Hanoi is not only the economic and political center of Vietnam but also a famous destination with many historical, cultural, and scenic sites… Therefore, hotels in the area serve many kinds of tourists with different purposes. Although in 2020 and 2021, fluctuations caused by the COVID-19 epidemic profoundly affected their operation, along with the recovery of the tourism industry, the hospitality industry of Hanoi has had many positive changes to gradually regain the growth rate in 2023. According to Hanoi Department of Tourism, in the first 6 months of 2023, total tourists reached 12.33 million arrivals, up 42% over the same period in 2022, of which international tourists reached 2.03 million arrivals, up 7 times over the same period in 2022. With the increase in tourist arrivals, the hospitality market of Hanoi is recovering rapidly. As of June 2023, Hanoi has 3,756 tourist accommodation establishments with 70,218 rooms. The average occupancy in the first 6 months of 2023 is estimated at 61.1%, up 31.1% over the same period in 2022. Competition in this industry has also increased after the pandemic, especially when more hotel projects are being built, completed, and will be put into operation soon. The diverse customer base, rapid development, and fierce competition in a rapidly changing environment are some reasons why hotels in Hanoi need to increase SCA and focus on responsible innovation. This study which is conducted in the context of hotels in Hanoi (Vietnam) clarifies the role of innovation resources, innovation capabilities, and responsible innovation in increasing SCA, thereby implying solutions for hotels and other enterprises in general.

3.2 Data Collection and Analysis

This study is quantitative research which is conducted through a survey applied in 1 - 5 star hotels in Hanoi, Vietnam. The sample size is determined according to, [59], [60], based on the number of observations and the number of variables in the model. Therefore, 300 questionnaires were distributed directly or via email to managers of 1 to 5-star hotels in Hanoi. We received 235 responses, of which 197 respondents were valid, reaching 65.67% of the questionnaires issued (Table 1). The 5-point Likert scale is used in the questionnaire.

Table 1. Research sample descriptions

Indicators		Frequency	%
Gender	Female	103	52.28
	Male	94	47.72
Age	Under 30	84	42.64
	30 - 40	71	36.04
	41 - 50	31	15.74
	Over 50	11	5.58
Qualifications	Bachelor	176	89.34
	Master	21	10.66
Years of working in the hospitality industry	5 - 10 years	89	45.18
	11 - 15 years	63	31.98
	16 - 20 years	36	18.27
	Over 20 years	9	4.57
Years of working as a hotel manager	Less than 10 years	105	53.30
	10 - 15 years	56	28.43
	16 - 20 years	32	16.24
	Over 20 years	4	2.03

Quantitative research is carried out using the SPSS 21 (reliability analysis and exploratory factor analysis - EFA) and AMOS 21 (measurement model analysis, structural model analysis). The reliability of scales is analyzed through Cronbach alpha coefficient and corrected item-total correlation. EFA with principal axis factoring and Promax rotation is conducted to evaluate the discriminant validity and convergent validity through the KMO (Kaiser-Meyer-Olkin) coefficient, Bartlett, total variance explained (TVE), eigenvalue, and factor loading.
Measurement model assessment using Confirmatory Factor Analysis (CFA) with AMOS. The purpose of measurement model analysis is: Assessment of model fit via fit indices: Chi-square/df, CFI, TLI, GFI, RMSEA; Assessment of the quality of observed variables via regression weights and standardized regression weights; assessment of convergent validity via composite reliability (CR), average variance extracted (AVE); assessment of discriminant validity via maximum shared variance (MSV), square root of AVE (SQRTAVE) and inter-construct correlations in Fornell and Larcker.

The structural model is evaluated using the Bootstrap technique with a magnification of sub-1000 samples and a significance level of 5% to test research hypotheses via indices: Regression Weights, Standardized Regression Weights, Squared Multiple Correlations (R^2), standardized Effects and

p-value of indirect effect, total effect.

3.3 Measurement

SCA is measured based on scale development of, [61], [62], [63], based on comparison with competitors and industry averages: "high-quality product", "competitive price"; "large market share", "strategic advantages"; "earnings before interest and taxes"; "return on investment"; and "return on sales".

Innovation resources are measured based on developing the scale of, [26], [38], in comparison with other enterprises in the industry: "financial support for innovation activities", "strong R&D team", "the R&D personnel have higher scientific research quality", "closely related to external stakeholders", and "cooperate with external R&D teams".

Product innovation capability is measured based on developing the scale of, [29], [34]: "replace obsolete products", "extend the range of products", "develop environmentally friendly products", "improve product design", and "reduce the time to develop a new product".

Process innovation capability is measured based on developing the scale of, [29], [34]: "create and manage a portfolio of interrelated technologies", "master and absorb the basic and key technologies", "develop programs to reduce production costs", "valuable knowledge for innovating manufacturing and technological processes", "valuable knowledge on the best processes and systems for work organization", "organize production efficiently", "assign resources to the production department efficiently", "offer environmentally friendly processes", "manage production organization efficiently", and "integrate production management activities".

Responsible innovation is measured based on developing a scale of, [26], [64]: "a wider range of stakeholders in innovation activities", "make forward-looking analysis on the future impact of activities", "reflect on the assumptions, requirements, objectives, implementation process and results of innovation"; "the behavior subject and governance mode of innovation activities, realize the correct guidance, and real-time correction".

4 Research Results

4.1 Cronbach's Alpha Reliability Analysis and Exploratory Factor Analysis

To ensure unidirectionality and reliability of the scale, it is required: Cronbach's Alpha ≥ 0.7, [59], corrected item-total correlation of the variables ≥ 0.3, [65].

Table 2. Cronbach's Alpha and Factor Loading

Items	Cronbach's Alpha	Item-Total Correlation	Cronbach's Alpha if Item Deleted	Factor Loading
IR	0.840			
IR1		0.730	0.786	0.875
IR2		0.662	0.804	0.652
IR3		0.705	0.792	0.817
IR4		0.502	0.844	0.520
IR5		0.634	0.813	0.558
PD	0.830			
PD1		0.689	0.777	0.762
PD2		0.619	0.798	0.723
PD3		0.682	0.779	0.742
PD4		0.572	0.811	0.590
PD5		0.574	0.810	0.635
PC	0.884			
PC2		0.647	0.870	0.616
PC3		0.632	0.872	0.649
PC4		0.674	0.867	0.690
PC5		0.680	0.866	0.656
PC6		0.709	0.862	0.785
PC7		0.714	0.862	0.830
PC8		0.651	0.869	0.767
RPI	0.798			
RPI1		0.624	0.725	0.728
RPI2		0.625	0.723	0.721
RPI3		0.533	0.780	0.535
RPI4		0.643	0.724	0.745
SCA	0.865			
SCA1		0.635	0.847	0.749
SCA2		0.618	0.850	0.660
SCA4		0.658	0.843	0.696
SCA6		0.660	0.842	0.657
SCA7		0.721	0.831	0.785
SCA8		0.670	0.841	0.691

The reliability analysis results show that innovation resources, product innovation capability, and responsible innovation have Cronbach's alpha coefficient > 0.7 (0.841, 0.830, and 0.789); and corrected item-total correlation of all observed variables > 0.3 (Table 2). Therefore, the scale of innovation resources, product innovation capability, and responsible innovation meet the requirements. If IR4 is deleted, Cronbach's alpha coefficient is 0.844 > 0.841, but the difference is not much (< 0.3), and IR4 - relationships with stakeholders - is an important measure of resource innovation, these observed variables should be retained for further evaluation. Corrected item-total correlation of PC1, PC9, PC10, SCA3, and SCA5 < 0.3, they do not meet the requirement, so they are disqualified. After deleting PC1, PC9, PC10, SCA3, and SCA5 the Cronbach's alpha coefficient of process innovation capability and sustainability> 0.7 (0.884 - 0.865), corrected item-total correlation of remaining

observed variables > 0.3, they meet the requirements (Table 2).

EFA results show that KMO = 0.844 > 0.5; sig of Barlett test = 0.000 < 0.05, which means observed variables are correlated with each other. Factors with a total variance is 61.991 > 50% and Eigenvalue = 1.206 > 1, which proves the model is suitable. The rotation matrix with coefficients (Table 2) (0.520 – 0.875 > 0.5) shows a good correlation between observed variables and factors, [59]. 27 observed variables grouped into 5 factors (Table 2).

4.2 Assessment of the Measurement Model

According to, [59], indicators of model fit include: CMIN/df ≤ 2, CFI ≥ 0.9, GFI ≥ 0.9, and RMSEA ≤ 0.08. CFA is performed with 5 factors including 27 observed variables. The first CFA results show that some indicators are not good, so the model is improved by suggestions from modification indices. The second CFA results: Chi-square has P-value = 0; CMIN/df = 1.575 < 2; CFI = 0.930 > 0.9; GFI = 0.851 > 0.8; RMSEA = 0.054 < 0.08. According to, [66], the threshold of GFI is 0.8 in studies with a small sample. Results of CFA show that the research model is appropriate for the data.

The quality of the observed variables is evaluated based on regression weight and standardized regression weight. According to, [59], observed variables that have a p-value of regression weight < 0.05 and standardized regression weight ≥ 0.5, are satisfactory. Results of CFA show that the p-value of the regression weight of all observed variables < 0.01, standardized regression weights are in the range from 0.559 to 8.52, therefore, all observed variables meet requirements.

Indices of convergent validity and discriminant validity include: CR ≥ 0.7, AVE ≥ 0.5; MSV < AVE; SQRTAVE > Inter-Construct Correlations, [59]. CFA results show CR of factors are in the range from 0.800 to 0.876 (> 0.7); AVE of factors are in the range from 0.500 to 0.509 (> 0.5); MSV < AVE and SQRTAVE > Inter-Construct Correlations (Table 3). These results show that scales have convergent validity and discriminant validity.

Table 3. Convergent Validity, and Discriminant Validity of Measurement Model

	CR	AVE	MSV	MaxR(H)	SCA	PC	IR	RPI	PD
SCA	0.857	0.500	0.262	0.859	0.707				
PC	0.876	0.503	0.172	0.882	0.362	0.709			
IR	0.835	0.509	0.229	0.873	0.452	0.400	0.714		
RPI	0.800	0.501	0.262	0.807	0.512	0.415	0.479	0.708	
PD	0.840	0.520	0.203	0.874	0.451	0.325	0.369	0.403	0.721

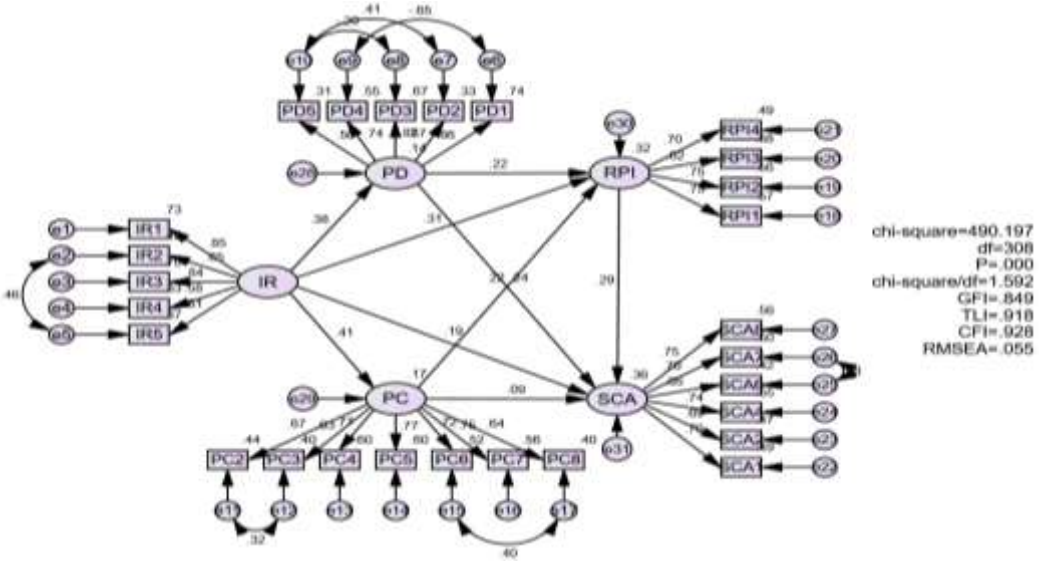

Fig. 2: Structural Model

4.3 Assessment of the Structural Model and Hypothesis

The structural model is analyzed to evaluate direct, indirect, and total effects. The SEM model returned a good model fit: P-value = 0; CMIN/df = 1.592 < 2; GFI = 0.849 > 0.8; TLI = 0.918 > 0.9; CFI = 0.928 > 0.9; RMSEA = 0.055 < 0.08 (Figure 2).

Table 4. Summary of Results from the SEM Models

Hypotheses	Relationships	Effect	Regression	Standardized regression	P-value	Conclusion
H1	IR → SCA	Direct	0.142	0.192	0.041	Supported
H2	IR → PD	Direct	0.349	0.381	***	Supported
H3	IR → PC	Direct	0.250	0.410	***	Supported
H4	PD → RPI	Direct	0.171	0.218	0.008	Supported
H5	PC → RPI	Direct	0.261	0.221	0.012	Supported
H6	IR → RPI	Direct	0.225	0.314	***	Supported
H7	RPI → SCA	Direct	0.298	0.289	0.003	Supported
H8a	PD → SCA	Direct	0.190	0.235	0.004	Supported
H8b	PD → RPI → SCA	Indirect	0.051	0.063	0.017	Supported
H9a	PC → SCA	Direct	0.111	0.091	0.274	Not supported
H9b	PC → RPI → SCA	Indirect	0.078	0.064	0.013	Supported
H10	IR → SCA	Indirect	0.198	0.268	0.001	Supported

*Note: $p \leq 0.001$ ****

Innovation resources have a direct, positive effect on SCA (β = 0.192, Sig. < 0.05), direct, positive effect on product innovation capability (β = 0.381, Sig. < 0.001), direct and positive effect on responsible innovation (β = 0.410, Sig. < 0.001), H1, H2, H3 are positive effect on responsible innovation (β = 0.218, Sig. < 0.01). Process innovation capability has a direct and positive effect on responsible innovation (β = 0.221, Sig. < 0.05), H4, H5 are accepted. Innovation resources have a direct and positive effect on responsible innovation (β = 0.314, Sig. < 0.001). Responsible innovation has a direct and positive effect on SCA (β = 0.289, Sig. < 0.01). H6, H7 are accepted. Product innovation capability has a direct and positive effect on SCA (β = 0.235, Sig. < 0.01), and an indirect and positive effect on SCA through responsible innovation (β = 0.063, Sig. < 0.05). H8a and H8b are accepted. Due to P-value = 0.274, there is no statistical evidence that process innovation capability has a direct, positive effect on SCA, however, analysis results note that there is an indirect positive effect of process innovation capability on SCA (β = 0.064, Sig. < 0.05). H9a is rejected, and H9b is accepted. Innovation resources have an indirect positive effect on SCA (β = 0.268, Sig. < 0.01). H10 is accepted (Table 4).

Regarding total effect, responsible innovation has a mediating role that strengthens the positive effect of product innovation capability on SCA, the standardized regression coefficient increases β = 0.298. There is no statistical evidence to show the total effect of process innovation capability on SCA. Meanwhile, innovation capabilities (product and process), and responsible innovation have mediating roles that strengthen the positive effect of innovation resources on SCA, the standardized regression coefficient increases β = 0.460 (Table 5).

R^2 of product innovation capability is 0.145 so innovation resources impact 14.5% of product innovation capability. R^2 of process innovation capability is 0.168, which means innovation resources impact 16.8% of process innovation capability. R^2 of responsible innovation is 0.319 so innovation resources impact 31.9% of responsible innovation. SCA has R^2 = 0.365 so innovation resources, product innovation capability, process innovation capability, and responsible innovation impact 36.5% of SCA.

Table 5. Total Effects

Relationships	Regression	Standardized regression	P-value
PD → SCA	0.241	0.298	0.003
PC → SCA	0.189	0.155	0.143
IR → SCA	0.340	0.460	0.002

5 Discussion

The research results point out factors of enterprise's innovation resources and prove the positive role of innovation resources in increasing enterprise's SCA. Enterprises that have financial resources for R&D activities, strong R&D human resources, and good relationships with stakeholders, and regularly cooperate with external R&D teams will be able to create outstanding products, competitive pricing, and strategic advantages over competitors. They also have incomes and profits that are above the industry average. Research results are consistent with RBV on the role of resources in improving the competitive advantage of enterprises. According to RBV, resources can create competitive advantages for enterprises, but these resources must be valuable, rare, hard to imitate, and irreplaceable, [4]. Innovative resources meet these special requirements to provide SCA for enterprises. The results of this study support previous studies on the positive influence of enterprises' resources on SCA, [67], [68]. However, the research results show that the level of direct impact of innovation resources on SCA is not high. The reason is that the resources themselves are not enough to bring significant SCA, enterprises need to know how to use and exploit these resources effectively through their capabilities. In other words, innovation resources can affect the resources of enterprises. It is consistent with the research results which show that innovation resources have a positive impact on product innovation capability and process innovation capability. The results of this study support previous studies on the positive impact of resources on capability, [69], and innovation capabilities, [70].

Based on RBV and behavioral theory, this research suggests that responsible innovation is better implemented with better resources and capabilities. Findings from this study support the hypothesis. It shows relationships between innovation resources, innovation capabilities, responsible innovation, and SCA, and clarifies the role of responsible innovation in increasing the SCA of enterprises. Enterprises that have financial resources for R&D activities, strong R&D human resources, and good relationships with stakeholders, and cooperate regularly with external R&D teams will be able to implement innovation activities better with stakeholder engagement. Analysis of the impact of innovation, identification of risks, and good governance to implement and present more accurately and fine-tune innovation activities. This result is consistent with the conclusions of some previous studies. Research, [26], also showed that innovation resources including finance, and human and social relations have a significant positive impact on responsible innovation.

The study results also indicate a positive impact of responsible innovation on SCA. Accordingly, the more hotels focus on and implement responsible innovation, the more competitive advantages, they have in the market. This result is consistent with some previous studies which suggested that responsible innovation has a positive impact on competitive advantages, [11], and product performance, [12].

Research results show that product innovation has a positive effect on SCA. Enterprises that can replace obsolete products, expand product range, develop environmentally friendly products, improve product design, and reduce new product development time can create SCA. The result of this study supports previous studies, innovation is considered an important means of achieving exceptional performance in a fiercely competitive environment, [71]. Fierce competition and consumers' caution in choosing a product require enterprises to be more innovative in production, this product will be considered by consumers as different from competitors, and the success of the product will lead to its market performance, [72]. This finding supports the research conducted by, [73], which showed the higher product innovation capability is, the better the SCA becomes. Product innovation is a way to add value to the success of an enterprise to achieve an SCA in the era of globalization, [7]. Product innovation can add value to give a competitive advantage through superior products, [74], and increase product attractiveness and product positioning quality, [75]. At the same time, this study also has a new finding that the positive effect of product innovation capability on SCA is increased by responsible innovation. As a result, enterprises with better product innovation capability and responsible innovation will have better SCA than those who have only product innovation capability without responsible innovation.

Although there is no evidence of the direct effect of process innovation capability on SCA, an indirect relationship is noted. Through responsible innovation, enterprises with better process innovation capability will have higher SCA. This result points to new findings compared to some previous studies. The study of, [6], showed a low positive effect of process innovation capability on competitive advantage. [6], noted that process innovation capability gives a competitive advantage because it provides ways to outperform competitors through process improvements. be efficient in their services. Previous studies suggested that to achieve a competitive advantage, enterprises need to have

process innovation capability. However, this study shows that to achieve SCA, process innovation capability is not enough, enterprises also need to undertake responsible innovation. With the intermediary role, responsible innovation helps enterprises promote process innovation to create advantages over competitors in terms of product, price, market share, and profits in a sustainable way. Finally, research results indicate that product innovation capability, process innovation capability, and responsible innovation have mediating roles in strengthening the relationship between innovation resources and SCA. Then, important intermediary roles of innovation capabilities, especially responsible innovation are affirmed in exploiting innovation resources to create enterprises' SCA. It supports RBV, enterprises with innovation resources need to use their resources effectively to get SCA, [4], [9]. Efficient use of resources is achieved through the development of a particular set of capabilities. This result of our study supports previous studies. [76], indicated that rare and valuable resources and capabilities have a positive effect on the competitive advantage of enterprises. [77], asserted that the combination of resources and capabilities is identified to be the driving force behind advantages in costs, services, and products.

6 Conclusion and Implications

This study evaluates the relationship between innovation resources, innovation capabilities, responsible innovation, and SCA. Survey data from 197 hotels in Hanoi city is used for Cronbach's alpha reliability analysis and exploratory factor analysis, assessment of the Measurement Model, assessment of the Structural Model and Hypothesis. Research results have proven that: Innovation resources are positively associated with product innovation capability, process innovation capability, responsible innovation, and SCA; Product innovation capability is positively associated with responsible innovation and SCA; Process innovation capability is positively associated with responsible innovation, is not positively associated with SCA but indirectly and positively associated with SCA through responsible innovation. Innovation resources and Product innovation capability are indirectly and positively associated with SCA by way of responsible innovation.

Theoretically, this study provides evidence in favor of RBV and develops the theory by demonstrating the positive effect of innovation resources on SCA directly and indirectly through product and process innovation capabilities. Previous studies on SCA mainly focused on the role of innovation, innovation capability, product innovation, or business model innovation with SCA, [5], [7], [8], [78]; Besides, research on responsible innovation also mainly studies the relationship between responsible innovation and competitive, [11], or product innovation performance, [12], sustainability performance, [13]. This study has a new contribution in confirming the positive impact of responsible innovation on SCA. The innovation-responsible implementation plays an important role in increasing enterprises' SCA because its intermediary role positively affects the relationships between innovation resources, innovation capability, and SCA. Enterprises with innovation resources and innovation capabilities can create SCA, but if they implement responsible innovation, their SCA will increase significantly.

Besides theoretical contributions, this study provides some implications for hotel managers in general and enterprises in particular to increase SCA. Enterprises need to focus on creating innovation resources by paying attention to financial investment for innovation activities; establish a strong R&D team, with a mechanism for members to regularly exchange, share, and support other members to accumulate knowledge, maximize the use of team knowledge; focus on training and developing high-quality R&D personnel; establish and maintain close relationships with external stakeholders including suppliers, distributors, and regulatory agencies; actively cooperate with external R&D teams to jointly develop new technologies. Enterprises need to improve their product innovation capability, which is reflected in the replacement of obsolete products, expansion of product range, development of environmentally friendly products, innovation in product design, and shortening of new product development time. Enterprises also need to improve their process innovation capability by mastering and absorbing technologies, developing programs to reduce service delivery costs, innovating service delivery processes, improving knowledge of process and organization systems, allocating resources efficiently, and providing environmentally friendly processes. Competitive advantage is established sustainably through the implementation of responsible innovation, which enhances the impact of innovation resources and innovation capabilities, especially process innovation capabilities. With an important role, enterprises need to pay attention to responsible innovation, not normal innovation activities. To achieve this, enterprises need to note: implementing innovation activities with the

participation of more stakeholders; in the early stages of innovation perform a forward-looking analysis of the impact of the innovation to align these activities in a socially and ethically acceptable direction and recognize the controllable risks of innovation activities; during the renovation process, regularly review the requirements, objectives, implementation process and results of innovation; define an innovation management method that ensures interoperability, sustainability, and adaptability so that innovation is carried out accurately and can be adjusted in real-time.

Within the scope of the research, the paper still has gaps for future research. First, this study was carried out with hotels in Hanoi, so it is necessary to have studies with hotels in different areas or enterprises in other fields to provide more affirmative evidence. Second, this research focuses on studying two aspects of innovation capabilities which are product innovation capability and process capability, while innovation capabilities of enterprises include many other aspects such as marketing capability. Third, other factors such as dynamic capacity, corporate social responsibility, and responsible leadership can be considered in further studies to evaluate their mediating or regulatory roles in this relationship with innovation resources, responsible innovation, and SCA.

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Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

- Nguyen Thi Huyen Ngan performs conceptualization and original draft preparation, formal analysis, and discussion of findings.
- Duong Hong Hanh carried out supervision, reviewing, and editing works.
- Hoang Thi Lan was responsible for the statistics.

Sources of Funding for Research Presented in a Scientific Article or Scientific Article Itself

No funding was received for conducting this study.

Conflict of Interest

The authors have no conflicts of interest to declare that are relevant to the content of this article.