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VRINE In Green: Shifting Towards Ecological RBV Theory

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This research endeavours to contribute to the advancement of Resource-Based View (RBV) as a conceptual framework within existing literature. The investigation assesses the impact of the resources' attributes - Value, Rarity, Inimitability, Non-substitutability (VRIN), augmented by the ecological factor (E) - on competitive advantage. Notably, the study introduces an environmental perspective to RBV by incorporating the ecological attribute (E) and empirically examines its influence on competitive advantage. The quantitative survey, conducted within six Tunisian private clinics located in the capital Tunis, involved 350 self-distributed questionnaires among diverse employee categories. Out of these, 288 usable responses were collected, resulting in an 82.3% return rate. Utilizing SPSS and AMOS version 23 software, structural equation modelling analysis was performed. The findings affirm that resources adhering to the VRIN+E criteria significantly contribute to competitive advantage. All hypotheses testing VRINE attributes in relation to competitive advantage were substantiated. The study concludes by offering theoretical, methodological, and managerial insights specific to the ecological attribute, along with suggesting avenues for future research.

***Keywords*:** RBV, Ecological Attribute, Competitive Advantage.

Introduction

Sustainability, integrating human, natural, and financial resources, aims to enhance the economy, environment, and society for current and future generations (Sathasivam, Abu Bakar, & Che Hashim, 2021). Widely accepted by various authors over decades, this concept also finds recognition in rural societies. Ancient civilizations often intertwined their religion with environmental preservation. In the business context, sustainability ensures ongoing organizational productivity (Hariram, Mekha, Suganthan, & Sudhakar, 2023). Unfortunately, profit-driven companies are increasingly adopting Machiavellian practices, with adverse environmental consequences.

In the contemporary business landscape, companies predominantly prioritize profit and short-term investments, often overlooking long-term growth, societal, and environmental considerations (Haseeb, Hussain, Kot, Androniceanu, & Jermsittiparsert, 2019). A deeper understanding of sustainable competitive advantages and corporate sustainability can empower organizations to achieve consistent growth. Many small businesses face a short lifecycle due to a lack of comprehension of sustainability and core competence, leading to a decline within five years of inception. Acquiring knowledge in sustainability not only facilitates the attainment of sustainable competitive advantages but also contributes to increased revenue, profit, and environmental and societal responsibility (Wang, 2021).

In the context of escalating global competition, the significance of sustained competitive advantage has risen substantially. A company can only assert a competitive advantage by formulating a strategy that yields unique value and is not replicated by competitors (Yang, Jin, & Zhao, 2022). To attain such an advantage, organizations must concentrate on identifying strategies for product differentiation, cultivating or enhancing core competencies, acquiring distinctive technology, and securing intellectual property. These factors significantly contribute to an organization's success in the contemporary competitive marketplace. Within the framework of the RBV, J. Barney (1991) underscores the internal resources of an organization as pivotal for gaining a competitive advantage. According to J. Barney, Wright, and Ketchen Jr (2001), for resources to sustain their potential as fountains of sustainable competitive advantage, they must possess the attributes of being valuable, rare, imperfectly imitable, and non-substitutable. The primary objective of the Resource-Based View is to elucidate the factors influencing organizational diversity and growth, thereby underscoring the critical importance of organizational resources.

The concept proposed by J. Barney (1991) unquestionably stands as a fundamental point of reference in the field of strategic management (Alghamdi & Agag, 2024; M. B. Lieberman, 2023). Situated as an internal approach to comprehending competitive advantage within the RBV framework, an organization's resources constitute the fundamental attributes influencing its performance. Consequently, these resources facilitate the formulation of strategies aimed at enhancing organizational effectiveness and efficiency, thereby contributing to the establishment of a sustainable competitive advantage (Antunes, Pereira, Dias, & da Silva, 2023; Sabourin, 2020).

Scholars emphasize the distinction between an organization's resources, capabilities, and competencies (Hidayat, Mahanani, Sugiartono, & Kurniawan, 2022). The firm's access to resources and abilities plays a crucial role in competency development, requiring effective combination and mobilization for specific product-related competencies (Konopik, Jahn, Schuster, Hoßbach, & Pflaum, 2022). Valuable resources aid in seizing opportunities, mitigating external threats, and enhancing organizational effectiveness through strategic

implementation. In sustainable development, resource imitability or transferability is vital, especially if the resources are ecologically based (Assensoh-Kodua, 2019). The study aims to apply the resource-based view in the Tunisian context, introducing an ecological aspect as the fifth attribute to assess its impact on the competitive advantage of Tunisian private clinics. It prompts the question of whether it's time to consider incorporating an ecological attribute into J. Barney (1991) RBV equation.

Literature Review and Theoretical Framework

Resource-Based View

The RBV model is primarily employed to elucidate strategic alternatives that naturally emerge based on distinct resource perspectives. Various scholars assert that products, resources, and organizations represent different facets of the same phenomenon (Assensoh-Kodua, 2019). Numerous products necessitate a variety of services, sourced from diverse resources applicable across multiple product lines. Considering an organization's engagements in various potential markets, it becomes feasible for the organization to ascertain the minimal requisite resources (İpek, 2018). Simultaneously, defining the organizational profile enables entities to explore the broad spectrum of market activities associated with the product.

The fundamental concept underpinning the RBV posits that organizations should prioritize the cultivation of internal capabilities and existing resources to secure a distinctive or competitive advantage in the market (Quaye & Mensah, 2019). In contrast to environmental models of competitive advantage, the RBV mitigates their limitations by establishing a correlation between a company's heterogeneous resources and the resultant strategic advantages. As articulated by J. Barney (1991), only strategic resources and skills that are substantial and valuable should be acknowledged as potential sources of competitive advantage.

The performance of a company is contingent upon the resources available to it and the manner in which they are utilized. Porter (1997) asserts that competitive advantage can be attained through cost leadership, differentiation, or a hybrid strategy encompassing both. Grant (1991) supplements this perspective by positing that a company's competitive advantages stem from its resources (human, organizational, intangible, physical, and financial) and capabilities (skills and knowledge). The synergy between these resources and capabilities plays a pivotal role in enhancing overall company performance (Musyoka, Arasa, & Ombuki, 2022). Consequently, the RBV of the firm elucidates the significance of cultivating resources and capabilities that are valuable, rare, inimitable, and non-substitutable. Strategic resources and competencies, also referred to as core or distinctive competencies (Camisón & Puig-Denia, 2020), encompass resources possessing qualities of value, rarity, and inimitability that render them beyond replication or substitution by competitors. Organizations derive value through the configuration of diverse resources, although attempting to replicate another firm's value configuration may lead to the demise of the imitating entity. Such replication is infrequent due to the requisite configuration complexity (Islami, Mustafa, & Topuzovska Latkovikj, 2020). Previous studies have treated RBV as foundational literature, emphasizing its strategic importance in the market. Researchers have posited that the VRIN attributes of resources, denoting value, rarity, inimitability, and non-substitutability, are pivotal factors influencing value creation, thereby establishing a crucial relationship with sustainability.

Competitive Advantage

The competitive advantage paradigm has faced considerable contention among researchers owing to its multifaceted and ambiguous nature (M. Lieberman, 2021; Postrel, 2018). Attaining competitive advantage is imperative for organizations to ensure their relevance in the market, and the RBV emerges as a pivotal framework for achieving this goal (Sameera, 2018). The discourse surrounding RBV has predominantly centred on organizational capabilities and their inherent potential to yield a competitive advantage (J. Barney et al., 2001). Noureddine, Errabbah, and Lekbich (2023) articulate competitive advantage as "the factor or set of factors that enable an organization to distinguish itself from its competitors and offer distinctive values and advantages to customers." Some studies characterize competitive advantage as a compilation of capabilities and elements facilitating performance improvements relative to competitors. Deszczyński and Deszczyński (2021) contend that the RBV theory positions a firm's internal resources as the cornerstone of competitive advantage and firm performance, defining competitive advantage as the defining factor that sets a company apart.

Researchers assert that an organization is predicated on the aggregation of organizational, human, and physical resources (Chigara, 2021). Organizational resources, characterized by imperfect sustainability, imperfect imitability, rarity, and value, serve as the primary reservoir for attaining sustainable competitive advantage and maintaining organizational performance. These resources must adhere to the VRINE criteria, encompassing valuation, rarity, imperfect inimitability, non-substitutability, and ecological considerations (Zvarimwa & Zimuto, 2022). Azeem, Ahmed, Haider, and Sajjad (2021) propose four empirical indicators, namely value, rarity, inimitability, and non-substitutability, aligning with J. Barney (1991) framework, to evaluate a company's resource potential for generating competitive advantage. Additionally, we introduce a fifth ecological attribute to extend the scope of the RBV equation and ensure the incorporation of environmental considerations.

Valuable Resource and Competitive Advantage

Valuable resources in an organization are those that provide strategic value, aiding in market opportunity exploitation and threat reduction (Khan, Yang, & Waheed, 2019). If resources fail to increase value for the firm, they hold no utility for the organization. According to J. Barney et al. (2001), a company's resources must be valuable to serve as a sustainable competitive advantage, requiring the

addition of value to ensure this advantage. J. Barney (1991) emphasizes that the value of specific resources depends on the unique market context in which they are applied. A valuable resource not only enhances the company's differentiation position but also reinforces its cost-containment strategy. Externally, such a resource can proactively address threats and exploit opportunities, surpassing competition (J. Barney, 1991).

Considerable empirical research explores the impact of valuable resources on competitive advantage. As per Farida and Setiawan (2022), resources that enhance organizational potential, enabling cost reduction and effective responses to environmental threats and opportunities, are deemed valuable. The value of a resource is gauged by its effectiveness in influencing organizational capabilities and securing competitive advantage (J. Ferreira, Coelho, & Moutinho, 2020). The acquisition of capabilities and resources by an organization plays a pivotal role in determining its level of competitive advantage. An organization possessing highly valuable capabilities and resources is more inclined to attain a significant competitive advantage (Azeem et al., 2021).

Newbert (2008) discovered a noteworthy positive influence of value on the preservation of competitive advantage. In a separate investigation within the setting of large and medium-sized Croatian companies, scholars empirically demonstrated that valuable value exerts a substantial and positive effect on sustainable competitive advantage. Furthermore, a study conducted on banks operating in a highly unstable economy, with a primary focus on directors, managers, supervisors, and senior executives, by Zvarimwa and Zimuto (2022), revealed a significant and positive relationship between valuable resources and competitive advantage. Consequently,

H1- Value resource positively influences competitive advantage.

Rare Resource and Competitive Advantage

Researchers highlight that organizational resources are considered rare if few organizations possess them, a criterion easily accessed through VRIO. Rare resources, challenging for potential competitors to acquire, play a crucial role in gaining organizational advantages. Resources common to most organizations lack the capacity to design unique strategies, hindering the attainment of competitive advantage (D'Oria, Crook, Ketchen Jr, Sirmon, & Wright, 2021). Possession of valuable resources enables a firm to outperform competitors by effectively controlling negative factors, exploiting opportunities, and achieving superior performance (J. Ferreira et al., 2020). To gain competitive advantage, organizations must neutralize threats, exploit market opportunities, and attain a cost level beyond their competitors' reach. J. Barney (1991) asserts that a resource's value is contingent on its rarity, emphasizing that a competitive advantage is elusive if the resource is widely accessible to numerous competitors. This necessitates the resource's uniqueness to the company. However, the absence of rarity does not negate the relevance of a valuable resource to its possessor. Amaya, Bernal-Torres, Nicolás-Rojas, and Pando-Ezcurra (2022) contend that valuable but non-rare resources still function as internal strengths for the company. The specificity and uniqueness of a resource to the company enhance its rarity. As highlighted by J. J. Ferreira, Fernandes, and Ferreira (2022), a rare resource propels the company to a superior position compared to competitors, forming the foundation of a competitive advantage.

Limited research has explored the correlation between rarity and competitive advantage. In the realm of resource-based entrepreneurship, Adomako (2018) found a positive association between the rarity of resource-capability and entrepreneurial orientation leading to competitive advantage. Semaan, Beydoun, and Mostapha (2020) conducted empirical research, establishing a positive influence of the rarity of organizational resource-capacity combinations on competitive advantage. Additionally J. J. Ferreira et al. (2022), scrutinized various resource attributes, confirming a significant and positive relationship between rarity and competitive advantage, alongside overall organizational performance.

H2- Rarity positively influences competitive advantage.

Inimitable Resource and Competitive Advantage

The organization's resource, characterized by non-sustainability and inimitability, poses challenges for other entities to acquire or find suitable substitutes. When an organization possesses a rare or valuable resource, it functions as a catalyst for gaining a competitive advantage, especially if other organizations have not acquired the same resource or a close substitute. Acquiring a valuable and rare resource that is easily imitated does not suffice for building a sustainable competitive advantage. Therefore, it becomes imperative to possess not only a valuable and rare resource but also one that is inherently inimitable, preventing competing companies from reproducing it. Only under these conditions can the maintenance of a competitive advantage be ensured. In alignment with this perspective, J. B. Barney (1996) emphasizes the significance of inimitability within the resource-based view of the firm, stating that if other firms can acquire or develop the same resources as a firm possessing them and do so at a similar cost, these resources cannot be a source of competitive advantage for any firm.

Imitating these resources becomes arduous for organizations, particularly if they are costly for competing firms. When a company possesses such resources, it can potentially establish a near-permanent monopoly, as the resource remains difficult to imitate over an extended period. Even legal protection adds an additional layer of complexity for organizations attempting to replicate these resources. According to the resource-based view, resources can attain inimitability based on the interplay of three factors: unique historical conditions (past choices), causal ambiguity (blurring between resource competitive advantage), and social complexity (the strength of the company's social network).

Sani, Hassaballah, and Hafiz (2014) employed quantitative research to establish a significant and positive correlation

between resource inimitability and sustainable competitive advantage. In a study focused on two Kenyan universities, it is demonstrated that resource inimitability contributes to sustaining university competitiveness. Cao, Duan, and Cadden (2019) asserted a positive association between the inimitability of information-processing capacity and competitive advantage based on their research results. More recently, Amaya et al. (2022) conducted research affirming the crucial role of inimitability for a company seeking to uphold its competitive edge.

H3- Inimitability positively influences competitive advantage.

Non-Substitutable Resource and Competitive Advantage

J. Barney (1991) defines non-substitutability as the quality of a resource being unmatched, rare, and inimitable. Non-substitutability specifically denotes the incapacity of competitors to replicate a company's positional advantages or reproduce its products or services. The non-sustainability of resources implies the formidable challenge for an organization to maintain its competitive edge, as alternative resources cannot adequately replace the organization's performance (Bekanwah & Miidom, 2020). Acquiring specific capabilities is crucial for organizations seeking a competitive advantage, and these organizational capabilities, being non-sustainable, are not strategically interchangeable Ndegwa, Kilika, and Muathe (2018).

Non-sustainable capabilities hold less strategic importance for organizations, emphasizing the significance of acquiring final organizational capabilities for gaining a competitive advantage. These capabilities must strategically differentiate from those of competitors to be deemed non-substitutable (Gumulya, Purba, Hariandja, & Pramono, 2023). Non-substitutable resources play a vital role in attaining sustainable competitive advantage, as empirically determined by Hinterhuber (2013) and confirmed in Indonesian research by Guntoro and Widiyanti (2021). Recent research in Malaysian high-tech manufacturing companies by Vafaei-Zadeh, Madhuri, Hanifah, and Thurasamy (2024) affirms that non-substitutability significantly and positively impacts sustainable competitive advantage. Thus,

H4- Non-substitutable resource positively influences competitive advantage.

Ecological Resource and Competitive Advantage

An ecological resource is defined as the production or process, operation, or marketing of a product or service that, throughout its life cycle, leads to a reduction in environmental risks, pollution, and other adverse impacts on nature. To address the urgent need to preserve biodiversity and protect the environment, an ecological resource is deemed valuable, rare, inimitable, and non-substitutable, providing a foundation for a company to attain a sustainable competitive advantage that aligns with environmental benefits (Dasgupta, 2021). In support of this perspective, Camisón and Puig-Denia (2020) contend that advocates for the environmental ecosystem advocate for a novel approach in understanding the determinants of resource and capacity value. This necessitates not only a precise comprehension of the internal ecosystem but also an understanding of the natural ecosystem, as the biosphere generously provides resources to the company at minimal cost.

The ecological responsibility of organizations often emerges as a decisive factor capable of influencing and shaping competitive advantages across various organizational types. Ecological concerns, encompassing issues such as waste management, pollution, natural resource utilization, and energy consumption, concurrently impose constraints and present competitive opportunities. These factors play a pivotal role in enabling organizations to secure a competitive advantage (Klemke-Pitek & Majchrzak, 2022). The escalating environmental degradation, pursuit of profit maximization, and the depleting availability of natural resources pose significant threats to the global population (Hoang Yen & Hoang, 2023). While the traditional VRIN attributes conceptualization remains crucial for ensuring sustainable competitive advantage, it is recognized as a necessary but insufficient condition for corporate sustainability, considering its economic, societal, and ecological implications (Camisón & Puig-Denia, 2020). Saunila and Ukko (2013) advocate for the sustainable use of corporate resources and ecological support. Past studies have affirmed the positive impact of ecological activities on competitive advantage (Yadav, Han, & Kim, 2017). Thus,

H5- Ecological resource positively influences competitive advantage.

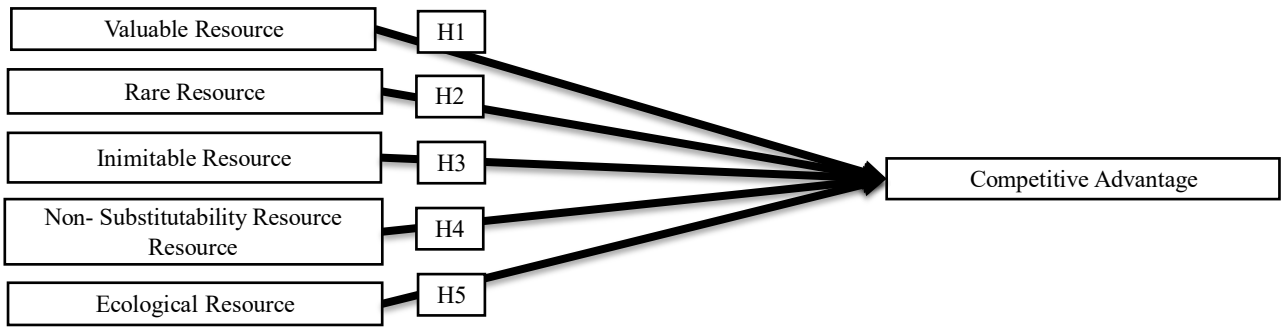

Figure 1: Conceptual Synthesis Model.

Methodology

Population and Sampling Techniques

Our quantitative study was conducted within six Tunisian private clinics situated in the capital, Tunis. A self-distributed questionnaire was administered to 350 participants, encompassing administrative personnel (directors, human resources managers, procurement managers, engineers, and IT specialists), medical professionals (general practitioners, specialists), and paramedical staff (nurses, orderlies, anaesthetists, paediatric technicians, midwives). The study achieved a response rate of 82.3%. The data underwent analysis using structural equation modelling through SPSS and AMOS version 23 software.

Choice of Measurement Scale

The significance of information is contingent upon the thoughtful selection of measurement scales, necessitating their reliability and validity. In the ensuing discussion, we will elucidate the measurement scales pertaining to our six variables, as delineated in Table 1. The arrangement of certain measurement scales has been tailored to align with our theoretical and practical requirements.

This study utilized items related to the value and rarity of resources from Newbert (2008), with three items dedicated to resource rarity and six items to resource value. Additionally, items assessing the inimitability and non-substitutability of organizational resources were drawn from the work of Morgan, Vorhies, and Schlegelmilch (2006), each comprising four items. The items concerning ecological resources were adapted from Robertson and Barling (2013). Lastly, the six-item scale measuring competitive advantage was adapted from Čater and Čater (2009).

Five-point Likert scales were employed, prompting respondents to express their preferences on a spectrum from "strongly disagree" to "strongly agree." Table 1 provides a comprehensive overview of the measurement scales incorporated into the research questionnaire, detailing the scales, the number of items they encompass, and their respective authors.

Table 1: Summarizing Table of the Scales Used.

Variables	Number of Items	Corresponding sources
Value	6	Newbert (2008)
Rarity	3	Newbert (2008)
Inimitability	4	Morgan et al. (2006)
Non-substitutability	4	Morgan et al. (2006)
Ecology	10	Robertson and Barling (2013)
Competitive Advantage	6	Cater & Cater (2009)

Measurement Results

Exploratory analysis serves as a means to evaluate the precision of measurement scales, aiming to establish their reliability through a principal component analysis. Subsequently, a confirmatory analysis was conducted as a secondary step to validate the findings derived from the exploratory data analysis. In the conclusive phase, structural equation models (SEM) will be employed to examine the correlations existing among the six variables.

Results of Confirmatory Factor Analysis

As depicted in Table 2 below, responses obtained from the questionnaires were bounded within a range of 1 to 5, with mean values spanning from 3.67 to 4.15 and standard deviations ranging from 1.135 to 1.289. Furthermore, the first-order model exhibits an x^2/ddl ratio of "2.663," well below the threshold of 3. The SRMR yields a value of 0.026, and the RMSEA indicates a value of 0.076, reflective of residuals approaching zero. The CFI, TLI, NFI, and IFI present values of 0.938, 0.930, 0.904, and 0.938, respectively, in close proximity to 1. These findings suggest that the modifications implemented in our model are reasonably acceptable.

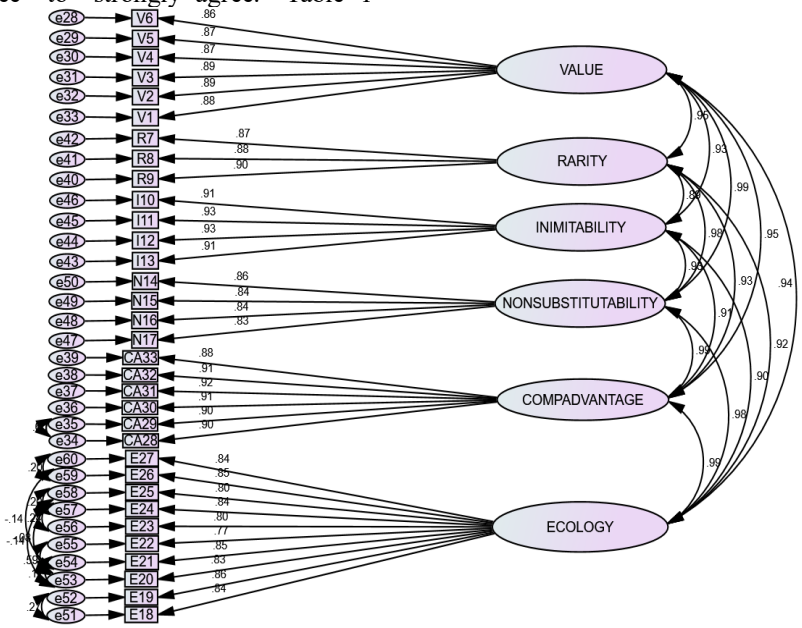

Figure 2: The Standardized Regression Weights of The First-Order Model.

Upon further examination of Table 2 , it is evident that the skewness and kurtosis coefficients align with the null hypotheses proposed by Kline (2015), showcasing satisfactory values. In light of these findings, it is observed that all distributions and variables maintain an equitable distribution (Table 2).

Table 2: Desc. St.

	≤	≥	M	SD	Skew[X]	KU
V1	1,0	5,0	4.00	1.233	-1.181	.360
V2	1,0	5,0	4.02	1.237	-1.216	.416
V3	1,0	5,0	3.96	1.259	-1.163	.307
V4	1,0	5,0	3.95	1.216	-1.107	.257
V5	1,0	5,0	3.95	1.251	-1.144	.272
V6	1,0	5,0	3.90	1.230	-1.097	.266
R7	1,0	5,0	3.73	1.213	-.925	.058
R8	1,0	5,0	3.84	1.228	-1.080	.290
R9	1,0	5,0	3.74	1.218	-.985	.159
I10	1,0	5,0	3.68	1.234	-.945	.070
I11	1,0	5,0	3.68	1.264	-.952	.013
I12	1,0	5,0	**3.67**	1.252	-.933	.012
I13	1,0	5,0	3.67	1.229	-1.015	.199
N14	1,0	5,0	3.89	1.256	-1.097	.220
N15	1,0	5,0	3.86	1.239	-1.029	.124
N16	1,0	5,0	4.01	1.234	-1.219	.462
N17	1,0	5,0	3.98	1.246	-1.232	.530
E18	1,0	5,0	3.99	1.245	-1.180	.357
E19	1,0	5,0	4.01	1.249	-1.309	.666
E20	1,0	5,0	3.93	1.209	-1.086	.280
E21	1,0	5,0	3.93	1.233	-1.113	.265
E22	1,0	5,0	3.91	**1.135**	-1.003	.338
E23	1,0	5,0	3.86	1.213	-.945	.009
E24	1,0	5,0	3.98	1.248	-1.126	.218
E25	1,0	5,0	3.86	1.253	-.956	-.070
E26	1,0	5,0	3.98	1.198	-1.184	.497
E27	1,0	5,0	3.94	1.182	-1.179	.588
CA28	1,0	5,0	4.07	1.215	-1.465	1.179
CA29	1,0	5,0	4.09	1.226	-1.463	1.093
CA30	1,0	5,0	4.11	**1.289**	-1.452	.873
CA31	1,0	5,0	**4.15**	1.256	-1.529	1.143
CA32	1,0	5,0	4.12	1.270	-1.546	1.206
CA33	1,0	5,0	4.03	1.256	-1.430	.965

Convergent and Discriminant Validity of Measurements

After establishing the outcomes of the confirmatory factor analysis, the subsequent step involves assessing the correlation among variable items. To achieve this, the calculation of convergent validity, through the CR, becomes imperative. The CR values should exceed 0.70, accompanied by an AVE value surpassing 0.50. Regarding discriminant validity, the square root values should surpass the shared correlation among the variables. The values presented in Table 3 below indicate that discriminant validity was upheld for all six variables.

Table 3: Convergent and Discriminative Validity (*Developed by Authors*).

Factors	CR[1]	AVE[2]	MSV[3]	ASV[4]	1	2	3	4	5	6
Value Newbert (2008) ***(α = 0.953)***	.953	.771	.848	.805	**.878**					
Rarity Newbert (2008) ***(α = 0.913)***	.914	.779	.795	.754	.889**	**.882**				
Inimitability Morgan et al. (2006) ***(α = 955)***	.955	.842	.786	.740	.887**	.829**	**.917**			
Non-substitutability Morgan et al. (2006) ***(α = 0.905)***	.905	.704	.850	.814	.921**	.892**	.865**	**.839**		
Ecology Robertson and Barling (2013) ***(α = 0.958)***	.956	.687	.885	.796	.892**	.860**	.855**	.912**	**.828**	
Competitive Advantage Cater and Cater (2009) ***(α = 0.965)***	.964	.816	.885	.814	.909**	.874**	.865**	.922**	.941**	**.903**

In accordance with the guidance provided by Fornell and Larcker (1981), the correlation coefficients among variables ought to surpass the off-diagonal values. This signifies that the factors' discriminant validity has been duly maintained.

Table 4: Correlations (Developed by SPSS).

		VAL	RAR	INIMITA	NONSUB	ECOLO	COMPADV
VAL	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	288					
RAR	Pearson Correlation	.889**	1				
	Sig. (2-tailed)	.000					
	N	288	288				
INIMITA	Pearson Correlation	.887**	.829**	1			
	Sig. (2-tailed)	.000	.000				
	N	288	288	288			
NONSUB	Pearson Correlation	.921**	.892**	.865**	1		
	Sig. (2-tailed)	.000	.000	.000			
	N	288	288	288	288		
ECOLO	Pearson Correlation	.892**	.860**	.855**	.912**	1	
	Sig. (2-tailed)	.000	.000	.000	.000		
	N	288	288	288	288	288	
COMPADV	Pearson Correlation	.909**	.874**	.865**	.922**	.941**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	288	288	288	288	288	288

[1] CR = Composite Reliability
[2] AVE = Average Variance Extracted
[3] MSV = Maximum Shared Value
[4] ASV=Average Shared Value

Following the assessment of both reliability and validity, structural equation modelling becomes essential to scrutinize the impact of our five independent variables on competitive advantage. The model exhibits a chi-square ratio on its x^2/ddl degree of freedom amounting to 2.454, a highly acceptable result as it is below 3. Regarding the RMSEA index, it stands at 0.071, indicating a very acceptable proximity to zero. Additionally, the indices NFI = 0.959, TLI = 0.961, IFI=0.987, RFI=0.931, and CFI = 0.986 all align with the values acknowledged in the literature to denote a highly satisfactory fit. The SRMR registers at 0.0183, which is deemed tolerable as it is also in close proximity to zero.

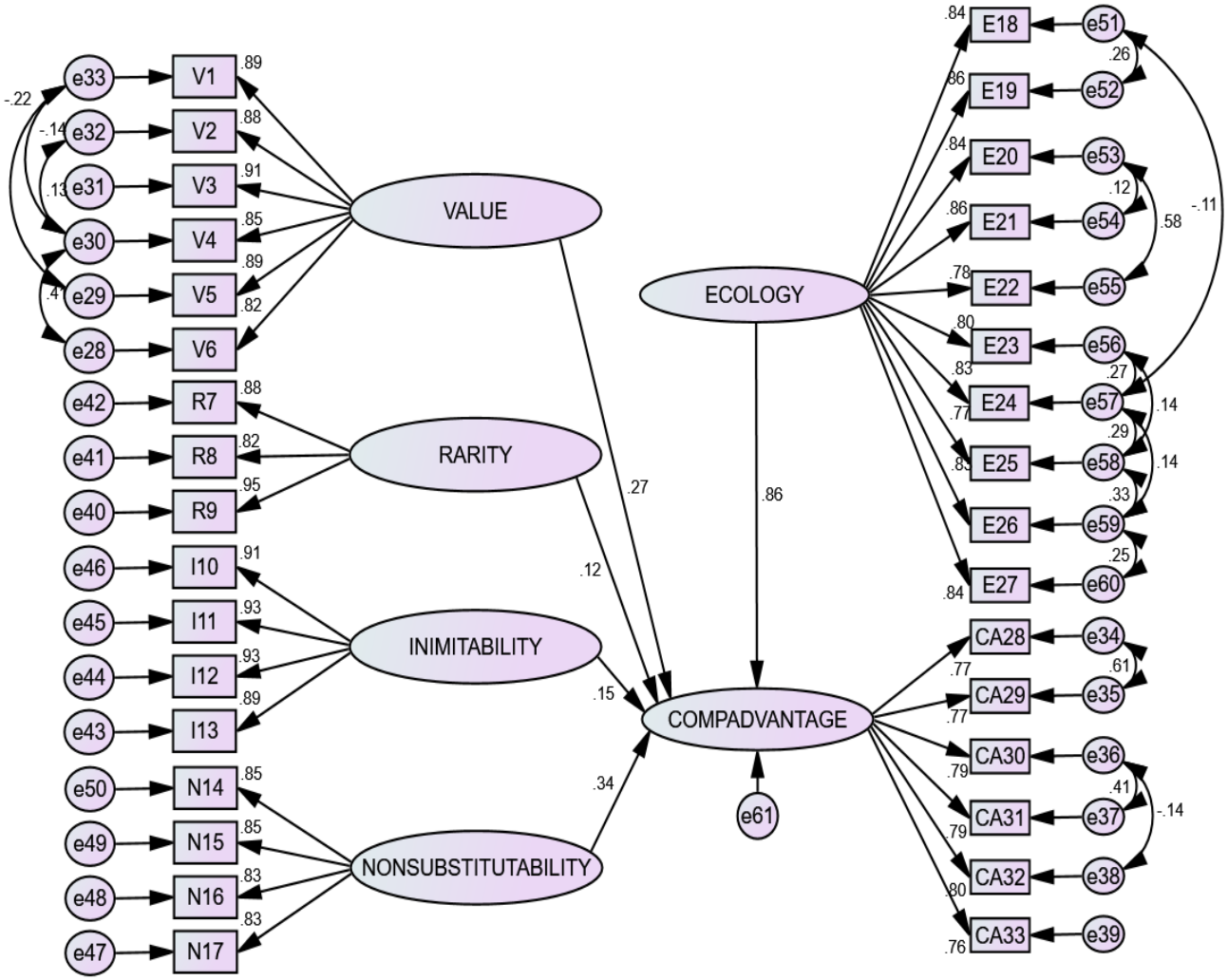

Figure 2: The Final Model.

The findings of this study demonstrate a positive influence of valuable resources on competitive advantage (β= +0.269, p < 0.001***), indicating a statistically significant impact. Moreover, the rarity of resources exhibits a significant and positive effect on competitive advantage (β = +0.123, p < 0.001***). Similarly, the inimitable nature of resources significantly and positively influences competitive advantage (β= + 0.152, p < 0.001***), while the non-substitutable aspect of resources demonstrates a significant and positive impact on competitive advantage (β= + 0.342, p < 0.001***). Additionally, our findings reveal a robust association between ecological resources and competitive advantage (β= + 0.859, p < 0.001***).

To assess the robustness of the structural model, we computed the R^2. The coefficient reveals a significant and substantial value of 0.917 (refer to Table 5), encompassing five independent variables: value, rarity, inimitability, non-substitutability, and ecological aspects of the resource affecting competitive advantage. Thus, these variables collectively account for approximately 91.7% of the variance in competitive advantage within the regression model. Notably, the empirical findings affirm a positive relationship between valuable resources and competitive advantage (β= +0.269, p < 0.001***), corroborating the results observed in studies by Newbert (2008), Talaja (2012), and Zvarimwa and Zimuto (2022).

Resource rarity positively impacts competitive advantage (β = +0.123, p < 0.001***), aligning with findings from prior studies conducted by Adomako (2018), Semaan et al. (2020), and J. J. Ferreira et al. (2022). Similarly, the inimitable resource demonstrates a significant and positive influence on competitive advantage (β= + 0.152, p < 0.001***), confirming the empirical trend observed in previous research.

Sani et al. (2014); Cao et al. (2019); Amaya et al. (2022). Moreover, the non-substitutable resource significantly and

positively influences competitive advantage (β= + 0.342, p < 0.001***), aligning with the findings of Hinterhuber (2013), Guntoro and Widiyanti (2021), and Vafaei-Zadeh et al. (2024). Lastly, the ecological resource, proposed as an additional attribute in J. Barney (1991) RBV, exhibits a remarkably strong, significant, and positive impact compared to all other attributes on competitive advantage (β= + 0.859, p < 0.001***), as highlighted by Bhandari, Ranta, and Salo (2022). Furthermore, within the regression model and utilizing the ecological attribute as a predictor, we can elucidate approximately 88.5% of the variance in competitive advantage (refer to R^2 in Table 6).

Table 5: Robustness of the structural model (Developed by SPSS).

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.958[a]	**.917**	.916	.33557	.917	624.769	5	282	.000

a. Predictors: (Constant), ECOLO, INIMITA, RAR, VAL, NONSUB

Table 6: R^2 of the Ecological Resource Variable in Relation to Competitive Advantage.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.941[a]	**.885**	.884	.39290	.885	2198.376	1	286	.000

a. Predictors: (Constant), ECOLO

Discussion

The study examined the impact of resources (Value, Rarity, Inimitability, Non-substitutability, and Ecology) on competitive advantage, specifically exploring the addition of the ecological attribute (E) to re-evaluate RBV from an environmental standpoint. Conducted through a quantitative survey among six Tunisian private clinics in the capital Tunis, the results demonstrated a positive effect of value on competitive advantage, aligning with prior research (Zvarimwa & Zimuto, 2022). The findings suggest that respondents believe their organizations can easily access resources held by competitors, reducing the cost of utilizing these resources. Leveraging such resources allows organizations to better exploit market opportunities, enhance performance, compete effectively, and address environmental threats, both internal and external.

The study's results underscored a positive relationship between resource rarity and competitive advantage. This indicates the significance of resource rarity for organizations to attain a competitive advantage and outperform other industry competitors. Past research by Semaan et al. (2020) aligns with these findings. Several reasons might explain these results. Respondents may perceive their organization as effectively utilizing organizational capabilities compared to other companies. The organization's distinctive approach to resource utilization, particularly in cost reduction, market exploitation, and competitive scenarios, could contribute to this outcome. Effectively managing resources is crucial for survival in a competitive market. Respondents also believe that their organization excels in resource utilization when faced with strong threats or opportunities, optimizing operational costs. The assessment of organizational performance includes an examination of the costs incurred in achieving organizational objectives. Additionally, organizations deploy resources in a distinctive manner to enhance performance relative to competitors and to streamline operational costs. Ultimately, the strategic and unique utilization of organizational resources is crucial for optimizing organizational opportunities.

The study results also indicated a positive correlation between inimitability and competitive advantage, aligning with the research findings of Amaya et al. (2022). This alignment suggests that competitors encounter significant challenges in attempting to replicate the organization's resources. Furthermore, none of the rival organizations possess the capability to duplicate the specific resources essential for business operations. In essence, acquiring the resources of the organization proves exceedingly difficult for competing firms, making it nearly impossible for them to emulate the organization's resource base.

The study's findings also indicated that non-substitutability positively influences organizational competitiveness. This is attributed to the absence of available substitutes for the unique combination of resources possessed by the organization. The organization demonstrates the capacity to manage a diverse range of resources through various means. There is a prevailing belief within the organization that utilizing a varied set of resources for business operations could lead to unfavourable outcomes. Additionally, organizational decision-makers emphasize that achieving success in business is contingent upon utilizing the organization's resources, and these resources must be employed in diverse compositions. Effectively leveraging organizational resources requires a skilled human resource, as highlighted in the study conducted by Vafaei-Zadeh et al. (2024).

Ultimately, the study results underscored the significance of the environment for organizational success and competitive advantage. The findings revealed a positive impact of Ecology on competitive advantage, aligning with the results presented by Yadav et al. (2017) in their study. The potential rationale for these findings lies in the respondents' strong sense of environmental passion. These employees consistently exhibit environmentally friendly behaviour while working within the organization. They believe their organization possesses environmentally friendly resources, making it nearly impossible to harm the environment through organizational activities. Moreover, the respondents perceive competing firms as less environmentally friendly compared to their own organization. They actively engage in discussions about

environmental issues with both internal and external stakeholders, as well as within their industry. Their organizational strength lies in their commitment to environmental responsibility, taking measures to minimize environmental impact. Additionally, these employees voluntarily participate in environmental groups, highlighting the importance of the environment to them. They invest time and resources to contribute to environmental preservation, showcasing their dedication to the organization.

Implications, Limitations and Future Research

This paper contributes both theoretically and managerially, advancing the broader literature and particularly enriching J. Barney (1991) resource-based perspective. A distinctive feature of this study is its accomplishment in consolidating all resources into a comprehensive model and empirically assessing their respective impacts on the competitive advantage of six Tunisian private clinics. The examination in this study delineates the portion of competitive advantage explicated by the five independent variables: value, rarity, inimitability, non-substitutability, and resource ecology. Moreover, the findings of this research stand as a testament to the importance of endorsing sustainable use of corporate resources and supporting ecological initiatives. The outcomes of our investigation affirm the viability of the proposed conceptual model, establishing a noteworthy precedent as one of the few studies illustrating the significant and positive influence of VRINE resources on competitive advantage.

In managerial terms, this study emphasizes the need for eradicating detrimental stereotypes. Specifically, outdated views treating environmental management as a mere expense should be replaced with a strategic perspective acknowledging its potential for competitive advantage. Decision-makers should recognize that adopting an environmental resource can result in either cost efficiency or enhanced differentiation. The study underscores the significance of on-site visits to clinics as pivotal actions for improving energy efficiency.

The study shares common limitations with other empirical research endeavours. While it successfully attained its objectives and addressed the research question, certain constraints should be acknowledged. The survey focused exclusively on a limited geographic area, specifically the six private clinics in the capital, Tunis. This localized approach hinders the generalizability of the findings. Subsequent studies should expand the sample size by incorporating a more extensive range of clinics to enhance the depth of insights. Furthermore, this research relied on quantitative analysis; future investigations could adopt a mixed-methods approach for a more comprehensive examination. The study's scope was confined to Tunis, and future research could apply the same model to a broader South Asian context. Additionally, the present study employed AMOS for data collection, while future research might explore alternative tools such as Process Macros or Smart PLS 4 for data analysis.

In subsequent research endeavours, it would be valuable to elucidate the factors contributing to the non-application of procedures, while concurrently examining the affective, normative, and calculative dimensions of commitments among companies that adhere to environmental procedures in their pursuit of environmental sustainability.

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Appendix 1: Measurement Scales

Abr.	Item	Reference
	Value	
1	Given the Resources my firm possesses and has access to, if my firm possessed other	Newbert (2008)
2	Given my firm's Capabilities, if my firm possessed or had access to other Resources it could reduce its costs further	
3	Given the Resources my firm possesses and has access to, if my firm had access to other Capabilities, it could better exploit targeted market opportunities	
4	Given my firm's Capabilities, if my firm possessed or had access to other Resources it could better exploit targeted market opportunities	
5	Given the Resources my firm possesses and has access to, if my firm had access to other capabilities, it could better defend against known competitive threats	
6	Given my firm's Capabilities, if my firm possessed or had access to other Resources it could better defend against known competitive threats	
	Rarity	
1	Compared to companies with similar Capabilities, my firm uses them to exploit very different Resources when attempting to reduce costs, exploit market opportunities, and/or defend against competitive threats	Newbert (2008)
2	Compared to companies that possess or have access to similar Resources, my firm exploits them with very different Capabilities when attempting to reduce costs, exploit market opportunities, and/or defend against competitive threats	
3	Compared to my firm's competitors, my firm exploits very unique combinations of Resources and Capabilities when attempting to reduce costs, exploit market opportunities, and/or defend against competitive threats	
	Inimitability	
1	Competitors find it very difficult to match our export venture's resources	(Morgan et al., 2006)
2	No competitor could replicate our mix of export resources	
3	Acquiring export resources similar to ours is not difficult (Reverse Scored)	
4	Competitors never seem to match our export venture's resources	
	Non-substitutability	
1	There is no substitute for our mix of export resources	(Morgan et al., 2006)
2	You can always overcome having a different mix of export resources somehow	
3	Having a different mix of export resources would be disastrous	
4	You cannot succeed without having our mix of export resources	
	Ecology	
1	I'm passionate about the environment.	(Robertson & Barling, 2013)
2	Within my company, I like to adopt environmentally friendly behaviours	
3	Our organizational resources are environmentally friendly	
4	I am proud to belong to an environmentally friendly company	
5	Our competitors are not as environmentally friendly as we are	
6	I enthusiastically discuss ecological issues with other people from companies in the same sector as us	
7	At company level, respect for the environment is our strength	
8	I am a volunteer member of an environmental group	
9	I have voluntarily donated time or money to help the environment in some way	
10	I am very committed to my environmental values	
	Competitive Advantage	
1	Our prices per unit of product/service are lower than our competitors' prices	(Čater & Čater, 2009)
2	We will continuously improve our cost efficiency	
3	We are cost-efficient	
4	Compared to our competitors' products, the quality of our products/services is better	
5	Compared to our competitors, we are faster in meeting our customers' needs	
6	Compared to our competitors, we are more flexible in meeting our customers' needs	