

The Impact of External Business Environment on the Performance of Business Organization and The Moderating Role of Internal Organizational Resources

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Abstract

The aim of this research assessed the impact of internal business factors and the external operating environment on the performance of business organisations. The external and internal resource factors were modelled as higher-order factors, and the impact of the moderating effect of the internal business factors on the relationship between external factors and the performance of business organizations was analysed. The survey questionnaire was sent to over 380 companies. 146 responses (38 percent) were received. The data was analysed using Smart PLS 3. The results indicated that external resources have a direct and positive impact on the performance of business organisations and that the internal organisational resource factors have a positive moderating effect on the relationship between the external business environment and the performance of business organisations in South Africa.

Keywords

Structural equation modelling, Competitiveness, Business performance, Porter's diamond model, Resource-based theory.

1. Introduction

Business organisations are faced with a multitude of challenging factors that include access to finance, access to markets, and access to adequate resources to manage and build effective operations that deliver value to their customers and stakeholders (Husso & Nybakk, 2010). These factors are due to the environment in which they operate, but the impact they have on the performance and continuity of the business may depend on how the business organisation may have structured and used its internal resources as production factors (Cho & Mun, 2013). The intensification of competition among organisations and the operating environment uncertainties may drive the less competitive organisations out of business. Their lack of competitiveness may be due to having limited or inappropriate resources, and these businesses may find themselves under strain as they strive to survive economic hardships and remain profitable, which results in the likelihood of having to close their businesses (Lussier & Halabi, 2010; Van Auken et al., 2009). Porter (1980) states that the competitive advantage from sustainable and superior resources of the firm can help to guard against external forces emanating from the market conditions and the pressure from other organisations operating in the same market space (Campbell & Park, 2016). Recently, the Covid-19 pandemic threatened the lives of many people around the world and businesses suffered a similar fate, where they might have had to suspend operations due to economic activities across the globe coming to a halt. Many businesses realised that they could not get back into operation when the national economies started opening up again. The Covid pandemic is one of those adversities businesses had to endure, and to many organisations, this meant closing permanently due to a lack of access to market, unsecure financial support, or total lack of access to (or not having the right) resources to keep their businesses sustained and profitable.

By design, organisations are structured to generate and deliver value to their stakeholders, which includes their customers (Hamilton & Dobbs, 2006). The creation of value requires adequate resource availability in various forms and compositions. Without (or with limited) resources, businesses may find it difficult to generate and deliver the required values, whether in the form of products or services, because resources are both an input for, and driver of,

values (Wilk & Fensterseifer, 2003, Mahoney & Pandian, 1992). Winterfelt (1984) defines a resource as anything which can be viewed as a strength (or the lack thereof as a weakness) of the firm. Resources can be tangible or intangible; physical, such as land and raw material; or non-physical, such as human capital, social capital, and entrepreneurial orientation, to name a few. While tangible resources can be observed and evaluated with clarity, intangible ones, like the reputation of a company or product, organisational culture, management and coordination abilities, non-documented technologies, and knowledge, among others, cannot be directly observed or quantified (Wilk & Fensterseifer, 2003). Resources can also be viewed as internal (those that an organisation has or acquire to deliver values) or external, such as market demand, and supply chain networks between and within industries. The firm's resources and capabilities are the results of the business's strategic choices and resource commitment made by the business over a period, and they ultimately determine the business' growth and performance over time (Penrose, 1959; Rivard, et al, 2006).

1.1 Objectives

This paper aimed to answer two questions: what are the impacts of the business' external environmental factors on the performance of businesses; and how much do internal business resources (factors) moderate the impact of the business' environmental factors on the performance of businesses in South Africa? This study uses all four determinants of the Porter's Diamond model (demand conditions, factor conditions, related and supporting industries, and the firm structure and firm strategy) and the resource-based view of the business from an organisational social capital, entrepreneurial orientation, and other resources perspective (Wernerfelt, 1984). In this study, resources are viewed from a perspective of either being internal i.e., those that the firm has direct influence and control over, or external, i.e., those which are not within the firm's span of control, though they impact the performance of the firm (Campbell & Park, 2016). Literature suggests that many of the factors discussed under theories such as Porter's diamond model (1991) and the Resource-Based Theory (RB-theory) (Wernerfelt, 1984) can be distinctly categorised as external business environment factors or internal organisational factors. That is the approach that was adopted in this research.

This paper is structured as follows. Section one discusses the study background. Section two presents the literature review and the proposed hypotheses for the study. Section three discusses the methodological steps for the study and the analysis of the data gathered for use in structural equation modelling, after which it progresses to present the structural equation model. Section four covers the discussion of the results, and section five concludes the study.

2. Literature Review

This study draws from two main ideas: one was propounded by Michael Porter in the diamond model and the other is the RB-theory. Both theories propose that resources, which may be either internal or external in nature, are important to the growth and performance of organisations, and drive their competitiveness. Factors in Porter's diamond model such as demand conditions, firm strategy, and firm structure can be categorised as either internal or external resource factors. Additionally, RB-theory emphasises the importance of value creation through the use of resources to which the organisation has access. Both models have similar factors; consequently, it was decided to integrate both models for the development of the model proposed in this study.

2.1 Resource-based theory

The value creation model of organisations follows an approach of using resources as inputs to deliver value to the end customer. Both product- and service-based businesses require resources in one form or another to produce the final product or service for their customers. A particular resource can belong to a business or be accessed by the business through another resource (Mills & Platts, 2003). Penrose (1959) developed a concept that became the foundation of the RB-theory, which viewed a business as a group of resources. It is also stated in the resource-based view of the firm that the resource perspective provides a basis for understanding the fundamental essence and objective of the company. While physical resources like land, machinery, and equipment are self-evident, there may be the need to discuss intangible resources like human capital, social capital, a company's technical know-how, and entrepreneurial orientation.

Learning and adsorptive capacity theory state that the growth path of each business will mirror, to some extent, the dynamics of learning within the business (Bessant et al., 2005, p.25). This provides the entrepreneur with the knowledge that assists in recognising opportunities and ways to pursue those opportunities to realise the intended growth in the business. This is understood as the entrepreneurial adsorptive capacity, which refers to "the ability to

recognize [sic] the value of new information, assimilate it, and apply it to commercial ends to create a firm” (Cohen & Levinthal, 1990). Michael Porter (Porter, 1994) explains this in the diamond model as the advanced factor conditions, which are created from basic factor conditions over time. It is through learning that the critical resource of sufficient knowledge is created in the decision-makers, which in turn facilitates the subsequent evolution of their business.

Organisational resources are assets that are formed over time by routines that coordinate the human and physical resources in a productive manner, and the social capital network that the business has within its value chain and supply chain network. Close coordination, planning, and management between the supporting industries or firms in similar industries within the supply chain network result in the external business ecosystem that delivers superior competitive advantage (Porter, 1991). As a result, there is a rapid flow of information, knowledge spillover, and technology, which results in innovation and significant improvement (Acs et al., 2009 and Audretsch, 1996; 2006). RB-theory places emphasis on network resources, particularly the external social capital resource, as critical in gaining growth and competitiveness, and it is seen at various levels. Strategic alliances with other organisations (universities, large corporations, financial institutions, etc.) are important in supplementing and complementing the firm’s resources in attaining sustainable competitive advantage.

Resources can also be viewed as internal (those that an organisation has or acquires to deliver value) or external, such as market demand, and supply chain networks between and within industries (Penrose, 1959; Rivard, et al, 2006).

2.2 Competitiveness

The choices a company makes concerning the industry in which they operate, positioning of the business to their customers, and the configuration of activities and resources, including market outcomes, result in companies having the benefit of strong domestic positioning, strong local suppliers, and demand for better quality and competitive products or services by domestic consumers (Cho & Mun, 2013). For productivity to be raised, local firms must be able to compete in highly sophisticated industries and continuously develop competitive capabilities that will further allow them to compete in new and entirely superior markets. Porter (2003) states that at a high level, companies need to move away from competing on comparative advantage geared towards low-cost labour or natural resources, and move towards competitive advantages, emanating from superior and distinctive products or services and processes. The central objective of strategy planning, formulation, implementation, and monitoring is the development and sustaining of the organisation’s competitive advantage (Wilk & Fensterseifer, 2003). Michael Porter’s “five forces” diamond model has been regarded as a significant analytical framework of competitiveness (Kharub & Sharma, 2017). The framework allows organisations to approach the assessment of their business performance through an evaluation of the market demand conditions, and factor conditions, which are primarily factors of production, industry network and supply chain strength, firm structure, and firm strategy.

Michael Porter (1990) argued that traditional explanations of organisational performance and competitiveness of nations, such as macroeconomic indicators including foreign exchange rates, interest rates, government policies, inexpensive workforce, and abundance of natural resources are no longer valid indicators to explain the competitiveness of nations, industries, and performance of business organisations. Porter’s diamond model depicts the characteristics of a given firm’s environment, and how interconnected these characteristics are. Each of these factors necessarily has an impact on the other factors in the model, hence, it is important to view them holistically (Penttinen & Risto, 1994). Porter’s (1990) analysis on the characteristics of the firm and industries is explained by the diamond model, which is supported fundamentally by his theoretical contributions to “The Competitive Advantages of Nations”. The constructs of Porter’s “diamond of advantages” model include the four determinants of industry competitiveness (national advantage), such as factor conditions (inputs), home demand conditions, related and supporting industries, and the industry or firm strategy, structure, and rivalry.

Demand conditions (Penttinen, 1994) refer to the domestic demand that helps build and drive competitive advantage, especially when a specific industry market is larger, dominant, and more sophisticated. This can act as a pull factor, influencing the external business environment, and rewarding companies for producing superior quality products and services by forcing local firms to further improve the quality of their goods or services and drive innovation, which helps in stimulating higher levels of business performance (Smith, et al. 2016). Porter (1991) suggests that domestic competition is the most important of all constructs in the model, because of the powerful stimulating effect it has on other constructs. This is because it forces companies to be flexible, cost-effective, improve on quality, innovate and evolve. Domestic competition creates constant pressure for innovation and upgrading of the sources of competitive

advantage (Penttinen, 1994). This resource factor is critical to the success of many of the businesses in South Africa, particularly small and medium enterprises. With a lack of resources, organisations may find it challenging to continuously meet the ever-changing demand conditions while remaining competitive.

The industry forces construct in Porter's model describe the related and supporting industries. The construct refers to the access to, and availability of competitive suppliers and supporting industries and how this forms a cluster of industry forces (Ozgen, 2011). The competitive suppliers and supporting industries provide cost-effective inputs into the factors of production in the most efficient manner with speed and shape the external business environment in which the company operates.

Factor conditions are considered to be the production inputs of an organisation or a group of organisations that characterise the industry or country from a factors of production perspective (Porter, 1990). These production inputs shape the nature of the business's internal resources, and as such, the inputs are infrastructures that range from communication, transportation, healthcare, legal and regulatory infrastructure, and education systems; as resources that are available to firms. Human capital, which includes skilled labour and the ability to identify opportunities, builds strong processes and procedures that are idiosyncratic to the organisation and may position it for better utilisation of resources, which in turn influences the competitiveness of industries (Ozgen, 2011). Capital resources, such as financial resources and assets, and knowledge resources such as quality of research and education level, are argued by Porter to be advanced factor conditions. Financial capital is the most general type of resource, which easily can be converted to other types of resources.

Organisational capital such as structure, culture, management systems, processes, and procedures of the company in different countries influence and have an impact on the performance of business organisations. This determinant takes shapes from how companies are designed, created, and organised, and how they manage and maintain the internal resources of the business. They also affect the nature of the domestic competition will be.

RB-theory (Wernerfelt, 1984) supports a strategy determinant in the diamond model in stating that the growth of businesses is dependent on those managerial resources available over time to plan and manage growth in addition to maintaining current operations to gain competitive advantage. Empirical studies have begun to explain business performance, measured as growth in profitability, in terms of the degree of fit between the resource base and the strategy of the business. The resources required for business growth range from financial, network, human capital, and external or operational resources that can strategically be used and deployed to deliver value that ensures business growth. Organisations differ in terms of what their goals are, and how they set them (Porter, 1991, Penttinen, 1994). In this study, resources are viewed from the perspective of either internal (those that the firm has a direct influence and control on), or external (those which are not within the firm's span of control, but have an impact on the performance of business organisations) (Wilk & Fensterseifer, 2003). Based on literature from theories such as Porter's diamond model (1991) and the resource-based theory, many of the factors discussed under their theories can be distinctly categorised as external business environment factors or internal organisational factors. The resource-based view of the firm (Wernerfelt, 1984; Wilk & Fensterseifer, 2003) places emphasis on the firm's internal characteristics and resources to explain why firms make different strategic choices that lead to different outcomes as the source of competitive advantage. The firm's resources and capabilities are a result of its strategic choices and resource commitments over time, and ultimately determine its performance at any given time (Rivard, et al., 2006).

2.3 Model development and hypothesis formulation

The factors from both Porter's diamond model and resource-based theory can be grouped into either external or internal resource factors, based on the nature of their composition. Demand conditions are viewed as an external factor because it is largely driven by the external market and customers' needs. The organisation has no direct control of this factor; hence it is categorised as an external resource factor. Related and supporting industries are also viewed as an external factor, which is shaped by how the industry is structured and how it operates. This factor has an impact of the performance of the business organisation, due to the organisation forming part of that ecosystem. Social capital is a factor that draws from the influence and presence of the organisation amongst its peers in the industry. It is categorised as an external factor due to its characteristics, which are directly influenced by external forces such as supply chain networks. Factor conditions (which encompasses financial resources, human resources, and intellectual capital), firm structure, firm strategy, and entrepreneurial orientation are seen as internal factors, where the organisation has direct control over how these factors are acquired, structured, managed, and is controlled by the organisation to drive performance of businesses.

Table 1. The Resource-based theory and porter's diamond model factors

Theory /(Approach)	Resource-based theory (Growth of the firm)	Porter’s diamond model (Competitiveness)
Factors	Social capital	Demand conditions
	Financial resources	
	Human resources	Factor conditions
	Intellectual capital	
	Learning and adsorptive capacity	Related and supporting industries
	Strategy	Firm’s strategy
	Entrepreneurial Orientation	Firm structure

Table 1 shows the tabulation of the factors under the two theories, which will be the focus of this research. In this study, external factors will include the demand conditions, related and supporting industries, and social capital. Internal factors include the factor conditions, firm structure, firm strategy, and entrepreneurial orientation. A hierarchical second-order structural model, presented in Figure 1, has been used for assessing the impacts of external business environment factors on the performance of business organisations. The structural model consists of an endogenous variable, business performance, and two exogeneous variables, external factors, and internal factors. The first second-order construct, external factors, was formed by three first-order constructs (demand conditions, related and supporting industries, and social capital). The second second-order construct was formed by four first-order constructs (factor conditions, firm structure, firm strategy, and entrepreneurial orientation). The main purpose was to analyse and understand how the external business environment factors impact the performance of business organisations, with the internal business resource factors as a moderating variable.

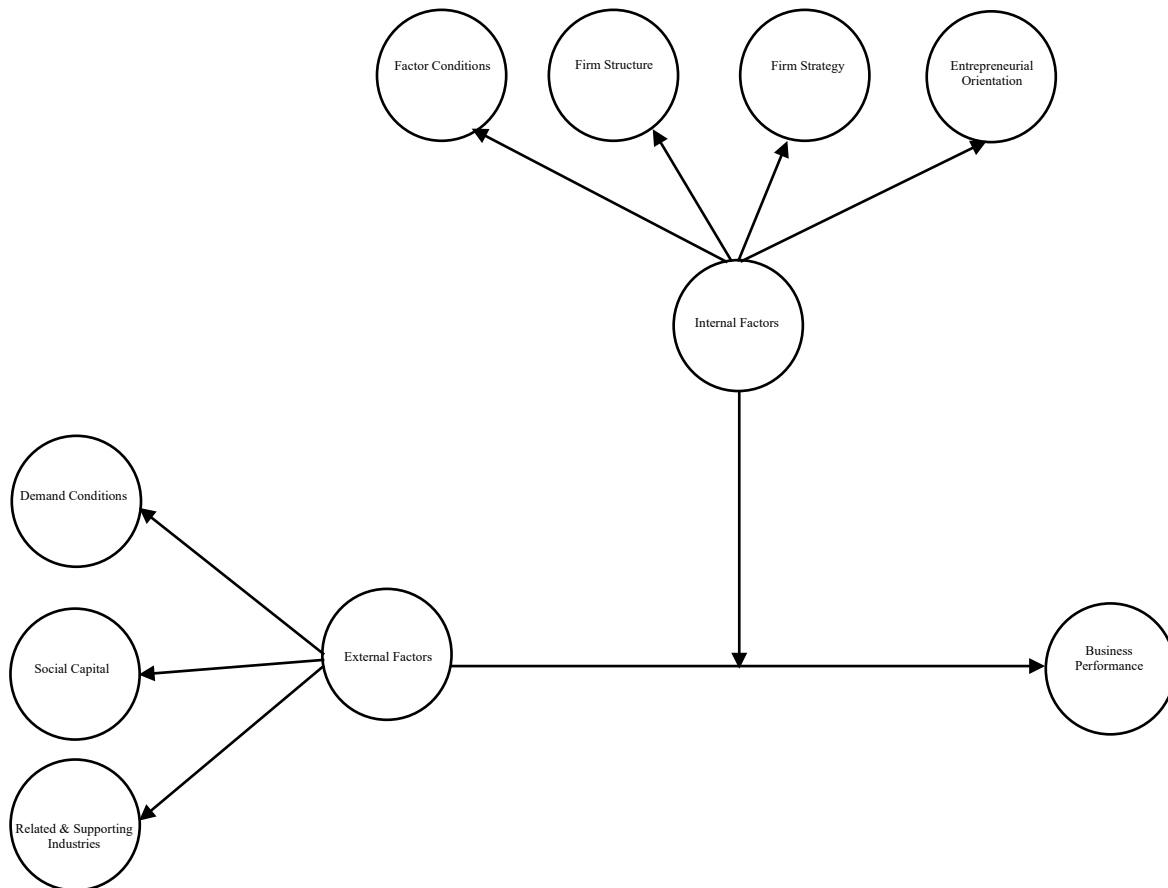


Figure 1. Proposed higher-order structural equation model for business performance

2.3.1. The impact of external and internal factors on the performance of business organisations

It is, therefore, hypothesised that:

Hypothesis (H1). The external business environment factors have a direct relationship with the performance of business organisations.

2.3.2. The moderating role of internal business resource factors

For effective and optimal use of external factors as a driver for competitiveness, organisations must consider the role of internal business resource factors. Internal business resource factors include factor conditions, firm structure, firm strategy, and entrepreneurial orientation within the organisation. This paper suggests that the internal conditions and resources with which the business operates will impact the effectiveness and results of leveraging the external business environment factors to gain superior business performance. Similarly, a lack of internal resource factors in an organisation will negatively impact the performance of business organisations (Hamilton & Dobbs, 2006). Internal resources such as entrepreneurial orientation enable and shapes how an organisation is set to take advantage of external resources and gain competitiveness. Factor conditions are considered to be the production inputs of an organisation or a group of organisations that position the industry or country from the factors of production perspective (Porter, 1990). Organisational capital such as the structure, culture, management systems, processes, and procedures of the company in different countries has an impact on the competitiveness of organisations (Porter, 1990). This determinant is shaped by how companies are designed, created, organised, managed, and maintained in terms of the internal resources of the business. They also affect what the nature of the domestic competition will be. It is suggested that as entrepreneurs rely on firm-specific capabilities, such as strategy and structure that a firm has developed and perfected over time, the more likely they discover opportunities for new ventures (Ozgen, 2011). The resource-based view (Wernerfelt, 1984) supports the strategy determinant in the diamond model (Porter, 1991) in stating that the growth of businesses is dependent on the managerial resources available over time used to plan and manage growth in addition to maintaining current operations to gain competitive advantage.

In previous studies, these intellectual resources have been found to positively and directly affect performance. It is based on the above premise that this study argues that internal factors will have an effect on the performance of businesses. The following hypothesis was formulated for the study:

Hypothesis (H2): There is a significant and positive moderating effect of internal factors on the relationship between the external environment and the performance of business organisations

3. Methods

A survey questionnaire was developed to assess the impact of internal business factors and external business environment factors on the performance of business organisations in South Africa. The questionnaire had four sections. Section one included demographic questions concerning the role that respondent occupies and the industry in which they operate. Section 2 included questions concerning the presence of both internal factors and external factors. A five-point Likert scale was devised as follows: 1 – Strongly disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly Agree. This was used in the assessment. Section 3 also used the five-point Likert scale, with 1 – Much below average, 2 – Below average, 3 – Average, 4 – Above average, and 5 – Much above average, to measure the performance of business organisations.

4. Data Collection

A total of 386 businesses across various industries in South Africa were sent an email with the survey link to the questions. Most of the organisations that took part in the survey were small and medium enterprises that are actively participating in the economy of South Africa. 146 complete responses were received from the survey conducted. The industries included finance, manufacturing, agriculture, professional services, and retail amongst others. The Table 2 below provides a list of all the industries that participated in the survey. PLS-SEM two-stage approach was used to analyse the second-order structural model.

Table 2. Data response categories by industry

Type of industry	Number of companies	Sample percentage
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Finance	7	5.19
Manufacturing	24	17.78
Agriculture	17	12.50
Mining and Minerals	2	1.47
FMCG	1	0.74
Professional services	11	8.09
Energy and Utility	1	0.74
Education	7	5.15
Information Technology	6	4.41
Multimedia	2	1.47
E-commerce	3	2.21
Logistics and transportation	3	2.21
Communication	2	1.47
Wholesale and Retail	6	4.41
Tourism	6	4.41
Automotive	1	0.74
Textile and clothing	1	0.74
Healthcare	3	2.21
Construction and infrastructure	5	3.68
Industrials	2	1.47
Other (Unclassified)	26	19.12

5. Results and Discussion

Analysis of the measurement model: Construct reliability and validity

The Cronbach's α of each construct was higher than 0.07 and the composite reliability of each was not lower than 0.815, indicating that each of the items used for measuring each construct retained was measuring that same construct. Values of the average variance extracted (AVE) were higher than 0.50. The AVE of the Related and supporting industry construct had a value of 0.526, with other factors being higher. This indicated that there is a strong convergent validity for the model. Table 3 presents the results, including the confidence intervals for the Herotrait-Monotrait ratio (HTMT) that did not include 1, meaning all the constructs exhibit discriminant validity (Hair et al., 2016).

Analysis of the structural model

The VIF values for all items were less than the threshold value of 5, indicating that there were no collinearity issues with the model. Table 4 presents the path coefficients for the inner model (Figure 2). The path between the external factors and business performance has the strongest path coefficient of 0.360, demonstrating that external factors have a direct and positive impact on the performance of organisations. The hypothesized relationship path between external factors and business performance is statistically significant (>0.20), thereby supporting H1.

The coefficient of the path between the demand conditions and external factors was 0.781, which demonstrated the need for strong domestic demand as an external factor to drive the sustainable performance of the organisation. The relationship between related and supporting industries and social capital to the external factors indicated a very strong effect, with path coefficients of 0.902 and 0.906, respectively. Internal factors construct also moderated the relationship between the external factors and the performance of business organisations. The first-order constructs have demonstrated a very strong effect, with path coefficients 0.768, 0.893, 0.781, and 0.800 for factor conditions, firm structure, firm strategy, and entrepreneurial orientation, respectively.

A P value of 0.00 was obtained for all first-order construct and 0.01 and 0.03 for H1 and H2, respectively. Based on the results discussed above, H1 and H2 are supported.

The predictive power of the model is measured by R^2 . The value depicts the quantity of variance in the dependent variable that is explained by all the independent variables connected to it. R^2 values of 0.75, 0.50, or 0.25 for endogenous latent variables can be respectively categorised as strong, moderate, or weak effect of the exogenous variables (Hair et al., 2011; Henseler et al., 2009). The R^2 value of Business Performance was weak to moderate at 0.304, followed by the Factor condition's R^2 at a value of 0.487. All other endogenous variables showed very high R^2

values. The overall results below indicate that the model has good predictive power. Demand conditions at R^2 value of 0.677, Related and supporting industries with 0.793 value, and Social Capital at 0.798, indicating that the external factors are a good predictor of business performance. Cohen f^2 formula was used to calculate the effect size of the variables. The effect size f^2 explains how the value of R^2 changes for the dependent variable when a certain exogenous variable is removed, and it was calculated using the Cohen f^2 formula (Hair et al., 2011, Wong, 2019). The guidelines for assessing f^2 are values of 0.35, 0.15, and 0.02 respectively, representing high, medium, and small effects of an exogenous variable on the endogenous variables. The effect of excluding external factors from the model of the endogenous variables, such as demand conditions, related and supporting industries, and social capital was very high, the effect size for all external factors was higher than 0.35. The effect of excluding internal factors from the model was also high, and the effect size values for all internal factors were higher than 0.35. This means that both the external and internal factors have large influences on the endogenous variables, hence the removal of any exogenous variable used in the research is not recommended. The predictive relevance is explained by the Stone-Geisser value, Q^2 . The Q^2 values of all the endogenous variables were higher than 0, indicating that the model has good predictive relevance. The R^2 , f^2 and Q^2 values are presented in Table 6.

Table 5 presents the path coefficient for the effect of internal factors on business performance as a moderator. The path coefficient value is 0.224 and the p-value of 0.001, which is statistically significant (>0.20). Figure 3 depicts the effect of having the internal factors as a moderating variable in the model. There is positive amplification of the relationship between external factors and business performance. The diagram shows that with an increase of significance of the internal factors (at +1SD) there is an increase in the positive relationship impact and strengthening effect of external factors on business performance. At -1SD there is a reduction in the impact as shown by the blue line in the graph depicting the weakening effect (Dawson, 2013), thereby further supporting H2 that there is a significant and positive moderating effect of internal factors on the relationship between the external environment and the performance of business organisations.

5.1 Numerical Results

Table 3. Reliability and validity results

Construct	Internal consistency reliability		Convergent validity (AVE)	Discriminant Validity HTMT Values
	Cronbach's α	Composite Reliability		
Business Performance (BP)	0.920	0.935	0.642	Does not include 1
Demand Conditions (DC)	0.755	0.834	0.560	Does not include 1
Entrepreneurial Orientation (EO)	0.851	0.880	0.594	Does not include 1
Factor Conditions (FC)	0.814	0.867	0.567	Does not include 1
Firm Structure (FS)	0.731	0.842	0.642	Does not include 1
Related & Supporting Industries (RSI)	0.705	0.816	0.526	Does not include 1
Social Capital (SC)	0.837	0.879	0.549	Does not include 1
Firm Strategy (FStr)	0.805	0.881	0.713	Does not include 1

Table 4. Path coefficient and effects results

Hypotheses	Effect of	On	Path Coefficient	p-value	Result
	Extl Factors	Demand Conditions	0.781	0.00	
	Extl Factors	Related & Supporting Industries	0.902	0.00	
	Extl Factors	Social Capital	0.906	0.00	
	Intl Factors	Factor Conditions	0.768	0.00	
	Intl Factors	Firm Structure	0.893	0.00	

	Intl Factors	Firm strategy	0.781	0.00	
	Intl Factors	Entrepreneurial Orientation	0.800	0.00	
H1	Extl Factors	Business Performance	0.360	0.01	Supported
H2	Intl Factors	Business Performance	0.305	0.03	Supported

Table 5. Path coefficient of the effect of the moderator on business performance

Effect of	On	Path Coefficient	p-value
Intl Factors Moderator	Business performance	0.224	0.001

Table 6. Representation of endogenous variables' predictive power

Endogenous variable	R2	Effect size f2	Q2
Business performance (BP)	0.304		0.165
Demand Conditions (DC)	0.677	2.095	0.373
Entrepreneurial Orientation (EO)	0.763	3.216	0.470
Factor Conditions (FC)	0.487	0.95	0.251
Firm Structure (FS)	0.809	4.236	0.512
Related & Supporting Industries (RSI)	0.793	3.833	0.415
Social Capital (SC)	0.798	3.959	0.429
Firm Strategy (FStr)	0.696	2.294	0.487

Table 7 Importance-Performance table for the first order variables without the presence of internal factors as a moderating variable

	LV Importance	LV Performances
Business Performance (BP)		51.562
Demand Conditions (DC)	-0.135	72.606
Entrepreneurial Orientation (EO)	0.057	63.433
Factor Conditions (FC)	0.199	48.522
Firm Structure (FS)	-0.007	61.597
Related & Supporting Industries (RSI)	0.135	57.785
Social Capital (SC)	0.265	60.226
Firm Strategy (FStr)	-0.036	67.17

Table 8. Latent variable index values and performance of the target construct business performance

	LV Index	LV Performances
Business Performance (BP)	3.075	51.872
Demand Conditions (DC)	3.918	72.943
Entrepreneurial Orientation (EO)	3.637	65.916
External Factors	3.544	63.592
Factor Conditions (FC)	3.054	51.362
Firm Structure (FS)	3.476	61.906
Internal Factors	3.475	61.87

Related & Supporting Industries (RSI)	3.340	58.494
Social Capital (SC)	3.427	60.683
Firm Strategy (FStr)	3.726	68.16

Table 9. Importance-Performance table for lower order constructs

	External Factors	Internal Factors
LV Importance	0.503	0.27
LV Performance	63.592	61.87

5.2 Graphical Results

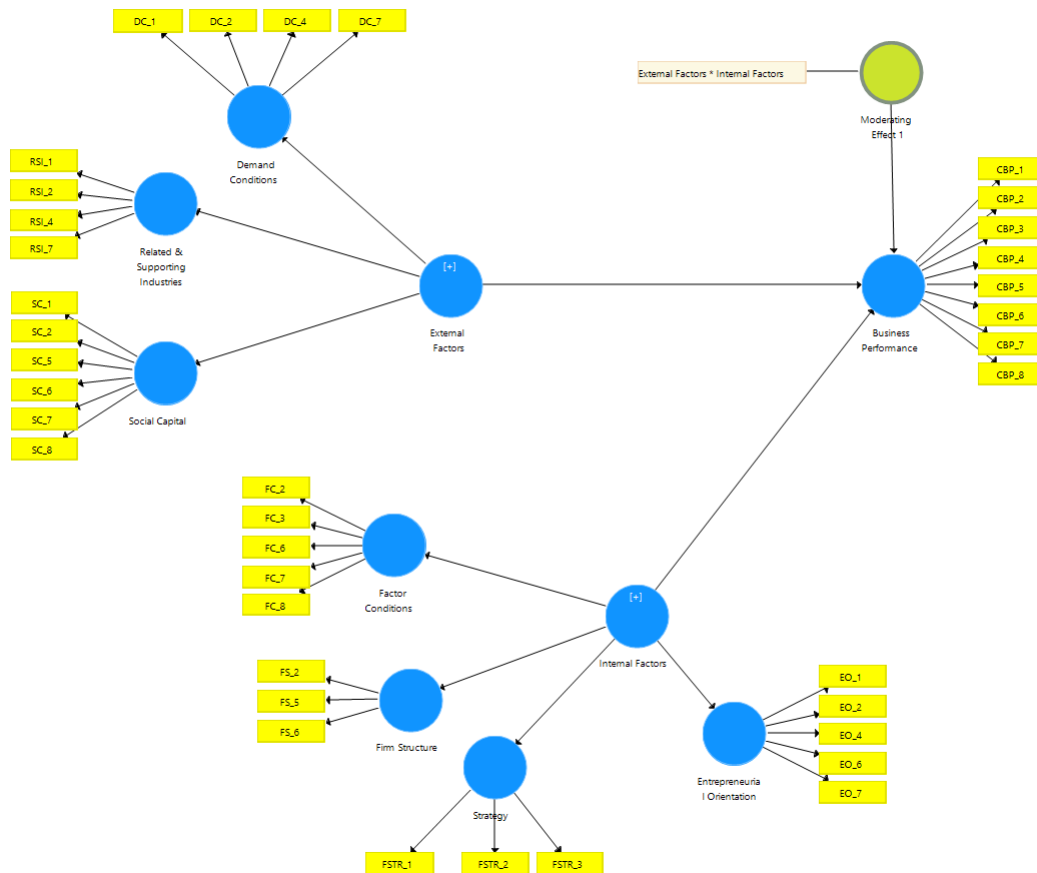


Figure 2. Higher order measurement structural model with the moderating variable

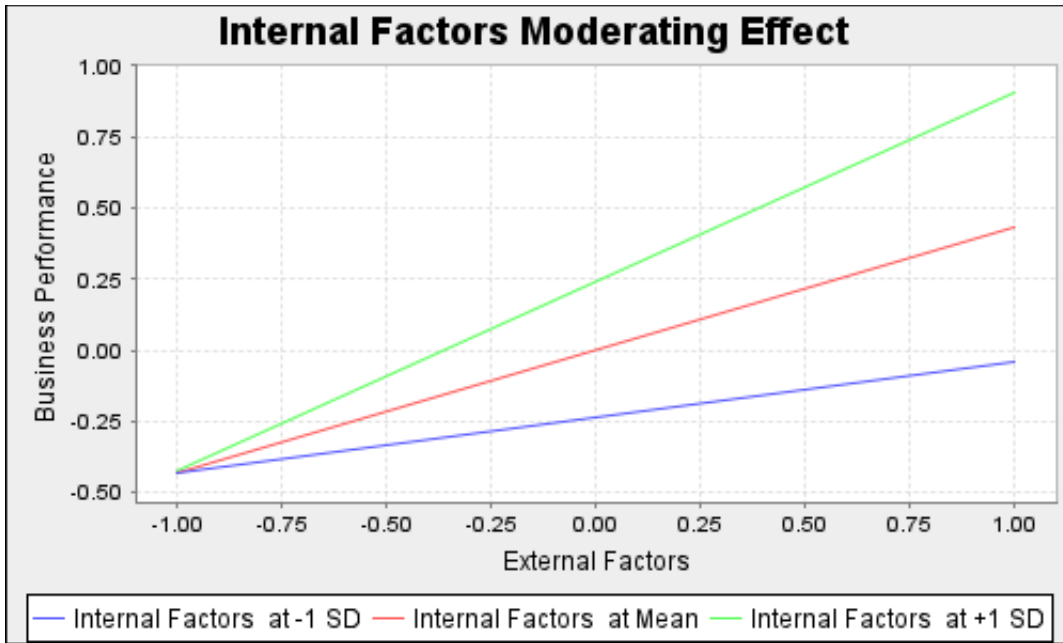


Figure 3. Graphical representation of the moderating effect on the external factors on business performance

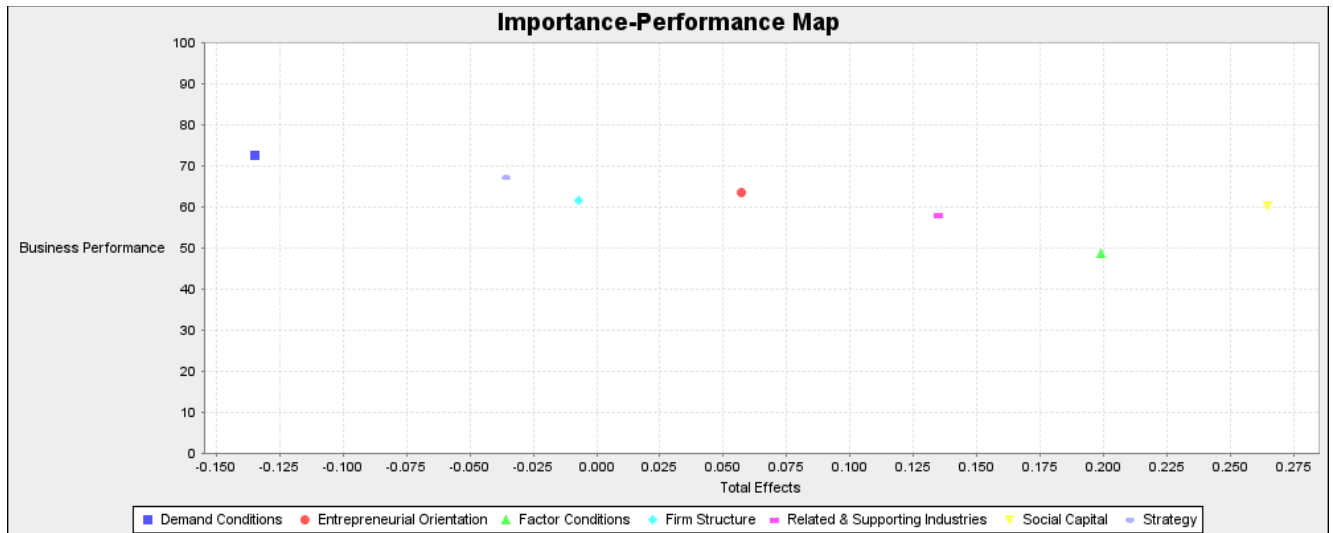


Figure 4. Importance-Performance Matrix for the first order constructs

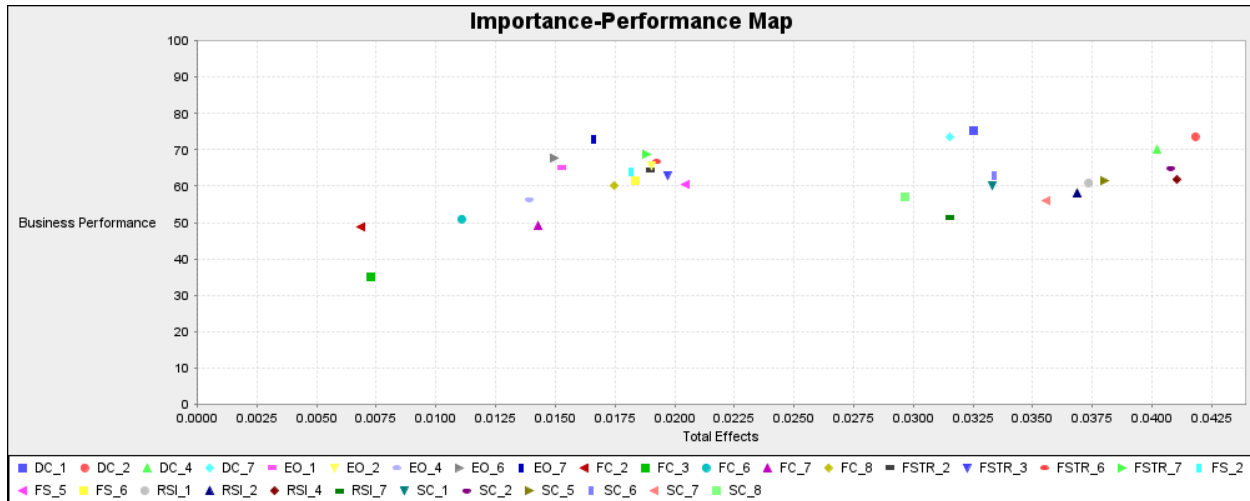


Figure 5. Indicators' Importance-Performance graph for the targeted construct business performance

5.3 Discussion

This paper investigates the structural relationship between the external business environment factors, the internal business factors, and the performance of business organisations in South Africa. The results revealed that external factors significantly and directly impacts the performance of business organisations. The internal factors acted as a moderating variable in the relationship between the external factors and the performance of business organisations.

5.3.1 Theoretical implications

From the literature review, Barney (1991), Grant (1991), Penttinen (2003), Porter (1991), Rangone (1999), and Spanos & Lioukas (2001) have indicated that Porter's model (Porter, 1990) factors and RB theory factors can be classified as internal and external resources and that there is a direct impact of these factors on the performances of businesses. Several authors have proposed the assessment of the moderating effect of internal factors on the relationship between the external business factors and the performance of business organisations but there seems to not have been any attempts to classify these factors into internal and external factors shows a clear overlap in Porter's model and the RB Theory. For this study, it has been decided to combine factors from both theories as they are complementary. Thus, there was reason to group them as external and internal factors for this study, and where there was repetition, it was eliminated such that there might be an exclusive set of internal and external factors in building the model for the study. This paper adds to the extant knowledge with the results indicating that external factors and internal factors have a direct impact on the performance of business organisations.

5.3.2 Management / consultative application

The study has shown that external factors such as market demand conditions, related and supporting industries, and social capital impact the nature and level of performance of business organisations. The presence of internal resources such as factor conditions, firm structure, firm strategy, and entrepreneurial orientation has a moderating effect that positively impacts the effects of external factors on the performance of business organisations.

The IPMA construct and indicator level results revealed the relative importance and performance of resource factors (external and internal) and their indicators to the target construct, the performance of business organisations. The lower order constructs for external factors exhibited higher performance and relatively higher importance, particularly the demand conditions related and supporting industries and social capital, respectively. The factor condition lower-(first-) order construct indicated relatively less importance and lower performance in the presence of internal factors as a moderating variable; however, factor conditions are considered essential (as shown in Figure 4) to the support of the implementation and enablement of other internal factor conditions as it covers the factors of production resources. At the indicator level, the analysis reveals areas of potential improvement for achieving higher business performances in organisations, especially for those indicators with high importance but relatively low performance (Ringle & Sarstedt, 2016). It was observed that RSII, RSI7, and SC7 are the manifest variables for potential improvement in obtaining higher business performance. RSII: "Technology upgrade of our downstream industries is strong". This

suggests that further business performance improvement should be done through the implementation of strong technological upgrades of the downstream businesses in the industry it operates in. Policy and business industries should be aimed at improving and upgrading of the technology infrastructures to enable stronger supplier chain networks which should translate into subsequent better performance of individual business organisations within that industry; RSI7: “Public-Private Partnership within our related and supporting industries is strong”. This variable suggests that for business organisations to improve their performance and become more competitive, there need to be intentional but effective Private-Public partnerships in place. This emphasizes the need to have economic and development policies that are geared towards fostering economic development through private-public partnerships; SC2: “Our organisation’s network connections are diverse”. The social capital constructs outlined above suggest that for better performance of business organisations, businesses must drive for better diversification of their network channels, and form meaningful associations within the industry they operate in which will, in turn, drive better influence within the industry to enable higher business performance and gain more power within the supply chain network.

5.4 Validation: Importance – Performance Map Analysis

In efforts to further understand the results of the study, an Importance-Performance Matrix Analysis (IPMA) (Ringle & Sarstedt, 2016) was applied. IPMA extends the standard PLS-SEM results reporting path coefficient estimates and other parameters by adding a procedure that considers the performance level of latent variables and manifest variables in a PLS-SEM analysis (Hair et al., 2016). The application of IPMA provides insights into the importance of the variables to the target construct in the study. The results of the IPMA allow for prioritization of the variables which is to be improved upon to improve the target construct.

The guidelines provided by Ringle and Sarstedt (2016) were utilized in conducting the analysis. Consequently, the latent variable (LV) importance index and constructs’ performance are shown in Tables 8 & 9. In the absence of the internal factors as a moderating variable, the IPMA results for the lower-order constructs reveal that social capital (SC), factor conditions (FC), and related & supporting industries (RSI) as the three most important variables, respectively. See Figure 4. The first-order importance-performance is presented in Table 7. According to the results, the IPMA shows some latent variables demonstrating high importance and relatively low performance, such as social capital (importance = 0.265, performance = 60.226); factor conditions (importance = 0.199, performance = 48.522); and related & supporting industries (importance = 0.135, performance = 57.785).

The presence of the internal factors as a moderating variable in the IPMA analysis for the higher order constructs shows complimenting results that indicate that demand condition is the most important construct offering higher performance than other lower - (first-) order constructs (Table 8).

The indicators’ importance-performance is presented in Figure 5. The IPMA results indicates some manifest variables demonstrating large importance and relatively low performance, such as RSI1: “Technology upgrade of our downstream industries is strong” (importance = 0.037, performance = 60.959); RSI2: “R&D investment by our service providers in their organisation is extensive” (importance = 0.037, performance = 58.219); RSI4: “Product and service development of our downstream industries is strong” (importance = 0.041, performance = 61.815); RSI7: “Public-Private Partnership within our related and supporting industries is strong” (importance = 0.032, performance = 51.541); SC2: “Our organisation’s network connections are diverse” (importance = 0.041, performance = 64.897); SC5: “Our organisation has great associations with our industry counterparts” (importance = 0.038, performance = 61.473); and SC7: “Our organisation has strong influence within our industry” (importance = 0.036, performance = 55.993). Additionally, Figure 5 shows that the importance levels of indicators of external factors are closely interrelated, ranging between 0.030 and 0.042 with performance ranges from 51.541 to 75.171. Importance levels of indicators of internal factors range between 0.007 and 0.02 with performance ranging from 35.103 to 72.774.

6. Conclusion

To the best knowledge of the researcher, this is the first empirical study conducted to analyse the moderating effect of internal factors on the relationship between the external business environment factors and the performance of business organisations in a developing country, where South Africa was taken as a case study, using integrated porter’s diamond model and the RB theory factors as designed in the study’s operative model. The findings suggested that external factors, such as market demand conditions, related and supporting industries, and social capital, have a direct and positive impact on the performance of organisations. In addition, the study indicated that the internal business factors of an organisation have a direct effect on how the external factors are leveraged to drive business performance. The

limitation of the research was that the sample was only limited to South African business organisations from various industries. The study can be extended to business organisations in other developing countries.

References

- Acs, Z.J., Braunerhjelm, P., Audretsch, D.B., and Carlsson, B., The knowledge spillover theory of entrepreneurship, *Small Business Economics*, vol. 32, no. 1, pp. 15-30, 2009.
- Audretsch, D.B., *Innovation and Industry Evolution*, Cambridge: MIT Press, 1996.
- Audretsch, D.B., and Keilbach, M.C., The theory of knowledge spillover theory entrepreneurship, *Journal of management Studies*, vol. 44, pp. 1242-1254, 2006.
- Barney, J.B., Firm resources and sustained competitive advantage, *Journal of Management*, vol. 17, no. 1, pp. 99-120, 1991.
- Barney, J.B., Resource-based theories of competitive advantage: a ten-year retrospective on the resource-based view, *Journal of Management*, vol 27, no. 6, pp. 643-650, 1991.
- Bessant, J., Phelps, B. and Adams, R., External knowledge: a Review of the Literature Addressing the Role of External Knowledge and Expertise at a Key Stages of Business Growth and Development, *Advanced Institute of Management*, London, 2005.
- Campbell, J., and Park, J., Extending the resource-based view: Effects of strategic orientation toward community on small business performance, *Journal of Retailing and Consumer Services*, vol.34, pp. 302-308, 2016.
- Cohen, W.M., and Levinthal, D.A., absorptive capacity: a new perspective on learning and innovation, *Administrative Science Quarterly*, vol. 35, pp. 128-152, 1990.
- Cho, T., and Mun, H. (2013). From Adam Smith to Michael Porter: evolution of competitiveness theory (Extended Edition): *APA (American Psychological Assoc.)*, Extended ed.
- Dobbs, M. and Hamilton, R.T., Small business growth: recent evidence and new directions, *International Journal of Entrepreneurial Behaviour & Research*, vol. 13 no. 5, pp. 296-322, 2006.
- Grant R.M., The resource-based theory of competitive advantage: implications for strategy formulation, *California Management Review* vol. 33 no. 3, pp. 114-35, 1991.
- Hair, J.F. Jr, Hult, G.T.M., Ringle, C. and Sarstedt., *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, Sage Publications, London, 2016.
- Hair, J.F. Jr, Gudergan, S.P., Ringle, C. and Sarstedt, M., *Advanced Issues in Partial Least Squares Structural Equation Modeling (PLS-SEM)*, Sage Publications, London, 2018.
- Henseler, J., Ringle, C.M., and Sinkovics, R.R., *The Use of Partial Least Squares Path Modeling in International Marketing*, 2009.
- Husso, M., and Nybakk, E., Importance of Internal and External Factors when Adapting to Environmental Changes in SME Sawmills in Norway and Finland: The Manager's View, 2010.
- Kharub, M., and Sharma, R.K., Comparative analyses of competitive advantage using Porter diamond model (the case of MSMEs in Himachal Pradesh). *Competitiveness Review: An International Business Journal Incorporating Journal of Global Competitiveness*, vol. 27, pp. 132-160, 2017.
- Lussier, R., and Halabí, C.E., A Three-Country Comparison of the Business Success versus Failure Prediction Model. *Journal of Small Business Management*, vol. 48, pp. 360 – 377, 2010.
- Mahoney, J. and Pandian, R., The resource-based view within the conversation of strategic management, *Strategic Management Journal*, vol. 13 no. 5, pp. 363-80, 1992.
- Mills, J., and Platts, K., Applying resource-based theory. Methods, outcomes and utility for managers, *International Journal of Operations & Production Management*, vol. 23 no. 2, pp.148-166, 2003.
- Ozgen E., Porter's diamond model and opportunity recognition: A cognitive perspective, *Academy of Entrepreneurship Journal*, vol. 17, no. 2, 2011.
- Porter, M.E., *Competitive Strategy*, Free Press, New York, 1980.
- Porter, M.E., *The Competitive Advantage of Nations*, Simon and Schuster, 1991.
- Porter, M.E., Building the microeconomic foundations of prosperity: Findings from business competitiveness index, *The global competitiveness report 2004 (2003)*. pp. 29-56, 2003.
- Penttinen, R., Summary of the Critique on Porter's Diamond Model. Porter's Diamond Model Modified to Suit the Finnish Paper and Board Machine industry, *The Research Institute of the Finish Economy (ETLA), Helsinki (1994)*. no. 462, 1994.
- Penrose, E.G., *The theory of the growth of the Firm*, Wiley, New York, 1959.
- Rangone, A., A Resource-Based Approach to Strategy Analysis in Small-Medium Enterprises, *Small Business Economics*, vol. 12, no. 3, pp. 233 -248, 1999.

- Ringle, C.M., and Sarstedt, M., Gain more insight from your PLS-SEM results: The importance-performance map analysis. *Industrial Management & Data Systems*, vol.9, no. 116, pp. 1865-1886, 2016.
- Rivard, S. Raymond, L. and Verreault, D., Resource-Based view and competitive strategy: An integrated model of the contribution of information technology to firm performance, *Journal of Strategic Information Systems*, vol. 15, pp. 29-50, 2006.
- Spanos, Y. E. and Lioukas, S., An examination into the causal logic of rent generation: Contrasting Porter's competitive strategy framework and the resource-based perspective, *Strategic Management Journal*, vol 22, pp. 907-934, 2001.
- Smith, A., Fainshmidt, S., & Judge, W.Q., "National Competitiveness and Porter's Diamond Model: The Role of MNE Penetration and Governance Quality" *Global Strategy Journal*, Vol. 6., pp. 81-104, 2016.
- Van Auken, H.E., Kaufmann, J.B., & Herrmann, P., An Empirical Analysis of the Relationship Between Capital Acquisition and Bankruptcy Laws. *Journal of Small Business Management*, 47, 23 – 37, 2009.
- Wernerfelt, B., "A Resource-based View of the Firm" *Strategic Management Journal*, Vol. 5, pp. 171-180, 1984.
- Wilk, E.O. and Fensterseifer, J.E., "Use of resource-based view in industrial cluster strategic analysis", *International Journal of Operations & Production Management*, Vol 23. No. 9 pp. 995-1009, 2003.
- Wong, K.K.-K., "Mastering partial least squares structural equation modelling (Pls-sem) with Smartpls in 38 Hours, iUniverse", p.184.0, 2019.

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