Int. J. Manage. Bus., Vol 7, (2) ,68-85, Spring 2023

Human Intellectual Capital, Organizational Resources and Product Innovation Performance: A Perspective of Resource Based View Theory

LilyJulienti Abu Bakar [1]*
Mohd Rafi Bin Yaacob [2]

Recive 2023,05,25 ***Accept 2023,07,01***

Abstract

This study aims to examine the relationship between human intellectual capital (HIC), organizational resources (OR), and product innovation performance (PIP) within the framework of the Resource-Based View (RBV) theory. The study employs a quantitative research approach, utilizing survey data collected from a sample of Small Medium Enterprise (SME) in Malaysia. The research instrument consists of validated scales to measure HIC, OR, and PIP. Multiple regression analysis is employed to assess the strength and significance of the relationships among the variables. Preliminary findings indicate a positive and significant relationship between HIC and PIP. Specifically, firms that possess higher levels of HIC, including Entrepreneurial Orientation (EO) are more likely to achieve improved product innovation outcomes. Additionally, the study reveals that OR, such as organizational culture and structure increase PIP of SMEs. This study contributes to the existing literature on the RBV theory by providing empirical evidence on the importance of HIC and OR in driving PIP.

Keywords: Human intellectual capital, organizational resources, product innovation performance, resource-based view theory, firm performa

[1] *Abu Bakar School of Business Management Universiti Utara Malaysia 0600, Changlun, Kedah MALAYSIA julienti@uum.edu.my* ***(Author) ****
[2] *Faculty of Entrepreneurship and Business Universiti Malaysia Kelantan Tmn. Bendahara, Pengkalan Chepa, 16100 Kota Bharu, Kelantan, MALAYSIA rafi@umk.edu.my*

Introduction

Product that has been newly introduced or improved is known as product innovation, and its performance is critical to the success of firms in competitive markets. Nowadays, an extensive literature has emerged on the topic of product innovation performance (PIP), whereby PIP is a multidimensional construct that encompasses various aspects of a product's performance, such as profitability and brand reputation (Sidek & Rosli, 2021). The literature on PIP has identified several factors that influence its outcomes and these factors can be categorized into both inner and outer factors (Cotora, 2007). In most literature, inner factors refer to the characteristics of the firm and its innovation process that affect PIP. These include aspects, for example organizational culture, technology adoption, and product development rapidity. External factors consist of the market and industry conditions that affect product innovation performance, such as customer necessities, rivalry, controlling environment, and marketplace demand. Researchers have used various methods, including surveys, case studies, experiments, and econometric models to study the relationship of organizational resources and performance.

PIP involved multidimensional whereby the literature on PIP has identified several key concepts, theories, and empirical findings that shed light on the factors that influence its outcomes. In today's rapidly changing business environment, companies are increasingly realizing the importance of intangible resources in driving PIP. This study was supported by the Resource Based-View Theory (RBV) as internal valuable resources and capabilities that enabling a firm to provide a sustained competitive advantage by preventing competitors from replicating them (Poazi, Tamunosiki-Amadi & Fems, 2017). In addition, previous study by Hult et.al (2004) found that a firm's research and development (R&D) as well as its marketing capabilities, were positively related to its PIP. This was similar with a study by Lin et al.

(2008) who found that a firm's technological capabilities and knowledge resources were positively related to its PIP. Overall, by identifying and leveraging the RBV, a firm can enhance its PIP and achieve sustained competitive advantage.

Literature Review

Intangible Resources and Product Innovation Performance

Non-physical and non-financial resources of the organization also known as intangible resources and are broadly (Lev, 2001). The term intellectual capital is also applied to the definition (Edvinsson & Malone, 1997). Companies can improve its financial performance with effective identification and management of intellectual capital (Kristandl & Bontis, 2007). Researchers also found that there is a need to take into account the value of intangible resources with product innovation in order to understand more completely the relationship to PIP. In this case, RBV provides a framework to highlight and predict the fundamentals of organisation performance and competitive advantage (Utami & Alamanos, 2022). RBV theoretically predicts intangible resources as the important factors for firm success (Amit & Schoemaker, 1993; Barney, 1991; Conner, 2002; Hall, 1993; Michalisin et al., 1997).

Intangibles resources are able to support a greater level and scope of activity than are since they bring together more frequently the requirements necessary for producing sustainable advantage; valuable, rare and difficult to imitate and replace by competitors (Barney, 1991; Hitt et al., 2001) Strategic management research which includes theoretical and empirical

studies also being done to understand of how firms' resources and capabilities lead to performance (Molloy and Barney, 2015; Morris et al., 2017). In addition, human intellectual capital (HIC) is also considered a valuable intangible resource for organizations to develop innovation capabilities, while product innovation is a key driver of firms' competitiveness. Nevertheless, organizational resources (OR) also being found play an important role in facilitating product innovation. Thus, the following literature review will aim to examine the relationship among HIC, OR and PIP.

Human Intellectual Capital and Product Innovation Performance

HIC effected higher performance as it leads to the development of a skilled workforce and engages in firm's behaviour that lead to competitive advantage (Wright et al., 2003). As proposed by Foss et al. (2006), human resources and resource learning are key contributors to a firm's evolving bundle of productive resource services and it has been described as person- level influences on innovation activities that require other distinct resources such as intellectual abilities, knowledge, styles of thinking, personality, motivation and environment (Sternberg, 1999).

As a result, entrepreneurial orientation (EO) can be theorised as a form of HIC whereby it includes entrepreneurial knowledge, skills, and abilities of individuals within an organization. In addition, EO has been widely renowned as a key driver of firm performance and competitive advantage (Wiklund & Shepherd, 2005). EO is as a form of HIC, which refers to the skills, and abilities of individuals (Bontis, 1998; Kraaijenbrink, Spender & Groen, 2010). Furthermore, HIC can facilitate, dissemination, and utilization of knowledge, and enhance organizational learning and innovation (Bontis, Dragonetti, Jacobsen, & Roos, 1999).

Studies by Fred & Francis (2005) have examined the relationship between EO and HIC. Similarly, other researcher, Hmieleski and Carr (2008) found that EO was positively associated to the HIC of top management line-ups. On the other hand, other studies have focused on the antecedents and outcomes of EO as a form of HIC. For instance, study by Rauch, Wiklund, Lumpkin, and Frese (2009) shows that the human capital of entrepreneurs is positively related to their EO. Whereas, Lee, Lim, and Lim (2003) and Massa and Testa (2008) found that EO is positively related to firm innovation and performance. HIC is also an essential resource for firms to achieve their strategic objectives, including product innovation. PIP is a crucial outcome for firms as it can lead to competitive advantages, increased profitability, and market share (Wang et. al, 2022).

In this literature review, we will examine the relationship between HIC and PIP in several studies. One study by Joo and Park (2016) found HIC positively affects PIP and found that firms with higher levels of HIC had a higher level of PIP. This study also supported by articles in Neil et. al (2001) and Handbook of Industrial, Work and Organizational Psychology. Another study by Wang (2014) and Fornes et al. (2018) found that HIC significantly influenced PIP. The study also found that knowledge management practices and organizational learning were significant mediators in the relationship between HIC and PIP (Attia & Essam, 2018). Furthermore, a study by Chen et al. (2018) found that HIC had a positive impact on PIP with organizational innovation capability as mediator. This finding also being supported by research findings by Khodaei et, al (2021). Finally, a study by Triguero-Sánchez et al. (2019) revealed that intellectual capital had a significant

impact on both exploratory and exploitative innovation performance.

In conclusion, several studies have established the positive relationship HIC and PIP (Samad, 2020). All of these studies suggested that research on HIC and PIP have significant implications for managers and policymakers, indicating the importance of HIC in enhancing PIP. Therefore,

H1: The higher the human intellectual capital, the higher the product innovation performance

Organizational Resources and Product Innovation Performance

Scholars found that the presence of a skilled and knowledgeable workforce leads to higher levels of product innovation (Bakker et al., 2013) and employee empowerment are also positively related to PIP (Youndt, Subramaniam & Scott, 2004; Jansen et al., 2012). In term of financial resources, studies have found that firms with superior financial resources are more likely to engross in product innovation activities (Zahra, 1993; Braun et al., 2012). Furthermore, firms that leverage financial resources through partnerships, alliances, and collaborations with other firms are also more likely to achieve greater levels of PIP (Miller & Friesen, 1978; Cohen et al., 2010).

In non-financial aspect, technological resources also play a critical role in facilitating product innovation. Scholars have found that firms that invest in advanced technologies and infrastructure are more likely to achieve higher levels of PIP (Kotabe et al., 2013). Additionally, firms that retain technological capabilities and knowledge are expected to introduce new and innovative products (Laursen & Salter, 2014). Other element of organizational resources is knowledge management. It refers to the processes and strategies used by firms to create, share, and utilize knowledge. Scholars have found that effective knowledge management practices are positively related to PIP (Nonaka & Toyama, 2002). Furthermore, firms that invest in knowledge management systems, such as databases and knowledge sharing platforms, are more likely to achieve higher levels of PIP (Gupta et al., 2002).

Organizational culture (OC) also considered a crucial part in supporting PIP. Most researchers, however, see OC particularly as cognitive elements including beliefs which determine the thoughts, feelings, and actions in organization (Michalski & Martinez, 2008). Employees have been shown to behave and respond differently because of the underlying cross-cultural differences in organizational values and attitudes (Hofstede, 1980; Hofstede, Neuijen, & Ohavy, 1990; Tayeb, 1994). Scholars have found that a strong innovative culture is positively related to PIP (Kuemmerle, 1999). Furthermore, firms that promote a culture of research, risk-taking, and creativity are more likely to introduce new and innovative products (Jassawalla and Sashittal, 2002).

Other than OC, researchers also found that organizational structure (OS) as an important aspect that affects the innovation performance of a firm. A study by Chen et. al (2018) examined the effect of OS on PIP in Chinese firms. The authors found that a flatter OS, with fewer hierarchical levels and more decentralization of decision-making is positively associated with PIP. Similarly, a study by Ahn et al. (2019) in South Korea found that a decentralized OS positively affects PIP. The authors suggest that decentralization allows for greater communication and information sharing, leading to increased innovation. Another study by Mello et. al (2019), who studied the relationship between OS and

innovation performance in Brazilian firms found that, a modular OS, which allows for greater flexibility and coordination across different functions and departments, positively affects innovation performance. Similarly, a study by Patalas-Maliszewska et. al (2019) in Poland found that a hierarchical OS is positively related with innovation performance. The authors suggest that a hierarchical structure provides clear goals and directions, leading to greater focus and efficiency in innovation activities. This has been supported by Axtell et.al (2000), who found that employee perceptions on individual, group and organizational factors had an impact on innovation.

In summary, the relationship between OS and PIP is complex and may differ across firms and countries. The majority of studies suggest that a flatter, more decentralized OS is associated with higher PIP. This may be due to greater communication, information sharing, and flexibility in decision-making. Nevertheless, the results of the studies reviewed in this literature review indicate that organizations should consider their specific context when designing their OS to PIP. Therefore, considering all of the above literature regarding OC and OS and PIP, the most integral part of the innovation process (Evans & Saxton, 2004; Kotelnikov, 2001), this study proposed to test the effect of OR on PIP that leads to the following hypotheses,

H2: The higher the organizational resources, the higher the product innovation performance.

Resource Based View Theory

Resource Based View theory (RBV) originated in the middle of year 1980s and suggests that a firm's resources and capabilities are the main drivers of its competitive improvement (Wernerfelt, 1984; Barney, 1991). According to the theory, firms that keep unique resources are expected to achieve viable competitive advantage. This theory suggests that a firm's success is not merely reliant on external factors such as market conditions, but also on internal resources and capabilities (Barney, 1991). In recent years, researchers have focused on knowledge, innovation, reputation, and organizational culture, which are important in today's knowledge-based economy (Audretsch & Thurik, 2001).

Thus, in this literature review, we will explore the RBV theory and its application to intangible resources from an entrepreneurial perspective. RBV found to be applicable as previous research mostly focus on strategic setting as a critical component to gaining competitive advantage and higher performance (Barney, 2001; Ferreira & Azevedo, 2007). The first published papers in entrepreneurship identify five types of resources in the context of the RBV which are human, social, physical, organizational and financial resources (Greene & Brown, 1997). Technological resources were recognised in following research as an important element for national economic growth (Venkataraman, 2004). Recently, firms' resources have been considered in six strategic resources which are physical and non-physical namely reputational, organizational, financial, human intellectual and technological (Amit & Schoemaker, 1993; Barney, 1991; Puente & Rabbino, 2003).

Furthermore, research has revealed that a firm's knowledge and innovation capabilities can allow it to develop new products and services that are hard for competitors to imitate (Rumelt, 1984; Barney, 1991 & Grant, 1991). Similarly, a firm's reputation can offer competitive advantage by persuading consumer loyalty and inviting talented employees (Barney, 1991; Locket, Thompson & Morgenstern, 2009). Studies have also

shown that a firm's OC such as, a robust culture that emphasizes innovation can empower a firm to develop new products and services speedily than its competitors (Grant, 1991; Kocak, Carsrud & Oflazoglu, 2017)). Similarly, a culture that highlights customer service can lead customer reliability and satisfaction (Barney, 1991; Christoph & Kavadias, 2008).

The RBV also highlights the intangible resources as a unique resource (Barney, 1986, 1991; Wernerfelt, 1984), but stresses that not all resources hold the potential to provide the firm with a constant competitive advantage (Clulow, 2007). Previous literature on the RBV has frequently attentive on resources as a steady concept that can be recognised at a point in time and will undergo over time (Wright, Dunford, & Snell, 2003). When referring to the RBV, most researchers focus on strategic setting, bestowing resources and capabilities as important to gaining a sustained competitive advantage and greater performance (Ferreira & Azevedo, 2007). The present study represented the function of entrepreneurship in RBV by emphasising the importance of EO as a HIC. As Casson's (2004) arguments, the RBV focuses on the importance of human resources, as reflected in the competencies and capabilities in the performance of the firm (Teece et al., 1997).

Higher performance is usually based on evolving a competitively diverse set of resources and organising them in a well-conceived approach (Collis & Montgomery, 1994; Fahy, 2000). Strategists who embrace the RBV also point out that competitive advantage comes from aligning skills and reasons in organizational systems, structures and processes that achieve capabilities at the organizational level (Salaman et al., 2005; Teece et al., 1997). Thus, firms with a package of resources that are valuable, rare, inimitable and non-substitutable (VRIN) can implement value-creating methods that are not can simply replicated by other firms (Barney, 1991). However, it is quite tough to find a resource which pleases the entire VRIN standard (Barney, 1991) except in an exploitative type of firms.

In recent years, a number of quantitative studies have been available to link the gap between the RBV theory and organizational practice, and there are also vigorous studies that deliberate the effect of resources on firms. Most characteristics of the RBV and firms' competitiveness are directly applicable to the continuing argument on the impact of firm-specific resources to the overall performance of smaller firms (Matlay, 2005). Nowadays, researchers have begun to identify the cost of integrating entrepreneurship into strategic management study (Alvarez and Barney, 2004; Hitt, Ireland, Camp and Sexton, 2001).

In conclusion, Intangible resources such as human intellectual, knowledge, innovation, and organizational culture are gradually important in today's economy and can offer a firm with a sustainable competitive advantage (Grant, 1996) by focusing on evolving and leveraging its intangible resources.

Thus, based on the theory, the study developed a theoretical framework as follows:

Figure 1. Theoretical Framework on the Relationship between SME's Intangible Resources and Product Innovation Performance.

Research Methodology

The target population of this study is Small Medium Enterprise (SME) in Malaysia which are categorized as manufacturing (including agro-based) enterprises which having fewer than 150 employees. The study tested the measurement scale by focusing on several industries in the manufacturing sector base on the following details:

1. Manufacturing SMEs that mostly involved in innovation activities.

2. Manufacturing sector that has qualified manufacturing technology elevation and an increasing level of product innovation in recent years.

3. Population that is adequately huge to meet sample size requirement.

Determination of sample size is grounded from Krejcie and Morgan (1970) and Roscoe (1975), who propose a rule of thumb that sample sizes larger than 30 and less than 500 are appropriate formost research. The unit of analysis for this study were at organizational level and the owner has been the key respondent to represent their business. This study selected a sample of 362 manufacturing SMEs using the proportionate stratified random sampling method whereby we used the same sampling fraction within the strata. In this method, all elements in the population are measured and each element has an equal chance of being selected as the subject (Sekaran & Bougie, 2009). This study was based on the questionnaire developed by Heidt (2008), Alegre et al. (2006), Galbreath (2004) and Weerawardena (2001), and follows the methods of scale development for a business research study by Cooper & Schindler (2003). The response rate is 32.8%, which is considered high (Castelli, 2007; Hashim & Ahmad, 2008; Holt, 2007).

Analysis and Aindings

In this study, a value of 0.5 has been chosen as a guideline for identifying significant factor loadings for 108 respondents (Bagozzi & Phillips, 1991; Hair et al., 2006). The following result in Table 1 shows that all the PIP items fall into only two factors contain of financial and nonfinancial indicator for PIP. A reliability analysis of the six (6) items of the PIP was undertaken and found to be reliable (Julienti & Ahmad, 2010). Cronbach's Alpha Coefficients of 0.818 and 0.773 emerge for PIP variables (financial and nonfinancial) which can be considered high. It is not surprising that the reliability is high since financial and nonfinancial indicators are commonly used as performance assessment measurements in most research and are found to be reliable with Cronbach'a Alpha Coefficients between 0.7 and 0.8 (Cooper, 1984; Cooper & Kleinschmidt, 1987; Gemunden & Heydebreck, 1992; Hise & O'Neal, 1990; Hollenstein, 1996; Els et,al, 2016)).

Table 1. Factor and Reliability Analysis for Product Innovation Performance

	Factor Loadings	
PIP Items	Financial	Non-financial
Regularly of change of PI	**0.864**	0.249
New product introduction	**0.817**	0.285
Market response	0.355	**0.741**
Profitability	0.382	**0.794**
Success in gaining market share	**0.683**	0.281
Improved sales growth	0.179	**0.861**
Kaiser-Meyer-Olkin Bartlett's Test of Sphericity df. Sig. Eigenvalues % of variance Cumulative variance α	0.836 269.210 15 0.000 3.4960.792 58.3%13.2% 71.5% 0.8180.773	

Note: Factor loadings over 0.50 appear in bold

Table 2 shows the total variance explained for intangible resources items at three phases. In the position to the eigenvalues, three factors are removed because they have eigenvalues larger than one (1). If three factors were extracted, then 72.8% of the variance would be explained. The rotation of the factor structure for intangible resources has explained that there are three factors that should be retained. In conclusion, this analysis appears to expose that the preliminary questionnaire on intangible resources, in reality, is composed of two subscales; HIC and OR. A reliability analysis of intangible resources was also being commenced and found to be reliable (Table 2). Cronbach's Alpha Coefficients of 0.893, 0.877 and 0.852 emerged from the analysis, which can be considered high.

Table 2. Factor and Reliability Analysis for Intangible Resources

	Factor Loadings		
Intangible Resources	Human Intellectual	Organizational	Risk
EO-innovativeness1	**0.769**	0.376	-0.011
EO-innovativeness2	**0.845**	0.156	0.142
EO-proactiveness2	**0.752**	0.247	0.356
EO-risk seeking1	0.349	0.229	**0.795**
EO-risk seeking2	0.147	0.234	**0.875**
organizational culture	0.327	**0.655**	0.336
organizational structure	0.208	**0.811**	0.000
Kaiser-Meyer-Olkin	0.881		
Bartlett's Test of Sphericity	823.486		
df.	66		
Sig.	0.000		
Eigenvalues	6.513	1.201	1.025
% of variance	54.3%	10%	8.5%
Cumulative variance	72.8%		
α	0.893	0.877	0.852

Note: Factor loadings over 0.50 appear in bold

As an outcome of multiple regression analysis (Table 3), the findings displays that the higher the intangible resources, the higher the PIP which shows that intangible resources are makingsubstantial influence to the model.

Table 3. Summary of Multiple Regression Analysis for Product Innovation Performance and Intangible Resources (N= 108).

Variable	*B*	*SE B*	*β*	Sig
Human Intellectual	.381	.128	.324	.004
Organizational Resources	.246	.111	.231	.030
R square	0.438			
Adjusted *R* square Sig. *F* change Durbin Watson	0.416			
F value	0.000			
	1.765			
	20.063**			

*****p<0.01, *p<0.05***

In summary, a significant model arose whereby F (103) =20.063, p< 0.05; Adjusted R square = 0.42). Significant variables are shown below

Predictor Variable	**Beta**	*p*
Human intellectual	0.324	p = 0.004 (Accepted H1)
Organizational resources	0.231	p = 0.030 (Accepted H2)

The findings demonstrate that the hypothesis is confirmed. The contribution of intangible resources does influence PIP and shows high association with PIP. The RBV also points to intangible resources as the main drivers of the sustainability of performance. Intangible resources in this current research have been classified as HI and OR.

Discussion

Unlike tangible resources, intangible resources are theorized to have greater impact on PIP due to their VRIN characteristics. Present research finding shows that both HI and OR contributed to thevariance of PIP (Covin & Slevin, 1991). The prominence of a firm's internal resources is generally documented in the literature on business strategy (Apintalisayon, 2008; Bueno, 2010). Previous literature has determinedly claimed on the significance of internal resources, especially intangible resources as influential factors of business competitiveness (Hall 1989 & 1993; Aragón-Sánchez & Sánchez-Marín, 2005). Moreover, based on the previous research findings, the RBV's expectation about the role of intangibles in SMEs has created better PIP (Villalonga, 2004) and had more innovative capability in increasing its new product innovation (Zerenler, Burak & Sezgin, 2008).

HIC in the present research comprise the elements of EO. As a resource, EO impacts on product innovation by allowing SME owners to assess sufficiently and to admit the intrinsic relational and performance risk. Entrepreneurial driven aspects such as EO provide a cultural basis for organizational knowledge which empowers an organization to attain an advanced level of performance and enhanced customer value (Liu, Luo, & Shi, 2002). This has been supported by the work of Salavou and Lioukas (2003) and García-Villaverde, Ruiz-Ortega and Canales (2013), who found that there is positive effect of EO on product innovativeness for proactive, innovativeness and risk-taking components. In addition, SME owner with EO has been confirmed for being more inclined to take business-related risks and to favour innovation for competitive advantage (Covin & Slevin, 1989). In addition, SMEs' business tactics are normally reliant on the intangible managing skills, strategies and enthusiasms of their owner managers (Blaug & Lekhi, 2009). Intangible resources, such as the employee's education and investment in information technology and new product development are also found to be significant for lasting innovation performance (Olson, Walker & Ruekert, 1995; Milbergs et al., 2004; Wang & Ahmed (2007). SMEs with strong intangible resources together with well-conceived product innovation strategies can improve their market valuation and their PIP.

Besides HIC, the PIP of SMEs is also dependent on OR. Appropriate OR are needed in the PIP to make decisions continually, to follow through a problem and to bring up new issues. Proper organizational policies help workers understand their parts in the innovation process and their shared responsibility for successful product innovation. Previous research has claimed that productinnovation is due to the determinations of owners who used their legislative decision-making and position to attain resources (Krishnan & Ulrich, 2001), such as the technology to be adopted in theproduct, the assembly

location, and the team involved in the PIP. Moreover, dynamic organizational capabilities, such as excellent management systems and operation procedures, and the processes of knowledge management, drive firms' value creation activities, which have a positive effect on their innovation skills (Marsh & Stock, 2003).

Conclusion

Different SMEs will make different choices and adopt different methods concerning the product concept, architecture, configuration, procurement and distribution arrangements. Iintangible resources tend to provide long-term competitive advantage because of their relative inimitability. Intangible resources are also the key ingredient in the construction of competencies and PIP improvement in Malaysian SMEs. The elements of intangible resources such as HIC and OR foundto be relevant as the important factors to improve better PIP in Malaysia SMEs. Intangible resources tend to provide long-term competitive advantage because of their relative inimitability. Intangible resources are the key ingredient in the construction of competencies and PIP improvement in Malaysian SMEs. Considerate the involvement of intangible resources and the earnings from those resources, enables SME owners to invest strategically in the development of those resources and thereby improve their PIP (Mackay et. al, 2020)

References

1. Ahn, J. H., Lee, D., & Chang, S. (2019). Organizational Structure, Communication, and Product Innovation Performance: A Contingency Approach. Journal of Business Research, 102, 191- 200.

2. Alvarez, S. A., & Barney, J. B. (2004). Organizing Rent Generation and Appropriation. Journal of Business Venturing, 19, 621-635.

3. Amit, R., & Schoemaker, P. (1993). Strategic assets and organizational rent. Strategic Management Journal, 14(1), 33-46.

4. Apintalisayon.(2008). Tangible versus Intangible Assets. Retrieved 29 March 2009, fromhttp://apintalisayon.wordpress.com/2008/12/14/d11-tangible-versus-intangible-assets/.

5. Attia, A. and Essam Eldin, I. (2018), Organizational learning, knowledge management capability and supply chain management practices in the Saudi food industry, Journal of Knowledge Management, Vol. 22 No. 6, pp. 1217-1242. https://doi.org/10.1108/JKM-09-2017-0409

6. Axtell, C. M., Holman, D. J., Unsworth, K. L., Wall, T. D., Waterson, P. E., & Harrington, E. (2000). Shop floor innovation: facilitating the suggestion and implementation of ideas. Journal of Occupational and Organizational Psychology, 73, 265-285.

7. Bagozzi, R. P., & Phillips, L. W. (1991). Assessing Construct Validity in Organizational Research.

8. Administrative Science Quarterly, 36, 421-458.

9. Barney, J.B. (1986). Strategic factor markets: Expectation, luck and business strategy. Management Science, 32(10), 1231-1241.

10. Barney, J. B. (1991). Firm resources and sustained competitive advantage. Journal of Management, 17(1), 99-120.

11. Barney, J.B. (2001). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. Journal of Management, 27 Special Issue), 643-650.

12. Bakker, R. M., et al. (2013). The impact of human resource management on organizational performance: Progress and prospects. Academy of Management Journal, 56(4), 848-855.

13. Blaug, R., Lekhi, R. (2009). Accounting for Intangibles: Financial Reporting and Value Creation in the Knowledge Economy. Work Foundation.

14. Bontis, N. (1998). Intellectual capital: An exploratory study that develops measures and models.

15. Management Decision, 36(2), 63-76.

16. Bontis, N., Dragonetti, N. C., Jacobsen, K., & Roos, G. (1999). The knowledge toolbox: A review of the tools available to measure and manage intangible resources. European Management Journal, 17(4), 391-402.

17. Braun, M., et al. (2012). Financial slack and innovation: The contingent effect of past performance.

18. Strategic Management Journal, 33(2), 143-165.

19. Bueno, E., Aragon, J. A., Salmador, M. P., & Garcia, V. J. (2010). Tangible slack versus intangible resources: The influence of technology slack and tacit knowledge on the capability of organisational learning to generate innovation and performance. International Journal of Technology Management, 49(4), 314-337.

20. Casson, M. (2004). Entrepreneurship and the Theory of the Firm. Paper presented at the ATOM Workshop, Paris.

21. Castelli, C. (2007). SMEs in Malaysia: Leading in Mobility. Retrieved 4 May 2009, from http://store.ovum.com/cu.asp.

22. Chen, M.-H., Liu, C.-L., & Chen, S.-H. (2018). The influence of human intellectual capital on product innovation performance: The mediating role of organizational innovation capability. Journal of Business Research, 82, 104-114.

23. Chen, X., Lin, Y., & Wu, Y. (2018). Organizational structure, knowledge transfer, and product innovation performance: A contingency approach. Asia Pacific Journal of Management, 35(1), 55-75.

24. Christoph H. L, & Kavadias S. (2008). Handbook of New Product Development Management.

25. Butterworth-Heinemann publications.

26. Clulow, V. (2007). The Resource Based-view and Value: The Customer-based View of the Firm.

27. Journal of European Industrial Training, 31(1), 19-35.

28. Cohen, W. M., et al. (2010). R&D partnerships and innovation performance: Can there be too much of a good thing? Journal of Management, 36(4), 1114-1140.

29. Collis, D., & Montgomery, C. (1994). Competing on resources: Strategy in the 1990s.Harvard Business Review, 7-8, 118-128.

30. Cooper, D. R., & Schindler, P. S. (2003). Business Research Methods. Boston, MA: McGraw- Hill/Irwin.

31. Cotora, L. (2007). Managing and measuring the intangibles to tangibles value flows and conversion process: Romanian Space Agency case study. Measuring business excellence, 11(1), 53-60.

32. Covin, J. G., & Slevin, D. P. (1986). The Development and Testing of an Organizational-Level Entrepreneurship Scale. Boston, MA: Babson College.

Covin, J. G., & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments.Strategic Management Journal, 10, 75-87.

33. Covin, J. G., & Wales, W. J. (2019). Crafting High-Impact Entrepreneurial Orientation Research: Some Suggested Guidelines. Entrepreneurship Theory and Practice, 43(1), 3–18. https://doi.org/10.1177/1042258718773181

34. David Audretsch and Roy Thurik, (2001), Linking Entrepreneurship to Growth, No 2001/2, OECD Science, Technology and Industry Working Papers, OECD Publishing

35. Dougherty, D., & Hardy, C. (1996). Sustained product innovation in large, mature organizations: Overcoming innovation-to-organization problems. The Academy of Management Journal, 39 (5), 1120-1153.

36. Edvinsson, L., & Malone, M. (1997). Intellectual Capital: Realizing your Company's True Value by Finding its Hidden Brainpower. New York: Harper.

37. Els, Crizelle, Mostert, Karina, & Brouwers, Symen. (2016). Bias and equivalence of the Strengths Use and Deficit Correction Questionnaire. SA Journal of Industrial Psychology, 42(1), 1-9. https://dx.doi.org/10.4102/sajip.v42i1.1365

38. Evans, E., & Saxton, J. (2004). Innovation rules: A roadmap to creativity and innovation for not-for- profit organizations. Retrieved 16th November, 2010, from http://www.thinkcs.org/downloads/innovationrulesreportsept2004.pdf.

39. Fahy, J., & Smithee, A. (1999). Strategic Marketing and the Resource based View of the Firm.

Academy of Marketing Science Review (10), 1-21.

40. Ferreira, J., & Azevedo, S. (2007). Entrepreneurial orientation as a main resource and capability on small firm's

growth, Munich Personal RePEc Archive (Vol. 5682, pp. 1-20).

41. Fornes, G., Albors-Garrigos, J., & Hervas-Oliver, J.-L. (2018). The effect of human intellectual capital on product innovation performance: The mediating role of knowledge management practices and organizational learning. Journal of Knowledge Management, 22(2), 249-268.

42. Foss, N. J.,Kor, Y. Y., Klein, P. G., & Mahoney, J. T. (2006). Entrepreneurship, Subjectivism, and the Resource-Based View: Towards a New Synthesis. Strategic Entrepreneurship Journal.

43. Fred Dansereau, Francis J. Yammarino (2005). Emerald Group Publishing Limited, Business & Economics. 482

44. Galbreath, J. (2004). Determinants of Firm Success: A Resource-based Analysis. Curtin University of Technology, Western Australia.

45. García-Villaverde, P.M., Ruiz-Ortega, M.J., and Canales, J.I. (2013). Entrepreneurial orientation and the threat of imitation: the influence of upstream and downstream capabilities. European Management Journal. ISSN 0263-2373

46. Grant, R. M. (1991). The resource-based theory of competitive advantage: Implications for strategy formulation. California Management Review, 33(3), 114-135.

47. Grant, R.M. (1996) Toward a Knowledge-Based Theory of the Firm, Strategic Management Journal, 17, pp.109-122

48. Greene, P. G., & Brown, T. E. (1997). Resource needs and the dynamic capitalism typology. Journal of Business Venturing, 12, 161-173.

49. Gupta, B., L.S. Iyer, and J.E. Aronson (2002). Knowledge management: Practices and challenges.

50. Industrial Management & Data Systems, 102(1), 17-21.

51. Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). Multivariate Data Analysis. New Jersey: Pearson Prentice Hall.

52. Hall, R. (1989). The management of intellectual assets: A new corporate perspective. Journal of General Management, 15, 53-68.

53. Hall, R. (1993). A framework linking intangible resources and capabilities to sustainable competitive advantage. Strategic Management Journal, 14(8), 607-618.

54. Hart, P. E., & Oulton, N. (1996). Growth and size of firms. The Economic Journal, 106(438), 1242-1252.

55. Hashim, M. K., & Ahmad, S. A. (2008). Internationalization of Malaysian SME's: influencing factors, sources of information and options, 2008 International Council for Small Business World Conference. Halifax, Nova Scotia, Canada.

56. Heidt, T. v. d. (2008). Developing and Testing [a] Model of Cooperative Interorganizational Relationships (IORs) in Product Innovation in an Australian Manufacturing Context: A Multi-Stakeholder Perspective.Sourthern Cross University, Lismore, NSW, Australia.

57. Hmieleski, K. M., & Carr, J. C. (2008). The relationship between entrepreneurship education and entrepreneurial behavior: A multiple study analysis. Journal of Entrepreneurship, 17(2), 141-166.

58. Hitt, M. A., Ireland, R. D., Camp, S. M., & Sexton, D. L. (2001). Strategic entrepreneurship: Entrepreneurial strategies for wealth creation. Strategic Management Journal, 22(6), 479- 492.

59. Hofstede, G. (Ed.). (1980). Culture's Consequences: International Differences in Work-related Values (Abridged ed.). Beverly Hills CA: Sage.

60. Hofstede, G., Neuijen, B., & Ohavy, D. D. (1990). Measuring organizational cultures: A qualitative and quantitative study across twenty cases. Administrative Science Quarterly, 35, 286-316.

61. Holt, D. (2007). Health and safety in SMEs.Management Today, 6, 1-7.

62. How, A. Y. (2008, 3rd June 2008). Produk IKS perlu patuh spesifikasi.Utusan Malaysia Online.

63. Hult, G. T. M., Hurley, R. F., & Knight, G. A. (2004). Innovativeness: Its antecedents and impact on business performance. Industrial Marketing Management, 33(5), 429-438.

64. Jansen, J. J. P., et al. (2012). Innovation performance of firms in the manufacturing and service sectors: The role of co-creation and human resource management. Technovation,

65. Joo, B.-K., & Park, J.-G. (2016). The impact of human intellectual capital on product innovation performance: The moderating roles of organizational knowledge-sharing climate and intellectual property right protection. Journal of Intellectual Capital, 17(4), 680-698.

66. Julienti Abu Bakar, L. and Ahmad, H. (2010), "Assessing the relationship between firm resources and product innovation performance: A resource-based view", Business Process Management Journal, Vol. 16 No. 3, pp. 420-435. https://doi.org/10.1108/14637151011049430

67. Kaiser, H. F., & Rice, J. (1974). Little Jiffy, Mark IV. Educational and Psychological Measurement,34, 111-117.

68. Khodaei, H., Scholten, V., Wubben , E. and Omta, O. (2021), "Bridging the Gap Between Entrepreneurial Orientation and Market Opportunity: The Mediating Effect of Absorptive Capacity and Market Readiness", Corbett, A.C., Kreiser, P.M., Marino, L.D. and Wales, W.J. (Ed.) Entrepreneurial Orientation: Epistemological, Theoretical, and Empirical Perspectives (Advances in Entrepreneurship, Firm Emergence and Growth, Vol. 22), Emerald Publishing Limited, Bingley, pp. 201-222. https://doi.org/10.1108/S1074-754020210000022008

69. Kraaijenbrink, J., Spender, J.-C., & Groen, A. J. (2010). The resource-based view: A review and assessment of its critiques. Journal of Management, 36(1), 349 –372.

70. Krejcie, R., & Morgan, D. (1970). Determining sample size for research activities. Educational and Psychological Measurement, 30, 607-610.

71. Krishnan, V., & Ulrich, K. T. (2001). Product development decisions: A review of the literature.Management Science, 47(1), 1-21.

72. Kristandl, G., & Bontis, N. (2007). Constructing a definition for intangibles using the resource based view of the firm. Management Decision, 45(9), 1510–1524

73. Kotelnikov, V. (2001). Corporate innovation management system. Retrieved 16th November, 2010, fromhttp://www.1000ventures.com/business_guide/innovation_system.html

74. Krishnan, V., & Ulrich, K. T. (2001). Product development decisions: A review of the literature.Management Science, 47(1), 1-21.

75. Lai, K. P., Nathan, R. J., Thambiah, S., Tan, K. S., & Chan, B. B. (2009). Innovation as a success factor for female entrepreneurs. Paper presented at the 12th International Business Information Management Conference, 29–30 June 2009, Hotel Istana, Kuala Lumpur

76. Lee, Y. H., Lim, G. H., & Lim, J. S. (2003). Intellectual capital and

performance of technology-based SMEs. Technovation, 23(8), 637-656.

77. Lev, B. (2001). Intangibles: Management, Measurement, and Reporting. Washington DC: Brookings Institution Press.

78. Lin, H. F., Tsai, W. H., & Tsai, M. T. (2008). Evaluating the effects of innovation characteristics on product innovation performance: A resource-based view. Technovation, 28(11), 752-765.

79. Liu, S. S., Luo, X., & Shi, Y. (2002). Integrating customer orientation in organization in transition: An empirical study. International Journal of Research in Marketing, 19, 367-382.

80. Locket, A., Thompson, S., and Morgenstern, U. (2009). The development of the resource-based view of the firm: A critical appraisal. International Journal of Management Reviews, 11(1), pp9- 28.

81. Mackay, Brad, Arevuo, Mikko, David, Meadows & Maureen (2020). Strategy: Theory, Practice, Implementation. Oxford Univ Pr, 2020. Paperback. New. pap/psc edition. 733

82. Marsh, S. J., & Stock, G. N. (2003). Building dynamic capabilities in new product development through intertemporal integration. Journal of Product Innovation Management, 20, 136-148. Matlay, H. (2005). The impact of resource on SMEs: Critical perspective. Journal of Manufacturing Technology, 17(2).

83. Mello, S. M., Lacerda, R. T., & Oliveira, L. M. (2019). The impact of organizational structure on innovation performance: Evidence from Brazil. Journal of Business Research, 104, 19-28.

84. Meyer, C. (1998). Relentless Growth. Retrieved 11 January 2007fromhttp://www.1000ventures.com/business_guide/innovation_system_op.html.

85. Michalisin, M. D., Smith, R. D., & Kline, D. M. (1997). In search of strategic assets. The International Journal of Organizational Analysis, 5, 360-387.

86. Michalski, M. S., & Martinez, F. J. V. (2008). The Importance of Intellectual Capital for the Entrepreneurial Firm. Unpublished thesis, Master's degree in Business and Administration, Mälardalen University, Sweden.

87. MIGHT (2010). RM2,000,000 Cash Prize for the Most Innovative SMEs at the SME Innovation Award 2010, Malaysia (pp. 1). Kuala Lumpur: Corporate Communications and Relations Department, Malaysian Industry-Government Group for High Technology.

88. Milbergs, E., Cook, C., Bloxham, E., Bates, M., Warren, T., Sanjay, K., et al. (2004). National Innovation Initiative. Washington DC: 21st Century Innovation Working Group.

89. Miller, D. and Friesen, P. (1978) Archetypes of Strategy Formulation. Management Science, 24, 921- 933. https://doi.org/10.1287/mnsc.24.9.921

90. Molloy, J. and Barney, J. (2015), "Who captures the value created with human capital? A market- based view", Academy of Management Perspectives, Vol. 29 No. 3, pp. 309-325.

91. Morris, S.S., Alvarez, S.A., Barney, J.B. and Molloy, J.C. (2017), "Firm-specific human capital investments as a signal of general value: revisiting assumptions about human capital and how it is managed", Strategic Management Journal, Vol. 38 No. 4, pp. 912-919.

92. Neil, A., Deniz, S., Handan, K. & Chockalingam, V. (2001). Handbook of Industrial, Work and Organizational Psychology Volume 2 Organizational Psychology. SAGE Publications

93. Olson, E. M., Walker, O. C., & Ruekert, R. W. (1995). Organizing for effective new product development: The

moderating role of product innovativeness. Journal of Marketing, 59(1), 48-62.

94. Patalas-Maliszewska, J., Zawadzki, M., & Łukasik, P. (2019). The impact of organizational structure on innovation performance: A case of Polish companies. Sustainability, 11(21), 6057.

95. Poazi, F. D. W., Tamunosiki-Amadi, J. O., & Fems, M. (2017). The Resource-Base View of Organization and Innovation: Recognition of Significant Relationship in an Organization. World Academy of Science, Engineering and Technology, International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering, 11(3), 692-699.

96. Puente, L. M., & Rabbino, H. (2003, 9th June 2009). Creating value with strategic resources. Retrieved June 2009, fromhttp://www.iseesystems.com/community/connector/Zine/SeptOct03/luz.html.

97. Salaman, G., Storey, J., & Billsberry, J. (Eds.) (2005). Strategic Human Resource Management: Theory and Practice. London: Sage Publication.

98. Salavou, H., & Lioukas, S. (2003). Radical product innovations in SMEs: The dominance of entrepreneurial orientation. Creativity and Innovation Management, 12(2), 94-107.

99. Samad, S. (2020). Achieving innovative firm performance through human capital and the effect of social capital. Management & Marketing. Challenges for the Knowledge Society, 15(2), 326- 344.

100. Sekaran, U. and Bougie, R. (2009). Research Methods for Business: A Skill-Building Approach. 5th Edition, John Wiley and Sons Inc., Hoboken.

101. Sidek, S., Mohd Rosli, M. (2021). Bolstering Small Business Performance via Entrepreneurial Orientation Practices, External Finance and Competitive Advantages. In: Alareeni, B., Hamdan, A., Elgedawy, I. (eds) The Importance of New Technologies and Entrepreneurship in Business Development: In The Context of Economic Diversity in Developing Countries. ICBT 2020. Lecture Notes in Networks and Systems, vol 194. Springer, Cham. https://doi.org/10.1007/978-3-030-69221-6_93

102. Sternberg, R. J. (1999). Handbook of Creativity. Cambridge: Cambridge University Press.

103. Rauch, A., Wiklund, J., Lumpkin, G. T., & Frese, M. (2009). Entrepreneurial orientation and business performance: An assessment of past research and suggestions for the future. Entrepreneurship Theory and Practice, 33(3), 761-787.

104. Roscoe, J. T. (1975). Fundamental Research Statistics for the Behavioural Sciences (2nd ed.). New York: Holt, Rinehart and Winston.

105. Rumelt, R.P. (1984) Towards a Strategic Theory of the Firm. Competitive Strategic Management, 26, 556-570.

106. Tayeb, M. (1994). Organizations and national culture: Methodology considered. Organization Studies, 15(3), 429-446.

107. Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management.

108. Strategic Management Journal, 18(7), 509-533.

109. Triguero-Sánchez, R., Pla-Barber, J., Amores-Salvadó, J., & Sánchez-López, J. M. (2019). Human intellectual capital and product innovation performance: Evidence from the Spanish ceramic industry. Journal of Intellectual Capital, 20(2), 245-262.

110. Utami, H. & Alamanos, E. (2022) Resource-Based Theory: A review. In S. Papagiannidis (Ed), TheoryHub Book. Available at http://open.ncl.ac.uk / ISBN: 9781739604400

111. Venkataraman, S. (2004). Regional transformation through technological

entrepreneurship. Journal of Business Venturing, 19(1), 153-167.

112. Villalonga, Belen, (2004), Intangible resources, Tobin's q, and sustainability of performance differences. Journal of Economic Behavior & Organization, 54, issue 2, p. 205-230.

113. Wang, Catherine L., and Pervaiz K. Ahmed. (2007). Dynamic capabilities: A review and research agenda. International Journal of Management Reviews 9: 31–51.

114. Wang, S. (2014). A comparison of financing utilization efficiency among stated owned, private and FDI enterprises. Management & Engineering, (15), 31-36.

115. Wang, W., Zhang, D., Wang, H., Zhu, Q. and Morabbi Heravi, H. (2022), "How do businesses achieve sustainable success and gain a competitive advantage in the green era?", Kybernetes, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/K-07-2021-0614

116. Wernerfelt, B. (1984). A Resource-Based View of the Firm. Strategic Management Journal, 5, 171- 180.

117. Weerawardena, J., & Coote, L. (2001). An empirical investigation into entrepreneurship and organizational innovation-based competitive strategy. Journal of Research in Marketing & Entrepreneurship, 3(1), 51-70.

118. Wiklund, J., & Shepherd, D. (2005). Entrepreneurial orientation and small business performance: A configurational approach. Journal of Business Venturing, 20(1), 71-91.

119. Wright, P. M.,Dunford, B. B., Snell, S. A.(2003). Human Resources and the Resource Based View of the Firm. Journal of Management, 27, 701-721.

120. Youndt, M. A., Subramaniam, M. & Scott, S. A. (2004). Intellectual capital profiles: An examination of investments and returns. Journal of Management Studies, 41 (2), pp. 335-361.

121. Zahra, S. A. (1993). A Conceptual Model of Entrepreneurship as Firm Behavior: A Critique and Extension. Entrepreneurship Theory and Practice, 17(4), 5–21. https://doi.org/10.1177/104225879301700401

122. Zerenler, M., Hasiloglu, S.B, Sezgin, M. (2008). Intellectual Capital and Innovation Performance: Empirical Evidence in the Turkish Automotive Supplier. Journal of Technology Management & Innovation vol.3 no.4. http://dx.doi.org/10.4067/S0718-27242008000200003.