

The Impact of Intellectual Capital and Knowledge Management on Competitive Advantage

Dicky Hida Syahchari^{a*}, Muh Amsal Sahban^b, ^aManagement Department, BINUS Business School Undergraduate Program, Universitas Bina Nusantara, Jakarta, Indonesia, ^bManagement Department, STIM Lasharan Jaya, Makassar, Indonesia, Email: ^{a*}dicky.syahchari@binus.edu

This study aims to examine the relationship between intellectual capital and knowledge management with a competitive advantage in small and medium enterprises. Intellectual capital alludes to all the intellectual resources that the organisation claims or possesses, while knowledge management alludes to the procedures and practices that enable organisations to deal with their intellectual resources and accomplish knowledge based on a competitive advantage. This research uses quantitative and multiple regression methods to analyse research data. The statistical software used in SPSS version 24. The results of this study support previous research, in the sense that there is a significant relationship between Intellectual Capital and Knowledge Management on the competitive advantage. The implication of this research shows that the degree of Intellectual Capital can foresee the advancement capability of a company. The company must use Knowledge Management to increase Intellectual Capital and exploit the potential of knowledge. The results of this study indicate the benefits of developing innovations to illustrate the relevance of knowledge management in the exploitation of intellectual capital to improve the competitive advantage of the company.

Key words: *Knowledge Management, Intellectual Capital, Competitive Advantage.*

Introduction

Today's business competition is getting tougher. Companies are continually required to find ways and strategies to be the best in order to survive in global competition (Mohamed, Ibrahim, Eltayeb, & Abker, 2019). One way that companies can take to be the best is to have a corporate strategy to gain a competitive advantage (Afriapollo, 2016). At present, Small and Medium Enterprises must have a competitive advantage because, at present, the competition between companies is strengthening, but behind this, the potential of Small and Medium Enterprises (SMEs) can make a significant contribution to the Internal Product Gross (GDP). SMEs represent approximately 60% of GDP. The potential can get Indonesia out of the middle trap in the game. SMEs do not underestimate. Although it seems small, the numbers are many. If the potential can be enhanced, then the contribution of SMEs to the national economy can be a gateway for Indonesia to exit low economic growth, which is currently still 5% (Nurdin, 2019)

Growing current research discusses the impact of knowledge-based problems in creating value focused on the concepts of intellectual capital and knowledge management. Intellectual capital refers to the general intellectual assets of companies (Zambon & Dumay, 2016) while knowledge management is to the processes and implementation of companies to control their intellectual resources and accomplish a competitive advantage based on knowledge (Hislop, Bosua, & Helms, 2018) (Webb, 2017) (Kianto, Vanhala, & Heilmann, 2016)

The competitive advantage can be improved when knowledge management is the main predictor. Knowledge management results in both harmony and transparency existing within a company. Another meaning of knowledge management is the implicit exchange of knowledge within the company (Akgün, Keskin, Ayar, & Okunakol, 2017) (Ou, Davison, & Wong, 2016).

To overcome the existing research gaps, the objective of this study is to empirically examine how a company's knowledge base and its capacity to utilise and build up this base linked to competitive advantage. The objective is to look at companies with a general level of intellectual capital and knowledge management on the competitive advantage of the company.

Literature Review

Competitive Advantage

The term competitive advantage is commonly used in the field of strategic management. The extension of the phrase to "sustainable competitive advantage" today is a translation of ambiguity. The concept of competitive advantage has a long history in the strategic management literature. The competitive advantage can determine by the characteristics of the opportunities that are unique in certain areas of the product market and business growth (Mohamed et al., 2019). In this case, identify the specific characteristics of the market for

individual products that will provide a strong competitive corporate position (Yang, 2016). The competitive advantage is a factor or a combination of several factors that have a direct or indirect impact on the organisational growth in the market and the economic impact and are capable of increasing the stability of profits through the optimal use of available resources (Saeidi, Sofian, Saeidi, Saeidi, & Saaeidi, 2015).

Competitive advantage defined as the ability of organisations to create positions above other companies or competitors (Noe, Hollenbeck, Gerhart, & Wright, 2017). The competitive advantage consists of unique competencies that differentiate the organisations' from the competitors, which gives them an advantage in the market (Al Shobaki & Naser, 2017). The competitive advantage has traditionally involved choices about the markets in which the company will compete, maintaining market share in clear segments using price and product performance attributes. Competition in today's global economy depends on anticipation and rapid response to changing market needs. Porter's approach to competitive advantage focuses with upper hand centres around the organisation's capacity to be an ease maker in its industry or to be one of a kind in its industry in different viewpoints that are esteemed by clients (Porter, 1991)

The competitive advantage fundamentally develops from the qualities or advantages made by the organisations' for the purchasers. Clients, for the most part, want to purchase items that have more an incentive than they need or anticipate. Be that as it may, the worth will likewise contrast and the value advertised. Item buys will happen if the customer price considers the price of the product according to the esteem offered (Vogel & Paul, 2015). Cost: it is one of the important variables to achieve a competitive advantage by reducing production costs in the percentage that reaches the wishes of several customers by reducing the total cost of service products, with the need to realise that the objective Strategic cost reduction is not absolute, but in accordance with the established conditions and regulations. Therefore, organisations that adopt the lowest cost should focus on the production process, starting with the supplier and ending with the arrival of the product to the customer and controlling the general product and the costs associated with the production and providing new services low value. Cost is one of the most important dimensions. It is essential for the competition, and many organisations try to rely on reducing the cost of their products to achieve a competitive advantage, which means that organisations manage products and market products at the lowest possible cost.

Knowledge Management

Knowledge management has defined in several ways and aspects; Interestingly, there is no single definition that can explain the whole picture because different authors see knowledge management from various perspectives, which determines how they define it. However, the study of knowledge comes from ancient Greece. Even before that, knowledge was handled at least implicitly when people worked (Shams, Vrontis., Weber., & Evangelos Tsoukatos.,

2019). Knowledge management is the work and development of knowledge assets of an organisation to achieve the objectives of the organisation (Chiu & Chen, 2016). Knowledge management involves the creation, manipulation, storage and exchange of knowledge among people in the community of practice (Chiu & Chen, 2016). Knowledge management, by definition, is a piece of the whole administration process that spotlights on methodical investigation, creation, advancement, stockpiling and utilisation of knowledge. (Ikechukwu & Callystus, 2018). Knowledge management involves people who share their experiences, skills, ideas, context, interpretation, judgment, intuition and motivation (Jayasingam, Ansari, Ramayah, & Jantan, 2013). Doggett, M. defines knowledge management as a process based on four pillars: (a) content: it relates to the type of knowledge (explicit or tacit), (b) skills: accessibility to skills to extract knowledge, (c) Culture: Organizational culture should promote the distribution of knowledge and information, (d) organize: organize current knowledge. Knowledge management is a process that helps organizations find, select, organize and disseminate important information (Doggett & Jahan, 2014)

Malhotra defines knowledge management: knowledge management is the process by which organisations acquire skills to learn (internalise knowledge), encode knowledge (externalise knowledge) and distribute and transfer information resources of knowledge and knowledge assets by "remembering" and applying your experience (Malhotra, 2000).

Relationship Knowledge Management and Competitive Advantage

Several studies have examined the relationship between knowledge management and competitive advantage (Meihami & Meihami, 2014). Knowledge is socially complex and difficult to replicate based on competitive advantage; therefore, knowledge management is the main determinant of competitive advantage (Chuang, 2004). Valuable knowledge can be retained, applied or made to emphatically competitive advantage. Viable the board of knowledge forms, including the securing, move, and utilisation of knowledge, successfully expanding the communications of accomplices with associations, adding to the nature of items or administrations and growing new items or administrations, and creating one of a kind capacities and important. Among the principal issues in strategic management, Knowledge Management has a positive association with financial performance, authoritative adequacy, advancement and hierarchical spryness (Mao, Liu, & Zhang, 2015) these problems help organisations achieve a competitive advantage. Therefore, we propose the following hypothesis: **H1**. Knowledge Management positively influences competitive advantage

Intellectual capital

Intellectual capital has three components: human capital resides in the person, structural capital resides in the company, and relational capital resides in the relationship between the company

(Sveiby, 2001). Different environments and different content of the dimensions of intellectual capital decide the procedure to get a superior execution of the company. At the point when intellectual capital estimated by dimensions that show real impacts, these dimensions may incorporate parts of company capacity because the last impact is a result of the way toward getting execution through competitive advantage. Likewise, in numerous investigations of basic capital, it incorporates organisational capacities (Wu & Chou, 2007).

Accordingly, the components of intellectual capital and company capacities join with their impacts. Besides, there is an input procedure between the components of intellectual capital since human, structural and social capital are interrelated. The things incorporated into each component of intellectual capital produce slight changes in the connections between them because of the input procedure occurs toward some path relying upon the degree of advancement of the organisation. SMEs with another developing management framework scarcely show the criticism procedure. Consequently, the examination of intellectual capital inside the system of competitive advantage in SMEs with a management model that shows up more unmistakably appears the relationship between the dimensions of intellectual capital because the feedback process begins. (Jardon & Susana Martos, 2012)

The effort towards a good categorisation of the intellectual capital of a company is also an effort towards better management of this intellectual capital. One of the initial categorisations of intellectual capital carried out by Karl-Erik (Sveiby, 2001) distinguishes the internal structure, the external structure, and the competencies of the employees. The internal structure consists of the company's internal systems, databases, business processes and routines that used as commercial support. External structures require relationships with stakeholders and external networks. Finally, employee competencies include individual experience, knowledge, and skills of employees.

Relationship Intellectual Capital and Competitive Advantage

Intellectual capital lays the foundations for future competitiveness, in general, an increase in intellectual capital produces outcomes on execution; however this effect is difficult to assess (Jardon & Susana Martos, 2012) Intellectual capital is progressively significant as a source of competitive advantage in SMEs than big organisations because tangible assets are frequently lower and SMEs must contend through elusive assets. The reconciliation of intellectual capital and competitive advantage could encourage the separation among assets and aptitudes. The competitive advantage model presents particularities for SMEs in moderate development frameworks and embryonic management (Santos-Rodrigues, Figueroa Dorrego, & Maria Jardon, 2010). Several studies have investigated the relationship between intellectual capital and competitive advantage. Yaseen, SG, Dajani, D., and Hasan, Y. (2016) That examined the impact of the components of intellectual capital on the advantage of competitive in Jordanian telecommunications organisation. The research results indicate that relational capital and

structural capital have a positive effect on competitive advantage (Yaseen, Dajani, & Hasan, 2016). Therefore, we propose the following hypothesis: **H2:** Intellectual capital positively influences competitive advantage

Research Methodology

This study adopted a quantitative research design with a sample size of 110 SMEs in the DKI province. The questionnaires were distributed through the use of 125 sheets, unfortunately only 100 questionnaires were completed correctly and thus these were used for data analysis. The sampling technique in this study uses a simple random technique used to select SMEs. The questionnaire serves as the main source of data used to generate responses from respondents. To guarantee the validity of the instrument using the content validity and the use of the Cronbach alpha test to ensure the reliability of the instrument. The indicators of knowledge management, intellectual capital, and competitive advantage are measured using five points: the Likert scale consists of 5 = Strongly agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Not strongly agree. This study uses statistical software for social sciences (SPSS) version 24.0 to analyse hypotheses. Based on the number of questionnaires that were feasible to analyse and met the requirements, 100 respondents (56 male, 44 female) obtained in Table 1 and the age of the respondents listed in Table 2.

Table 1: Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	56	56.0	56.0	56.0
Female	44	44.0	44.0	100.0
Total	100	100.0	100.0	

Table 2: Age of respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 20-25	15	15.0	15.0	15.0
26-35	48	48.0	48.0	63.0
36-45	23	23.0	23.0	86.0
46-55	6	6.0	6.0	92.0
>55	8	8.0	8.0	100.0
Total	100	100.0	100.0	

Analysis of Data

The analysis of test requirements that will apply in this study: the classical assumption test consists of the data normality test, the heteroscedasticity test, the autocorrelation test, the multi colouration test, and the hypothesis test using the SPSS Version. 24

In this study, he proposes a hypothesis consisting of:

1. $H_0 : b_1 = b_2 = 0$; There is no influence of knowledge management and intellectual capital together on competitive advantage.
2. H_1 : one or both $b_1 \neq 0$; There is an influence of knowledge management and intellectual capital together on competitive advantage. If $F_{count} > F_{table}$, H_0 is rejected, and H_1 is accepted.
3. $H_0 : b_1 = 0$; knowledge management has no effect on competitive advantage
4. H_1 : $b_1 \neq 0$; There is an influence of knowledge management on competitive advantage. If $t_{count} > t_{table}$, is rejected, and dan H_1 is accepted.
5. $H_0 : b_2 = 0$; Intellectual Capital has no effect on competitive advantage.
6. H_1 : $b_2 \neq 0$; There is intellectual capital against competitive advantage. If $t_{count} > t_{table}$, H_0 is rejected dan H_1 is accepted.

Tests performed on each hypothesis with the sequence of steps as follows: F test, t-test for b_1 , t-test for b_2 and multiple regression equations. The test results of each hypothesis are the following:

- a) The F test can see in table 3. According to the SPSS calculation, the F_{count} results obtained a value of 201,727 and F_{table} with $\alpha 5\%$, $n_1 = 2$, $n_2 = 100$ obtained a value of 3,35, so that $F_{count} (201,727) > F_{table} (3,35)$, then H_0 is rejected, and H_1 is accepted, which means that there is a significant influence between the knowledge management variable and intellectual capital in the competitive advantage.

Table 3: Value of F calculated by SPSS 24

ANOVA(b)

Mode l		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	25.277	2	12.639	201.727	.000(a)
	Residual	6.077	97	.063		
	Total	31.355	99			

a Predictors: (Constant), X2, X1

b Dependent Variable: Y

- b) The T-test for b_1 can see in Table 4. From the results of the t-test calculations with the help of SPSS-based computer processing vers. 24, obtained the value of the t_{count} coefficient of

3,809 while t_{table} with a free degree of 100 in α (0,025) amounted to 1,950. Therefore t_{count} (3,809) > t_{table} (1,950), so H_0 is rejected, and H_1 is accepted. It shows that the better the knowledge management, the greater the competitive advantage.

Table 4: Value of t count for t-test b_1
Coefficients(a)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.601	.158		3.809	.000		
	X1	.881	.045	.894	19.723	.000	1.000	1.000

a Dependent Variable: Y

c) The t-test for b_2 can see in table 5. From the results of the t-test calculations with the help of SPSS-based computer processing vers. 24, obtained the value of the t_{count} coefficient of 5,038 while the t_{table} with a free degree of 100 in α (0,025) is 1,95. Therefore t_{count} (5,038) > t_{table} (1,95), so H_0 is rejected, and H_1 is accepted. It shows that the better the intellectual capital, the greater the competitive advantage.

Table 5: Value of t count for t-test b_2
Coefficients(a)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.000	.198		5.038	.000		
	X2	.753	.055	.810	13.663	.000	1.000	1.000

a Dependent Variable: Y

d) Multiple regression equations, with the help of computer processing based on SPSS calculations vers. 24, which listed in Table 3, Table 4 and Table 5, obtained the multiple regression equation as follows :



$$Y = 0,601 + 0.881 X_1$$

$$Y = 1,000 + 0.753 X_2$$

$$Y = 0,541 + 0,741X_1 + 0.155 X_2$$

Conclusion

This research is an effort to combine the disciplines of intellectual capital and knowledge management to discover which configurations can produce benefits in terms of competitive advantage. The results of this study indicate that the better the knowledge management, the greater the competitive advantage, and the better the intellectual capital, the greater the competitive advantage. In terms of the research search that combines intellectual capital and knowledge management, this research perspective contributes to a broader scientific discussion from a knowledge-based view, where knowledge-based assets seen as resources and skills. The implementation of effective knowledge and intellectual capital management is regulated and facilitated by certain factors that can increase the competitive advantage of the company. Organisations can certainly benefit from a more comprehensive understanding of the factors that are crucial to the success of knowledge management and intellectual capital. However, the application of inappropriate factors can make it difficult to achieve the desired performance. Therefore, sufficient attention should give to the development of knowledge management and intellectual capital to increase the competitive advantage of the company.



REFERENCES

- Afriapollo, S. (2016). Strategy of leadership and innovation in improving company performance against competitive advantage,. *International Journal of Economics, Commerce and Management*,.
- Akgün, A. E., Keskin, H., Ayar, H., & Okunakol, Z. (2017). Knowledge sharing barriers in software development teams: A multiple case study in Turkey. *Kybernetes*, 46(4), 603-620.
- Al Shobaki, M. J., & Naser, S. S. A. (2017). *The Role of the Practice of Excellence Strategies in Education to Achieve Sustainable Competitive Advantage to Institutions of Higher Education-Faculty of Engineering and Information Technology at Al-Azhar University in Gaza a Model*.
- Chiu, C. N., & Chen, H. H. (2016). The study of knowledge management capability and organizational effectiveness in Taiwanese public utility: the mediator role of organizational commitment. *SpringerPlus*, 5(1), 1520.
- Chuang, S. (2004). A resource-based perspective on knowledge management capability and competitive advantage: an empirical investigation. *Expert Systems with Applications*, 27, 459–465.
- Doggett, M., & Jahan, M. P. (2014). Perceptions of manufacturing management knowledge and the four pillars. In *Proceedings of Association of Technology, Management, and Applied Engineering (ATMAE)*, (pp. 269-279.).
- Hislop, D., Bosua, R., & Helms, R. (2018). *Knowledge management in organizations: A critical introduction*. Oxford University Press.
- Ikechukwu, D., & Callystus, A. (2018). Knowledge Management and Organizational Commitment. *International Journal of Business and Management Invention*, 7(3), 19–24.
- Jardon, C. M., & Susana Martos, M. (2012). Intellectual capital as competitive advantage in emerging clusters in Latin America. *Journal of Intellectual Capital*, 13(4), 462-481.
- Jayasingam, S., Ansari, M. A., Ramayah, T., & Jantan, M. (2013). Knowledge management practices and performance: are they truly linked?. *Knowledge Management Research & Practice*, 11(3), 255-264.
- Kianto, A., Vanhala, M., & Heilmann, P. (2016). Journal of Knowledge Management The impact of knowledge management on job satisfaction The impact of knowledge
270



- management on job satisfaction. *Journal of Knowledge Management Journal of Knowledge Management Journal of Knowledge Management Iss Journal of Knowledge Management*, 20(20), 43–45. <https://doi.org/10.1108/JKM-10-2015-0398>
- Malhotra, Y. (2000). *Knowledge management and virtual organizations*. IGI global.
- Mao, H., Liu, S., & Zhang, J. (2015). How the effects of IT and knowledge capability on organizational agility are contingent on environmental uncertainty and information intensity. *Information Development*, 31, 358–382.
- Meihami, B., & Meihami, H. (2014). Knowledge Management a way to gain a competitive advantage in firms (evidence of manufacturing companies). *International Letters of Social and Humanistic Sciences*, 3(14), 80-91.
- Mohamed, A. T., Ibrahim, S. B., Eltayeb, T. K., & Abker, A. Y. (2019). The Mediating Role of Radical Innovation in the Relationship Between Knowledge Management and Competitive Advantage in Sudanese Manufacturing Firms. *American Journal of Business, Economics and Management*, 7(1), 1.
- Noe, R. A., Hollenbeck, J. R., Gerhart, B., & Wright, P. M. (2017). *Human resource management: Gaining a competitive advantage*. New York, NY: McGraw-Hill Education.
- Nurdin, Y. T. (2019). UMKM Mampu Dorong Pertumbuhan Ekonomi.
- Ou, C. X., Davison, R. M., & Wong, L. H. (2016). Using interactive systems for knowledge sharing: The impact of individual contextual preferences in China. *Information & Management*, 53(2), 145-156.
- Porter, M. E. (1991). Towards a dynamic theory of strategy. *Strategic Management Journal*, 12(S2), 95-117.
- Saeidi, S. P., Sofian, S., Saeidi, P., Saeidi, S. P., & Saeidi, S. A. (2015). How does corporate social responsibility contribute to firm financial performance? The mediating role of competitive advantage, reputation, and customer satisfaction. *Journal of Business Research*, 68(2), 341-350.
- Santos-Rodrigues, H., Figueroa Dorrego, P., & Maria Jardon, C. (2010). The Relation Between Network of Collaboration (as a Relational Capital Dimension) and Firm Innovativeness. *Proceedings of the 2Nd European Conference on Intellectual Capital*, 521–528.
- Shams, S. M. R., Vrontis., D., Weber., Y., & Evangelos Tsoukatos., A. F. (2019). *Cross-Functional Knowledge Management: The International Landscape*.



- Sveiby, K.-E. (2001). A knowledge-based theory of the firm to guide in strategy formulation. *Journal of Intellectual Capital*, 2(4), 344-58.
- Vogel, J., & Paul, M. (2015). One firm, one product, two prices: Channel-based price differentiation and customer retention. *Journal of Retailing and Consumer Services*, 27, 126-139.
- Webb, S. P. (2017). *Knowledge management: Linchpin of change*. Routledge.
- Wu, Y. C., & Chou, Y. H. (2007). A new look at logistics business performance: intellectual capital perspective. *The International Journal of Logistics Management*, 18(1), 41-63.
- Yang, L. (2016). Product Market Competition, Competitive Position and Employee Wage. *Journal of Human Resource and Sustainability Studies*, 4(03), 176.
- Yaseen, S. G., Dajani, D., & Hasan, Y. (2016). The impact of intellectual capital on the competitive advantage: Applied study in Jordanian telecommunication companies. *Computers in Human Behavior*, 62, 168-175.
- Zambon, S., & Dumay, J. (2016). A critical reflection on the future of intellectual capital: from reporting to disclosure. *Journal of Intellectual Capital*.