

INTELLECTUAL CAPITAL INVESTIGATION IN ACHIEVING SUSTAINABLE COMPETITIVE ADVANTAGES IN THE CREATIVE INDUSTRY: DOES THE MEDIATION OF KNOWLEDGE MANAGEMENT SYSTEM AFFECT ?

Yanti Mayasari Ginting, Institut Bisnis dan Teknologi Pelita Indonesia

ABSTRACT

The purpose of this research is to analyse the model of the relationship of intellectual capital to the knowledge management system (KMS) of the Visual Communication Design (VCD) business in achieving sustainable competitive advantage (SCA). This research is quantitative research, analyses the relationship of intellectual capital on the KMS and SCA, then analyses the role of mediating KMS on the influence of intellectual capital on SCA. This research used a cross sectional cohort study. The population in this research consisted of the owners, managers, and creative designers in the VCD business in Riau Province, Indonesia. The sampling method is probability and using cluster sampling as a technique sampling. This research used 202 respondents. Data were collected by using the questionnaire and analysed by using AMOS SEM. The results of this research are intellectual capital influence the VCD business to achieve SCA both directly and indirectly through KMS mediation. Although the effect of the direct relationship is greater than indirect. This means that without KMS mediation, VCD business can achieve SCA. This research suggests that VCD businesses need to empower human capital, relational capital, and organizational capital to enhance SCA. Establish procedures for knowledge acquisition, knowledge conversion, knowledge application, and knowledge protection can also be applied, with the aim of being able to maintain knowledge and adapt to changes that occur dynamically.

Keywords: Knowledge Management System, Intellectual Capital, Sustainable Competitive Advantage.

INTRODUCTION

Riau Province is at the forefront of western Indonesia, bordering the Southeast Asia region, this has the potential to make Riau as an area of Indonesia's national economic growth. Based on data from the Central Statistics Agency of Riau Province for the period 2010-2018, the financial sector, real estate and service companies are the sectors with the highest economic growth. Then the next growth in the trade sector, hotel and communication, and government services. Visual communication design business activities as a sub-sector of the creative industry are related to the presence of businesses in other economic sectors as mentioned above.

In creative economic activities, the involvement of various actors in the ecosystem is very inseparable. Each actor has a specific competency capacity. Therefore, each actor must have the knowledge to ensure the chances of success of the creative economy business in Riau, particularly the VCD sub-sector.

Knowledge in the form of ideas (tacit) is the main potential in business in the creative industries, although explicit knowledge such as the ability to manage business activities is also required (DCMS, 1998; Bekraf, 2016). Knowledge in the form of capacity and competence in each actor, synergize and through KMS is transformed into productive and profitable business activities (Walters, 2002).

Knowledge in terms of designer creativity, business management, and marketing is a type of intellectual capital owned by VCD businesses as intangible assets. This knowledge is very important than tangible assets such as financial capital, buildings, machinery, and other physical assets. So companies must manage each potential knowledge both tacit and explicit knowledge as a way to achieve business objectives (Bekraf, 2016; Latilla et al., 2018).

Intellectual capital in the VCD business is different from other types of industries. In some intellectual capital literature is the output of knowledge management (Sharkie, 2003; Barber et al., 2006). In the creative economy, intellectual capital is an input that will support business management activities that involve many parties in the creative economy ecosystem. Intellectual capital owned by each of the actors involved is specifically formed in their own communities and creative industry business activities. This type of knowledge, collaborating in achieving company goals. So that in this business, intellectual capital is a tacit and explicit collaboration of knowledge (Polanyi, 1966; Nonaka & Takeuchi, 1995; Holste & Fields, 2010; Seleim & Khalil, 2011; Chen et al., 2017).

According to Corso et al. (2006) knowledge management is a key factor for obtaining and maintaining competitive advantage. Collaboratively, knowledge becomes a strength in business activities obtained through a work system consisting of a combination of [a] academics, [b] business actors, [c] governments, [d] creative communities, [e] media. This combination creates the KMS terminology for creative industries that emphasizes the interaction and combination of knowledge in the ecosystem. According to Gold et al. (2001) intellectual capital is knowledge management infrastructure that can affect in achieving competitive advantage.

Although the literature refers to the process of creating knowledge in organizations as knowledge management, in the creative economy, it is more relevant to call it KMS because it is known as collaborative knowledge derived from ecosystem interactions. This means that the existing knowledge in the creative industries sourced from knowledge collaboration, is intended to produce high-value creative products which will then be used as a solution to support the economic activities of other sectors. This is supported by a number of literatures that initially connected the creative industry with its ecosystem consisting of universities, industry, government (triple helix) (Etzkowitz & Leydesdorff, 1995). In a broader understanding and consideration, then developed with the term quadruple helix, which consists of [a] academics, [b] community [c] business, [d] government (Carayannis & Campbell, 2009). Furthermore, this ecosystem was developed into a penta helix, which consists of the involvement of academics, business, community, government, media (ABCGM) (Yahya, 2017; Ginting, 2020).

This research examines the KMS mediation of VCD business in the relationship of intellectual capital to SCA. KMS consisting of dimensions of knowledge acquisition, knowledge conversion, knowledge implementation, and knowledge protection is known to influence the achievement of SCA in some research literature conducted in business areas outside the creative economy such as manufacturing, service industries, limited private companies, and joint stock companies (Lopes et al., 2016; Nguyen & Neck, 2008; Gold et al., 2001). Different from previous studies, this research was conducted on the creative economy

business. Management is faced with the challenges of the synergy of knowledge of each actor in a business ecosystem that has an exclusive competency capacity (Ginting et al., 2019). So research is needed on how intellectual capital in achieving SCA, can it be determined by KMS mediation from the VCD business, or without KMS mediation.

This paper will be divided into several sub-discussions, [a] starting with an introduction [b] literature review [c] an explanation of theoretical developments and hypotheses [d] research methodology [e] discussion of research results, [f] conclusions and implicit research.

LITERATURE REVIEW

Intellectual Capital

Intellectual capital is a major component of corporate value. These intangible assets are often considered more important than tangible assets. In addition, intellectual capital is the composition of knowledge and abilities embedded in organizational members that can produce economic benefits (Stewart, 1997; Yi Ching et al., 2012).

According to intellectual capital theory, human capital, structural capital and other knowledge assets are part of a company's intellectual capital, which can be defined as the sum of all knowledge used in creating the process of doing business to gain a competitive advantage (Youndt et al., 2004; Subramaniam & Youndt, 2005). Intellectual capital is the sum of all valuable knowledge and abilities for companies in doing business activities and gaining SCA (Stewart, 1994; Stewart & Ruckdeschel, 1998; Teece, 2000; Wang et al., 2014). According to Edvinsson and Malone (1997) intellectual capital is a hidden value which is the gap between market value and book value.

Intellectual capital refers to the knowledge and ability to know social collectivity, such as organizations, intellectual communities, or professional practice. Intellectual capital includes the knowledge, skills and abilities acquired that enable people to act in new ways (Nahapiet & Ghospal, 1998). Intellectual capital has been defined in a variety of ways, including knowledge assets that can be converted into value. Intellectual capital is an assets of a company that are not fully recorded on the balance sheet: intellectual material such as knowledge, information, and experience that forms a company's competitive advantage as Stewart and Ruckdeschel (1998) has mentioned; and the amount of knowledge an organization can utilize in the process of doing business to gain competitive advantage (Mehralian et al., 2012).

In general intellectual capital is understood as non-monetary, non-physical intellectual capital, which contributes to the creation of organizational value and the extraction of values through knowledge not only owned by individuals, but also stored in organizational databases, business processes, systems, and relationships (Sullivan, 1999; Serenko & Bontis, 2004; Youndt et al., 2004; Thrylo & Kornukh, 2011; Zharinova, 2011; Mehralian et al., 2012).

Knowledge Management System

In general knowledge is divided into two types, namely implicit and explicit knowledge (Polanyi, 1958). Some literature has mentioned that the creation of company knowledge is obtained through the conversion of implicit knowledge into explicit. Furthermore, explicit conversion to implicit continuously at the process of how knowledge is constantly changing and being updated. The process refers to the Nonaka Knowledge Spiral for the purpose of New Product Development (Nonaka, 2007).

Knowledge of organization and management is not enough without collaborating to the knowledge related to creativity (tacit), especially for businesses that use ideas, expertise, and skills to gain wealth like the creative industries. Knowledge of creative actors comes from perseverance in developing talent so that it has a high selling value. Not all knowledge possessed by creative actors can be converted to explicit knowledge, but even though it can be converted to explicit knowledge, it cannot replace itself (the owner of knowledge). So the knowledge of creative actors is a type of tacit knowledge. Tacit knowledge can be converted to explicit knowledge. But on certain creativity characteristics, tacit knowledge tends to be exclusive. Like Designer Anne Avantie, she has her own method for producing Kebaya designs that have high selling points and are not based on explicit book guidelines or tutorials.

Creative industries as profit-oriented organizations create and enhance knowledge not limited to the goal of New Product Development (NPD) but for the long-term goal of making the creative industry have a SCA. Which means that in addition to being present to cooperate with other business sectors and increasing regional economic growth, the creative industries must also be able to maintain intellectual capital and develop their competencies. SCA is the collaborative practice between knowledge held by organizations and knowledge possessed by actors involved in the business continuously. Creative actors cannot optimally commercialize their creative work without aligning it by KMS conducted by creative economy businesses, whereas businesses cannot have SCA without the knowledge possessed by creative actors.

KMS is considered as the mapping and management of knowledge resources, utilizing the collective knowledge of companies from one project to another, and in some efforts makes companies invest in technology to facilitate the knowledge management (Alavi & Leidner, 2001). In some literature, knowledge management is defined as the acquisition, storage, retrieval, application, generation and review of organizational knowledge assets in a controlled manner (Brelade & Harman, 2003; Pathirage et al., 2008; Pitt & Tucker, 2008; Ajmal et al., 2010; Kebede, 2010; Chandra, 2019). Knowledge management emphasizes changes in the relevance of information according to context and needs. The essence of knowledge management is the relationship between two dimensions, namely people and information mediated by a system or procedure. The KMS in this research is not related to replacing the work of collaborative knowledge between actors in the creative economy ecosystem with technology, but this is related to the interdependence of knowledge in the ecosystem that will affect the management of creative economy businesses through KMS of business to achieve SCA.

Traditionally organizational knowledge is obtained, used, and stored through the process of coding knowledge that is used as a guide to redirect knowledge if needed to use it. So that knowledge gained through coding can guide finding knowledge, such as people, documents or databases called knowledge maps (Davenport & Prusak, 1998; Barber et al., 2006).

Knowledge collaboration is a vital collaboration between actors in the creative economy ecosystem. Knowledge collaboration is carried out in synergy by each actor which is a combination of academics, the business community, creative workers, the government, and the media. This is supported by a number of literatures that initially connected the creative industry to institutions such as universities, industry, government (triple helix) (Etzkowitz & Leydesdorff, 1995) and then developed as a quadruple helix, namely the involvement of academics, communities, business, government (Carayannis & Campbell, 2009). Furthermore, it developed into a penta helix, namely involvement and synergy between academics, business, community, government, media (ABCGM) which was initiated in the development of tourism

and creative economy formulated by the Minister of Tourism of the Republic of Indonesia (Yahya, 2017). So that the term KMS in the creative industry emphasizes the interaction of knowledge from various parties that can affect the achievement of the objectives of each party specifically and the creative industry in general, namely achieving SCA. If the literature mentions the process of knowledge creation in organizations with the term knowledge management, then in the creative industry it would be very appropriate if the process of knowledge creation is called KMS because creative industry knowledge is the collaboration of knowledge of interacting actors. This means that business knowledge in the creative industry comes from knowledge that is entirely generated from knowledge collaboration for the purpose of producing high-value creative products that serve as identities and solutions for regional economic needs.

Sustainability Competitive Advantage

Having a SCA is the company's main desire because by having it they can survive and grow in the market. Analysis of the external and internal environment can drive the realization of the company's goals (Masurel, 2007; Gibbs, 2009; Santiago, 2013).

Companies traditionally have three alternative generic strategies to achieve competitive advantage. According to (Porter, 1985) these generic strategies are cost leadership, market differentiation, and niche orientation. But today companies face new challenges, namely globalization, intangibles, and inter-connectivity (Kelly, 1998; Coyle, 1999). This requires companies to clearly understand the changing nature of competition and adopt additional strategic approaches (Jackson et al., 2003). The approach to understanding market dynamics and competition is the resource-based view of the company, which argues that only valuable, scarce, hard to imitate, and irreplaceable resources provide SCA (Barney, 1991; 1995; Hamel & Prahalad, 1994; Porter, 1996; Michalisin et al., 1997; Teece et al., 1997; Ferdinand, 1999), which leads to higher company performance (Peteraf, 1993).

Jackson et al. (2003) argue that in any competitive landscape, intangible resources tend to produce competitive advantage, which is the most important intellectual capital because it is the most difficult to emulate. In today's dynamic environment tangible assets become easily accessible, replicable, and replaceable, so that according to Riahi-Belkaoui (2003) the foundation of organizational competitiveness has shifted to an emphasis on knowledge.

Creating competitive advantage in market conditions with rapid changes, resource-based view (RBV) and knowledge-based view (KBV) are used in dynamic market conditions (Eisenhardt & Martin, 2000; López, 2005). In a research conducted by Nguyen and Neck (2008) stated that in dynamic market conditions with high intensity of competition, knowledge-based resources are a way for companies to have different competitive advantages. KMS can change, upgrade and exploit knowledge-based resources that represent knowledge related to the company's dynamic capabilities. KMS creates a spiral of corporate knowledge, so that companies not only produce new knowledge but also enhance the status of knowledge-based resources (Nielsen, 2006). In the face of dynamic conditions, the process of creating organizational knowledge will always be followed by upgrading and exploitation of knowledge to create SCA.

THEORETICAL DEVELOPMENT AND HYPOTHESIS

Relationship of Intellectual Capital, Knowledge Management System, and Sustainable Competitive Advantage

Intellectual capital is an intangible asset that is important for organizations to provide value to the company and be more important than tangible assets (Galbraith, 1969). According to Stewart (1997) intellectual capital as a composition of knowledge and abilities that are embedded in organizational members and which can produce economic benefits. Intellectual capital refers to ownership of knowledge, applied experience, organizational technology, customer relations, and professional skills that give companies a competitive advantage in the market (Edvinsson & Malone, 1997).

Edvinsson & Malone (1997) divide intellectual capital consisting of two components (1) human capital (knowledge, skills and experience of employees) and (2) structural capital (manifestation, empowerment, and infrastructure supporting human resources). Stewart (1997) classifies intellectual capital into three categories, namely human capital, structural capital, and customer capital.

Youndt et al. (2004) and Subramaniam & Youndt (2005) define intellectual capital is the sum of all knowledge used by companies for competitive advantage and has three components, namely human capital, organizational capital, and social capital. Bontis (1996) introduces the idea of relational capital, which includes all external relations to expand customer capital. Johnson (1999) argues that relational capital includes internal relations with employees and external relations with stakeholders. Based on the discussion above intellectual capital tends to be divided into three main categories; [1] human capital related to knowledge that is embedded in individuals, [2] structural capital related to the organizational structure, processes and systems, and [3] relational capital related to relationships and networks.

The other research by Wang et al. (2014) investigated the effect of knowledge sharing on company performance and the mediating role of intellectual capital on hitech companies in China. The results show that sharing tacit knowledge significantly contributes to the three components of intellectual capital (human, structural and relational capital), sharing explicit knowledge only has significant influence on human capital and structural capital. All three human capital, structural capital, and relational capital, strengthen the company's operational and financial performance.

The effect of knowledge sharing on company performance is mediated by intellectual capital. Sharing explicit knowledge has a greater effect on financial performance than operational performance, sharing tacit knowledge has a greater impact on operational performance than financial performance. The existence of tacit and explicit knowledge within the company contributes differently to organizational performance. Sharing tacit knowledge and sharing explicit knowledge affect intellectual capital and company performance.

In the creative economy business there is a synergistic ecosystem in managing, developing, promoting the creative economy business. Businesses in creative economic involve the interaction of all actors in the ecosystem. This is what makes the formation of intellectual capital and the impact of its influence different in creative economic business when compared with other sectors outside the creative industry.

In their research Hedberg & Stenius-bratt (2006) examined that intellectual capital in the creative industry sector is related to how the strategic use of intellectual property rights derived from intellectual capital is very valuable for business sustainability in the creative industry. There is a relationship between the concept of intellectual value and the commercial success of ideas in the creative industry. Intellectual capital is derived from the intellectual creations of employees that are used as important and valuable assets for creative industries which are protected through an agreement and high financial rewards because the intellectual

creations can have an impact on business competitiveness and sustainability. The research was conducted in the film industry with the child segment (Nickelodeon).

The VCD business uses intellectual capital derived from the knowledge or intellectual creations of VCD practitioners and also other actors which are involved in business management, product marketing, and regulation. All of these parties influences the implementation of the KMS to increase SCA as Nguyen & Neck (2008) and Ginting et al. (2019) has conducted an empirical research that the KMS influences SCA. Intellectual capital is a knowledge resource, which is available in the creative economy ecosystem that is useful in the development of creative economy businesses. Knowledge resources possessed by actors in the ecosystem will influence the implementation of business KMS as explained in the literature that KMS is a key factor in business success in achieving SCA. KMS consists of the activities of acquiring, converting, implementing, and protecting information and knowledge as important assets that can improve business competitiveness. According to Alavi & Leidner (2001) KMS can produce benefits in gaining knowledge, creating knowledge, can support and facilitate knowledge sharing, and knowledge reuse. So that the intellectual capital in this research analysed its relationship to the KMS of VCD business in achieving SCA.

VCD business combines business knowledge and practical knowledge of VCD as a collaboration activity of knowledge. So that the KMS of VCD business is carried out as an effort by the company to synergize the capacity and competencies of available resources and available opportunities through the flow of information from business people to be used in forming reliable business strategies.

This research conducted an empirical test of the effect of intellectual capital on SCA through KMS mediation. Intellectual capital in the creative industry is not only limited to knowledge related to the structure and responsibilities of work, and the network of relationships in marketing activities, but no less important is intelligence in generating creativity. This intelligence is obtained through experience, perseverance, and direct learning processes that are carried out continuously. Therefore, knowledge collaboration will place intellectual capital as an input that influences the VCD business KMS in generating SCA.

On the other hand researcher analysed the relationship of intellectual capital on SCA without KMS mediation. The assumption underlying this is that the system of knowledge collaboration in the creative economy is "synergy of knowledge". Business knowledge and intelligence of VCD practitioners, besides not being able to replace each other, also do not influence each other. Knowledge management in business organizations cannot awaken the intelligence of VCD practitioners, on the contrary it does not affect the ability of individual practitioners. So that the mediation of KMS of VCD business does not apply and that different characteristics of knowledge and skills can build high professionalism that can create business sustainability and superior competitiveness. The hypotheses to be developed are:

Hypothesis 1: Intellectual capital influences KMS of VCD Business

Hypothesis 2: KMS of VCD Business influence SCA

Hypothesis 3: Intellectual capital directly affect SCA

Hypothesis 4: The effect of Intellectual capital on SCA is mediated by KMS of VCD Business.

METHODOLOGY

This research analyses the influence of intellectual capital on SCA through and without the mediation of KMS VCD business. This research is a quantitative research, testing hypotheses using survey research methods using questionnaires. The measurement instrument for each variable was adapted from the relevant literature using 5 Likert scale scales from 1 (strongly disagree) to 5 (strongly agree). The accuracy of the research instruments was analysed using validity and reliability tests. Hypothesis testing techniques using Structural Equation Modelling (SEM) using AMOS software.

The population in this research is the owner, business manager, and creative designer in VCD Business. The research sampling method is probability, and the sampling technique is cluster sampling. The sample size used was 202 respondents. Data was collected through a questionnaire consisting of 54 questions.

Through a pilot test using 50 respondents, the questionnaire was first distributed consisting of 65 questions. However, after conducting the validation test, there were four questions that were excluded from the questionnaire. So that at the stage of distribution to respondents, the questionnaire consisted of 50 questions.

For the purposes of data analysis, it begins with data processing which consists of the following steps: [a] assessing sample characteristics, [b] identifying normality of the data, [c] undertaking confirmatory factor analysis, [d] proposing measurement model and construct validity, and [e] developing and estimating the structural model.

However, before we start the statistical procedure, we tried to figure the operational definition of variables used in this research. This is shown in Table 1.

Variable	Dimension	Concept and Definition of Variables
Intellectual capital		A potential source of competitive advantage and hence can increase value creation (Branco & Rodrigues, 2006), viewed as a knowledge stock that an organization possesses at a particular point in time, which is managed and accumulated through dynamic knowledge processes (Bontis, 2004).
	Human capital	Refers to the personal knowledge, skills, experience and capabilities of knowledge workers (Youndt et al., 2004; Seleim & Khalil, 2011)
	Organizational capital	Refers to the codified and institutionalized knowledge that resides within an organization such as organizational routines, organizational processes, procedure manuals, systems, files, patents, and organizational culture (Youndt et al., 2004; Seleim & Khalil, 2011)
	Relational Capital	Mainly concerned with the organization's relationships with all related parties and stakeholders, which essentially depend on organizational members' capacity to develop and maintain connections with these parties (Youndt et al., 2004; Seleim & Khalil, 2011).
Knowledge Management System		The ability to acquire, develop, share, and apply knowledge has been key to obtaining sustainable CA and sustainable superior performance (Grant, 1996a; Hamel & Prahalad, 1994; Ho, 2008; Powell & Snellman, 2004; Sharkie, 2003; Teece et al., 1997; Verona & Ravasi, 2003) through the synergy of knowledge from each party collaborating with the creative industry business in order to create strategic competitiveness.

	Knowledge Acquisition	Oriented to gain knowledge that can be explained by many other terms such as obtaining, searching, producing, creating, capturing, and collaborating, all with a general theme - accumulation of knowledge (Gold et al., 2001).
	Knowledge Conversion	Oriented to make existing knowledge useful (Gold et al., 2001) which can be activated by several processes such as regulating (Davenport & Klahr, 1998; O'Dell & Grayson, 1998), representing (Marshall et al., 1996), integrating (Grant, 1996; Nielsen, 2006), combining, structuring, coordination (Miller, 1982 Moore, 1996; Sanchez & Mahoney, 1996), or spreading knowledge (Davenport & Klahr, 1998; Davenport et al., 1996; Zander & Kogut, 1995).
	Knowledge Application	Oriented to the actual use of knowledge (Gold et al., 2001) makes knowledge 'more active and relevant for companies in creating value (Bhatt, 2001).
	Knowledge Protection	Oriented to the protection of knowledge in an organization from illegal or inappropriate use or theft (Gold et al., 2001).
Sustainable competitive advantage		The objective of organizational strategies (Porter, 1985) which are measured in many dimensions such as innovation, market position, mass customization, and difficulty in duplication (Byrd & Turner, 2001).
	Basic Competing Strategies	Strategy to compete through the core competencies of the organization.
	Strategic competitiveness	A strategic effort by organizations to be able to compete in dynamic situations to achieve sustainable competitive advantage.

RESULTS

The research began by examining respondents. For descriptive statistics to the respondents, it is known that:

[a] male 72.3 % and female 27.7 %

[b] married 34.16 %, unmarried 65.35 % and single parents 0,5 %

[c] age 21-25 years (41.1 %), age 26-30 years (25.25 %), age 36-41 years (4 %)

[d] self-owned capital 76.5 %, funding from banks and financial institutions 9.4 %, joint venture/cooperation 9.4 %, bank / financial institution accompanied by own capital 4.7%.

Using the values of the kurtosis from the variables of the research, researcher found that it do not exceed the absolute value of 2 for skewness and 7 for the kurtosis index as Hair et al. (2014) and Kline (2011), researcher further consider the data of this research as to have normal distribution, and the maximum likelihood. The measurement of goodness of fit model which was obtained by operating Chi-Square shows the value of 35.431; the probability value is 0.062; CCMIN / df value is 1.476; GFI value is 0.961; AGFI value is 0.927; TLI value is 0.978; CFI value is 0.985; NFI value is 0.956; IFI value is 0.985; RMSEA value is 0.049. The results of the indicators have further proven that the fit model assessment of the research are in good position and they can further be used as the basis for hypothesis testing through the regression analysis.

The AMOS SEM results show that [a] intellectual capital affects the KMS (CR 7.763) in the 0.05 level of significance (P=***), [b] the KMS affects SCA (CR 2.498) in the 0.05 level of significance (P=0.013***), and [c] intellectual capital does not affect SCA (CR 5.608) in the .05 level of significance (P=***).

Based on the results obtained by the dimensions of intellectual capital which are consist of dimensions of human capital, organization capital, and relational capital by using a significant level of 0.05 (P=***) the highest standardized regression weights are in the human

capital, relational capital, organizational capital. The dimensions of the KMS which consists of the knowledge acquisition process, knowledge conversion process, knowledge application process, knowledge protection process with a significant level of 0.05 ($P=***$). The highest standardized regression weights in each KMS dimension is knowledge acquisition process, knowledge application process, knowledge conversion process, and the last one is knowledge protection process. Dimension of SCA which consists of basic competing dimensions, and strategic competitiveness dimensions can be accepted as dimensions of SCA at a significant level of 0.05 ($P=***$) with the highest standardized regression in the basic competing strategies dimension, and then followed by the strategic competitiveness dimension. Size of standardized direct effects between intellectual capitals to SCA 0.61. Whereas the standardized indirect effects of intellectual capital to SCA through KMS mediation 0.17.

Based on the results of data processing that has been described above, the results are simply seen in the figure of the research model (Figure 1).

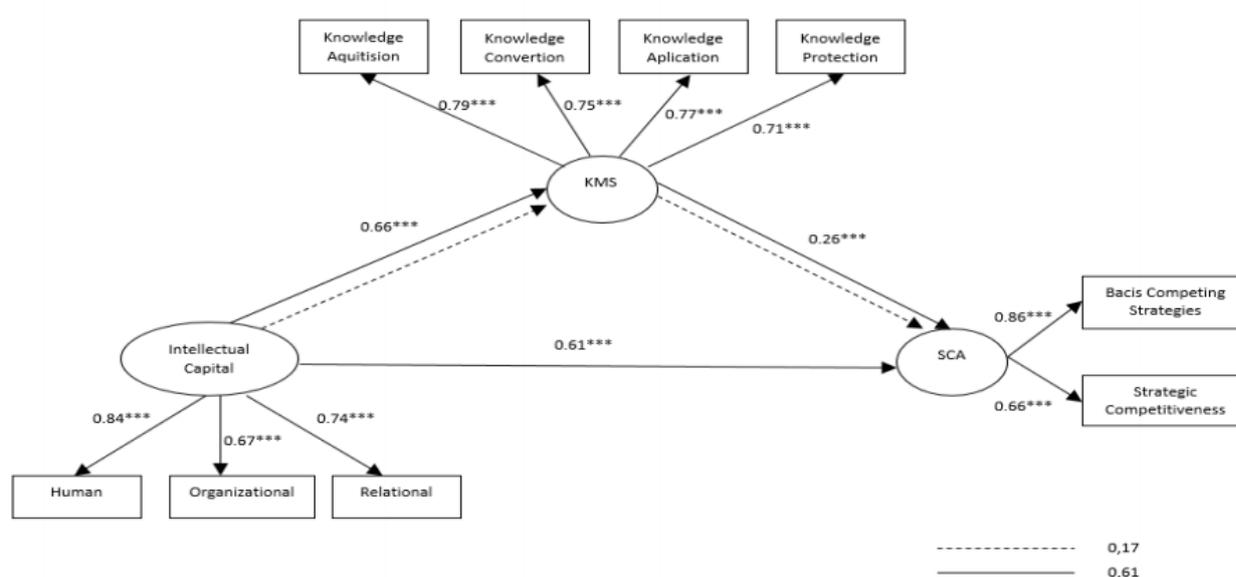


FIGURE 1
MODEL OF KNOWLEDGE MANAGEMENT SYSTEM IN MEDIATING THE
RELATIONSHIP OF INTELLECTUAL CAPITAL TO SUSTAINABLE
COMPETITIVE ADVANTAGE (SOURCE: DATA ANALYSIS, PROCESSED)

DISSCUSSION

This research empirically examines the effects of [a] intellectual capital on the KMS of VCD business [b] intellectual capital on the SCA [c] KMS of VCD business on SCA [d] KMS mediation on the influence of intellectual capital on SCA. Based on research results it was found that [a] intellectual capital influence the KMS of VCD business [b] intellectual capital directly influence SCA, [c] KMS of VCD business influences the SCA, and [d] KMS mediates the relationship intellectual capital towards SCA.

In situations that are uncertain, In order to adapt the company needs to implement KMS. It is intended that the company is able to map the external and internal environment in a sustainable manner and obtain appropriate business strategies to achieve short-term, medium-

term and long term corporate goals. In accordance with Agha et al. (2012) KMS is an effort to achieve organizational sustainability can bring organizations more flexible and have higher performance. Lopes et al. (2016) in their research proved that implementation of knowledge management affects business sustainability by using new knowledge in the form of ideas and practices that can expand business.

KMS helps organizations produce the most appropriate strategy to position the creative economy business in the market and produce unique and valuable products and increase competitive advantage in maintaining a creative economy business. Literature was relate intellectual capital as an enabler for knowledge management (Nguyen & Neck, 2008). Intellectual capital owned by the organization influences the effectiveness of achieving business goals efficiently. Intellectual capital make efforts to manage and use organizational resources, see opportunities, build business strategies, and conduct performance evaluations continuously. These efforts can also carried out through the mediation of KMS of business through working procedures and mechanisms that aim to maintain and empowerment of intellectual capital optimally in achieving SCA.

The idea-based industry that is the creative economy is different from other business sectors, knowledge related to ideas, creativity, talent and skills in the creative economy is the key to success that has a high bargaining position so as to maximize its value, it must be integrated with business, and marketing strategies. Business relationships are built on the principle of mutual benefit. So that intellectual capital is maintained and developed as a profitable relationship. In a business context that promotes creativity and innovation, knowledge is an important asset that must be protected by business actors involved in business activities. This aims to prevent the loss of originality sources of the work of creative actors. So that in achieving SCA, intellectual capital can directly achieve it.

Each party involved in the VCD business strives to improve competence so that they have a high bargaining value. The potency is very valuable and business KMS is applied to obtain and maintain these resources. Work agreements and high income incentives are efforts that can be made, thereby stimulating them to produce creative work that is able to bring businesses to achieve SCA.

Furthermore, in idea-based industrial activities, the ability to manage company knowledge resources through intellectual capital capacity can bring companies more effectively in achieving SCA. Previously, the discussions that had been carried out showed that intellectual capital is the result of knowledge management practices. As revealed by Kianto et al. (2017) that Human Resource Management Practices based on explicit knowledge will have an impact on the company's intellectual capital, resulting in higher innovation performance. This research was conducted on 180 Spanish companies that implement HRM practices. Likewise, Ramadan et al. (2017) which analyzes the effect of knowledge management on intellectual capital through social capital mediation (ICT Sector-information and communication technology). The results of the research show that there is a relationship between knowledge management on corporate intellectual capital and social capital mediate that relationship.

The creative economy has an ecosystem that synergizes with each other in regulating, developing, promoting business. The creative economy business involves the interaction of all actors in the ecosystem. This makes intellectual capital consisting of the dimensions of human capital, organizational capital, and relational capital needed to synchronize the involvement of ecosystems and VCD business activities. In their research, Hedberg & Stenius-bratt (2006) explain the role of intellectual capital in the creative industry and the strategy of using

intellectual property rights obtained from intellectual capital was very valuable for business continuity. There is a relationship between the concept of intellectual value and the success of commercial ideas in the creative industry. Intellectual capital is used as important and valuable assets for creative industry businesses that are protected through agreements and high financial rewards because these intellectual creations can have an impact on business competitiveness and sustainability. Their research was carried out in the child segment film industry (Nickelodeon). Likewise, the Visual Communication Design (VCD) business uses intellectual capital derived from the knowledge of VCD designers and actors involved in business to be able to compete in a sustainable manner. Business VCD combines business and management knowledge, and visual design knowledge as a practice of knowledge collaboration. So that intellectual capital is related to the ability to manage all company resources through work mechanisms, and retain knowledge resources so that they have organizational citizenship behavior. The capacity of each actor in business tends to be very separate, work synergy is needed in order to developing the creative economy. Therefore KMS is carried out so that collaboration of knowledge in the creative economy can be directed to achieve SCA. Intellectual capital can affect the implementation of KMS of VCD business and intellectual capital affects the increase in SCA through KMS mediation of VCD business.

Although based on the results of data processing above it is known that without KMS mediation, intellectual capital can succeed in increasing SCA. This is because the professionalism of each actor involved and each actor has competencies that tend to be separate and synergize.

CONCLUSION AND IMPLICATION

This research uses the Structural Equation Modeling (SEM) method through AMOS software. That is a way to test the fit model and find out the magnitude and effect of the relationship between variables. The AMOS software application requires a large number of respondents, although this research has been able to follow the rules in its application. But to respond to curiosity about the consistency of the results in this research, then further research can use a larger number of samples. Riau Province as the area of this research conducted is the determinant in the selection of visual communication design business as the object of research. This is because Riau is a region with high growth in the financial sector, real estate / property, and services, including trade, hotel and communication sector, and then followed by the service sector including public services. So that the existence of a visual communication design business is very potential, easy to find, and able to support the activities of other business sectors. However, to enhance the SCA of businesses from all creative economic sub-sectors, further research needs to do in other sub-sectors such as culinary, fashion, crafts, television & radio, publishing, architecture, game applications & developers, advertising, music, photography, performing arts, product design, fine arts, film, animation and video, interior design.

The influence of intellectual capital on SCA through KMS mediation and without KMS mediation in the VCD business has been discussed in this research. Further research can examine KMS mediation in achieving SCA and discuss other factors that can be influenced by KMS mediation in achieving SCA, especially in the creative industries.

The practical implication of this research is to provide VCD business actors with an understanding and insight into the role of intellectual capital in the synergy of knowledge needed in business to increase profits and prosperity, providing a better understanding related to maintaining intellectual capital, sustainability and business competitiveness. The application

of KMS in the creative industries can mediate the relationship of intellectual capital in achieving SCA through the process of knowledge acquisition, the process of knowledge conversion, the process of knowledge application, and the process of protecting knowledge carried out by businesses. Even without KMS mediation, intellectual capital involved in business can achieve SCA. This is because increasing the competence of each actor in the creative economy ecosystem will be aligned with achieving business goals.

REFERENCES

- Agha, S., Alrubaiee, L., & Jamhour, M. (2012). Effect of core competence on competitive advantage and organizational performance. *International Journal of Business and Management*, 7(1), 192-204.
- Ajmal, M., Helo, P., & Kekale, T. (2010). Critical factors for knowledge management in project business. *Journal of Knowledge Management*, 14(1), 156-168.
- Alavi, M., & Leidner, D. E. (2001). Review: knowledge management and knowledge systems: conceptual foundations and research issue. *MIS Quarterly*, 25(1), 107-136.
- Barber, K. D., Munive-Hernandez, J. E., & Keane, J. (2006). Process-based knowledge management system for continuous improvement. *International Journal of Quality & Reliability Management*, 23(8), 1002-1018.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99-120.
- Barney, J. B. (1995). Looking inside for competitive advantage. *Academy of Management Perspectives*, 9(4), 49-61.
- Bekraf (2016). *Sistem Ekonomi Kreatif Nasional*, edited by Tim Penulis Bekraf, Deputy Infrastruktur Badan Ekonomi Kreatif, Jakarta.
- Bhatt, G. D. (2001). Knowledge management in organizations: examining the interaction between technologies, techniques, and people. *Journal of Knowledge Management*, 5(1), 68-75.
- Bontis, N. (1996). There's a price on your head: managing intellectual capital strategically. *Business Quarterly*, 60(4), 40-47.
- Bontis, N. (2004). National intellectual capital index a United Nations initiative for the Arab region. *Journal of Intellectual Capital*, 5(1), 13-39.
- Branco, M. C., & Rodrigues, L. L. (2006). Corporate social responsibility and resource-based perspectives. *Journal of Business Ethics*, 69, 111-132.
- Brelade, S., & Harman, C. (2003). *A Practical Guide to Knowledge Management*, Thorogood, London.
- Byrd, T. A., & Turner, D. E. (2001). An exploratory examination of the relationship between flexible IT infrastructure and competitive advantage. *Information & Management*, 39, 41-52.
- Carayannis, E. G., & Campbell, D. F. J. (2009). Mode 3' and 'Quadruple Helix': toward a 21st century fractal innovation ecosystem. *International Journal of Technology Management*, 46(3/4), 201-234.
- Chandra, T. (2019). Mapping knowledge management system within literatures of creative industry. *Journal of Management Information and Decision Sciences*, 22(3), 213-222.
- Chen, J. A., Gilmore, A. K., Wilson, N. L., Smith, R. E., Quinn, K., Peterson, A. P., Fearey, E., Shoda, Y. (2017). Enhancing stress management coping skills using induced affect and collaborative daily assessment. *Cognitive and Behavioral Practice*, 24(2), 226-244.
- Corso, M., Martini, A., Pellegrini, L., Massa, S., & Testa, S. (2006). Managing dispersed workers : the new challenge in knowledge management managing dispersed workers : the new challenge in knowledge management. *Technovation*, 26, 583-593.
- Coyle, D. (1999). *The weightless world: strategies for managing the digital economy*, 2nd ed., Capstone, Oxford.
- Davenport, T., Jarvenpaa, S., & Beers, M. (1996). Improving knowledge work processes. *Sloan Management Review*, 37, 53-65.
- Davenport, T.H. and Klahr, P. (1998). Managing customer support knowledge. *California Management Review*, 40(3), 195-208.
- Davenport, T. H., & Prusak, L. (1998). *Working knowledge: how organizations manage what they know*. Harvard Business School Press, Boston.
- DCMS. (1998). *Creative industries mapping document*, DCMS, London, New York.
- Edvinsson, L., & Malone, M. S. (1997). *Intellectual capital: realizing your company's true value by finding its hidden brainpower*. Harper Business, New York, NY.
- Eisenhardt, K. M. & Martin, J. A. (2000). Dynamic capabilities: what are they. *Strategic Management Journal*, 21, 1105-1121.

- Etzkowitz, H., & Leydesdorff, L. (1995). The triple helix-university-industry-government relations: a laboratory for knowledge based economic development. *EASST Review*, 14(1), 14-19.
- Ferdinand, A. (1999). *Strategic pathways towards sustainable competitive advantage*. DBA thesis, Southern Cross University.
- Galbraith, J. K. (1969). *The new industrial state*. Princeton University Press, Princeton, NJ.
- Gibbs, D. (2009). Sustainability entrepreneurs, ecopreneurs and the development of a sustainable economy. *Greener Management International*, 55, 63-78.
- Ginting, Y. M. (2020). *Ekonomi kreatif: prinsip, evolusi dan pengembangannya di Indonesia*. Yayasan CUDI, Pekanbaru.
- Ginting, Y. M., Elfandri, E., Rahman, H., & Devianto, D. (2019). Observation the implementation of business knowledge management system in creative industry in achieving competitive advantage (study in visual communication design business in Riau province, Indonesia). *The Journal of Social Sciences Research*, 5(11), 1562-1570.
- Gold, A. H., Malhotra, A., & Segars, A. H. (2001). Knowledge management : an organizational capabilities perspective. *Journal of Management Information Systems*, 18(1), 185-214.
- Grant, R. M. (1996a). Prospering in dynamically-competitive environments: organizational capability as knowledge integration. *Organization Science*, 7(4), 375-387.
- Grant, R. M. (1996b). Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17, 109-122.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis*, 7 Ed., Pearson Education Limited, Harlow, England.
- Hamel, G., & Prahalad, C. K. (1994). *Competing for the future*. Harvard Business School Press, Boston, MA.
- Hedberg, A., & Stenius-bratt, H. (2006). *Intellectual capital management in the creative industries: from intellectual creations to intellectual property*. Thesis, Intellectual Capital Management ICM, available at: <https://gupea.ub.gu.se/bitstream/2077/1890/1/200637.pdf>.
- Ho, L. (2008). What affects organizational performance? The linking of learning and knowledge management. *Industrial Management & Data Systems*, 108(9), 1234-1254.
- Holste, J. S., & Fields, D. (2010). Trust and tacit knowledge sharing and use. *Journal of Knowledge Management*, 14(1), 128-140.
- Jackson, S. E., Hitt, M. A., & DeNisi, A. S. (2003). *Managing knowledge for sustained competitive advantage : designing strategies for effective human resource management*. Jossey-Bass, San Francisco.
- Johnson, W. H. A. (1999). An integrative taxonomy of intellectual capital: measuring the stock and flow of intellectual capital components in the firm. *International Journal of Technology Management*, 18(5/6/7/8), 562-575.
- Kebede, G. (2010). Knowledge management: An information science perspective. *International Journal of Information Management*, Elsevier Ltd, 30, 416-424.
- Kelly, K. (1998). *New rules for the new economy*, 1st ed., Penguin Putnam Inc., London.
- Kianto, A., Sáenz, J., & Aramburu, N. (2017). Knowledge-based human resource management practices, intellectual capital and innovation. *Journal of Business Research*, Elsevier, 81, 11-20.
- Kline, R. B. (2011). *Principles and practice of structural equation modelling*. 3 ed., The Guilford Press, New York, NY.
- Latilla, V. M., Frattini, F., Petruzzelli, A. M., & Berner, M. (2018). Knowledge management, knowledge transfer and organizational performance in the arts and crafts industry : a literature review. *Journal of Knowledge Management*, 22(6), 1310-1331.
- Lopes, C. M., Scavarda, A., Hofmeister, L. F., Thomé, A. M. T., & Vaccaro, G. L. R. (2016). An analysis of the interplay between organizational sustainability, knowledge management, and open innovation. *Journal of Cleaner Production*, 142, 476-488.
- López, S. V. (2005). Competitive advantage and strategy formulation The key role of dynamic capabilities. *Management Decision*, 43(5), 661-669.
- Marshall, C., Prusak, L., Shpilberg, D. (1996). Financial risk and the need for superior knowledge management. *California Management Review*, 38(3), 77-101.
- Masurel, E. (2007). Why SMEs invest in environmental measures: sustainability evidence from small and medium-sized printing firms. *Business Strategy and the Environment*, 16, 190-201.
- Mehralian, G., Rasekh, H. R., Akhavan, P., & Sadeh, M. R. (2012). The impact of intellectual capital efficiency on market value: An empirical study from Iranian pharmaceutical companies. *Iranian Journal of Pharmaceutical Research*, 11(1), 195-207.

- Michalisin, M. D., Smith, R. D., & Kline, D. M. (1997) In Search of strategic assets. *The International Journal of Organizational Analysis*, 5(4) 360-387.
- Miller, D. (1982). Evolution and Revolution: A quantum view of structural change in organizations. *Journal of Management Studies*, 19(2), 131-151.
- Moore, J. E. (1996). *The death of competition: leadership and strategy in the age of business ecosystem*. Harper Collins, New York, NY.
- Nahapiet, J., & Ghospar, S. (1998). Social capital, intellectual capital, and the organizational advantage. *Academy of Management Review*, 23(2), 242-266.
- Nguyen, Q. T. N., & Neck, P. A. (2008). *Knowledge management as dynamic capabilities: does it work in emerging less developed countries?* Proceedings of The 16th Annual Conference on Pacific Basin Finance, Economics, Accounting and Management, Brisbane, Queensland, Australia: Queensland University of Technology (QUT), pp. 1-19.
- Nielsen, A. P. (2006). Understanding dynamic capabilities through knowledge management. *Journal of Knowledge Management*, 10(4), 59-71.
- Nonaka, I. (2007) *The knowledge-creating company*. Harvard Business Review.
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: how japanese companies create the dynamics of innovation*. Oxford University Press, New York, NY.
- O'Dell, C., & Grayson, C. J. (1998). If only we knew what we know : identification and transfer of internal best practices. *California Management Review*, 40(3), 154-174.
- Pathirage, C., Haigh, R. P., Amaratunga, D., & Baldry, D. (2008). Knowledge management practices in facilities organizations: a case study. *Journal of Facilities Management*, 6(1), 5-22.
- Peteraf, M. A. (1993). The cornerstones of competitive advantage: a resource-based view. *Strategic Management Journal*, 14(3), 179-191.
- Pitt, M., & Tucker, M. (2008). Performance measurement in facilities management: driving innovation? *Property Management*, 26(4), 241-254.
- Polanyi, M. (1958). *Personal knowledge; towards a post-critical philosophy*. Routledge & Kegan Paul Ltd, London.
- Polanyi, M. (1966). *The tacit dimension*. Garden City, NY: Anchor Books.
- Porter, M. E. (1985). *Competitive advantage: creating and sustaining superior performance*. Free Press, New York, NY.
- Porter, M. E. (1996). What is strategy? *Harvard Business Review*, 74, 61-78.
- Powell, W. W., Snellman, K. (2004). The knowledge economy. *Annual Review of Sociology*, 30, 199-220.
- Ramadan, B. M., Dahiyat, S. E., Bontis, N., & Al-dalahmeh, M. A. (2017). Intellectual capital, knowledge management and social capital within the ICT sector in Jordan. *Journal of Intellectual Capital*, 18(2), 437-462.
- Riahi-Belkaoui, A. (2003). Intellectual capital and firm performance of US multinational firms: A study of the resource-based and stakeholder views. *Journal of Intellectual Capital*, 4(2), 215-226.
- Sanchez, R., & Mahoney, J. T. (1996). Modularity, flexibility, and knowledge management in product and organization design. *Strategic Management Journal*, 17, 63-76.
- Santiago, A. (2013). On the road to sustainability entrepreneurship: Filipino case. *World Journal of Entrepreneurship, Management and Sustainable Development*, 9(4), 255-271.
- Seleim, A. A. S., & Khalil, O. E. M. (2011). Understanding the knowledge management intellectual capital relationship : a two-way analysis. *Journal of Intellectual Capital*, 12(4), 586-614.
- Serenko, A., & Bontis, N. (2004). Meta-review of knowledge management and intellectual capital literature: citation impact and research productivity rankings. *Knowledge and Process Management*, 11(3), 185-198.
- Sharkie, R. (2003). Knowledge creation and its place in the development of sustainable competitive advantage. *Journal of Knowledge Management*, 7(1), 20-31.
- Steward, T., & Ruckdeschel, C. (1998). Intellectual capital the new wealth of organizations. *Performance Improvement*, 37(7), 56-59.
- Stewart, T. A. (1994). Your company's most valuable asset: intellectual capital. *Fortune*, 130(7), 68-74.
- Stewart, T. A. (1997). *Intellectual capital: the new wealth managing and measuring knowledge-based assets*. Doubleday, New York, NY.
- Subramaniam, M., Youndt, M. A. (2005). The influence of intellectual capital on the types of innovative capabilities. *Academy of Management Journal*, 48(3), 450-463.
- Sullivan, P. H. (1999). Profiting from intellectual capital. *Journal of Knowledge*, 3(2), 132-143.

- Teece, D. J. (2000). *Managing intellectual capital: organizational, strategic, and policy dimensions*. Taylor & Francis, Abingdon.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509-533.
- Thrylo, A. M., & Kornukh, O. V. (2011). Theoretical and methodical approaches to determination of components in intellectual capital of an enterprise and their essence. *Actual Problems of Economics*, 117, 168–178.
- Verona, G., & Ravasi, D. (2003). Unbundling dynamic capabilities : an exploratory study of continuous product innovation. *Industrial and Corporate Change*, 12(3), 577-606.
- Walters, D. (2002). *Operations strategy*. Palgrave Macmillan, New York.
- Wang, Z., Wang, N., & Liang, H. (2014). Knowledge sharing, intellectual capital and firm performance. *Management Decision*, 52(2), 230-258.
- Yahya, A. (2017). *Tourism development investment opportunities in Indonesia*. The 2nd Indonesia Investment Forum Kuala Lumpur, April 25th 2017.
- Yi Ching, C. M., Shui Wang, Y., & Sun, V. (2012). Intellectual capital and organizational commitment. *Personnel Review*, 41(3), 321-339.
- Youndt, M.A., Subramaniam, M., & Snell, S.A. (2004). Intellectual capital profiles: an examination of investments and returns. *Journal of Management Studies*, 41(2), 335-361.
- Zander, U., & Kogut, B. (1995). Knowledge and the speed of the transfer and imitation of organizational capabilities: an empirical test. *Organization Science*, 6(1), 76-92.
- Zharinova, A. G. (2011). Concept of intellectual capital commercialization management. *Actual Problems of Economics*, 121, 17-29.