

# The Influence Of Management Capability On It Capability, Innovation, And Competitive Advantage In The Salt Industry

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## Abstract

*This study aims to analyze the effect of Management Capability on IT Capability, Innovation, and Competitive Advantage in the Salt Industry. Salt is a basic need for the people of Indonesia, not only for household needs, salt is also a raw material for the alkaline sector industry (chlor-alkali plant/CAP). the main need for salt is not accompanied by the quality of the industry that produces quality salt. In an effort to increase competitive advantage in the salt industry, management's ability to adopt IT Capability and the ability to innovate are very important factors. This research is a type of explanatory research with data collection using survey research. Respondents in this study were all units of analysis, namely salt UKM managers, totaling 105 people. The data analysis method used is Partial Least Square (PLS) analysis. This research gives the result that the management capability variable has a significant and positive effect on competitive advantage, IT capability and sustainable innovation. In addition, this research also gives the result that IT capability has a positive and significant effect on innovation. There is a significant and positive influence between innovation and competitive advantage. Meanwhile, IT capability has no significant effect on competitive advantage.*

**Keyword:** Management Capability, IT Capability, Innovation, and Competitive Advantage

## I. Introduction

Salt is one of the raw materials for the alkali sector industry (chlor alkali plant (CAP), various foods), which the domestic salt processing industry cannot fulfill, due to the low quality of salt. So the government imports salt to fill this need. The low quality of salt because the production process is still traditional and does not apply technology and innovation. The majority of salt farmer groups in Indonesia do not have processing technology (washing plan). As a result, the salt produced is still below industrial salt standards. The skills of salt farmer groups in processing and producing salt are obtained from generation to generation. It is difficult to get them to apply salt management and processing technology. One of the important obstacles that hinders the success of SMEs is the scarcity of information technology resources which will impact their ability to respond to the market (Sidiq&Astutik, 2017). This is in accordance with the theory Resource Based View of Barney (1991) stated that information technology is a company resource that can be used to increase competitive advantage for companies.

The findings of Tambunan (2002) state that the problems of SMEs are a lack of knowledge in production technology, limited human resources and weak management capabilities. This is supported by Ngah (2018) that management ability has a significant effect on competitive advantage. Previous research (Ngah, 2018; Valmohammadi, Sofiyabadi, &Kolahi, 2019) states that management ability has a positive and significant

effect on innovation. Furthermore, the findings of Syahputra, Sularso, Suryaningsih, & Susanto, (2021) state that sustainable innovation has a significant and positive effect on cost advantage strategies and differentiation strategies. Innovation within the company is an important issue, because many companies fail to survive in the modern industrial world due to a lack of innovation. Continuous innovation is not only formed from management capabilities, but also requires cost advantage strategies and differentiation strategies.

In an environment characterized by rapid advances in Information and Technology (IT), companies are required to pay attention and strengthen their IT capabilities. This capability is needed in the midst of business competition with a high level of competition, especially in the era that leads to the digital economy and industry 4.0. This is in line with the development of digital-based business platforms, online business models, business automation, and other IT-based business activities (Khristianto, Kertahadi, &Suyadi, 2012). At the same time, this technology replaces old ways of working, old habits, old skills, and creates new ways that were previously uncommon (Manyika et al., 2013). IT capability is needed to achieve competencies and capabilities related to the tools and processes used to manage information (Turulja&Bajgoric, 2016). IT capability makes companies have strategies to get various benefits and advantages in the form of competitive advantage (Bharadwaj, 2000).

Salt farmer groups also need to innovate in the dynamics of a dynamic business environment and market tastes that are

constantly changing. Innovation is a very important factor in facing competition. Padilha & Gomes (2016) revealed that innovation is the basis for company growth and can be a source of sustainable competitive advantage. Innovation is also the foundation for organizations that want to stay focused on the market. Innovation is born from new ideas (Zuhal, 2002) and is a key factor for company success (Frambach & Schillewaert, 2002). According to Hult & Ketchen (2001), innovation contributes to a company's competitive position which will ultimately lead the company to achieve a competitive advantage.

Turulja & Bajgoric (2016) conducted research that tested the effect of IT capability on innovation with results showing that IT capability had an effect on innovation. The findings of Jabbouri et al. (2016) explained the positive and significant relationship between IT infrastructure and innovation performance. The findings of Turulja & Bajgoric (2016) prove that IT capability facilitates the creation of innovation, while the results of Jabbouri et al. (2016) proves that IT helps improve innovation performance. Then, for research that examines the effect of IT capability on competitive advantage conducted by Shbiel & Olimat (2016) shows the results that IT has an effect on competitive advantage. These results are supported by other studies (Alalwan, 2010; Berrich & Benkaddour, 2016). However, a different view was put forward by Tippins & Sohi (2003) who argued that IT capability, which is also known as IT competency (Ringim, Razalli, & Hasnan, 2015), does not necessarily affect competitive advantage. This confirms the previous opinion (Powell & Dent-Micallef, 1997). This is one of the research gaps that will be examined.

## 2. Literature Review

Discussion of how companies achieve competitive advantage is a central theme in much of the literature on strategic management (Fahy & Smithee, 1999). One of the approaches used to provide a competitive advantage is a resource-based view/RBV (resource-based view). According to the RBV, competitive advantage is achieved by exploiting internal resources and capabilities compared to exploiting external opportunities (Day & Wensley, 1988). Because resources represent a complex network of interrelated assets and capabilities, firms can adopt as many competitive positions as possible (Day, 1994). It is generally recognized in the literature that RBV is far more flexible than the approach proposed by (Porter, 1985) for the formulation of corporate strategy (Hooley, Broderick, & Möller, 1998).

The substance of the RBV considers that competitive advantage can be realized through proper and optimal

management and utilization of the resources owned by the company (Barney, 1991; Teece, 2007). Resources have a very important role for companies because they involve the process or how to treat the resources they own and use to achieve the expected goals (Hitt, Ireland, & Hoskisson, 2001). The external environment actually also provides the main resources that

support the organization to deal with change and survival, but the resources from external companies are limited (Wangechi, 2015). Based on this fact, companies should be able to integrate their strategies and various resources in order to create competitive advantages (Aisyah, 2007).

Currently, the problem faced by organizations is how to deal with a business environment that is constantly changing, unpredictable, very competitive, and very complex problems (Ravichandran, 2018). In addition, this condition requires organizations to adjust their actions and strategies very quickly (Ravichandran, 2018), because the success of every business depends on how to adapt to the environment in which the business is located. Under these dynamic and rapidly changing environmental conditions, dynamic capability is required (Teece, 2007). This condition is also experienced by groups of salt farmers who experience disruption due to the influence of information technology (IT) developments.

## 3. Research Methods

This research is a survey research by taking samples from the population using a list of statements as a data collection tool. Based on the research objectives, this research is a type of explanatory research. This research is referred to as hypothesis testing research or testing research. The data collected is cross-sectional obtained from respondents in responding to items related to variables in the form of a list of statements.

The population of this research is Salt UKM Managers in Madura, totaling 105 people. The sample unit in this study is the same as the unit of analysis, namely the salt UKM manager. The sample of this study used all individuals in the population as respondents, so that the number of samples is equal to the total population of 105 people

The data analysis method used for this study: (1) Partial Least Square (PLS) analysis. The reason for using Partial Least Square (PLS) is because; it is possible to do structural equation modeling with adjustable sample sizes and does not require multivariate normal assumptions, is a powerful analytical method because it can be applied to all data scales, besides being able to be used as confirmation of theory it is also used to build relationships that have no theoretical foundation.

## 4. Research Results and Discussion

Based on the empirical model, further research was carried out to test the hypothesis proposed by testing the path coefficient of the structural equation model. Hypothesis testing in the PLS analysis uses the t test by applying the bootstrap resampling method.

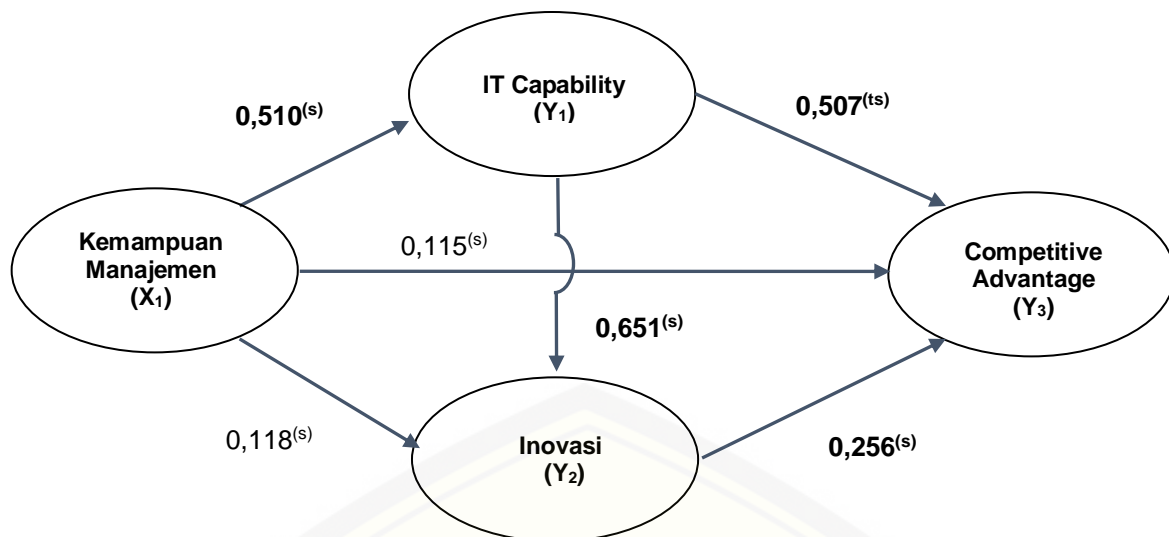


Figure 1. Path Charts

## 5. Discussion

### 5.1. Effect of Management Capability on Competitive Advantage

The results of hypothesis testing 1 show that "Management Ability has a significant and positive effect on Competitive Advantage". The relationship between the two variables is positive, it can be interpreted that the skills and competencies both administratively and operationally in carrying out management functions which include: planning, organizing, directing, and monitoring. in making decisions as a variable forming management capability, can be used directly to improve cost advantage strategy. The cost advantages referred to here are the availability of raw materials, relationships with suppliers, optimizing production facilities, and optimizing marketing facilities, as indicators for forming variable cost advantage strategies.

Empirical studies that support this finding include the findings of Suci (2009) which shows that management ability has a positive and significant effect on business strategy. The higher an entrepreneur is able to exploit his management abilities, the more capable he will be of making a good strategic plan. (Nghah, 2018), stated that management ability has a positive effect on competitive advantage. Acquaaah & Agyapong (2015), findings show that managerial ability strengthens the effect of cost leadership strategies on performance

The results of this study are supported by Nuthall (2001) which states that managerial ability determines the business strategy used to achieve classified goals. While Ansoff (1990) suggests that the ability of entrepreneurs includes the ability to make plans, determine strategies and correct strategies. The management capability of entrepreneurs is a set of skills and competencies both administratively and operationally in carrying out management functions to achieve certain goals. During the growth phase a manager needs management skills to develop the business. Furthermore, it was said by (Lawler, 1994), that the level of one's business ability relates to the way they formulate the company's functional policies to determine the strategic actions to be taken.

### 5.2. Effect of Management Capability on IT Capability

RBV explains that the company's performance is a combination of tangible and intangible resources and company capabilities. Management resources and information technology capabilities are the strength of the company to gain and maintain its competitive advantage. This is important for companies if these resources are able to increase efficiency and effectiveness in the company's functional activities so that it is possible to carry out activities that are better or cheaper than competitors. Based on the results of hypothesis testing, it was found that management ability has a significant and positive effect on IT Capability. Jaferian&Rezvani (2014) in their research on the manufacturing industry stated that companies that have an IT orientation will have good product performance. Panda (2020), stated that business strategy acumen, coaching and skills with empathy, as well as talent for technology are new additions to the professional management skill set, on the other hand, the role of management will transform into a strategic business partner. Subramony, Guthrie, &Dooney, (2021) argues that the function of most management professionals is focused on IT knowledge and special human resource management skills that have human capital and credibility to implement human resource management policies and practices.

### 5.3. Effect of Management Ability on Innovation

Based on the results of hypothesis testing 2, it was found that management ability has a significant and positive effect on sustainable innovation. This can be interpreted that the ability of expertise and competence both administratively and operationally in carrying out management functions which include: planning, organizing, directing, and monitoring. The purpose of developing this innovation capability is emphasized by Hock-Doepgen, Clauss, Kraus, & Cheng, (2021) which states that in a business environment, knowledge management capabilities are a valuable source of innovation and are focused on business model innovation. The findings of this study support the research of Nghah (2018) and Valmohammadi et al. (2019) which suggests management ability has a positive

and significant effect on sustainable innovation. However Chye et al. (2010) did not provide support for this study, where managerial competence has no impact on the relationship between innovation and SME performance. Furthermore, it was also stated that managerial skills such as planning, organizing, leading and controlling cannot help accelerate the innovation process to increase sales growth and SME profitability. Also Ursic&Mulej (2005) argued that management ability has no effect on innovation.

Suci's empirical study (2009) also supports this finding, among other things, that management ability has a positive and significant effect on business strategy. Entrepreneur's ability to apply management skills is very important impact on business strategy. The higher an entrepreneur is able to exploit his management abilities, the more capable he will be of making a good strategic plan.

These findings enrich the opinion (Jones, 2004) which states that innovation is a process within an organization to utilize skills and resources, to develop new products or services or to build new production and operational systems so as to be able to answer customer needs. Innovation in the organization will be directly linked to organizational goals, business plans and competitive market positioning. According to Tidd & Pavitt (1988), management ability is very important because the product or service development process in SMEs and large industries respectively requires management activities to coordinate the company's resources.

The results of this study also enrich opinions (Kotler, 2012), which reminds us that without innovation companies will become old, old-fashioned, fragile and indirect. Moreover, after the opening of globalization and the flow of information, causing every company to be in a very tight competition. According to (Ming-ming, Zhi-gang, &Kun, 2009) an important key for companies to win the competition is continuous innovation supported by a reliable strategy. Empirical studies (Hamilton, 2009) with the findings that innovation capabilities will be successful depending on the size, resources and managerial competence of SMEs.

The results of this study support research (Nuthall, 2001) which states that managerial ability determines the business strategy used to achieve classified goals. While Ansoff (1990) suggests that the ability of entrepreneurs includes the ability to make plans, determine strategies and correct strategies. The management capability of entrepreneurs is a set of skills and competencies both administratively and operationally in carrying out management functions to achieve certain goals. According to Peters & Lindsay (1998) during the growth phase a manager needs management skills to develop the business. Thus it can be concluded that sustainable innovation will be carried out well if the owner of the Batik Business has management skills supported by the right business strategy.

#### 5.4. The Influence of IT Capability on Innovation

The results of the PLS Warp analysis show that IT capability has a positive and significant effect on innovation. This means that the hypothesis which states that IT capability has a significant effect on innovation can be supported. This shows that the higher the director or SME manager on the IT capability assessment, the higher the level of innovation. Vice versa, the lower the perception of the director or SME manager on IT capability research, the lower the level of innovation. Enterprise innovation can provide a broader picture of work

innovation that is focused on business innovation models and focuses on new technological and process innovations (Ferreira, Coelho, &Moutinho, 2020). The results of this study also support the opinion put forward by Bharadwaj (2000) that IT capability is seen as very important for organizations to create business value, encourage innovation and maintain competitive advantage (Nootjarat, Chantatub, &Chongstitvatana, 2012). In addition, the results of this study are also in line with the opinion (Laudon & Laudon, 2005) that IT has the ability to provide tools for managers to complete their roles, monitor, plan, play a role in creating new products and services.

The results of this study also support the research of Turulja&Bajgoric (2016) and Ollo-López &Aramendía-Muneta (2012) which show that there is a positive and significant relationship between IT capability and innovation. In addition, the results of this study are also in line with research conducted by Jabbouri et al. (2016) which shows empirical evidence that there is a positive and significant relationship between IT infrastructure as a whole and innovation performance. IT enhances communication, information and knowledge sharing, learning processes within organizations and that supports the innovation process (Carbonara, 23005).

These results also support and complement research (Tarafdar& Gordon, 2005) that IT influences process innovation. Innovation can be likened to a basic component for survival, achieving profitability and organizational growth, while IT helps and acts as a facilitator to promote and develop innovation. At BPW, knowledge to communicate based on information technology is the main element in IT knowledge.

#### 5.5. Effect of IT Capability on Competitive Advantage

The results of the PLS Warp analysis show that IT capability has a positive and insignificant effect on competitive advantage. This means that hypothesis 6 which states that IT capability has a significant effect on competitive advantage cannot be supported or rejected. So, the higher the perception of the BPW director or manager on IT capability research, the higher the level of competitive advantage, although the effect is not significant. Vice versa, the lower the perception of the BPW director or manager on IT capability research, the lower the level of competitive advantage, although the effect is not significant.

The results of this study do not support the RBV theory that sustainable competitive advantage comes from the development of superior capabilities and resources (Barney, 1991). The findings of this study also differ from the opinion of Porter & Millar (1985) that IT has a strength effect on competitive advantage in terms of cost or differentiation. In addition, the results of this study are different from the opinion of Sambamurthy et al. (2003) that IT capability helps organizations to innovate and create competitive advantages. The findings of this study also differ from the opinion of Tippins&Sohi (2003) that IT can be a source of competitive advantage if companies understand and develop IT as an IT capability. The findings of this study differ from research conducted by (Shbiel&Olimat, 2016) that IT has an influence on competitive advantage. Regarding IT capability which has no significant effect on competitive advantage, there are several reasons that can be put forward.

First, in the context of IT object as an indicator in IT capability refers to hardware, software and personnel support

owned by BPW. The facts show that the type of hardware used by BPW is a computer or laptop. It can be assumed that in terms of the type of hardware and software, there is no significant difference in the capabilities of IT objects between BPWs. In addition, from the aspect of personnel support owned by BPW, it can be assumed that BPW has personnel/employees who have almost the same capabilities. This can be seen from the use of software that is relatively the same (Microsoft Office) as the work standard software used by BPW, while there are still a few BPWs who use software other than Microsoft Office adopted by BPW which is used to support BPW's business activities. Conditions of hardware, software, and personnel capabilities are almost the same which allows it to be replicated and easy to obtain. In fact, IT capability will have a significant influence on competitive advantage if the elements in IT capability have characteristics that are difficult to imitate or easy to obtain (Bharadwaj, 2000). Bharadwaj (2000) further stated that companies that achieve competitive advantage through IT need to effectively combine their IT resources to create overall IT capability. For example, flexible IT infrastructure combined with strong human IT skills to make organizations more resilient.

Third, the attitude of lack of attention to IT, the notion that IT is only a complement in running a business reflects the weakness of digital leadership among BPW directors or managers. The leader is responsible for verifying the suitability of the technology tools adopted or implemented in relation to the needs and goals of the organization (Cortellazzo, Bruni, & Zampieri, 2019). Being a leader in the digital era means understanding technology as well as finance, human resources, legality in companies (Gorton, 2018). Digital leadership is needed to create a culture that is oriented towards technology-based customer service (Tanniru, 2018) and to transform our organization to make it suitable for the internet era, through the process of building new capacities, structures, and ways of working (Gorton, 2018). Through the digital skills possessed by leaders, they can utilize technology to make effective decisions, to make a difference in a competitive business environment, to be closer to customers (Yucebalkan, 2018). Based on this description, it can be concluded that in conditions where digital leadership is weak, the commitment of company leaders to IT is weak, IT will not provide value to the company. However, when leaders are able to manage IT capability well, it will create uniqueness and provide a competitive advantage for the organization (Bhatt & Grover, 2005; Chen & Tsou, 2007). The key role of digital IT management skills is the only one that can provide a competitive advantage (Chi & Sun, 2015). These IT management skills will play a role in the process of using IT in the company.

## 5.6. The Effect of Innovation on Competitive Advantage

The results of the WarpPLS analysis show that innovation has a positive and significant effect on competitive advantage. This means that hypothesis 10 which states that innovation has a significant effect on competitive advantage can be supported. These results indicate that the higher the perception of the director or BPW manager on innovation research, the higher the level of competitive advantage. Likewise, preferably, the lower the perception of the director or BPW manager on the innovation assessment, the lower the level of competitive advantage.

These findings also support the concept of innovation as an

important component of competitive advantage embedded in the organizational structure, production process activities, product launches and also the company's marketing strategy (Alpkan, Bulut, Gunday, Ulusoy, & Kilic, 2010). Innovation is perhaps the most important capability that a company has (Birchall & Tovstiga, 2005) as a strategic choice that companies use to create competitive advantage, produce things that others cannot do, do things better than others, or introduce superior, cheaper, and fast services (Aziz & Samad, 2016). For companies, the existence of innovation is very important because innovation can be a differentiator between one company and another (Kalkan, Bozkurt, & Arman, 2014). In addition, innovation is a means used to exploit changes into opportunities because innovation can create competitive advantages (Barney, 1991; Penrose, 1959; Peteraf, 1993). Innovation is the focus of company activities in a dynamic and competitive environment (Porter, 1985). Innovation can be in the form of ideas, new methods or a combination of old ideas, and anything that is considered new or improved (Ven, 1986). Ven's statement (1986) is supported by the opinion of Hii & Neely (2000) who define innovation capability as the potential to generate new ideas, identify new market opportunities and implement innovations that can be marketed by utilizing existing resources and capabilities.

The results of this study support the results of research (Tiengetavaj, Phimonsathienand, & Fongsuwan, 2017) that innovation capability has a significant direct and positive effect on competitive advantage. This research also supports the research of Purnomo (2015) and Nuryakin. (2018) which proves that product innovation has a significant positive effect on competitive advantage, research by Chatzoglou & Chatzoudes (2018) also proves that innovation (process and product) has a direct positive impact on the development of competitive advantage. In addition, this study also supports the research of Zainurossalamia et al. (2016) found empirical facts that an innovation strategy can increase the bargaining position of more companies to compete in the SME market segment.

## 6. Conclusion

This research provides a framework for improving management capabilities so that they have knowledge and skills both administratively and operationally in carrying out management functions which include: planning, organizing, directing, and supervising. In making decisions as a variable forming management capability, can be used directly to improve competitive advantage strategy. It provides a list of focus areas that require change within the organization. Furthermore, the important things in this research have implications for understanding and increasing the ability of decision makers to be able to adapt to any changes that occur, more specifically in changes in technology and information in an effort to produce maximum production.

Management resources and information technology capabilities are the strength of the company to gain and maintain its competitive advantage. This is important for companies if these resources are able to increase efficiency and effectiveness in the company's functional activities so that it is possible to carry out activities that are better or cheaper than competitors. Not only in efforts to utilize technology but also management's ability to innovate to produce a new work process and even in producing new products. Without innovation, companies will become old, old-fashioned, fragile. Moreover, after the opening of globalization and the flow of

information, every company is in very tight competition. Innovation is also an effort to support the company's competitive advantage. This analysis also provides an illustration that information technology brings transformation in various aspects of the organization, especially in an effort to produce sustainable innovation. Enterprise innovation can provide a broader picture of work innovation that is focused on business innovation models and focuses on technological innovation and new work processes.

This research aims to provide an overview of how the industry/company can adapt to any changes that occur. The global phenomenon that is happening right now is when information technology is developing very rapidly so that fast and accurate decision making is needed to immediately make changes in order to survive and even excel in competition.

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