



# The Competitive Determinants Strategy and its Impact on Competitive Advantage (Study of Solar Panel Industry in Indonesia)

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## ABSTRACT

Several studies have reviewed new-renewable energy management, but very few studies focus on the study of competitive strategies and competitive advantages in the business of renewable photovoltaic energy production. This study tries to fill the gap of the literature. This study uses the structural equation modelling approach to data collected through questionnaires. Observations were made on the Directors who work in the company that focus on the management of Renewable Energy Photovoltaic in Indonesia. The results show that the development of competitive strategy is not influenced by external factors of the company. External factors also have no effect on competitive advantage either directly or indirectly. However, product innovation plays a role in the formation of competitive strategies, and indirectly influences competitive advantage of Renewable Energy management company in Indonesia.

**Keywords:** Competitive Strategy, Competitive Advantage, Renewable Energy Management

**JEL Classifications:** L1, Q42

## 1. INTRODUCTION

Energy is a basic human need. At present most of the energy is still supplied by energy from fossils such as from petroleum, coal and natural gas. The energy from this fossil is limited in nature and cannot be renewed. The amount of energy from this fossil is limited so that if it remains dependent on this energy there will be an energy crisis. By looking at the limited constraints of fossil energy resources, the world's energy trend towards energy can be renewed. Renewable New Energy (EBT) is energy that is sourced from nature and continuously can be produced without having to wait millions of years like fossil-based energy (Ayu, 2015. p. 136). The natural resources in question can come from nuclear, hydrogen, coal, and gas (new energy) or from geothermal, biomass, wind, sun, water currents and ocean currents (renewable energy). This energy has an important role in achieving social, economic and environmental

goals for sustainable development and is a support for national economic activities (Larasati and Anabarja, 2015. p. 2). One source of EBT in Renewable Energy is solar (solar), in addition to other energy from natural sources such as Biomass, Geothermal, Hydro, and Ocean (Mappangara and Warokka, 2015. p. 8). The energy comes from the sun, which is used as an electric current. So that said Solar Panel is a system or direct way to transfer solar radiation into electrical energy (Sherwani et al., 2010. p. 540). Renewable energy sources from the Solar Panel can generate electricity up to 1.5 GW, although there is a weakness in that energy where solar energy can be absorbed only during the day. However, this energy will not run out because it comes from nature and does not endanger the environment (Unardi and Liun, 2014. p. 34).

The Indonesian government through the ESDM Ministry targets EBT on solar cells to be <5% in 2025 (Perpres No. 5/2006).

This opens opportunities for businesses in the EBT industry, considering that solar energy is easier and cheaper than other energy sources (Unardi and Liun, 2014. p. 119). Based on data from the Ministry of Energy and Mineral Resources, there are 10 (ten) companies offering Renewable Energy products through Solar Panels (Azahari, 2012). The company certainly experienced competition with state-owned companies and foreign companies in producing Renewable Energy from Solar Panels (Couture and Gagnon, 2010). However, currently the competition is still dominated by state-owned companies, as seen from the Solar Panel development project in 2012 given to 3 (three) BUMN companies and previously still imported from China (Oktarianisa and Hazliansyah, 2012. p. 88).

But on the other hand the competition becomes tighter, one of which in the company that produces Solar Panels becomes less competitive with Foreigners. Where the construction of the Solar Panel still relies on Japan (Sherwani et al., 2010. p. 542), as well as Malaysia, which are imported from Germany and Japan (Ong et al., 2010. p. 645). From this information shows that the weak competitive strategy and competitive advantage of Solar Panel companies in Indonesia. Whereas in improving company performance competitive advantage is needed (Gyampah, and Acquaaah, 2007. p. 575).

Problems in developing Solar Panels can be suppressed if there is high technology support and investment fund support and large operational funds (Ong et al., 2010. p. 645). Especially for the Solar Panel industry, get special attention from the Government with the existence of a feed in tariff (FIT). This invites investment in the Solar Panel industry, at least there are 6 (six) factors that support the creation of an investment and business climate in the Solar Panel. Regulations supporting Renewable Energy include the 2007 Law, Ministry of Energy and Mineral Resources Regulation No. 70/2009, 2015 Paris agreement, Presidential Regulation No.4 2006, empirical data in remote areas, and Renewable Energy business in 2025.

The company stands certainly influenced by internal and external factors (Choi and Mogyoro, 2011. p. 2). Government regulations related to the Solar Panel are one of several external factors that need to be considered and commonly called Political (Shimwama et al., 2014. p. 150). Based on the policy on government regulations, it certainly has an impact on the company's decision, namely the Solar Panel industry in Indonesia in creating competitive strategies in market competition (Choi and Mogyoro, 2011. p. 13). Examining the study, it appears that external factors from the Solar Panel industry need to be considered in formulating competitive strategies to obtain competitive advantage of the company (Papulova and Papulova, 2006. p. 1).

Through innovation, companies are truly able to create competitive strategies (Hanaysha and Hilman, 2015. p. 94). Reviewing other things from the impact of 6 (six) factors that support the creation of an investment climate and the Solar Panel business, opens opportunities for companies with Solar Panel products in Indonesia to develop their products and innovations (Syafarudin, 2016). From previous research it appears the importance of companies

with renewable energy products that prioritize competitive advantage (Dolg et al., 2010. p. 542). Syafarudin and Sudiarditha (2018) from external factors and innovations in the achievement of sustainability of excellence through competitive strategies have never been done, especially in industries with Solar Panel products in Indonesia as the youngest country to start the Renewable Energy industry in Asia (Kadiman, 2006). Based on the above problem phenomena related to the Solar Panel industry in Indonesia, the research theme focuses on the competitive advantage of the renewable energy industry for external factors support, innovation and industry competitive strategies in Indonesia.

In recent years, more than 40% of all additional power generation capacity in the world has been carried out to utilize Renewable Energy. This further proves that Renewable Energy is a cost-effective solution to meet the world's energy needs. Considering that the golden age of Indonesia as an oil-rich country or often called the era of oil bonanza has ended. Petroleum production which reached its peak in 1997 amounted to 1.6 million barrels per day, now it is only half. Indonesia's oil reserves also declined the fastest in Asia, from around 12 billion barrels in 1980 to only <4 billion barrels left of Malaysia whose population was only one-ninth of Indonesia. Renewable Energy investment is less attractive because the investment is very expensive and the energy price is now more expensive than fossil energy (Soehari et al., 2019). Thus, a question will arise, namely how the development of the continuation of the Renewable Energy industry amid energy derived from fossils is still cheaper. Indonesia is a country with abundant potential for renewable energy sources.

## 2. COMPETITIVE STRATEGIES

A business organization, both a business organization engaged in the type of goods or services, in its effort to win the market is a strategy (Hertati, 2015). Efforts to win the market, means how to win competition in the market, so that the market chooses our products, in conditions like this, this business organization will certainly need and use competitive strategies (Hertati, 2015). Through competitive strategies, an organization will be able to compete with other organizations, which in term of management strategy are called organizations that have a competitive advantage (Gyampah and Acquaaah, 2007. p. 575). The opinion concludes one thing, namely the need for the development of cost strategies and differentiation. Although in the competitive strategy there are still other things that can be pursued. So that competitive strategies will produce competitive advantage, if a company can properly and effectively take advantage of its advantages. Strategy is a very important tool for achieving competitive advantage (Rangkuti, 2005. p. 4).

So it can be concluded that competing strategies to determine long-term goals carried out by a business organization to achieve desired goals (Hertati, 2016). In determining competing strategies there are many things that need to be prepared by the company, one of which is control of company innovation (Omar and Jusoh, 2010. p. 12). Control here means that innovation is the beginning of the formation of competitive strategies, although there are still

other factors that support such as external factors that play a role in the corporate environment (Husso and Nybakk, 2010. p. 2).

All companies need competitive strategies, including companies with Energy products (Hertati, 2016). Renewable through the solar panel industry. The company's readiness in determining competitive strategies by analyzing the actions and support of the company's environment, ultimately determines the company's competitive advantage (Dolg et al., 2010. p. 191). The study interpreted that it is important in making a competitive strategy, looking at the company's environment, namely internal and external factors. This will form the strength of the competitive strategy. The definition of the first competing strategy was delivered by Porter (1986. p. 64), who said the competitive strategy was the "a combination of the ends (goals) for which it was the policy and the means by which it was seeking to get there." Porter's opinion emphasized two things for strategy, namely plan and position. Where Porter argued that the speaking strategy related to position competition, related to company differentiation in the eyes of consumers, related more value to marketing activities that differentiate from competitors. This opinion can be interpreted as a competitive strategy about how the company positions its business more competitively compared to other similar industries. This situation has led the company to continue to have a unique strategy that is able to maintain the company's position from its competitors or survive (Syafarudin and Sudiarditha, 2018). In a competitive strategy, the company focuses on developing good business unit competition positions that are engaged in goods and services (Wheelen and Hunger, 2014. p. 183).

From previous studies by Yamin et al. (1999), it was explained earlier that the true competitive strategy has an impact on creating competitive advantage. Knowing the results of the study confirms that in the creation of competitive strategies to win specific market competition has the ultimate goal of competitive advantage. If we examine the research from Choi and Mogyoro (2011), who found that external factors have an impact on the formation of competitive strategies. So it is pointed out that indirect factors also have an impact on the achievement of the company's competitive advantage. The same is true of innovation, where Omar and Jusoh (2010) say there is a relationship between innovation and the company's competitive strategy. So that the achievement of competitive advantage is also indirectly influenced by the formation of good corporate innovation. However, deeper studies are needed regarding competitive strategies that can be used as a good strategy to achieve competitive advantage. Given not all competitive strategies that can be used by all types of companies.

The choice of competitive strategy is determined by the objectives of the company. Strategy is an effort that must be carried out by an organization to be able to produce unique and valuable products that can provide benefits to its users (Parnel, 2011. p. 130). By creating profits for users it will have an indirect impact on user satisfaction in the case of consumers. The importance of the strategy appears in the discussion in order to improve company performance (Gyampah and Acquaaah, 2007. p. 575). On this basis, business organizations are required to be able to build a trade off, through the selection of different activities compared to those carried out by competitors. This is done to be able to produce

product output that is also different, superior, valuable, and unique, as evidence of the output of competitive strategies that have been successfully carried out by the company.

Regarding the effort to create a competitive strategy, as well as determining the dimensions of research, the dimensions of the competitive strategy in this study are referring to the generic strategy proposed by Porter (1989). Determination of these dimensions based on these dimensions is not specific to one type of company but generally in the company. This strategy is called "Generic Strategy," which consists of four types, namely.

### **2.1. Cost Advantage Strategy (Overall Cost Leadership)**

It is a strategy in which each business unit strives to achieve the lowest possible production and distribution costs, so that the prices set are able to compete, and finally can reach a large share compared to its competitors. Cost advantage is the most obvious thing among generic strategies. So a company wants to be ready to become a low-cost producer. The size of the company is very important for the advantages of costs varying and depending on the industrial sector. These sources may include economies of scale and technological pursuits.

### **2.2. Differentiation Strategy (Differentiation)**

It is the company's efforts to have superior differences (attributes of product characteristics) compared to its competitors. For example, using new methods and technology to create superior products, building new products, introducing new products to the market, offering new products to the market, advertising and marketing intensity, building and utilizing seller speed, and building image strength identity (Parnell, 2011)

### **2.3. Focus Strategy (Focus Strategy)**

It is an effort to concentrate on one or more narrow market segments rather than serving the entire market segment but is truly mature and profitable. The focus strategy is different from the other strategies, because it emphasizes the choice of narrow competitive coverage in an industry. Some indicators that can be used include Product uniqueness of function or design,

Berman (2011) further developed Porter's competitive strategy theory (1989), namely cost-based strategy, differentiation-based strategy, and value-based strategy. The competing strategies that are conveyed are actually in common with Porter (1989), the development of dimensions only in value-based strategies. Whereas in its predecessor, Porter (1989), the focus strategy was included. This is because in Berman (2011), the strategy focuses on retail companies. In full, an explanation from Berman (2011), as follows:

1. Cost-based strategy
  - a. Bargaining power based strategy
  - b. Increase efficiency
  - c. Trade-offs between lower costs of sales have the potential to decrease and customer satisfaction.
2. Differentiation-based strategy
  - a. Product differentiation
  - b. Differentiation based on customer service
  - c. Differentiation based on trust.

3. Value-based strategy
  - a. Product quality
  - b. Value for money
  - c. Customer service experience.

The dimension presented by Berman (2011), is a development of Porter (1989), and all of these dimensions will be used in current research on companies with Renewable Energy products in the Solar Panel industry in Indonesia. This is motivated because all dimensions can represent the strategy of the company in general and these dimensions are current from the development of Porter (1989) theory before.

### 3. COMPETITIVE ADVANTAGE

Strategy is a very important tool for achieving competitive advantage (Rangkuti, 2005. p. 4). So it can be concluded that the competitive strategy is the determination of long-term goals carried out by a business organization to achieve the desired goals. A good understanding of the concept of strategy and other related concepts greatly determines the success of the strategy prepared (Hitt, 2002). The strategy concepts are as follows:

1. Distinctive competence, is an action taken by the company to be able to carry out activities better than its competitors. If a company has a power that is not easily imitated by a competing company, the company is seen as a company that has distinctive competence. Distinctive Competence explains the specific capabilities of an organization. Identification of Distinctive Competence in an organization includes the expertise of the workforce and the ability of resources (Rangkuti, 2005. p. 5). These two factors caused this company to be superior to its competitors.
2. Competitive advantage, is a specific activity developed by the company to be superior compared to its competitors. Competitive advantages are caused by the choice of strategies by the company to seize market opportunities. According to Porter, there are 3 (three) strategic approaches that companies can take to gain competitive advantage, namely Cost Leadership, Differentiation and Focus (Porter, 1986).

A business organization, both business organizations engaged in the type of goods or services, in its efforts to win the market, is in need of a strategy (Gyampah and Acquah, 2007. p. 575). Efforts to win the market, means how to win competition in the market, so that the market chooses our products, in conditions like this, this business organization will certainly need and use competitive strategies for competitive advantage (Yamin et al., 1999. p. 507). Competing is used for all types of companies, so is needed by companies with Solar Panel products in Indonesia, as stated by Dogl et al. (2014. p. 191). This indicates that the importance of competitive advantage to maintain corporate competition in the Renewable Energy industry (Solar Panel). Strategy is the company's goal in adopting the resources they have, of course the intended purpose is competitive advantage. So that an ability or resource owned by the company, is very necessary in making a strategy for competitive competition. The origin of competitive advantage certainly starts from a competitive strategy, as stated by Yamin et al. (1999. p. 507). So that the competitive

strategy in the company is very necessary in achieving the goals of the organization in business competition, namely competitive advantage. It is interpreted that the strategy is more on how to make a plan, tactics, win the position, patterns and perspectives made to be carried out in quite a long time, so the end is how to win the market. Competitive strategies are competitive advantages, where competitive advantage has 2 source perspective, first from the perspective of an industrial organization and second from a resource-based perspective (Lena, 2006. p. 22). One of the industrial organization perspectives was introduced by Porter (1989), while the resource-based perspective was developed.

As Porter (1989) stated, one of the strategies to achieve competitive advantage is differentiation. Dessler (2007) expressed his opinion for the company's competitive advantage from competitors in general. Strengthened by Dolg et al. (2010. p. 194) who say competitive advantage "is a combination of ability to improve processes and products as well as to compete." Macfarlane (2014. p. 264) who said "competitive advantage is the result of an organization's access to internal or external knowledge and resources." This opinion emphasizes the management of the company's internal and external knowledge and resources that can be maximized. Opinions from Macfarlane (2014) examine in general from various companies, and examine from several previous opinions it can be ascertained that competitive advantage is an advantage over product creation strategies that cannot be imitated by competitors in entering market share. In general the correct strategy is a strategy that combines four main characteristics, namely as follows:

1. Simple long-term goals or targets;
2. Through an analysis of the competitive environment;
3. Objective assessment of resources;
4. Effective application.

There are two levels of strategy in the company's competitive advantage, which are as follows:

1. Corporate strategy, which is related to decisions about where the company's business goes in and out and how the company should allocate resources among the different businesses it enters.
2. Business strategy, which is related to the ways that companies use to gain competitive advantage in each of its main businesses.

Chang (2011) measures competitive advantage directly represented by question indicators. Where the research is measured for companies that create environmentally friendly products. It seems clear in the indicators that it leads to the company's capability in creating environmentally friendly products. If simplified, the indicator becomes a measure of quality, capability, management, profitability, company image and position. Chang's research (2011) seems to have similar measurements of competitive advantage with the research of Ren et al. (2010). Where competitive advantage can be measured through quality/valuable, capable/rare, and position/cult to imitate. But in Chang's (2011) study there was a development of measures for management, profitability and corporate image. In research on Solar Panel companies, a combination of measures from Ren et al. (2010) and Chang

(2011) is used, namely quality, capability, position, profitability, management and corporate image. These measurements are considered appropriate because they look from the perspective of the organization for competitive advantage.

Competitive advantages in theory and empirical studies previously stated to have a close relationship with competitive strategies (Yamin et al., 1999). And competing strategies are created from external factors (Choi and Mogyoro, 2011) and innovation (Omar and Jusoh, 2010). Furthermore the relevance of previous research with current research is presented in a review of previous research. Research studies also look at or adapt to previous research or what is called a review of previous research, in an effort to uncover previous research to examine the relationship between research variables and find the originality of this study. The research variables that will be examined are related to external factors, innovation, competitive strategies and competitive advantage. Following is a review of previous research that contains researchers, themes, research results, similarities and differences in the following table.

Zakic et al. (2008) external and internal factors affecting the product and business process innovation. In this study, there was a correlation between external factors and the process of creating corporate innovation. The equation of research is the use of external factors and innovation variables. In Zakic's research, Jovanovic and Stamatovic (2008), studies related the impact of internal and external factors on the creation of products and the company's innovation process. The study is different. Choi and Mogyoro (2011) "Influence of Internal and External Factors on Expansion Strategies" In their studies submitted by Internal and External Factors in companies can support the formation of Competitive Strategies. Equations of research on the use of external factors and competitive strategies. Research differences: Previous studies presented by Choi and Mogyoro (2011) convey theoretically the relationship of External Factors research variables with Competitive Strategies. The current research will be empirically studied for the Renewable Energy industry in Indonesia and Malaysia.

Voiculet et al. (2010) "The impact of external environment on organizational development strategy. The study conveys the relationship between external environment or external factors from companies with the creation of Competitive Strategies. Equations of research on the use of External Factors and Competitive Strategies. Research differences: Voiculet et al. (2010) conducted a relationship theory research from External Factors and Competing Strategies, while currently it will be empirically tested on External Factors relationships, Innovation on Competitive Advantages through Competitive Strategies in the New Energy industry.

Omar and Jusoh (2010) "Aoretical Investigation into Entrepreneurship and Organizational Innovation-Based Competitive Strategy in Malaysia" found the results of this empirical study is the relationship between Entrepreneurship and Innovation with competitive strategy. The equation with the current research is the existence of innovation variables and competitive strategies that are partially sought for relationships. Research differences: Previous research from Omar and Jusoh

(2010) focused on small and medium entrepreneurs in Malaysia with variables used by Entrepreneurship and Innovation with Competitive Strategy. Whereas the research that will be carried out on the New Renewable Energy industry with the variables used is only innovation and competitive strategies. Hanaysha and Hilman (2015) "The impact of product innovation on relationship quality in automotive industry: Strategic focus on brand satisfaction, brand trust, and brand commitment" the findings in the study stated that innovation has an impact on satisfaction, trust and commitment. Where all three are focus strategies on competing strategies. The equation in this study is a study of the relationship between innovation and competitive strategies. Research Differences: Hanaysha and Hilman (2015) reviewed empirical research at Automotive companies in Malaysia, the focus of research was part of the competitive strategy namely focus strategy with Innovation. But in the current study there is a part of the model that connects innovation and competitive strategies. So that there appears to be research support and model differences.

Reguia (2014) "product innovation and the. The results of the study conveyed a relationship between Innovation and Strategy Competing on product creation in theory. In this study there appears to be an equation in the research section, namely the study of the relationship between innovation and competitive strategies. Research differences: Reguia (2014) conveyed theoretically the relationship between innovation and competing strategies, while currently it will be studied with different models, namely external factors and innovation in competitive strategies and competitive advantages. Husso and Nybakk (2010) "importance of internal and external factors when adapting to environmental changes in SME Sawmills in Norway and Finland": The Manager's View. The results presented in the study have a relationship between internal and external factors on the achievement of competitive advantages. The research equation is conveyed in the relationship between external factors and competitive advantages. Research differences: The difference lies in the research section where in the study of Husso and Nybakk (2010) only external factors with competitive advantages were examined. While at the moment there is support from other variables, one of them is innovation and competing strategies.

Chang (2011) "The influence of corporate environmental ethics on competitive advantage: The mediation role of green innovation" discussed in this study there is a relationship between corporate environment ethics and innovation with competitive advantages. The similarity of research occurs in the use of the same variables, namely competitive advantage, innovation and corporate Environment ethics which are part of external factors of the company. Research differences: Research Chang (2011) focuses on environmentally friendly products similar to current research, but the model presented is different, where the previous model only examined 3 variables, namely external factors, innovation and competitive advantage, while in the current study there were additional intervening variables namely strategy compete. Srivastava et al. (2013) "building a sustainable competitive advantage" The results of theoretical research suggest that in achieving Competitive advantages we need a view on the company external factors. The research equation in relation to

external factors with competitive advantage. Research differences: Srivastava et al. (2013) theoretically studied the relationship of external factors variables with excellence competing with companies in general. Whereas currently the study is empirical through the development of a research model.

Macfarlane (2014) "sustainable competitive advantage for accountable care organizations" The research findings conveyed a theoretical study of the relationship between innovation and competitive advantage. The equation of research on the study of the relationship between innovation and competitive advantage. Research Differences: Macfarlane (2014) only discusses theoretically the research section on the relationship of innovation to competitive advantage, while currently through different models it is examined empirically in the New Renewable Energy industry. Reed et al. (2012). "This research addresses the drivers of competitive advantage (Walker, 2007)." This study theoretically conveys the relationship between innovation and competitive advantage. The equation of research on the study of the relationship between innovation and competitive advantage. Research Differences: Macfarlane (2014) and Reed et al. (2012) have similarities namely the study of the relationship of Innovation and excellence competing in theory.

Whereas now through different models, it is examined empirically in the Renewable Energy industry Ren et al. (2010) "Sustainable competitive advantage and marketing innovation within firms." Delivered the results in this study are the relationship between Innovation and excellence competing empirically. The equation of research on the study of the relationship between innovation and competitive advantage. Research Differences: Ren et al. (2010) convey an empirical relationship between Innovation and competitive advantage, but the research is only part of the current research that develops the model into the relationship between External Factors, Innovation in Competitive advantage through competitive strategies. With objects in the renewable energy industry in Indonesia and Malaysia.

Yamin et al. (1999) convey the results that competing strategies have a relationship to the creation of competitive advantages. The research equation lies in the use of competitive strategies and competitive advantage. Research differences: In the study of Yamin et al. (1999) empirically there was a relationship between strategies to compete with competitive advantages. Whereas nowadays through the development of the Yai model.

Papulova and Papulova (2006) convey the results that Competing Strategies have a relationship with the creation of competitive advantages. The research equation lies in the use of competitive strategies and competitive advantage. Research differences: In the Papulova and Papulova study (2006) a qualitative study of Slovak countries regarding relationships. Strategy to compete with competitive advantages. But there are differences in addition to the quantitative passing method and the development of research models, namely the addition of Independent External Factors and Innovation variables. It has been studied that there is a relationship between external factors and innovation on competitive advantage in companies through competitive strategies. This time the research

model was applied to the renewable energy industry (Solar Panel). Considering the importance of external factors and innovations that have been faced and developed by companies, where the current panel industry in Indonesia requires competitive advantage Dolg et al. (2010. p. 293).

In the current study becoming independent variables is external factors and innovation Following the opinion of previous research from Choi and Mogyoro (2011) that external factors can stand as independent variables, given that external factors are variables that are able to form or influence competitive strategies, as well as innovation, where the study was delivered by Hanaysha and Hilman (2015) which makes innovation also an independent variable that is able to influence the formation of competitive strategies and has been empirically tested, while the intervening variables in this study are competitive strategies, which are associated with previous studies from Ortega et al. (2010) which thank you The results of the study that competitive strategies can be used as an intervening variable between the structure and performance of the company. The study reiterates that competitive strategies can be used as intermediate variables. In the dependent variable there appears to be a competitive advantage, this is seen from the research presented by Chang (2011). Where in this study competitive advantage is the end of the creation of innovation and external factors in the corporate environment. Examining the results of the presentation above shows a strong position for the current research model, however, it is also necessary to convey the novelty of the current research discussed in the study of state of the art.

### 3.1. Framework

The competitive strategy itself is defined as the integration and coordination of companies in building commitments and actions to win competition from similar companies. In a competitive strategy the measurement of variables can be done through Porter's Generic Strategies, namely:

1. Cost-based strategy, in this strategy that is a measure of which is a bidding power based strategy, increasing efficiency and trade-offs between lower costs of sales that have the potential to decrease and customer satisfaction
2. Differentiation-based strategy, in this strategy which is a measure of product differentiation, differentiation based on customer service and differentiation based on trust.
3. Value-based strategy, in this strategy that is a measure of quality products, valuable money and customer service experience.

The competitive strategy is the beginning of the creation of competitive advantage, considering that both have a very close relationship. But competing strategies need to be created through a review of external factors and company innovation. Speaking of competitive advantage, it was stated that competitive advantage is an advantage over product creation strategies that cannot be imitated by competitors in entering market share. Competitive advantage can be evaluated through a number of measures set before, including in this study used quality, capability, position, management profitability and corporate image as a direct measure of the company's competitive advantage.

#### 4. RELATIONSHIP OF COMPETITIVE STRATEGIES WITH COMPETITIVE ADVANTAGE

The previous study focused on the independent variable with the dependent variable, while other variables were also present which also determine the formation of the research model, namely the relevance of competing strategies with competitive advantage (Ryor, et al. (2014). In the research presented by Yamin et al. (1999) it was stated that in theory there is a close link between competitive strategies and competitive advantage. This emphasizes the importance of competitive advantage through competitive strategies. Other support is also provided by Populova and Populova (2006), who argue that in achieving competitive advantage, a competitive strategy is needed. And in getting a good company performance, it takes a company's competitive advantage (Gyampah and Acquah, 2007) between competing strategies with real competitive advantage very close (Yongtao, 2008). considering that both are strategies to build the company to be superior to its competitors.

In increasingly high competition, companies formulate competitive strategies by developing in the lower cost strategy and differentiation strategy (Wheelen and Hunger, 2010). The opinion concludes one thing, namely the need for the development of cost strategies and differentiation. Although in the competitive strategy there are still other things that can be pursued (Volberda et al., 2010). So that competitive strategies will produce competitive advantage, if a company can properly and effectively take advantage of its advantages. Strategy is a very important tool for achieving competitive advantage (Rangkuti, 2005. p. 4). So it can be concluded that competing strategies to determine long-term goals carried out by a business organization to achieve the desired goals. In determining competing strategies there are many things that need to be prepared by the company, one of which is control of company innovation (Omar and Jusoh, 2010. p. 12). Control here means that innovation is the beginning of the formation of competitive strategies, although there are still other factors that support such as external factors that play a role in the corporate environment (Husso and Nybakk, 2010. p. 2). All companies need a competitive strategy, including companies with Renewable Energy products through the Solar Panel industry. The company's readiness in determining competitive strategies by analyzing the actions and support of the company's environment, ultimately determines the company's competitive advantage (Dolg et al., 2010. p. 191). The study interpreted that it is important in making

a competitive strategy, looking at the company's environment, namely internal and external factors. This will form the strength of the competitive strategy. The definition of the first competing strategy was delivered by Porter (1986. p. 64), who said the competitive strategy was the "a combination of the ends (goals) for which it was the policy and the means by which it was seeking to get there." Porter's opinion emphasized two things for strategy, namely plan and position. Hubbard and Beamish (2011. p. 20) argues for competitive strategies that "competitive strategy is compared to other similar industries." That opinion can be.

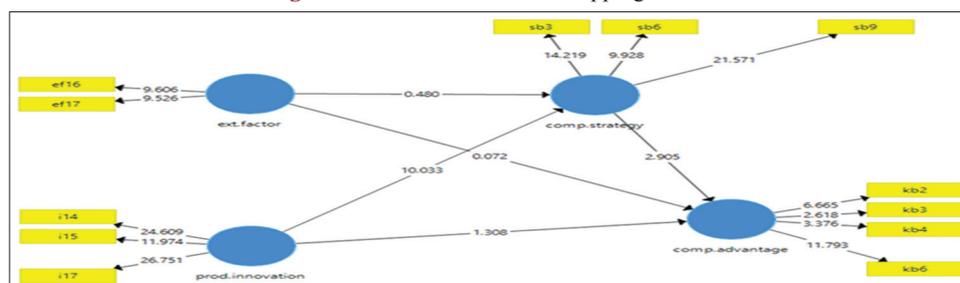
#### 5. RESEARCH METHODS

Research methods related to research design, research design is a framework or blueprint in carrying out marketing research that describes in detail the procedures needed to obtain information needed to structure or solve marketing research problems. Scientific research is basically an attempt to reveal phenomena that occur in a semantic, controlled, empirical, and critical manner. Descriptive research has a characteristic where research questions and hypotheses have been formulated in advance and the number of samples is large (Malhotra, 2010. p. 106). In this study questions were made and questions were collected in the appendix. Collection of question sheets from the Operations Director and Marketing Director of the Solar Panel industry is carried out at a certain time, namely for time horizon to be used cross-sectional (one shot) where data and information retrieval in 2016 takes into account the limitations of research time and costs. This cross-sectional time horizon reflects a picture of a situation at a certain time (Sekaran and Bougie, 2010. p. 119).

#### 6. SUCCESS AND DISCUSSION

In this study a description and relationship between variables was examined, it was stated in the next sub-chapter, but before the study of the description and relationship of the research variables, the results of data processing for 49 respondents from the same position as the Marketing Director and Operations Director of each Panel Surya in Indonesia. Respondents' answers relate to the implementation of external factors, product innovation, competitive strategies, and competitive advantages along with the results of hypothesis testing of each relationship (Figure 1). Based on testing Bootstrapping gives results as shown in Figure 1. This image is the result of a filter process and simplification of the model by PLS.

Figure 1: Final model of bootstrapping results



Based on the model that has been made (Figure 1), the suitability test of the research model is to see the outer and inner values of the model that explain the suitability or fit value of the research model (Table 1).

Analysis of the measurement model (outer model) shows the relationship between the manifest variable (indicator) and the respective latent variables. Analysis of the measurement model (outer model) is used as a test of the validity and reliability of dimensions in measuring latent variables and indicators in measuring constructs (second orders). Analysis of the measurement model can be explained by the value of Cronbachs Alpha can be used to see the reliability or level of reliability of dimensions in measuring research variables. If the Cronbachs Alpha value is >0.70, the dimensions and indicators are stated to be reliable in measuring the research variable. Composite reliability and Cronbachs Alpha of each variable >0.70, this indicates that all variables in the model are estimated to meet the criteria of discriminant validity, thus it can be concluded that all variables have good reliability. In addition to the suitability test of the research model, the validity of the research instrument was also conducted. In Table 2 shows the results of cross loading (discriminant validity) calculation. Table 2 shows that 2 of the 4 variables tend to have the highest correlation coefficient when associated with the variable itself. While the rest do not meet the rules of discriminant validity.

The results of research hypothesis testing based on the previous hypothesis design. There are 9 (nine) hypothesis tests presented in Table 3, the results are mostly significant (Support). The meaning of these results is that the research model presented can be generalized not only to the Solar Panel industry, but also to other industries.

**Table 1: Testing the outer and inner models**

Variabel	Cronbach alpha	Composite reliability	AVE
Competitive advantage	0.736	0.806	0.513
Competitive strategy	0.761	0.862	0.676
External factors	0.838	0.925	0.860
Innovation	0.812	0.888	0.726

Source: Data processed

**Table 2: Validity test results**

Variabel	X <sub>1</sub>	X <sub>2</sub>	Y	Z
External factors	0.654			
Innovation	0.481	0.658		
Competitive strategy	0.391	0.802	0.634	
Competitive advantage	0.219	0.731	0.796	0.696

Source: Data processed

**Table 3: Summary of test research hypotheses**

Hipotesis	Uji hipotesis penelitian	Hasil Nilai r	Hasil t/F statistik	Hasil
H1	External factors and inovasi ke strategi bersaing	0.617	12.17	Support
H2	External factors ke strategi bersaing	0.049	0.48	Not
H3	Inovasi ke strategi bersaing	0.693	10.03	Support
H4	External factors and inovasi ke keunggulan bersaing	0.224	2.01	Not
H5	External factors ke keunggulan bersaing	0.009	0.07	Not
H6	Inovasi ke keunggulan bersaing	0.215	1.31	Not
H7	Strategi bersaing ke keunggulan bersaing	0.446	2.91	Support

Source: Data processed

Hypothesis testing is done through the t test for partial relationships and F test for simultaneous simultaneous relationships.

Environmental changes outside the company or external factors can be a source of corporate strength in the company's competitive strategy (Johnson et al, 2009). The important point of the opinion is related in the context of the strategic relationship with the outside environment or external factors. That opinion further implies that in the formulation of competing strategies consideration is needed of external factors. On the other hand, Hitt et al. (2014) explained that the environment is a factor that determines the company and its competing capacity. Competitive companies are companies that can counteract these influences, including external factors. In Figure 1 can be seen the value of the response to external factors in Renewable Energy companies (solar panels) in Indonesia. External factors are built from several dimensions and offices. The dimensions that form include political, economic, social and technological. From these four dimensions it was rebuilt through several indicators. First for the political dimension, which is built on indicators of employee rules, consumer protection rules, environmental rules, tax rules, trade restrictions, health rules and safety rules. The first indicator is given by the rules of employees (A1), where most of the questions answered by the Directors have gone well in the solar panel industry in Indonesia. It appears from the percentage value of 71.8% which is in good criteria (Unardi et al., 2014).

Innovation is a source of development that cannot be ignored (Shang et al., 2009. p. 322). The success of an organization is empirical evidence of the importance of innovation in increasing competitive advantage (Sener and Saridogan, 2011). Now many companies are transformed from closed innovation to Stucki's open innovation (2009). This opens up innovation opportunities from outside the company, to increase the image value and performance of the company (Hafeez et al., 2012). Respondents' response to the implementation of this innovation was formed by four innovations, including product innovation, process innovation, process innovation and paradigm innovation. The first dimension to be discussed on the achievements of innovation is product innovation, where innovation is built on the level of development of new products, innovations in new products and techniques on new products (Whitmarsh and O'Neill, 2010). Business organizations need a competitive strategy to win the market (Kasarda, 2006). Efforts to win the market mean that this business organization will certainly need and use competitive strategies. Through a competitive strategy, an organization will be able to compete with other organizations, or competitive organizations (Gyampah and Acquah, 2007). Competitive strategies used are based on several dimensions, namely cost-based strategies, differentiation-based strategies and value-based strategies. This cost-

based strategy is formed from several question indicators, namely on the level of product bargaining power, the level of efficiency and the level of product trade offs.

Competitive advantages of the solar panel industry in Indonesia. This was conveyed in the questionnaire to the leadership of the company namely the Marketing Director and Operations Director of the solar panel industry (Mann and Blum, 2002). Furthermore, the results of the company leadership are reprocessed to find results on the description of the competitive advantage achieved by the solar panel industry in Indonesia. The competitive advantage of the solar panel industry is judged by several indicators including the level of quality of strategy, level of capability, level of profitability, level of position, management level and level of corporate image achieved good with a percentage value of 86.9% (Mezher et al., 2010). The results of the previous study and discussion conveyed the views of the Marketing Director and Operations Director in the solar panel industry on the impact of external factors, innovation and competitive advantage, which are mediated by competitive strategies. The results of the discussion gave rise to research findings from several parts of the study, most of which were improvements from the results of previous studies. However, it was found that there was a significant and insignificant relationship between variables, so the research model was changed Ryor et al. (2014). The next finding relates to the results of the analysis of the research model, and the novelty is to find new theories relating to External Factors and the reputation of the Company, actually not directly related to Competitive Advantage. Found a new model related to the mediating effect of Business Strategy on External Factors relations and Innovation on Competitive Advantages (Mezher et al., 2010). The findings of this study are innovation, considering that they have never been studied specifically in the solar panel industry in Indonesia. Based on the results of these studies, the next applicant can be proposed.

## 7. CONCLUSIONS AND SUGGESTIONS

Based on the results of research and discussion of research results in an effort to improve the competitive advantage of the solar panel industry, it can be concluded that the results of the study are as follows: External factors and product innovation have a significant effect on the strategy of competing solar panel industry together in Indonesia. This simultaneous influence is relatively dominated by the unique contribution of renewable energy product innovation to the composition of competitive strategies. This industry relatively involves resources that are very unique and relatively difficult to replace, so that the degree of mastery of solar panels will determine the Competitive Strategy and its implications. Therefore, external factors are not unique and have no significant effect on competitive strategies in this industry. Innovation has a significant effect on the strategy of partially competing in the solar panel industry in Indonesia. Innovation is a source of uniqueness and competitive power for companies, especially in the solar panel industry which is a rare commodity. Product innovation will be a source of excellence in industrial competition, even beyond national borders.

The competitive strategy has a significant effect on the competitive advantage of the solar panel industry in Indonesia. Competitive Advantage requires an effort to develop a careful strategy.

Competitive advantage is relatively not easy to develop because the nature of renewable energy commodities is unique and must be managed carefully. Operational suggestions: For managers of the solar panel industry in Indonesia, it is better to pay attention to the effects of mediating competitive strategies on competitive advantage. Especially related to external factors and innovation as a support for the company's competitive strategy. And before the industry uses this information, it is recommended to improve competitive strategies based on company innovation. The impact of innovation will be felt on quality and long-term on the sustainability of the solar panel industry. For the government to provide input on policy formulation for the solar panel industry in Indonesia, it is recommended to arrange more details regarding the implementation of the rules on renewable energy.

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