# The Adoption of Environmental Consciousness and Environmental Leadership as driver of Competitive Advantage

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OIDA International Journal of Sustainable Development, Ontario International Development Agency, Canada ISSN 1923-6654 (print) ISSN 1923-6662 (online) www.oidaijsd.com Also available at http://www.ssrn.com/link/OIDA-Intl-Journal-Sustainable-Dev.html

**Abstract:** The objective of this research was first to find out the impact of environmental consciousness and environmental leadership on competitive advantage. Second, this study also need to prove green intellectual capital as an intervening variable. Third, which variable have most get influenced strongly or partially from Green intellectual capital as mediating for the relationship between environmental consciousness or environmental leadership on competitive advantage.

A set of questionnaires survey was distributed to a minimum senior staff, managers, assistant managers using Google forms as online survey. And hard-copy. We go through linked in at managers community. The total number of respondents can be used were 123 samples collected were analyzed by partial least square structural equation modeling approach (PLS SEM) using Smart-PLS 3 program. The results show that Environmental Consciousness has direct relationship to competitive advantage, but no relationship between Environmental Leadership to competitive advantage. Therefore, green intellectual capital is not a mediator of the relationship between environmental consciousness and competitive advantage. But, green intellectual capital is a full mediator of the relationship between environmental leadership and competitive advantage. Since all the dimensions of green intellectual capital have positive effect to competitive advantage.

The limitation of this research was Environmental consciousness instrument in this research only consider Environmental policy as external dimension Environmental policy and regulation are important to force people to follow the regulation. Instead there is another internal dimension of Environmental consciousness that should be used for further research. The practical implication for Environmental consciousness is not only considers policy and regulation, but there is a need to concern with knowledge, attitudes and behavior as internal dimension of Environmental Consciousness. In addition, Coordination between Government, professional bodies and business organization is very important to set strategy in increasing the environmental consciousness to keep up with the sustainable development for the future. Next, considers adding dimension of Green Intellectual Capital with innovation and technology process. The social implication is that government and higher education need to join together to educate society to change their insight for considering the environment. Business organization will also helping in funding this education program. The Originality of this research was the separation between external and internal dimension of environmental consciousness. Environmental Leadership is also as a novelty variable should be introduced as a driver for increasing Environmental consciousness for future research.

Keywords: Environmental Consciousness, Environmental Leadership, Green Intellectual Capital, Competitive Advantage

# Introduction

The rapid technological development in the digital era requires companies to always follow the changes dynamically. They will strive to carry out the strategies they have set to achieve goals and gain competitive advantage. Competitive advantage is important for every company, since it determines the success or failure of a business.

As an effort to gain competitive advantage, companies need to utilize all of their resources optimally in accordance with their business concepts. In 1996, the OECD described the economy in the digital era as a knowledge based economy (Organization for Economic Co-operation and Development, 1996). The term refers to an economy that is directly based on the creation, distribution and use of information and knowledge. This is where the company began to realize the existence of intellectual capital which became a new force for the company in carrying out its business.

Stewart (1994) states that intellectual capital is all knowledge, information, technology, intellectual property rights, experience, competence, communication systems, relationships with consumers and brands that can create value for a company. Companies that realize the importance of intellectual capital will encourage and facilitate their employees to create innovation, as the key to gain competitive advantage. Investment in research and development as well as education and training is the key to creating and enriching the company's intellectual capital.

However, sophisticated technology is sometimes used inappropriately, causing negative impacts on the environment. The Indonesian government also establish regulations related to environmental issues such as Undang-Undang Republik Indonesia Nomor 32 Tahun 2009concerning Environmental Protection and Management. This is the responsibility of all companies, including those engaged in services

As we know, the purpose of a company is to earn profits in the interest of the owner or stockholder. However, companies must not only prioritize short-term goals, but also pay attention to the survival of the company as its long-term goal. One way of fulfilling the interests of stakeholders is by giving social responsibility. The triple bottom line concept, namely profit, people and planet shows that the company needs to pay attention to the surrounding environment, both social welfare and environmental sustainability.

Recognizing the importance of managing intellectual capital and environmental issues, Chen (2008) combines both of these in the concept of green intellectual capital. According to him, green intellectual capital is all intangible assets, knowledge, capabilities, relationships and other things related to environmental protection or green innovation, both at the individual and organizational level in a company. By adopting research (Bontis, 1999), Chen (2008) classifies green intellectual capital into 3 (three) elements, namely green human capital, green structural capital and green relational capital.

However, the support and commitment of leaders in the company is also believed to be the basis for the emergence of green intellectual capital in the company. The company's efforts in environmental management begin with the awareness of company leaders, because they are responsible for strategy and corporate culture.

## Literature Review

#### **Environmental Consciousness**

From a psychological point of view, environmental consciousness refers to certain psychological factors that are related to human tendencies to engage in pro-environmental behavior (Zelezny & Schultz, 2000). Meanwhile, Kollmuss & Agyeman (2002) define environmental consciousness as the level at which someone knows the impact of human actions on the environment.

Judge & Krishnan (1994) stated a traditional idea in which attention to environmental issues would negatively affect company performance, because of spending more money. In addition, many companies whose environmental obligations are only to avoid sanctions for regulations that require them, rather than consciously caring about environmental issues.

In the context of organization and business, Ahmed et al. (1998) states that environmental consciousness is a perception held by an organization or individual about environmental concepts, such as environmental protection, environmental policy, environmental management and environmentalism. Verbeke & Buysse (2003) argues that companies will have a pro-active strategy or environmental management if they realize the importance of meeting the interests of their stakeholders. Therefore, Huang & Kung (2011) states that the way companies perceive environmental problems depends on their stakeholders. Corporate perceptions of social and ethical responsibility are indicators of how companies perceive environmental issues.

Another research from Sharma and Bansal (2013) doing research on Environmental consciousness antecedent and behavioral outcome. Their insight are concerned with pro environmental behavior which was drive by the motivation to adopt the concept of green in business. This insight of green business will influence the attitude of a person and the result of acting green. Besides Pro environmental green behavior there is also reactive green behavior which come from environmental problem that should be solved .they also consider the environmental consciousness level from low level which may have little knowledge and as beginner of being green, until high level which have experienced of doing green and have much knowledge of green insight. According to them , there is internal determinant ( demographic, psychological and economical) which will influence of doing green as environmental consciousness. While the external determinant that influence environmental consciousness might

come from media, culture and family to become environmentally friendly. As a result the theory might be used will be social psychological research, (Pradeep Kautish and Sharma (2018) and theory of Planned behavior from Ajizen (1995)

## **Environmental Leadership**

According to Judge & Krishnan, (1994) leadership is a person's ability to influence other people so that they want to carry out work together in order to achieve the goals of a group or organization. While Mintzberg (2007) stated that there are 3 (three) main roles of a leader, those are interpersonal roles, informational roles and decisional roles.

As well as its relation to environmental issues, a leader who is personally aware and conscious of the importance of environmental management will encourage and control organizations or companies to support environmental management. This is what is called environmental leadership. Dechant et al. (1994) define environmental leadership as a dynamic process where individuals influence others and staffs to contribute to the achievement of environmental management and protection. In their research, Portugal &Yukl (1994) drew conclusions about the existence of 3 (three) behaviors relevant to environmental leadership, those are making clear and interesting visions related to environmental values, influencing people's perceptions of the environment, and acting symbolically. Those three skills should be integrated in the green strategy.

Avery and Harald Bergsteiner (2011) focus sustainable Leadership on humanistic which Leaders in a company will value people, staffs, society and concern with social well-being. It means that by valueing people will drive the company performance. Avery and Kantabutra (2013) continue the research of Avery and Bergsteiner (2011) by using the same instrument but doing research in Aisa, Thailand with conglomeration company and their research support the result of Avery and Bergsteiner (2011). They also found that trust, vision and staff engagement are very important in driving sustainability.

Kim and Stepchenkova (2017) divided Environmental Leadership into transactional and transformational which have different indicators. Transactional related to promotion and acknowledgment for being green. Instead Transformational having empower doing green for employee. The result showed that environmental transformational Leadership will support eco performance.

Gerard et al (2017) have different insight in Environmental Leadership. They concern with sustainable Leadership since to achieve sustainable development Goals for future. Good. Sustainable Leadership will help organization in building sustainable culture.

# **Green Intellectual Capital**

Chen (2008) agrees green intellectual capital as all intangible assets, knowledge, capabilities, and relationships related to environmental protection or green innovation, both at the individual and organizational level within the company. With the approval of Bontis (1999) research, Chen (2008) also classifies green intellectual capital into 3 (three) components:

- 1. Green human capital, all the knowledge, skills, abilities, experience, attitudes, competencies, creativity and commitment of employees towards environmental protection.
- 2. Green structural capital, all capability, commitment, knowledge management, information technology, database, managerial planning, operational processes, management philosophy, culture, image, patents, copyrights and company trademarks about green innovation or environmental protection.
- 3. Green relational capital, the entire interactive relationship between the company and its customers, suppliers, network members, and business partners about green innovation and corporate environmental management.

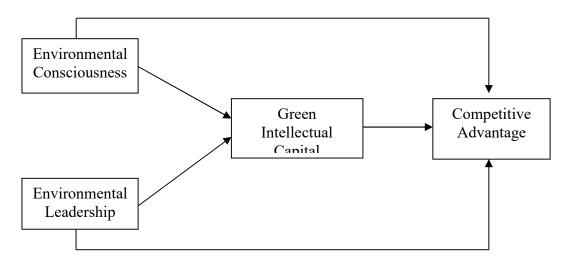
### **Competitive Advantage**

According to Porter (1985) Competitive advantage is the ability of a company to achieve greater economic benefits than its competitors in the same market and industry. In order to gain competitive advantage, companies will make competitive strategies in order to be able to gain a favorable position in the face of several forces that determine industrial competition.

Since pollution was discussed as problem, Porter and Linde (1995) give insight to companies to be environmentally friendly for reducing emissions and material resources. There is environmental standard for reduces waste water from Textile company and elimination of toxic product. This is a reactive environmentally friendly. But for proactive environmentally friendly behavior are much better in preventing and consider planning for reducing waste, water usage, energy saving. As a result, the innovation in producing green product become competitive advantage and unique compare to other company.

Using resource-based view, proactive environmentally friendly needs also skill and knowledge complement with technological consideration which is difficult and unique to imitate (Barney, 1991; Russo and Fouts, 1997)

## **Conceptual Framework**



# **Research Methodology Data dan Samples**

Broadly speaking, the object in this study is the influence of the environmental consciousness and environmental leadership as an independent variable on competitive advantage as the dependent variable. However, this study also examined the relationship between the independent variable and the dependent variable mediated by an intervening variable, namely green intellectual capital. The data used in this study are primary data, which was obtained through the distribution of questionnaires to a number of respondents by convenience sampling method. The questionnaire uses a 5-pointLikert scale and is made online through Google Forms and also distributed online through the Linked In application to a number of respondents, employees in a number of companies.

### **Research Variables and Measurement**

The dependent variable in this study is competitive advantage, measured by a number of question indicators adopted from Chen's (2008) and Huang and Kung (2011) research. The indicators define competitive advantage as the benefit of one company is more than the competitors in terms of the use of resources, skills, abilities and strategies that cannot be imitated by competitors, thus positioning it as the market leader.

The independent variables in this study are environmental consciousness and environmental leadership. Environmental Consciousness was adopted from Huang Kung (2011). But this study only used stakeholders view, while Huang and Kung (20110 also considers stockholders' view. The reason only for stakeholder is the company will consider green or pro environmentally friendly which create value for stakeholders. Those are social and environmental dimension from Triple bottom line. While stockholder view considers profit, which is economic profit dimension.

Meanwhile, the environmental leadership in this study is defined as a process where inspired by personal values, organizational leaders try to influence others at all levels of the organization to care about environmental issues (Dechant et al., 1994). The question indicator for measuring environmental leadership was adopted from Chen's (2011), which was related to the role of company leaders in building a culture and vision related to the environment, as well as working with other parties to overcome environmental problems.

This study also has an intervening variable, namely green intellectual capital. This study adopts question indicators from Huang and Kung (2011) research, where the indicator separates green intellectual capital into 3 (three) dimensions, namely green human capital, green structural capital and green relational capital, with a total number of questions as many as 18 questions.

# **Discussion and Analysis**

	Minimum	Maximum	Mean	Std. Deviation
Environmental Consciousness	2,25	5,00	4,60	0,48
Environmental Leadership	2,00	5,00	4,32	0,75
Green Human Capital	2,00	5,00	4,15	0,81
Green Structural Capital	1,00	5,00	4,00	0,90
Green Relational Capital	2,00	5,00	4,13	0,83
Competitive Advantage	2,22	5,00	4,45	0,66

# **Table-1 Descriptive Statistics**

Source: Data analyzed, 2019

**From table** -1 the minimum of each variable is not achieved above 3, especially for Green Structural Capital is 1 as strongly disagree Other variable minimum are 2 and a little above 2. It means that there is still respondents answer disagree. This result as our concern to the questionnaires need to be improved.

From table -2 this research variable is reliable and valid. The correlation among variable were also strong, since the Adj R2 over 0.5 means more than 50%

# Table 2. Reliability, Validity and Adj R2

Variables	Cronbach's Alpha	Adj R2	AVE
Competitive Advantage	0,933	0.613	0,652
Environmental Consciousness	0,863		0,595
Environmental Leadership	0,928		0,822
Green Human Capital	0,942	0.580	0,813
Green Relational Capital	0,961	0.592	0,864
Green Structural Capital	0,962	0.517	0,789

Source: Data analyzed, 2019

# Table 3: Influence of Green Intellectual Capital to Competitive Advantage

Variable	Original Sample	t statistic	<i>p</i> -value
$\operatorname{GIC} \to \operatorname{CA}$	0,463	4,458	0,000
$GHC \rightarrow CA$	0,222	1,639	0,102
$GSC \rightarrow CA$	0,108	0,788	0,431
$GRC \rightarrow CA$	0,167	1,156	0,248

Source: Data analyzed, 2019

From table-3 GIC will have positive influence to Competitive advantage as a unity. The influence is moderated strong since the path coefficient is 0.463. While GIC split into three dimensions, each dimension cannot influence Competitive advantage. It means that Green HC, Green Structural capital and green Relational capital cannot influence CA separately. The second reason was Competitive instruments used in this study are not consider green in each indicator. Future research we need to consider Green Competitive advantage so that will be influence by green Intellectual capital (Chen,2011). The third reason was Indonesia is developing country which is at the early stage of considering to be green. The implication is there is a need of collaboration between Government as setting green regulation, businessman who will lead the company being green, (Environmental Leader) and educators for building future generation.

Hypotheses	Path	Path Coefficient	t-value	p-value
H1	Environmental consciousness $\rightarrow$ Competitive advantage	0,268	2,459	0,014
H2	Environmental leadership $\rightarrow$ Competitive advantage	0,164	1,189	0,235
H3a	Green human capital $\rightarrow$ Competitive advantage	0,222	1,639	0,102
H3b	Green structural capital $\rightarrow$ Competitive advantage	0,108	0,788	0,431
НЗс	Green relational capital $\rightarrow$ Competitive advantage	0,167	1,156	0,248
H4a	Environmental consciousness $\rightarrow$ Green human capital $\rightarrow$ Competitive advantage	0,006	0,302	0,763
H4b	Environmental consciousness $\rightarrow$ Green structural capital $\rightarrow$ Competitive advantage	0,006	0,320	0,749
H4c	Environmental consciousness $\rightarrow$ Green relational capital $\rightarrow$ Competitive advantage	0,010	0,432	0,666
H5a	Environmental leadership $\rightarrow$ Green human capital $\rightarrow$ Competitive advantage	0,166	1,623	0,105
H5b	Environmental leadership $\rightarrow$ Green structural capital $\rightarrow$ Competitive advantage	0,117	1,112	0,267
Н5с	Environmental leadership $\rightarrow$ Green relational capital $\rightarrow$ Competitive advantage	0,077	0,794	0,427

#### Table - 4. PLS SEM Analysis

Source: Data analyzed, 2019

From table-4 all variables and dimension, the accepted relationship just only Environmental consciousness to Competitive advantage. While others are refused and not significant. The reason was Environmental Leadership as person being green but the competitive advantage instrument was not being green. this is contrary and not consistent with Chen (2011; Huang and Kung (2011). The second reason was some of the respondent are junior staff which has little knowledge and experience for evaluation of being green behavior. Third, some of the respondents are working at service company which has little experience or insight related to environmental activities. This is the limitation of this researchand future research was consider another green competitive advantage from Huang and Kung(2011) and Chen (2011), we should also consider the respondents who will fill in the questionnaires.

Path		Path coefficient	t-value	p-value
Environmental consciousness $\rightarrow$ Green intellectual capital $\rightarrow$	Total Indirect effects	0,022	0,521	0,602
Competitive advantage	Total effects	0,290	2,612	0,009
Environmental leadership → Green intellectual capital → Competitive advantage	Total Indirect effects	0,361	4,143	0,000
	Total effects	0,525	4,704	0,000

### Table - 5. Mediation Analysis

Source: data Analyzed, 2019

The mediation effect between environmental Leadership and competitive advantage is full mediation since the p value are 0.000 and the path coefficient is 0.361 with Green Intellectual Capital. This result supported the findings of Chen (2011) and Huang and Kung (2011). While there is no mediating effect of green Intellectual capital between Environmental Consciousness to Competitive Advantage. This result was contrary and not supported the result findings of Chen (2011) and Huang and Kung (2011)

#### Conclusion

Based on the results and discussion, it can be concluded that green intellectual capital is able to become a full mediator of the relationship between environmental leadership and competitive advantage. In other words, environmental leadership has a positive effect on competitive advantage indirectly with green intellectual capital as an intervening variable. This is because research results show that environmental leadership does not directly influence competitive advantage. However, what needs to be considered is that the three dimensions of green intellectual capital must support each other, because individually, each dimension is unable to mediate the relationship. This also relates to the results of research that shows that in unity, green intellectual capital has an effect on competitive advantage. While every dimension has no effect on competitive advantage.

## Limitations

This study still has limitations including the following:

- 1. Most of the respondents are employees with a working period of <5 years and have positions or staff positions in their company, where they do not yet have sufficient knowledge about the environmental consciousness, environmental leadership, and green intellectual capital owned by the company where they work.
- 2. Most respondents are employees who work in service companies (which are dominated by the financial sector), where the company's operational activities are not directly related to environmental management.
- 3. Online distribution of questionnaires through Google Forms and Linked In applications has limitations because the author cannot ascertain the correctness of the respondent's data information.
- 4. Collecting data through questionnaires using a 1-5 Likert scale, which risks triggering the answers of respondents who are hesitant or neutral.
- 5. Some statements in the questionnaire that are used as indicators of independent variables that are unobserved are less able to represent the independent variable, so this also affects the validity of the indicator.

## Implications

Based on the conclusions and limitations of the research, the following are the implications that can be conveyed to several parties:

1. For companies, especially company leaders or management, it is necessary to realize the importance of their role in encouraging environmentalism in the company. Companies also need to be aware of the importance of green intellectual capital that is able to have a positive impact on the company, which is expected to increase its competitive advantage.

2. For parties who seek to preserve the environment, it is necessary to increase supervision of the company's actions in providing social responsibility, especially in terms of environmental sustainability, both manufacturing and service companies. This can also be taken into consideration in preparing policies related to environmental sustainability

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