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Evaluating Information Credibility Toward Green Marketing in Indonesia

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Abstract

This study aims to identify variables, which have relationship to the information credibility toward brand trust. Other than that, this study also proposes a system dynamics approach method, where the time to achieve different credible information can be modeled efficiently and by using variable-oriented simulation methods. Data, which are used for testing, are derived from 400 questionnaires. Data for SEM are collected by using questionnaire and are processed using AMOS software to identify the result whether it is proper to determine the proper variables and the indicators, which will be processed in the simulation using Powersim. The result shows that, from six variables proposed, five are significant variables that support the information credibility. The value of information credibility has fluctuated in 10 years. The important aspect in business activity is a business strategy that incorporates marketing activities. Many companies are adopting green marketing practice to achieve a better business performance, so that information credibility factor is needed. Over the past few years, numerous industries in Indonesia have increased awareness toward green movement. Some companies apply the whole process of creating green products, while others only do so partially, but this is a good approach to green business development in Indonesia nonetheless.

Keywords: Green Marketing, Property Industry, Information Credibility, Structural Equation Modeling, System Dynamics

JEL Classification Code: D23, L2

1. Introduction

When running a business, a company needs various important elements to achieve the success of the business such as capital, availability of materials and tools, human resources, or quality products. In addition, there is one important thing that cannot be separated from business

activities, namely, business strategy. Based on the location of a company and on consideration of its resources, a company must be able to adopt a business strategy that involves in a growing environment and market (Dangelico & Vocellelli, 2017). This may occur so that the survival of the company is assured.

Inside business strategy, marketing activity is a crucial element. Marketing can be defined as the activity, which identifies and fulfills the need of human and social needs (Kotler & Keller, 2012). This is essential because, when a company wants to release a product or service, it has to make sure that the product or service should be based on the demand from customers. In marketing, market sensing is a key aspect of outside marketing capabilities. Through market sensing, a company has the possibility to detect and anticipate changes in market conditions, and identify the current lack of ability (Lacznik & Murphy, 2018)

In Indonesia, concern and awareness of the environment and health has changed the way of life and lifestyle of human and business actors. This is shown in the change of business pattern, which started to direct the business with the approach of business activity based on environmental

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sustainability. Environmental or green marketing is a new focus in business, a strategic marketing approach in an effort to gain the opportunity to reach a market that cares about the environment and health. One of the environmental activities of the company is conducting green marketing activity. One of the ways to minimize the negative environmental impact of business activities is to promote an environmentally-friendly and green purchase behavior (Liobikiene, Grincevičienė, & Bernatoniene, 2016). In Indonesia, the demand for real estate is growing over the coming years. Claims are that there has been an average annual increase of 9.67% in the years 2010-2015. A global phenomenon in business also has shown real estate companies are shifting toward green movement and sustainability. Sixty-four percent of Indonesian consumers is said to be prepared to spend extra for products and services that come from companies that have eco-friendly practices.

Green marketing is one type of marketing used by businesses in marketing their products or services. Green marketing is usually carried out because of the awareness of businesses and increased awareness of customers in contributing to environmental sustainability. Other than that, when green marketing becoming an important tools for sustainable business strategic, the company also uses green marketing in order to achieve a better business performance (Groening, Sarkis, & Zhu, 2018). In green marketing, there is also an important aspect to be concerned with, which called green marketing function. Through green marketing function, the company should be able to build a corporate image because customers will assume corporate image as an overall identity related to the product quality, and responsibility of the company (Ko, Hwang, & Kim, 2013). Moreover, the corporate image also can build the brand trust from the perspective of customers.

According to Dangelico and Vocalelli (2017), green marketing is divided into internal circle and external circle. In the internal circle, green marketing strategy includes four main steps, which are segmentation, targeting, positioning, and differentiation. In the external circle, green marketing mix has four main elements, namely, product, price, place, and promotion. This research will focus on green marketing mix especially in conducting promotion. In a green marketing mix, the activity inside marketing is based on the concept of environmental friendliness. The marketing activities of a company can be disturbed by non-credible information. It can cause the loss of company profit because of decreasing customer satisfaction, and also the unexpected condition based on the reality.

Research related to the topic of green marketing has been conducted (Dangelico & Vocalelli, 2017). This study is related to the green marketing definitions and their evolution over time, the different steps in building the strategy of green marketing, and the characteristics of green marketing mix. Li and Suh, 2015 examined what factors can

influence individual's perceived information credibility on social media platforms in order to fill the gap of limitation in understanding the determinants of online information assessment. Shah and Ravana (2014) discuss the evaluation of information credibility of digital content using hybrid approach. Verifying the information without any knowledge is quite difficult for the web user and it is also the same for the computer user because the web structure does not support semantics. Kriscautzky and Ferreiro (2014) discuss the credibility of information on the Internet with criteria used by Mexican students. Kang and Namkung (2019) study the importance of information quality and source credibility in customers' evaluation toward food O2O commerce. In this research, customer's decision-making, when purchasing food product through O2O commerce, was examined by using the elaboration likelihood model (ELM) used to identify the process of persuasive marketing communication, and the technology acceptance model (TAM).

Entrepreneurs are now internationalizing their operations, and many more are likely to internationalize in the future. Yet, most small firms expand in an opportunistic fashion, because entrepreneurs seldom have the time and resources to gather reliable data about opportunities in foreign countries (Dana, 1999). Indian literate and urban consumer is getting more aware about the merits of green products. But it is still a new concept for the masses. The consumer needs to be educated and made aware of the environmental threats. The new green movements need to reach the masses and that will take a lot of time and effort. Through India's ayurvedic heritage, Indian consumers do appreciate the importance of using natural and herbal beauty products. Indian consumer is exposed to healthy lifestyles such as yoga and natural food consumption. In those aspects, the consumer is already aware and will be inclined to accept green products (Singh & Neeru, 2015).

Donaldson (2005), in a study conducted in the UK, initially concluded that in general the ecological attitude of consumers changed positively. This study reported the strong faith of consumers in the known commercial brands and in the feeble behaviour referring to the "green" claims, which was the main cause behind the consuming failure to interpret their concerns beyond the environment in their behavior. Pandey (2019), had an article in *The Economic Times*, Mumbai, which stated that Green Ventures India is a subsidiary of New York-based asset management firm Green Ventures International. The latter recently announced a \$300 million India-focused fund aimed at renewable energy products and supporting trading in carbon credits.

Thus, this study will focus on green marketing function of a company and the researcher would like to identify variables, which have relationship to the information credibility toward brand trust. It is a condition about how exogenous variables

(information credibility) affect endogenous variable (brand trust). This study also proposes a system dynamics approach method, where the time to process different credible information can be modeled efficiently and simulated by using variable-oriented simulation methods.

2. Literature Review and Hypothesis Development

2.1. Marketing

Nowadays, marketing becoming a crucial activity in society, which involves some business actors. The marketing concept is stated as social discipline linked to exchange relationship between social agents, individuals, groups, and organizations. Marketing activity also builds and offers a comprehensive value to customers, consumers, company, and the overall society (Télez, 2017). The effective marketing activity is really dependent on human psychology. In the past, human psychology has been influenced by marketers, like they influence the temporal discounting function through trial and error, time-consuming market testing, through blind luck, or through folk intuition (Buss & Folley, 2019). Many marketers have designed various strategies to face the human psychology like today; the customers prefer to use environmentally-friendly product, so marketers carried out green marketing as their strategy.

2.2. Green Marketing

Environment and economy share a complex connection that diverts the level of economic development. In developed economies, the environment usually degrades due to increased production scale to fulfill higher demand of material commodity (Vu & Huang, 2020). Economic development should open active participation in productive activities for all members of society who are eligible to participate in the economic process. The productive economic activity contains many positive impacts, including adding real income to the majority of the population (Basuki et al., 2020). The ecology crisis happens when there is profit maximization with extreme effort, included in ethical and unethical ways, such as environmental harms (Kurnia et al., 2020). Green marketing stated as holistic management process used to be responsible to identify, anticipate, and satisfy the customer and society requirements, through beneficial and sustainability ways (Papadas, Avlonitis, Carrigan, & Piha, 2018). The understanding of green purchasing behavior comes because of environmental, scientific, communication advances such as Internet and social media, and the increase of consumer awareness and concern with environmental issues. But, in a marketing green

products and service, not all consumers will pay more for an environmentally superior product. Consumer characteristics that may inhibit the adoption of green products include: 1) prioritization of self-interest, 2) motivation by relative status (vs. absolute status), 3) unconscious social imitation, 4) focus on the short-term vs. long-term, and 5) low regard for distal or intangible issues. From those statements, green marketing faces the challenge in creating and marketing innovative green products and services combined to persuade the consumer to consider several stakeholders (Groening, Sarkis, & Zhu, 2018). Kumar (2016) reviewed the literature about the state of green marketing research over 25 years (1990-2014). Green marketing is classified into four groups: eco-orientation, green marketing strategy, green marketing functions, and green marketing consequence.

Green marketing is a crucial aspect in today's era of globalization to balance our ecology system. It is a concept to save the environment for future generation, but this concept is still in the nascent stage in Indian companies. Now this is the right time to implement green marketing globally. It will come with drastic change in the world of business only if all nations will make strict rules because green marketing is essential to save the world from various hazardous activities impacting our environment. From the business point of view, a clever marketer is one who not only convinces the consumer, but also involves the consumer in marketing his product. Green marketing should not be considered as just one more approach to marketing, but has to be pursued with much greater vigor, as it has an environmental and social dimension to it (Traymbak & Aggarwal, 2019).

2.3. Green Marketing Function

Green marketing has several functions, which cannot be separated from the activity of a company. It can build the image of company based on three factors, which are social responsibility, product image, and the reputation of a company (Mallek & Alipour, 2016). The important role in building image of company is a mediator of green marketing product or reliability delivered by company.

2.4. Brand Trust

A company brand is important as a tool to be introduced to the customer or becoming an identity for the company itself. Brand trust can be used as parameter for companies in determining the success of marketing the products or services. Brand trust can be explained as the security feeling of customers in brand interaction based on the belief that the brand can be reliable and responsible for the customer's interests and welfare (Upamanyu, Gulati, & Mathur, 2014). There are five supporting elements of brand trust related

to the green marketing, which are eco-labeling (Atkinson & Rosenthal, 2013), information credibility (Lee, Kim, & Chan-Olmsted (2011), communication tools (Sadek, Redding, & Tantawi, 2015), customer engagement (So, King, Sparks, & Wang, 2014), and green purchase intention (Zhao, Huang, & Su, 2019).

2.5. Information Credibility

Information has an important role in people's life. People and information are two things that cannot be separated because people will always seek information. Information credibility becomes an important aspect of individual's information evaluation. In brief, information credibility is meaningful for an individual's subjective evaluation of the accuracy of the obtained information (Zhu, Xie, & Gan, 2011).

2.6. Previous Research

Credible sources can determine the perception of people. When a source of information is not based on reality, or it cannot be proven by the available evidence, it will make people ask about authenticity of that information. A credible source will foster someone's trust in a piece of information. In other words, the reliability of information is often evaluated by people because they will pursue certain information if they consider a source is credible (Chakraborty, 2019). After people receive information from a source, they will act on that information. Usually, credible source will have an impact on people's behavior, attitudes and opinion. In the marketing area, brand and its product tend to have more positive response if they come from credible source (Pornpitakan, 2004). If the credibility of source is high, and the trust toward the reviews are also high, then it will affecting the purchase intention of customers (Kim, Choe, & Petrick, 2018).

Endorsement plays a role in introducing a brand to prospective customers through other people; usually it is done through celebrities, but sometimes endorsement comes through the general society. Marketers are better to understand the meaning of their brand for their targeted customers and the belief of customer through celebrities as a potential supporter (Escalas & Bettman, 2015). When individuals want to make their own decision to act on information, they will tend to consider other's behavior or idea. Therefore, individual's assessment of credibility of information may be affected by other's opinion (Yin, Yongqiang, Fang, & Lim, 2018).

Word of mouth plays an important role in customer belief in a company. The information coming from outside can be the parameter for customers to decide the purchase activity. Information about product also can be found on comment

delivered by other customers, it can be positive or negative. The negative comment can potentially decrease customer brand trust (Saavedra, Josep, & Llonch, 2015). Negative comment comes from negative perception of customer about the thing related to the company. When a customer is brand expert, have a product orientation, and has an exclusive brand relationship based on salesperson brand information, there will be a chance in generating negative perception of customer (Merk & Michel, 2019).

Website interactivity allows visitors to control any information which is accessed and bring through communication in two-way to others or website host (Nan, 2013). Website interactivity used to facilitate users, website sponsor and member to do agreement or engagement (Liu & L, 2002). Interactivity in certain period of time will lead to degree of involvement and website experience (Kim & Stout, 2010) then it will lead to interactivity attitudes and trust toward website, website sponsor and impacted to its featured product (Chena et al., 2013). So, sponsors have opportunity to build their brand trust through shared information.

According to Kundeliene and Leitoniene (2015), information transparency can encourage reliability, reliance on company, can built good relationship, and prevent the alienation between company and its stakeholders. People will consider the information from credible media when they perceive a high level transparency of the media (Li & Suh, 2015). Real estate markets play an essential role in the economic development of both developed and developing countries. Investment decisions in private real estate demand the consideration of several qualitative and quantitative criteria (Nguyen et al., 2020). Argument strength in a marketing activity can be one of crucial points to show whether the marketing activity is good enough. Argument strength stated as informational factor from central route, which can affect the attitude of information receiver toward the information (Li & Suh, 2015). Referring to the description of the above research, the following hypotheses are formulated:

- H₁: Credible source has an influence on brand trust*
- H₂: Social endorsement has an influence on brand trust*
- H₃: Negative comment has an influence on brand trust*
- H₄: Website interactivity has an influence on brand trust*
- H₅: Medium transparency has an influence on brand trust*
- H₆: Argument strength has an influence on brand trust*

3. Research Methods

3.1. Data Collection Method

This research was conducted in several companies in *Real Estate Indonesia* (Yogyakarta), which is active in

property field. This place or company was chosen because of their intention to persuade the customer to choose their environmentally-friendly products. The primary data of this study were obtained from questionnaires filled out by respondents from customers of companies at REI Indonesia (Yogyakarta). The sample totals 400 questionnaires. Data for SEM are collected by using questionnaires and will be processed using AMOS software to evaluate whether the results can lead to proper variables and indicators, which will be processed in the simulation using Powersim. A 5-point Likert scale is used. The structural equation model is based on causality relationships, where a variable change is assumed to result in changes in other variables. The strong causality relationship between the two variables assumed by the researcher does not lie in the analytical method he chose, but lies in theoretical justification to support the analysis

After the proper data are identified, there will be subjected to an expert judgment method by three experts to identify the score of each indicator and variable. The data from expert judgment will be processed in Powersim software to evaluate the value of information credibility for each year.

System dynamics is widely used as a method for prediction and make new policies related to prediction results. System dynamics can produce better predictions in the short, medium, and long-term trends rather than the directive statistical model on a better decision. System dynamics usually is used as an approach to policy analysis and design. It applies to dynamic problems arising in different complex systems (which are characterized by interdependence, mutual interaction, information feedback, and circular causality) (Barati, Azadi, & Scheffran, 2019).

3.2. Conceptual Model

The following framework shows the basis for developing the research findings and recommendations for the study. The framework explains the information credibility as independent variables that influenced by several factors from informational credibility itself. The conceptual model is shown in Figure 1.

Research facility is important, therefore the concept of research model was made in order to obtain the elements to be studied. Based on the various studies, the conceptual research model can be designed. The conceptual model is the brand loyalty of green product, and this research will be focus on information credibility toward brand loyalty to build a conceptual model. There are several variables to be considered by the customer in building the brand loyalty. Brand communication is the main integrative element in managing brand relationships with customers, causes customers' evaluation of brand, and creates

attitude toward the brand in customer's mind (Sahin et al., 2012). Aspects justification in SEM is being developed in theory models. This theory-based model consists of several variables related to information credibility and the relationship between each variable. Definition of credible source is credible source are about perceived expertise and trustworthiness of the source, also the currency of information delivered. Social endorsement is meant to be an advertisement from a company through someone who potentially suggests information to targeted customer. Negative comment is meant to come from perception of people generally. This is usually based on experience and relationship between customers and company. Website interactivity is a feature of websites that allow participation by visitors such that they can actively control what information to access and and/or engage in two-way communication with the website host or other visitors. Variable medium transparency is meant to be independent medium to use and transparent information to be shared. Variable argument strength is meant to validate and complete information and logic opinion to be shared.

4. Results

4.1. Data Collecting

Data were collecting by sending online questionnaires using Google Forms to Real Estate Indonesia (REI) Yogyakarta branch customers. The questionnaire consisted of 16 statements. The number of respondents is 400, customers who had bought property from REI Yogyakarta branch. Based on descriptive statistics, the number of male respondents is 227 (56.75%), while the number of female respondents is 173 (43.25%). The number of respondents under 20 years old is 0%, 20-25 years old is 33 (8.25%), 26-30 years old is 73 (18.25%), 31-35 years old is 116 (29%), and above 35 years old is 178 (44.5%). The number of respondents who are entrepreneur is 17 (4.25%), private employees is 197 (49.25%), government employees is 98 (24.5%), and number of respondents with occupation as labor is 88 (22%).

4.2. Data Processing In Structural Equation Modeling

The path diagram, which shows the relationship between variables and indicators, is build based on the theories that has been developed. Each observed variable constructed is described in an oval shape and it represented in rectangle or square, while the arrow describes the relationship between the constructs.

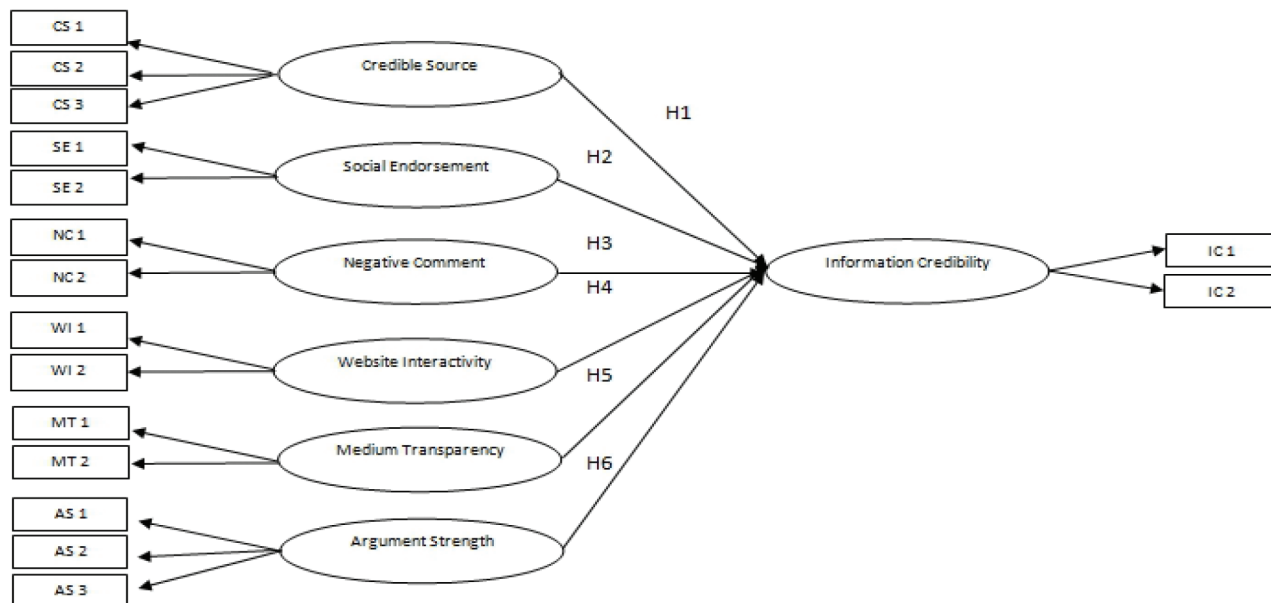


Figure 1: Conceptual Model

4.2.1. Model Input and Estimation

Input matrix and estimation techniques SEM selection uses data input, which only uses matrix/covariance or correlation matrix for the overall estimation. Covariance matrices are used because they have advantages in presenting valid comparisons between different populations or different samples and cannot be presented by correlation. The minimum sample sizes are 300 respondents for the technique of maximum likelihood estimation, while the minimum sample size is five respondents per parameter estimate. This research uses 400 datasets as the sample size, which means that it has exceeded the minimum size of 300. The number of indicators in this study is 16, if the minimum requirement is five respondents per parameter, the data needed is only 80 sample sizes. Therefore, the research’s sample size qualifies for further analysis.

4.2.2. Identification

Based on the output of data analysis below, the results lead to the conclusion that the model built is over-identified. With the number of samples $n = 400$, the total number of distinct samples is 136, while the number of parameters to be estimated is 53. From these results, the degree of freedom produced is $136-53$, it means $83 > 0$ that the model is over identified, so that the model can be processed.

4.2.3. Model Evaluation

Model evaluation is formulated if the model already met the criteria of goodness of fit, using the AMOS software.

a. Feasibility Test of Measurement Model

The examination of reliability and validity in measurement model has the objective to know the consistency and accuracy of the data collected from the indicators. Feasibility tests on the measurement model aimed to see whether a variable has been correctly measured by each indicator. A variable can be said to be truly measured by each indicator if it has a variance extracted value (AVE) ≥ 0.5 and construct reliability (CR) ≥ 0.7 . Based on the results of the research, information is obtained that each indicator measuring variable n has a significance level of ≤ 0.05 , it can be said that the indicator is valid as a variable measure, and the construct reliability (CR) value is ≥ 0.7 . The conclusion is that the measuring instrument for each variable is reliable.

b. Assumption Model Test

1) Normality Assumption

Based on the calculation result, it can be concluded that some indicators for testing normality univariate and multivariate are normally distributed because the value of the critical ratio (cr) for kurtosis and skewness is within ± 2.58 . Some data are found that are not normally distributed in the SE2 and CS1 indicator for the univariate, whereas for kurtosis, all distributions are normal because they are in the range of ± 2.58 .

2) Outlier Assumption

Based on the output in AMOS, there are 16 indicators, therefore the CHIINV value is 39.2523. The result is four observations or cases that are categorized as outliers because the value is greater than the value of CHIINV, 39.2523. But this case does not need to

be issued, according to Waluyo (2016), who stated that the data will still be included in the subsequent analysis if there are no specific reasons for issuing the case.

c. Feasibility Test Structural Model

The objective of the structural feasibility test model is to identify the relationship between variables that have been defined in the construction of the model, whether the relationship between variables has a significant effect, and how much relationship there is between these variables. Structural model testing is also often referred as a hypothesis test. To assess the significance of a relationship between variables, researchers can see the p value from the calculation of the regression value of the relationship.

From the table of goodness of fit indices above, out of the nine criteria offered there six values, which match the criteria, namely, GFI, RMSEA, RMR, IFI, CFI, and NFI. Others are in the marginal fit category whose results are close to the predetermined conditions. The use of four to five criteria for goodness of fit is considered to be sufficient to assess the feasibility of a model, provided that each group of goodness of fit are absolute fit indices and incremental fit indices represented. From the statement above it can be concluded that the overall model can be accepted.

4.2.4. Model Interpretation

The next step in modeling structural equations after the model is already in good condition is to interpret, and vice versa, if it is not good then it is necessary to modify the model. The main purpose of modifying the model is to improve the fit of a model, and is done by removing or adding relationships. To give an interpretation of whether the theory-based model tested can be accepted directly or needs

modification, the researcher must direct his attention to the predictive power of the model by observing the number of residuals. If the standardized residual covariance matrix has a value outside the ring $-2.58 \leq \text{standardized residual} \leq 2.58$ – then the estimated model needs to be modified. Based on the result of output it shows that there is no standard covariance residual matrix that has a value outside the ring $-2.58 \leq \text{standard residual} \leq 2.58$, so the model does not need to be modified.

4.2.5. Hypothesis Testing

After all the steps in SEM are carried out, then the next step is hypothesis testing. From the estimation result of the regression weight analysis, it can be concluded that credible source, social endorsement, negative comment, medium transparency, and argument strength have a significant effect on information credibility because the critical ratio is more than 1.96 and probability less than 0.05. The website interactivity variable has no significant effect on brand trust because the critical ratio is less than 1.96 and probability is more than 0.05. The results are shown in Table 1.

4.2.6. Model Recommendation

After the model already constructed is identified in the explanation, then there is a recommended model that will represent the better model after eliminating the variable, which has the value that does not match with the standard value. The recommended model is shown in Figure 2.

Based on the figure above it can be seen that the variables used in the new model are credible source, social endorsement, negative comment, medium transparency, and argument strength. This model is sound because the result value of every variable is significant.

Table 1: Estimation Results

			Estimate	S.E.	C.R.	P	Label
Information_ Credibility	<---	Credible_ Source	-.208	.056	-3.737	***	par_10
Information_ Credibility	<---	Social_ Endorsement	-.217	.059	-3.662	***	par_11
Information_ Credibility	<---	Negative_ Comment	.281	.067	4.191	***	par_12
Information_ Credibility	<---	Website_ Interactivity	.005	.059	.079	.937	par_13
Information_ Credibility	<---	Medium_ Transparency	.223	.055	4.033	***	par_14
Information_ Credibility	<---	Argument_ Strength	.423	.068	6.198	***	par_15

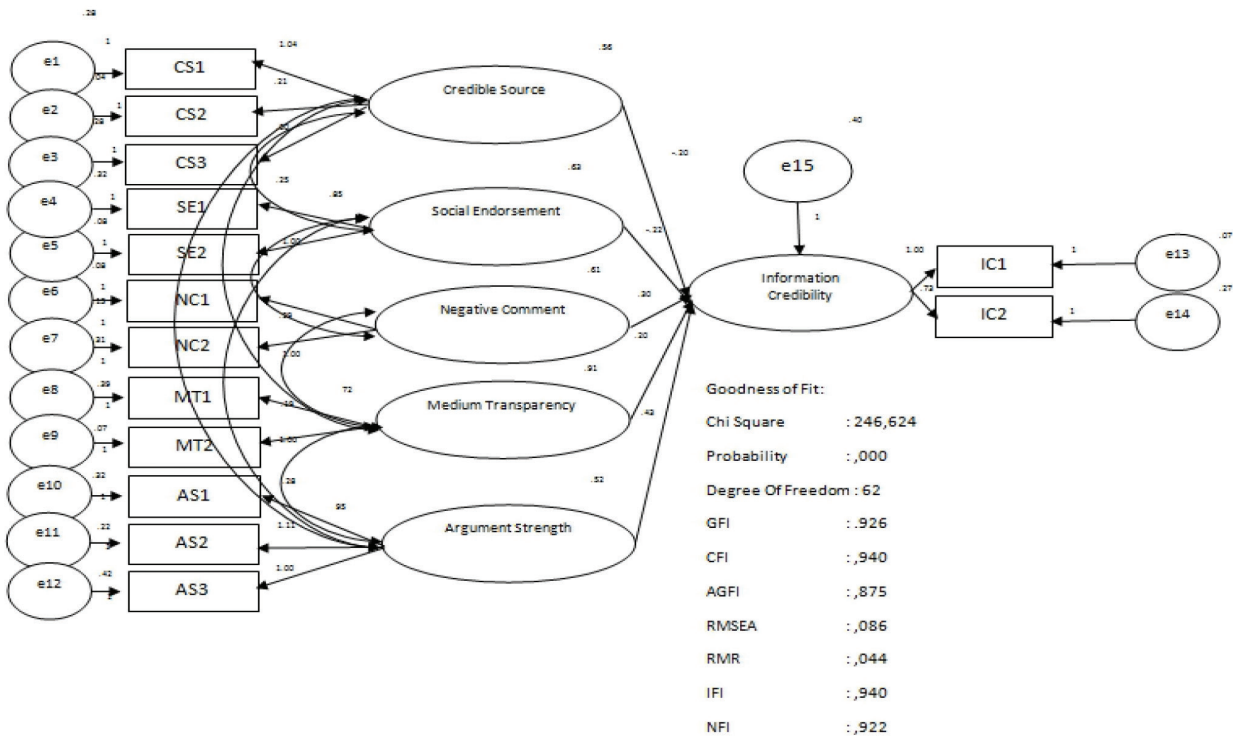


Figure 2: Recommended Model

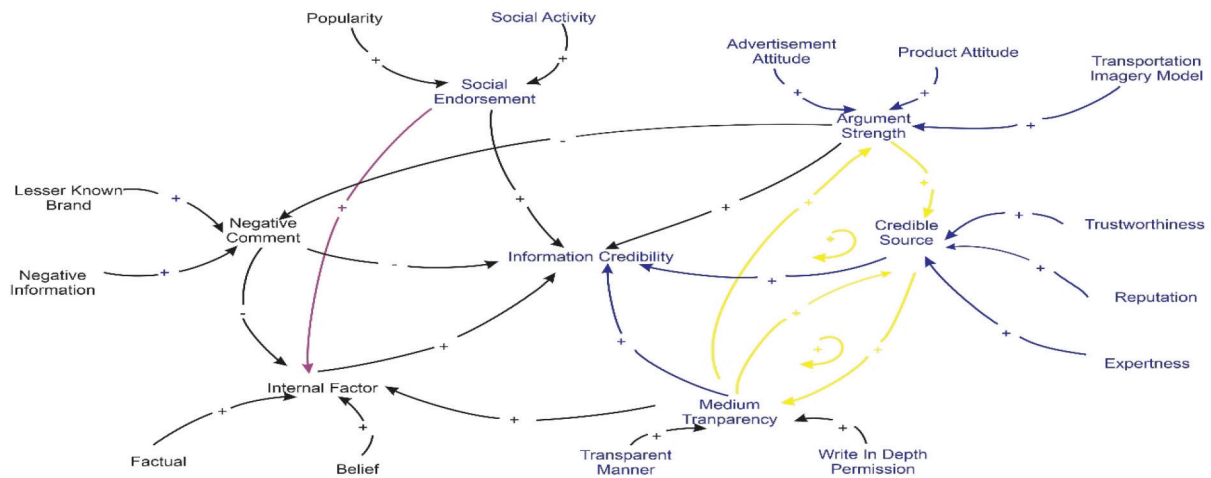


Figure 3: Causal Loop Diagram

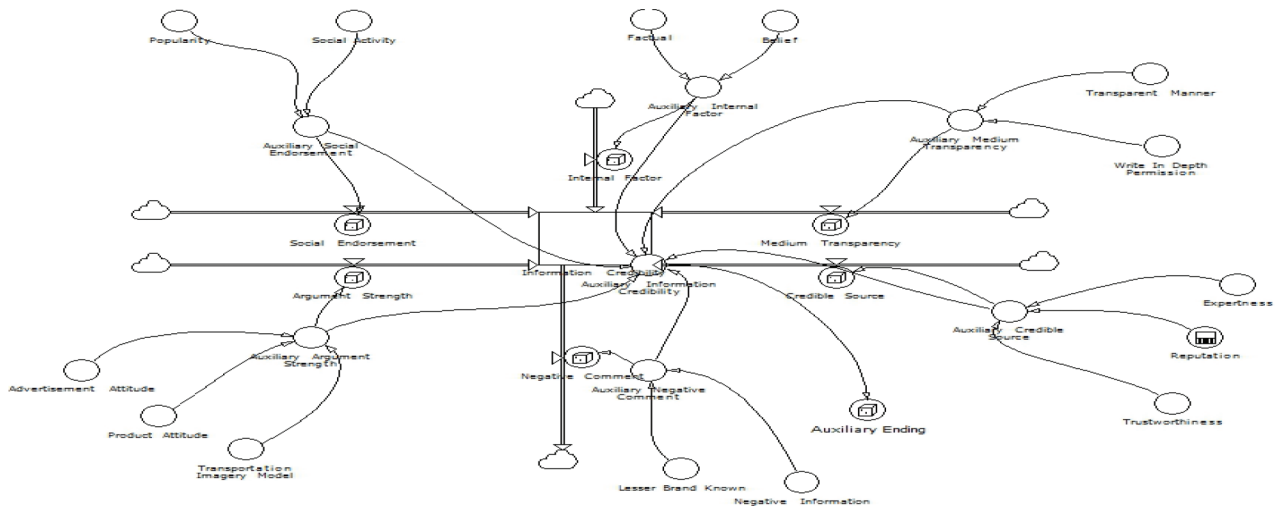


Figure 4: Flow Diagram Model

4.3. Data Processing For Simulation

4.3.1. Causal Loop Diagram

The causal loop diagram in this research will show the relationship among all of the variables and the indicator based on the main topic. The result of causal loop diagram is shown in Figure 3.

From the figure, it can be explained that (+) sign states that the relation is directly proportional from one variable to another variable or from one indicator to another variable or indicator; it means that when a variable decrease/increase then the other also decrease/increase. The (-) sign explained that the relation is inversely proportional, meaning if a variable increases, then the other will be decrease, and vice versa. In the model that has been constructed, two loops are found. The first one is from variables of credible source and medium transparency, and the second one is from variables of argument strength, credible source, and medium transparency.

4.3.2. Flow Diagram

Flow diagram of the model shown in Figure 4.

4.3.3. Input Data

The data of variable and indicator scoring have been produced by expert judgment method. Based on the explanation in the table above, from all criteria there are only three values that match the criteria, which are GFI,

RMR and RMSEA from absolute fit indices. Some others are in the marginal fit category whose results are close to the predetermined conditions. From the statement above it can be concluded that the overall model can be accepted.

4.3.4. Simulation Result

The overall result of simulation was obtained after running the Powersim software. The simulation was carried out over ten years. The graphic of simulation is shown in Figure 5.

5. Discussion

5.1. The Influence of Credible Source Toward Information Credibility

In the variable of credible source, three indicators were used, which are CS1, CS2, and CS3. Based on the output, after running the model in AMOS software and calculating the value in Microsoft Excel, the value of CR (construct reliability) for this variable is 0.909253 and the value for AVE (variance extracted value) is 0.770938. From those results, it can be concluded that the variable is reliable and valid. The hypothesis testing result shows that in credible source variable the value of CR is 3.737, it means that the value is higher than defined critical value (1.96) and the significant value (p value) is *** or expressed if the value is less than 0.05, so the hypothesis that credible source has an influence toward information credibility is accepted.

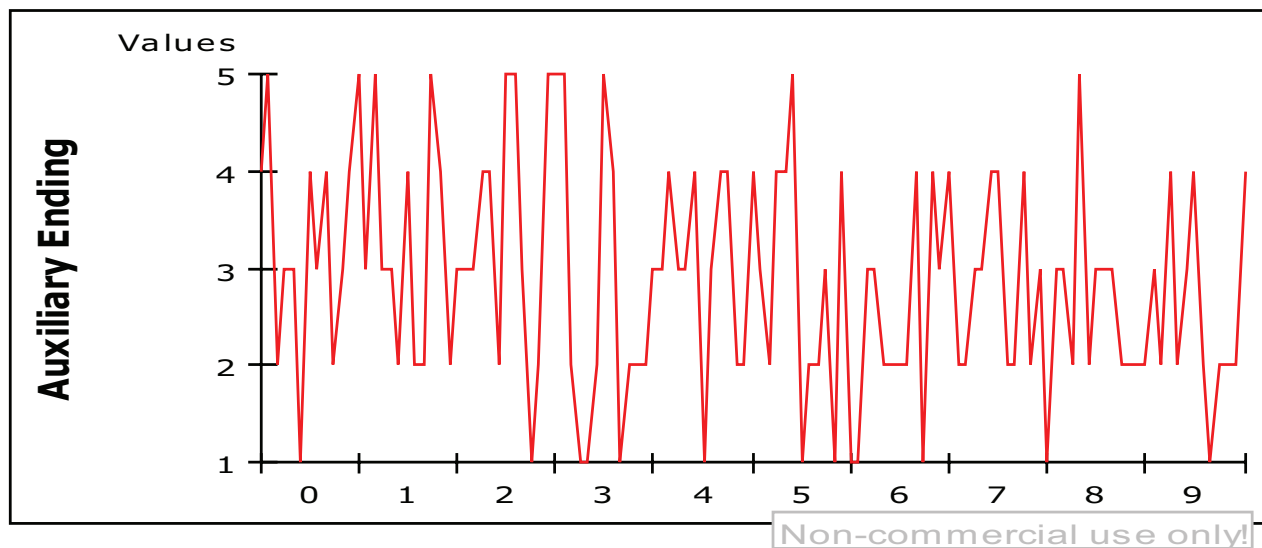


Figure 5: Graphic of simulation within 10 years

5.2. The Influence of Social Endorsement Toward Information Credibility

Social endorsement used two indicators, which are SE1 and SE2. The result of calculation shows that the value of CR (construct reliability) is 0,84587 and AVE (variance extracted value) is 0.734216, which means that social endorsement as the variable and the indicators inside them are reliable and valid. Thus, the indicators have good internal consistency. In the hypothesis testing, the result of CR is 3.662 and the result of significant value is ***, which means that the value is less than 0.05. From those values, it means the hypothesis that social endorsement has an effect toward information credibility is accepted.

5.3. The Influence of Negative Comment Toward Information Credibility

Variable of negative comment used two indicators, NC1 and NC2. Based on the calculation, it shows that the value of CR (construct reliability) is 0.853699 and the value of AVE (variance extracted value) is 0.74, higher than 0.5, so, the indicators have good internal consistency. In the hypothesis testing, it shows that the negative comment has CR value of 4.191, which means it is more than 1.96 and the significant value (p value) is *** or indicate that the value is less than 0.05, so, the hypothesis that negative comment has an influence toward information credibility is accepted.

5.4. The Influence of Website Interactivity Toward Information Credibility

Two indicators used for website interactivity, WI1 and WI2, have the CR (construct reliability) value of 0.887352, and the result of AVE (variance extracted value) is 0.79753. Based on those results, the value of CR is higher than 0.7 and the value of AVE is higher than 0.5, so, the indicators are already reliable and valid. Thus, the indicators have good internal consistency. While, for the hypothesis testing, the result of CR is 0.079, which is less than defined critical value of 1.96, and its significant value (p value) is 0.937, which means the value is higher than 0.05 as the value that has been set. Based on the results, the hypothesis that website interactivity has an influence toward information credibility is rejected.

5.5. The Influence of Medium Transparency Toward Information Credibility

There were two indicators, MT1 and MT2, used in the variable of medium transparency. Based on the calculation, the result of CR (construct reliability) is 0.836929 and the result of AVE (variance extracted value) is 0.720434. Based on the results, the indicators are reliable and valid because the value of CR is higher than 0,7 and the value of AVE is higher than 0.5. Thus, the indicators have good internal consistency. While for the hypothesis testing, the value of

CR is 4.033, which is higher than defined critical value of 1.96, and the significant value (p value) is ***, which is lower than 0.05, so the hypothesis that medium transparency has an influence toward information credibility is accepted.

5.6. The Influence of Argument Strength Toward Information Credibility

Argument strength used two indicators, which are AS1 and AS2. Based on calculation, the results shows that the value of CR (construct reliability) is 0.841157 and AVE (variance extracted value) is 0.631559, which means that the indicators in argument strength are reliable and valid because the value of CR is higher than 0.7 and the value of AVE is higher than 0.5. Thus the indicators have good internal consistency. In the hypothesis testing, the result of CR is 6,198 and the result of significant value (p value) is ***, which means that the value is less than 0.05. From those values, it means the hypothesis that argument strength has an influence toward information credibility is accepted.

Based on the output results from many parameters, there is a recommendation of new model. The new variables used in new models are credible source, social endorsement, negative comment, medium transparency, and argument strength. Website interactivity was eliminated because it was not significant. In the new model, which also ran in AMOS software, the output shows that all five variables are suitable to be processed in the system dynamics.

In the system dynamics, the model is constructed with Powersim. The variable used for simulation consists of five of six variables proposed before, which are credible source, social endorsement, negative comment, medium transparency, and argument strength. The website interactivity was not used because it was not significant, so it only has a small relationship. The value of each indicator and variable was given by expert judgment method with three experts. Before the data input, the geomean result was calculated in Microsoft Excel. The researcher transfers the data to the model in Powersim in the formulation.

After the data and the formula are entered into the Powersim software, the simulation was done over 10 years. The value of each indicator and variable is given by three experts. Before the data of value input, there was calculation of the geomean. The result of simulation can be seen in each month. The result over 10 years shows that the value fluctuates with different patterns in each year.

Information credibility is one of the important elements in marketing; it can be used as the parameter to measure the success of a business strategy. Credible information about a company can add good value to the company itself and it can make a good impression on the customer toward a certain brand. The credible information should to be implemented by

the company to build the trust about a certain brand. As well as in property industry body like REI Yogyakarta, companies also should be able to implement credible information in every aspect of their business activity especially in marketing. Because if an information is credible, usually customer will get closer to a brand.

6. Conclusion

Based on the calculation, results, and discussion, the following conclusions can be drawn. The conceptual design of a model in this research consist of six variables of information credibility with 16 indicators. Credible source variable has three indicators, social endorsement consist of two indicators, negative comment consist of two indicators, website interactivity consist of two indicators, medium transparency consist of two indicators, and argument strength consist of three indicators, while information credibility itself consist of two indicators.

Based on the calculation that related to the output of AMOS software, credible source, social endorsement, negative comment, medium transparency, and argument strength have a positive effect or significant value on information credibility. While website interactivity does not has positive effect or significant value toward information credibility, so it is stated as not valid. When the variable like website interactivity is not significant, maybe it comes from the limited data taken by the researcher so it is inaccurate and needs more research to identify the problem.

The model that has been determined was simulated by using Powersim. In the simulation, there are five variables, which have significant values used. The results show that the value of information credibility in each time can fluctuate.

Over the past few years, numerous industries in Indonesia have increased recognition toward the green movement. Some companies apply the whole process of creating green products, while others only do so partially, but this is a good aspect of green business development in Indonesia nonetheless. In building brand trust with the customer, REI Yogyakarta should be able to incorporate their concern within information credibility to maintain the credibility of information, which can be accessed by the customer or delivered by several stakeholders inside the company. For further research, it could be better to add other variables that are linked to information credibility to improve the model.

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