# THE EFFECT OF ENVIRONMENTAL CORPORATE SOCIAL RESPONSIBILITY ON CORPORATE IMAGE AND CUSTOMER LOYALTY: THE MODERATING ROLE OF CORPORATE SOCIAL RESPONSIBILITY COMMUNICATION

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| **ABSTRACT** |
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1. **Introduction**

In the new era - the digital age is gradually developing and covering widely as today, international trends are also gradually occupying an important position. In addition, economic and trade exchanges between countries around the world have also begun to change and develop. As a result, competition between businesses in most sectors is becoming more intense. Therefore, businesses need to research new ways to improve their ability and competitiveness in the direction of sustainable development, making a difference compared to other businesses in the same industry or field (Porter and Siggelkow, 2018).

Now, to attract customers, businesses will prioritize the use of methods to build corporate culture, ethics in business. And above all, the new trend has been growing in the world, becoming a seemingly "key" factor for all businesses in the integration process that is the need to implement corporate social responsibility (CSR) (Tsai et al., 2012), especially environmental corporate social responsibility (ECSR).

The aviation industry with a central role in the value chain, is considered one of the great drivers of development for economic sectors. Corporate social responsibility (CSR) in aviation has a spillover effect on other economic sectors and enhances the country's image among international friends.

The activities of the aviation industry have created negative consequences (Kim, Lee & Roh, 2020; Hwang & Choi, 2021). Corporate activities can adversely impact the natural environment, therefore socially responsible activities towards the environment in general play an important role (Murshed, Sen et al., 2021). In addition, companies with a high reputation for environmentally responsible operations are more likely to improve the corporate image to customers (Han et al., 2019a). Besides, among the various components of CSR (including social, economic, environmental), ECSR is the most important factor determining the level of competition among different service providers (Park et al., 2016). This may be because the number of customers interacting and reacting to CSR initiatives is increasing rapidly (Chomvilailuk & Butcher, 2021; D'Acunto et al., 2020). Customers increasingly choose airlines with a combination of environmentally friendly activities (Niu et al., 2016). In addition, airlines are required to promote environmental practices to establish strong and lasting relationships with their travelers (Vatankhah, Sepehr Manesh et al., 2023). Therefore, airlines must emphasize the need for social responsibility for the environment and building a green image (Vatankhah, Sepehr Manesh et al., 2023).

Moreover, in the context of an increasingly polluted and degraded environment, the Government has also introduced specific environmental protection policies for the aviation industry, such as Circular No. 52/2022/TT-BGTVT - Circular regulating environmental protection in civil aviation activities for airlines to follow and implement environmental protection. For the above reasons, we selected the environmental component in the three economic, cultural and social sectors to consider the impact of ECSR on the corporate image (CI) and customer loyalty (LOY).

There were many studies about CSR, corporate image and customer loyalty, but the identification of components still has gaps that need to be exploited. Firstly, studies in Vietnam about the relationship between CSR, corporate image and customer loyalty in the aviation industry are limited, only Hoang's study (2020), which researched the impact of CSR on corporate image and customer loyalty in the aviation industry in Vietnam. In addition, Thu's study (2020) conducted a survey of foreign studies on the impact of CSR on corporate image and customer loyalty. Secondly, with the development of the industrial revolution 4.0, the implementation of corporate social responsibility communication (CSR communication) can help increase purchasing intentions (Sen and Bhattacharya, 2001). Moreover, by communicating to be a good business can increase customer loyalty and positive word-of-mouth (Du et al., 2007). There is also an increase in customer satisfaction and corporate reputation as well as consumer brand equity (Page & Fearn, 2005). Besides, CSR communication plays an important role in building corporate image (Parguel et al., 2011).

Therefore, we conduct this research to consider the impact of ECSR on corporate image and customer loyalty, the impact of corporate image on customer loyalty as well as to see the moderating role of CSR communication.

1. **Theoretical framework**
   1. ***Theoretical foundation***

*2.1.1 Social Exchange Theory - SET*

According to Blau (1964), social interactions in which individuals believe that from social exchange actions they will receive certain benefits are called social exchange theory (SET). According to Redmond (2015), Homans considers action in society as the exchange of activities, physical or intangible, valuable or cheap, between at least two people, the user and the company. SET has been used in the research of Gürlek, Düzgün and Uygur (2017) to better understand the impact of communication aspects of CSR on customers in shaping a favorite corporate image. Although companies do not directly benefit their customers through CSR communications and activities, as members of society, customers pay respond to socially responsible actions by business because individuals are concerned with their own interests, the public interest and welfare (Gürlek et al., 2017). As a result, if a company engages in socially responsible activities, customers as members of society can perceive the company well. Corporations have a long-term and sustainable competitive advantage and as a result they have a marketing advantage over their competitors. Moreover, this theory is also applied in the study of Vuong (2023) studying the impact of CSR on customer loyalty. The author concludes that this theory is used to shed light on how customers perceive CSR and organizational trust.

*2.1.2 Stimulus-Organism-Response Model*

The research team used the SOR model proposed by Mehrabian & Russel (1974). This model consists of three parts: stimulus (S), subject (O) and response (R). This model assumes that stimuli (S) lead to perception (O), which in turn produces a response (R) of the customer. The customer response has two possible responses: approach or avoidance (Mehrabian & Russel, 1974). The SOR model is an effective approach to investigate the complex nature of customer decision making (So and Li, 2020). The main strength of the S–O-R framework is that it is flexible (Jacoby, 2002) and includes opportunities to test different internal and external stimuli; tangible and intangible stimulation includes attitudes, emotions, perceptions/feelings, judgments, beliefs, motivations and thoughts, and a number of response factors, including, intentions, behavior, avoidance…

*2.1.3 Expectation - Confirmation model*

To help explain the process of effective social responsibility communication, this paper applies the theory of validation of expectations (ECT). ECT has been used to explain why consumers decide to repurchase or continue using a company's product or service. While already widely used in the psychology and consumer behavior literature (Oliver, 1980), ECT has also been applied in the information science (Bhattacherjee, 2001). In theory, consumers tend to have certain expectations about an entity. When their expectations are met after using the entity, their expectations are confirmed, leading to positive customer satisfaction and continued support of the entity. Thus, in the literature on consumer behavior and information systems, ECT seems to be able to explain how consumers demonstrate continued support for a product or information technology (Bhattacherjee, 2001).

Thus, by applying this theory to the CSR communication context, we can also demonstrate how consumers support socially responsible companies through communication about their social responsibility. Today's organizations increasingly face strong expectations and demands from stakeholders regarding social responsibility and better communication practices (Pomering and Dolnicar, 2009). To meet these growing stakeholder expectations, CSR communication needs to be continually assessed as to whether stakeholder expectations are being met. Therefore, to demonstrate the communication process based on ECT, this paper measured CSR communication through factors of consumer expectations in previous studies (Kim and Ji, 2017; Afandi, Jamal et al., 2021; Chua and Chan, 2022).

* 1. ***Hypothesis***

*2.2.1 The relationship between Environmental corporate social responsibility (ECSR) and Corporate image (CI)*

ECSR is a concept of a business's complementary endeavor involving a combination of environmental or ecological concerns into business operations as well as interactions with stakeholders, and, a key aspect of ECSR is to protect the environment by minimizing harmful impacts (Rashid, Khalid et al., 2015). Thus, ECSR can be understood as an attempt by an enterprise to incorporate environmental concerns into its business in relation to its stakeholders so as not to affect its financial interests.

Corporate image (CI) is the sum total of beliefs, experiences, information, feelings and impressions related to a business that appear in the public mind (Kim et al., 2014). We support the view that corporate image is the result of a process (MacInnis and Price, 1987). This sensory process arising from the customer's ideas, feelings, and previous experiences with a business is retrieved from memory and transformed into mental images (Yuille and Catchpole, 1977). As a rule, people are exposed to the reality created by the enterprise and can consciously or unconsciously choose events that are compatible with their formation of attitudes and beliefs. These facts are retained and then retrieved from memory to reconstruct the image of the business operating (Nguyen and Leblanc, 2001).

Previous studies have demonstrated the influence of ECSR on corporate image. ECSR as a predictor of positive corporate image and customer loyalty (Rashid, Rahman et al., 2014). In addition, ECSR positively affects corporate image (Dögl and Holtbrügge, 2014; Lee, Kim et al., 2019; Thu, 2020).

Therefore, our hypothesis is:

*H1. Environmental corporate social responsibility has an impact on corporate image.*

*2.2.2 The relationship between Corporate Image (CI) and Customer loyalty (LOY)*

Customer loyalty (LOY) refers to a customer's commitment to a particular business, and the strong relationship between the customer and the business is unlikely to change under normal circumstances (Stanisavljević, 2017). Every business places great importance on customer loyalty and tries to strengthen it (Kim, Lee et al., 2020). Customer loyalty is also defined as the belief that customers have about a business, products and services (Lee, Kim et al., 2019). We support the view that true loyalty should be measured by customer retention, customer commitment, positive word of mouth and willingness to pay higher prices for services (Thu, 2020).

Corporate image is believed to have more impact on customer loyalty in intangible services than in tangible goods (Zeithaml, 1981). It has been proven that corporate image directly affects customer loyalty (Andreassen and Lindestad, 1998; Kandampully and Suhartanto, 2000). Studies show that corporate image directly affects customer loyalty (Ball, Coelho et al., 2006; Wang, 2010; Richard and Zhang, 2012) as well as significantly and positively indirectly. corporate image has a positive influence on customer loyalty when consumers choose an airline (Lee, Kim et al., 2019)

Therefore, our hypothesis is:

*H2. Corporate image has an impact on customer loyalty.*

*2.2.3 The relationship between Environmental corporate social responsibility (ECSR) and Customer loyalty (LOY)*

Previous studies conducted in different industries have indeed shown that a positive perception of CSR can lead to higher customer loyalty (Öberseder, Schlegelmilch et al., 2014; Moisescu, 2018). ECSR also increases customer loyalty (Nik Ramli et al., 2014). Social responsibility towards the environment has a positive and direct influence on customer loyalty (Thu, 2020). ECSR as a predictor of positive corporate image and customer loyalty (Rashid, Rahman et al., 2014).

Therefore, our hypothesis is:

*H3. Environmental corporate social responsibility has an impact on customer loyalty.*

*2.2.4 The moderating role of Corporate social responsibility communication (CSR communication)*

Corporate social responsibility communication (referred to as CSR communication) has been defined as communication information designed and distributed by an enterprise itself about its CSR efforts (Kim & Ferguson, 2016). Since it is difficult to measure CSR communication by itself, Kim and Ferguson (2018), previous studies have often explored consumer expectations for this communication to determine possible aspects of effective communication.

Based on previous studies by Kim and Ji (2017); Kim and Ferguson (2018); Afandi, Jamal et al. (2021); Chua and Chan (2022), we choose aspects to measure the effectiveness of communication about CSR based on consumer expectations, in this paper, we inherit Kim and Ji (2017), Kim and Ferguson (2018) and measured CSR communication by factors:

(i) factual tone

(ii) self-promotional tone

(iii) frequency

(iv) consistency

One of the main reasons why CSR fails is the lack of awareness among consumers about this activity (Maignan & Ferrell, 2004; Du et al., 2010). Therefore, the implementation of communication is necessary to raise consumers' awareness of CSR. When an organization does CSR communication through social media with customers, they will feel positive and want to respond positively to the organization (Zhang, Mahmood et al., 2021). CSR communication through social media impacts consumer loyalty in the banking industry (Ahmad, Naveed et al., 2021). CSR communication through social media increases customer loyalty (Zhang, Mahmood et al., 2021).

Communication plays an important role in building corporate image (Parguel et al., 2011). When the tone of the message (factual tone and self-promotional tone) is based on facts, less skepticism is generated. Companies will be seen as open and honest in their efforts to share information (Chua and Chan, 2022). In addition, according to Wan Afandi et al., (2021), the act of communicating a positive message about CSR to all stakeholders will reduce inconsistencies in information, improve corporate image. Companies should continuously communicate their CSR goals consistently, if a company is communicating arbitrarily and their socially responsible messages are constantly changing over time, it will increase public skepticism and distrust, leading to a bad corporate image in the public eyes.

Furthermore, combining SOR model (communication CSR plays a stimulating role), social exchange theory (considering the impact of communication aspects of CSR on customers in the formation of a favorite corporate image) and confirmation-expectation model (measurement of communication based on four aspects) with the basis of hypothetical arguments H1, H2 and H3.

Therefore, our hypothesis is:

*H4. CSR communication moderates the relationship between environmental corporate social responsibility and corporate image.*

*H5. CSR communication moderates the relationship between corporate image and customer loyalty.*

*H6. CSR communication moderates the relationship between environmental corporate social responsibility and customer loyalty.*

1. **Research method**
   1. **Measurement**

Drawing upon the SOR model, the confirmation-expectation model, the social exchange theory, and prior research, the research team developed measurement scales to analyze the effect of ECSR on corporate image and customer loyalty and consider the moderating role of CSR communication through four dimensions:

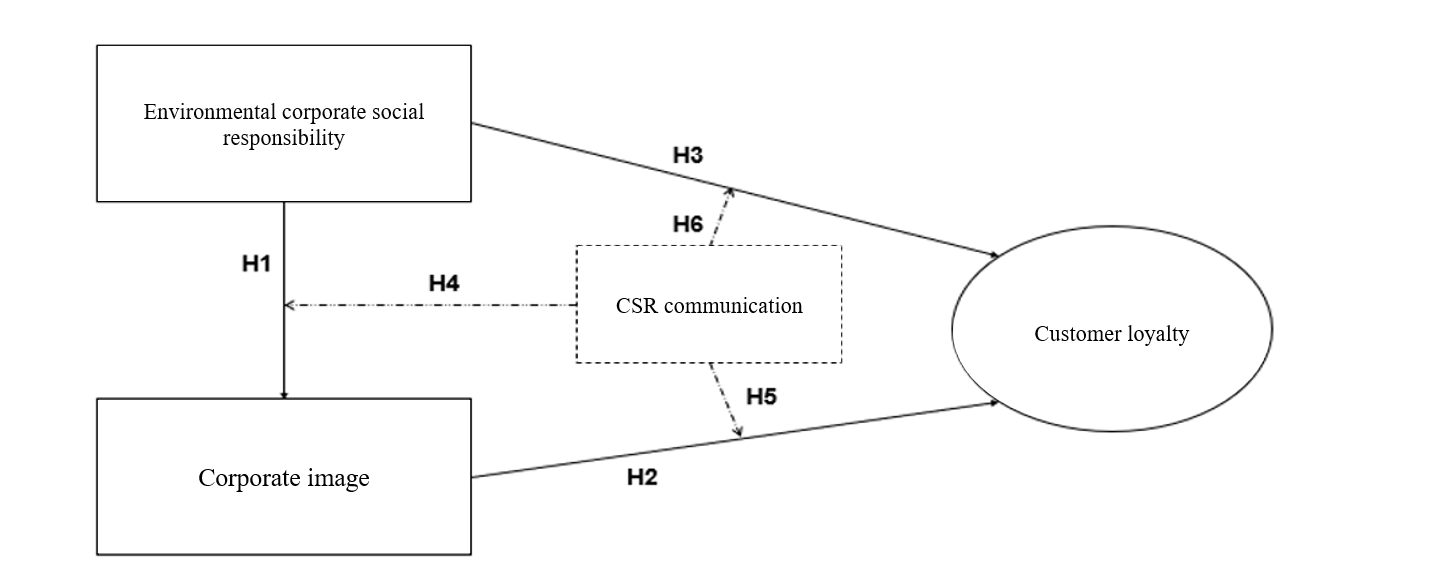
(1) environmental corporate social responsibility

(2) corporate image

(3) customer loyalty

(4) the moderating role of CSR communication

These scales were designed to assess the influence of ECSR on corporate image and customer loyalty in the context of the airline industry.



***Figure 1. Proposed research model***

Based on the research model shown in Figure 1 survey items were crafted for a quantitative approach. This was achieved by revising and complementing items from previous studies spanning various industries related to CSR, customer satisfaction, corporate brand, corporate trust, and corporate loyalty. All questionnaires were revised to fit the purpose of this paper using the 5-point Likert scale and translated into the Vietnamese language with support from the professional translator to clearly articulate the questions for the survey participants. Convenience sampling, which was based on the non-probabilistic and self-participation sampling method, was applied under the guidelines provided by Tarhini.

* 1. ***Collecting and processing data***

Data was collected using a convenience sampling through an online survey form on Google Form, which was sent via email to the survey participants, as well as through the paper questionnaires to 100 individuals in the waiting area of Tan Son Nhat International Airport. The survey participants were selected based on their prior experience with airline services as the users of four major companies: Vietnam Airline, Bamboo Airway, VietJet Air ,Jetstar Pacific Airlines; and some of them possessed certain knowledge in the field of aviation. After eliminating responses that did not meet the criteria or had incomplete information, a total of 292 valid responses were included in the quantitative analysis. Furthermore, the research team took special care to ensure that the survey participants represented a diverse range of backgrounds and experiences in the airline industry.

* 1. ***Data analysis***

The data was analyzed using the partial least squares structural equation modeling (PLS-SEM) method with smartPLS 3.0 software, non-parametric bootstrapping with 2,000 repetitions. The study comprised a measurement model and a structural model. The measurement model was used to build a valid and internally consistent model that contains convergent and discriminant validity. The structural model and its hypotheses were tested using path coefficients (β) and their significance level by applying PLS path modeling with asymmetrical bootstrapping procedure. Three criteria were used to evaluate the path system, including effect size (), determination coefficient (), and cross-validation () (Hair et al., 2014). The loading of these indices met the following requirements: (1) all loadings > 0.7, (2) composite reliability (CR) > 0.7, (3) average variance extracted (AVE) > 0.5. Subsequently, to test the relationships among variables in the study, the structural model was used with a t-value > 1.96, indicating statistical significance at the 5% level.

1. **Results and discussion**
   1. ***Descriptive statistics***

Table 4.1 illustrates the results of surveying 292 customers that had consumed airline services.

###### *Table 1: Descriptive statistics*

| **Information** | **Categories** | **Numbers** | **Ratio %** |
| --- | --- | --- | --- |
| Age | 18-30 | 185 | 63.36% |
| 31-40 | 76 | 26.02% |
| Above 40 | 31 | 10.62% |
| Gender | Male | 109 | 37.33% |
| Female | 183 | 62.67% |
| Number of trips per year | Below 3 | 215 | 73.63% |
| 3 to 5 | 44 | 15.07% |
| Above 5 | 33 | 11.30% |
| Favorite airline | Vietnam Airline | 165 | 56.51% |
| Bamboo Airway | 56 | 19.17% |
| VietJet Air | 66 | 22.60% |
| Jetstar Pacific Airlines | 5 | 1.72% |
| **Total** | | **292** | **100%** |

*Source: Authors's calculations*

Firstly, the majority of respondents belong to the 18 - 30 age group, at 63.36%, the younger group of between 31 to 40 years old accounted for 26.02% and the rest of 10.62% answers are derived from the above 40 age group. Secondly, passengers participating in the survey accounted for a high proportion of female with 183 people (62.67%) and male accounting for 37.33%. Thirdly, passengers with a frequency of below 3 trips per year make up a higher proportion of 73.63% with 215 respondents. Lastly, most of the people reply to prefer Vietnam Airline for traveling with 56.61%, Jetstar Pacific airline has the lowest fraction of only 1.72%.

* 1. ***Partical least squares strucural equation modeling method***

The PLS - SEM method is performed through Smart-PLS to test for the effects of 4 factors: (1) environmental corporate social responsibility, (2) corporate image, (3) customer loyalty, (4) CSR communication.

*4.2.1 Measurement Model*

The research team used Cronbach's Alpha coefficient, Composite Reliability (CR), Average Variance Extracted (AVE), and outer loading to evaluate the measurement model. To ensure the acceptability of the measurement model, the Composite Reliability coefficient must be > 0.7, the outer loading > 0.4 (Hair et al., 2014), and the AVE > 0.5.

According to the results in Table 4.2, Cronbach's Alpha and the Composite Reliability of all factors are greater than 0.7. Thus, the reliability of the measurement scales is ensured. Therefore, the conclusion is that the measurement scales are appropriate.

The AVE values of the latent variables in Table 4.2 meet the requirement (>0.5). According to Hair et al. (2017), the total variance extracted (AVE) of the factors should be greater than 0.5, which means that half of the observed variable variance is explained by the factor. Thus, with the AVE values meeting the requirements, it can be concluded that the measurement scales have good convergent validity.

Regarding the evaluation of the outer loading or Composite Reliability of the observed variables: from the results in Table 4.2, the calculated values for the outer loading of the observed variables are all greater than 0.7. This means that the observed variables are capable of explaining more than 50% of the latent variables (Hair et al., 2016). However, there is one observed variable, LOY5, that has a loading below this threshold (0.635). Nevertheless, according to Hair et al. (2019), an outer loading of the factors greater than 0.4 is acceptable. Thus, it can be concluded that the observed variables explain the factors well.

Regarding the discriminant validity between variables, the HTMT values according to the results in Table 4.3 are all less than the recommended threshold of 0.9. According to Henseler et al. (2015), latent variables with HTMT values below 0.9 will ensure the necessary discriminant validity for estimation. Therefore, all variables in the model adequately ensure the differentiation necessary for accurate estimation.

In summary, the results of the analysis of composite reliability, outer loading, and variance extraction of the component measures indicate that the measurement scales for the concepts all meet the requirements for reliability and convergent validity.

###### *Table 2: Confirmatory factor analysis result*

| **Construct** | **Code** | **Outer loading** | **Cronbach's Alpha** | **Composite reliability (rho\_a)** | **Composite reliability (rho\_c)** | **Average variance extracted**  **(AVE)** | **VIF** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| CI | CI1 | 0.765 | 0.822 | 0.823 | 0.883 | 0.653 | 1.552 |
| CI2 | 0.831 | 1.832 |
| CI3 | 0.845 | 2.155 |
| CI4 | 0.788 | 1.825 |
| COM | PT | 0.829 | 0.901 | 0.904 | 0.917 | 0.702 | 1.958 |
| FT | 0.802 | 1.75 |
| CONS | 0.892 | 2.727 |
| FREQ | 0.825 | 2.169 |
| ENV | ENV1 | 0.752 | 0.857 | 0.861 | 0.898 | 0.637 | 1.629 |
| ENV2 | 0.811 | 1.837 |
| ENV3 | 0.796 | 2.025 |
| ENV4 | 0.842 | 2.324 |
| ENV5 | 0.787 | 1.884 |
| LOY | LOY1 | 0.803 | 0.819 | 0.83 | 0.874 | 0.584 | 1.819 |
| LOY2 | 0.737 | 1.708 |
| LOY3 | 0.798 | 1.782 |
| LOY4 | 0.831 | 1.978 |
| LOY5 | 0.635 | 1.427 |
| PT | COM1 | 0.85 | 0.812 | 0.815 | 0.889 | 0.727 | 1.77 |
| COM2 | 0.883 | 2.027 |
| COM3 | 0.824 | 1.672 |
| FT | COM4 | 0.816 | 0.748 | 0.75 | 0.856 | 0.665 | 1.55 |
| COM5 | 0.817 | 1.435 |
| COM6 | 0.813 | 1.517 |
| CONS | COM7 | 0.814 | 0.808 | 0.809 | 0.887 | 0.724 | 1.555 |
| COM8 | 0.878 | 2.035 |
| COM9 | 0.858 | 1.908 |
| FREQ | COM10 | 0.844 | 0.822 | 0.825 | 0.894 | 0.738 | 1.696 |
| COM11 | 0.886 | 2.108 |
| COM12 | 0.847 | 1.889 |

*Source: Authors's calculations*

###### *Table 3: HTMT value for discriminant validity*

|  | **CI** | **COM** | **ENV** | **LOY** | **COM x ENV** | **COM x CI** |
| --- | --- | --- | --- | --- | --- | --- |
| CI |  |  |  |  |  |  |
| COM | 0.528 |  |  |  |  |  |
| ENV | 0.51 | 0.512 |  |  |  |  |
| LOY | 0.789 | 0.54 | 0.523 |  |  |  |
| COM x ENV | 0.118 | 0.06 | 0.29 | 0.166 |  |  |
| COM x CI | 0.049 | 0.145 | 0.121 | 0.055 | 0.634 |  |

*Source: Authors's calculations*

The variables converge to the correct factors as in the initial research model and ensure reliability and necessary differentiation. Therefore, it can be concluded that the scales used for the entire study are appropriate and SEM analysis can be carried out. Thus, it can be said that the process of building the research model, scales, and survey questionnaire used for the study has been conducted meticulously and ensures effectiveness. The observed variables have representative values for the factor they converge to, and performing linear structural equation modeling (SEM) based on these factor groups is statistically meaningful.

*4.2.2. Structural model assessment*

From Table 4.4, the results show that the VIF values among the independent variables are all less than 3. According to Hair et al. (2019), a VIF value less than 3 has a very low likelihood of multicollinearity. Therefore, it can be concluded that multicollinearity is not present in the model.

The test of determination coefficient (Table 4.5) shows that the corporate image variable is explained by the model at 32.9%, and similarly 49.4% for the customer loyalty variable. With a very small p-value (approximately 0), it can be concluded that the model fits the data well.

###### *Table 4: Test for multicollinearity (VIF)*

|  | **CI** | **COM** | **ENV** | **LOY** | **COM x ENV** | **COM x CI** |
| --- | --- | --- | --- | --- | --- | --- |
| CI |  |  |  | 1.422 |  |  |
| COM | 1.248 |  |  | 1.465 |  |  |
| ENV | 1.343 |  |  | 1.474 |  |  |
| LOY |  |  |  |  |  |  |
| COM x ENV | 1.085 |  |  | 1.885 |  |  |
| COM x CI |  |  |  | 1.811 |  |  |

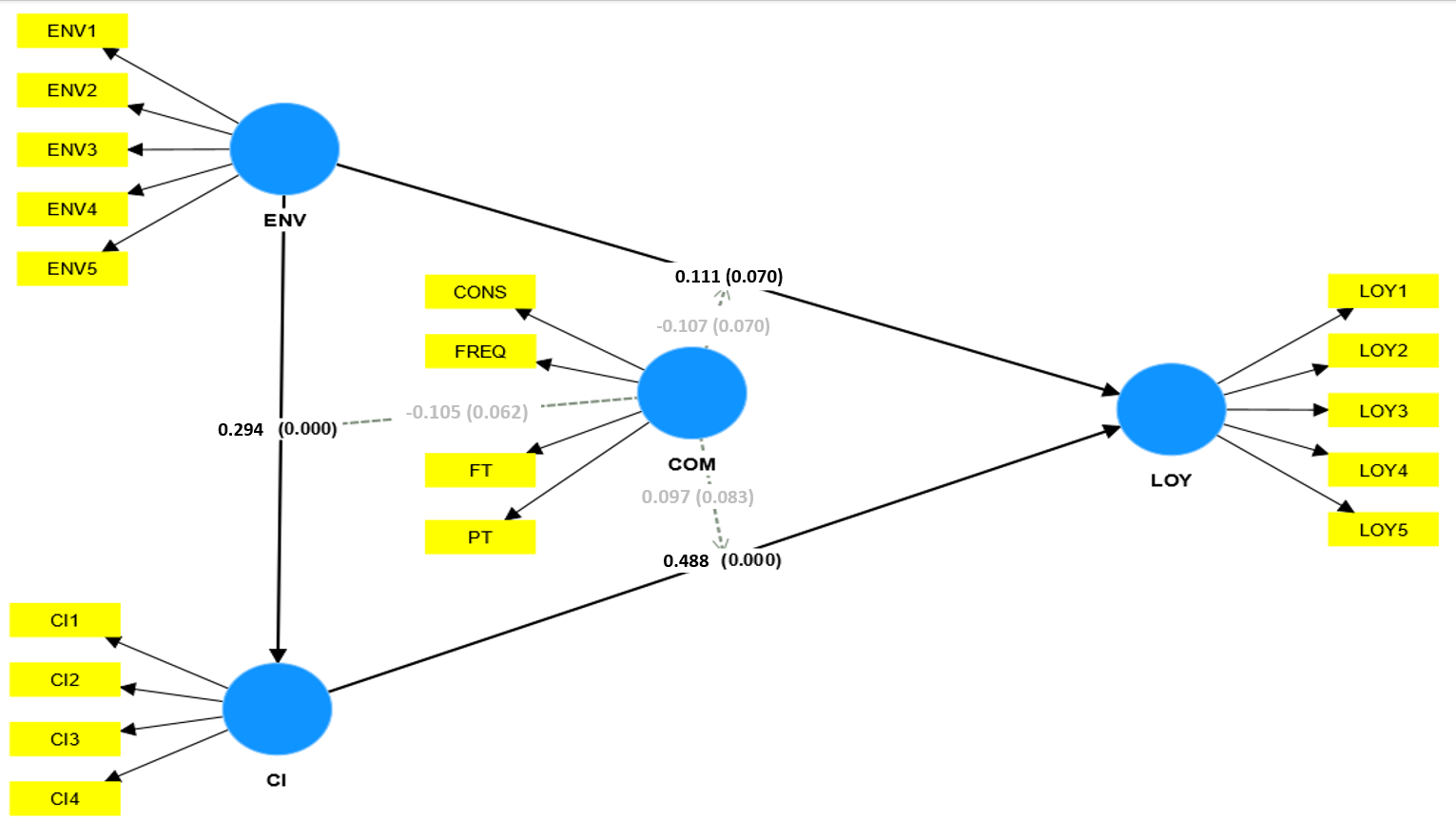
*Source: Authors's calculations*

***Table 5: Deterministic coefficient***

|  | **Original sample (O)** | **Sample mean (M)** | **Standard deviation (STDEV)** | **T statistics (|O/STDEV|)** | **P values** |
| --- | --- | --- | --- | --- | --- |
| CI | 0.329 | 0.343 | 0.060 | 5.471 | 0.000 |
| LOY | 0.494 | 0.508 | 0.048 | 10.383 | 0.000 |

*Source: Authors's calculations*

The values of the effect size coefficient indicates the strength of the relationships in the model. According to Cohen (1988), the value can be classified into three levels of weak, medium, and strong corresponding to threshold values of 0.02, 0.15, and 0.35, respectively. From the results in Table 4.6, the moderation effect of communication on the relationship between the corporate image and customer loyalty is at a moderate level ( = 0.15). Communication also has a moderate moderating effect on the relationship between environmental corporate social responsibility and customer loyalty ( = 0.19). Similarly, the direct effect of environmental corporate social responsibility on customer loyalty is at a decent level ( = 0.16). The direct relationship between the corporate image and customer loyalty is the strongest ( = 0.332). The moderating effect of communication on the relationship between environmental corporate social responsibility and the corporate image is weak ( = 0.125). Finally, the direct impact of the environmental corporate social responsibility variable on the corporate image is small ( = 0.088).



##### **Figure 2: Results of PLS - SEM**

*Source: Authors's calculations*

***Table 6: Effect size***

|  | CI | COM | ENV | LOY | COM x CI | COM x ENV |
| --- | --- | --- | --- | --- | --- | --- |
| CI |  |  |  | 0.332 |  |  |
| COM | 0.109 |  |  | 0.064 |  |  |
| ENV | 0.088 |  |  | 0.16 |  |  |
| LOY |  |  |  |  |  |  |
| COM x CI |  |  |  | 0.15 |  |  |
| COM x ENV | 0.125 |  |  | 0.19 |  |  |

*Source: Authors's calculations*

*4.2.3. Affect assessment*

After conducting the measurement model assessment, the bootstrap technique was used to test the relationships between the latent variables estimated. Bootstrap is a resampling method based on the original data to provide confidence intervals for the estimated parameters, allowing for statistical hypothesis testing. The results from the repeated data sampling provide mean values, standard deviations, and t-test values for each coefficient of the model. In this study, bootstrap was used with a sample size of 1000 observations compared to the original sample size of 292 observations. The estimated results from the software provided p-values less than 0.001 for all coefficients, except for the impact coefficients corresponding to hypotheses H3, H4, H5, and H6, which had p-values with a significance level of 10%. Thus, from the bootstrap estimation method, the conclusion is that the model is reliable, with most of the coefficients being statistically significant.

###### *Table 4.7: Results of path coefficients*

|  | **Original sample (O)** | **Sample mean (M)** | **Standard deviation (STDEV)** | **T statistics (|O/STDEV|)** | **P values** |
| --- | --- | --- | --- | --- | --- |
| CI -> LOY (*H2*) | 0.488 | 0.491 | 0.052 | 9.400 | 0.000 (\*\*\*) |
| COM -> CI | 0.315 | 0.315 | 0.062 | 5.101 | 0.000 (\*\*\*) |
| COM -> LOY | 0.218 | 0.219 | 0.057 | 3.849 | 0.000 (\*\*\*) |
| ENV -> CI (*H1*) | 0.294 | 0.298 | 0.062 | 4.742 | 0.000 (\*\*\*) |
| ENV -> LOY (*H3*) | 0.111 | 0.108 | 0.061 | 1.814 | 0.070 (\*) |
| COM x ENV -> CI (*H4*) | -0.105 | -0.101 | 0.056 | 1.868 | 0.062 (\*) |
| COM x ENV -> LOY (H6) | -0.107 | -0.103 | 0.059 | 1.816 | 0.070 (\*) |
| COM x CI -> LOY (*H5*) | 0.097 | 0.098 | 0.056 | 1.732 | 0.083 (\*) |
| ENV -> CI -> LOY | 0.143 | 0.147 | 0.036 | 3.961 | 0.000 (\*\*\*) |

*(\*) p-value <0.1, (\*\*) p-value <0.05, (\*\*\*) p-value <0.001*

*Source: Authors's calculations*

From the statistical estimation results, hypothesis testing is conducted for the research hypotheses:

*H1 (Supported):* Environmental corporate social responsibility (ENV) has a positive impact on the corporate image (CI). The model analysis results show that environmental corporate social responsibility has a positive relationship with the corporate image with an estimated coefficient of 0.294 which is statistically significant. Therefore, we accept hypothesis H1, a positive correlation is observed.

*H2 (Supported):* The corporate image (CI) has a positive relationship with customer loyalty (LOY). From the estimation results, a positive relationship is represented by a coefficient of 0.488 which is statistically significant. Therefore, we accept hypothesis H2, a positive correlation is observed.

*H3 (Supported):* Environmental corporate social responsibility (ENV) has a positive impact on customer loyalty (LOY). From the regression coefficient of 0.111 which is statistically significant, we accept hypothesis H3, a positive correlation is observed.

*H4 (Supported):* CSR Communication (COM) plays a moderating role in reducing the relationship between environmental corporate social responsibility (ENV) and the corporate image (CI). As the regression coefficient estimation result of -0.105 is statistically significant, we accept hypothesis H4, a negative moderating effect is observed.

*H5 (Supported):* CSR Communication (COM) plays a moderating role in increasing the relationship between the corporate image (CI) and customer loyalty (LOY). As the regression coefficient estimation result of 0.097 is statistically significant, we accept hypothesis H5, a positive moderating effect is observed.

*H6 (Supported):* CSR Communication (COM) plays a moderating role in reducing the influence of environmental corporate social responsibility (ENV) on customer loyalty (LOY). From the estimation result of the coefficient of -0.107 which is statistically significant, we accept hypothesis H6, a negative moderating effect is observed.

* 1. ***Discussion***

The results of testing the relationships in the research model show that ECSR has a positive impact on the CI. This is consistent with the studies by Rashid, Rahman, et al. (2014); Dögl and Holtbrügge (2014); Lee, Kim, et al. (2019) and Thu (2020). Increasing ECSR enhances CI.

Furthermore, corporate image is positively related to LOY. This is in agreement with the studies of Andreassen and Lindestad (1998); Kandampully and Suhartanto (2000); Bloemer and De Ruyter (1998); Nguyen and Leblanc (2001); Ball, Coelho, et al. (2006); Wang (2010); Richard and Zhang (2012); Lee, Kim, et al. (2019). Corporate image increases customer loyalty.

With the acceptance of hypothesis H3, ECSR has a positive impact on LOY. This is consistent with the studies of Nik Ramli et al. (2014); Rashid, Rahman, et al. (2014); Thu (2021). Increased ECSR leads to increase LOY.

With the acceptance of hypothesis H4, CSR communication plays a moderating role, reducing the relationship between ECSR and CI. The presence of communication reduces corporate image through ECSR. This is explained as follows: CSR communication is measured based on the self-promotional tone, factual tone, frequency, and consistency. First, consider the self-promotional tone, knowing that businesses need to actively communicate their social responsibility to target customers to increase their awareness, but when they try to advertise their good deeds, customers tend to doubt their sincerity, leading to negative reactions to the corporate social responsibility (Webb & Mohr, 1998). Next, when considering frequency, extensive communication about a corporate social responsibility may backfire as the public may become more skeptical about the company's sincere commitments (Morsing and Schultz, 2006; Stoll, 2002). Furthermore, when considering consistency, if a company communicates its social responsibility in a haphazard manner, such as "what the company is saying constantly changes", then communication about the corporate social responsibility will fail due to increasing skepticism and loss of public trust (Coombs and Holladay, 2011; Schlegelmilch and Pollach 2005). ECSR has a positive impact on corporate image (hypothesis H2). Therefore, due to the above reasons, CSR communication plays a negative moderating role, reducing the relationship between ECSR and corporate image.

The CSR communication factor plays a moderating role, increasing the relationship between corporate image and customer loyalty. This is supported by research conducted by Zhang, Mahmood, et al. (2021). The involvement of communication helps to strengthen the impact on loyalty through corporate image.

Finally, CSR communication has a moderating relationship that reduces the influence ECSR on customer loyalty. This finding differs from previous studies. The involvement of communication reduces customer loyalty through social responsibility. This can be explained as follows: CSR communication plays a moderating role in reducing the relationship between ECSR and corporate image, as explained above, while ECSR has a positive impact on customer loyalty. Therefore, CSR communication has a moderating relationship that reduces the influence of ECSR on customer loyalty.

1. **Conclusion**

Research results show that ECSR has a positive impact on corporate image, corporate image has a positive impact on customer loyalty. CSR Communication plays a moderating role, increasing the relationship between corporate image and customer loyalty. However, CSR communication reduces the impact of ECSR on customer loyalty and reduces the influence of ECSR on corporate image.

Based on the research results of the impact of ECSR on corporate image and customer loyalty as well as the moderating role of CSR communication, we propose the following managerial implications:

Firstly, ECSR helps to improve the corporate image and customer loyalty. Therefore, it is necessary to take socially responsible actions, including: Implementing energy consumption in a reasonable volume in the use of fuel for aircraft, other vehicles as well as operations in the office. Water sources used on aircraft, aircraft cleaning activities also need to choose a responsible supplier, use the right amount of water, and need to ensure proper discharge and treatment of wastewater. Comply with the provisions of the law on environmental protection; Circulars of the Ministry. In addition, airlines also need to control and use chemicals to kill insects or clean aircraft.

Secondly, in order to improve customer loyalty, it is also necessary to increase the corporate image because corporate image has an impact on customer loyalty, therefore: Airlines need to perform well on social responsibility for the environment to be able to receive customer support (Park et al., 2015; Alvarado Herrera et al., 2017; Park, 2019). Programs that can be mentioned include: recycling, reducing resource consumption and pollution, conducting annual environmental audits.

Third, to increase customer loyalty, airlines need to retain their customers. This should be done through the above environmentally responsible actions. Moreover, corporate image also has an impact on customer loyalty, which is a very important factor because it creates positive emotions for customers (Asatryan and Asamoah, 2014), so businesses also need to take the above actions to improve the corporate image, thereby strengthening customer loyalty.

Fourth, about CSR communication. If we have a better understanding of what customers expect from the media, organizations can better plan to communicate their social responsibility initiatives and meet public expectations, they will lead to better communication outcomes (Kim and Ferguson, 2018). In general, airlines need to actively communicate about their social responsibility efforts for the environment so that customers and the public understand and stay informed about the business. The information should be widely disseminated in the annual report and official website of the enterprise, in other mass media. To ensure effective communication, it is important to note that: Enterprises need to pay attention to the factual tone and self-promotional tone, when making the communication, it should be based on the truth, the tone is gentle, it should not be the self-promotional or congratulatory message because the customer doesn’t like this (Pomering and Dolnicar 2009; Schlegelmilch and Pollach 2005), if an airline is self-promoting, self-congratulating, or based on false information, the public will perceive the airline to be insincere and hence may not select the airline.

The study has some limitations on the demographics of the survey subjects: Of the subjects, 62.67% were female, and the age group from 18 to 30 accounts for the majority. In addition, the number of people who fly less than 3 times a year accounts for 73.63%, so they do not have too much experience to evaluate even though 100% of them have been on an airplane fly, know and understand CSR. Therefore, the effectiveness of communication may not be fully measured through these aspects. Finally, the authors only measure ECSR due to limited resources, unable to measure all three concepts from the point of view of sustainable development because of the difficulty in surveying business owners.

Finally, future research can measure CSR from the point of view of sustainable development (including 3 components) to see the impact of CSR on corporate image and customer loyalty. Research should be done online and offline, with an even distribution of age and gender to be representative.

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