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# The Role of Airport Reputation And Subjective Well-Being In Mediating Environmentally Friendly Building Design on Passenger Behavioral Intention (A Study on Green Airport In Indonesia)

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**Abstract:** Research on environmentally friendly building design has been widely conducted, including green decoration, living plants, environmentally friendly spaces, green atmospheres, but research that focuses on airports is still rare. This study aims to analyze the role of airport reputation and subjective well-being in mediating environmentally friendly building design on passenger behavioral intentions. The research method is quantitative. The sample used was 400 respondents who were passengers at Soekarno Hatta, I Gusti Ngurah Rai, Sultan Mahmud Badaruddin II, Juanda, Sultan Syarif Kasim II, and Sultan Hasanuddin airports. The sampling technique used accidental sampling. The data collection technique was a questionnaire. The data analysis technique used Structural Equation Modeling (SEM) based on Smart PLS. The results of the study showed that the environmentally friendly design of airport buildings directly influenced airport reputation, subjective well-being and behavioral intentions. Furthermore, airport reputation and subjective well-being influenced behavioral intentions, airport reputation and subjective well-being mediated the influence of environmentally friendly design of airport buildings on behavioral intentions. Researchers hope that airport managers will continue to improve environmentally friendly designs in airport buildings so as to create a reputation, subjective well-being, and behavioral intentions in users.

**Keyword:** Eco-friendly Design, Reputation, Subjective Well-being, Behavioral Intention, Airport

## INTRODUCTION

Air transportation serves as a vital means of connectivity across Indonesia, an archipelagic nation with numerous islands separated by vast bodies of water. Moreover, compared to other modes of transportation, air travel offers significantly faster travel times (Setiawan et al., 2021). Given these conditions, it is essential to develop an integrated, reliable, and well-targeted air transportation system, which requires thorough planning and continuous development (Mahardika et al., 2022).

Air transportation must be carried out using clean energy resources and environmentally friendly technologies that minimize pollution while ensuring energy efficiency, cost-effectiveness, safety, and speed. In other words, sustainability is a crucial aspect of air transportation, including the development of airports based on the green airport concept (Karakoç et al., 2023).

Green airports are designed to enhance operational performance while reducing environmental impact by lowering energy consumption and waste, as well as utilizing more sustainable materials rather than raw resources. Given the increasing global demand for rapid transportation and the growing pressure for sustainable production, air travel must adopt environmentally responsible practices (Karakoç et al., 2023). The implementation of efficient, eco-friendly designs is believed to bring several benefits, such as reducing stress, alleviating emotional fatigue, enhancing customer and employee retention, and cutting operational cost, all of which are essential for business success (Han et al., 2020).

Based on previous studies conducted by (Han et al., 2020), Bamidele et al., (2023); Chuaet al (2020), and Gayed et al (2023), environmentally friendly airport design is identified as a key factor influencing both airport reputation and the subjective well-being of its users. Furthermore, airport reputation and user well-being significantly impact consumer behavioral intention to revisit the airport. Additionally, (Han et al., 2020) highlight that research on the relationship between green airport design, reputation, and subjective well-being in shaping passenger behavioral approaches remains limited.

This study focuses on several airports that have implemented the green airport concept, namely Soekarno-Hatta International Airport, I Gusti Ngurah Rai International Airport, Sultan Mahmud Badaruddin II International Airport, Juanda International Airport, Sultan Syarif Kasim II International Airport, and Sultan Hasanuddin International Airport.

Considering the background discussed, this research aims to examine the influence of eco-friendly airport design, airport reputation, and subjective well-being on users' behavioral intentions.

## METHOD

This quantitative study follows a structured process, beginning with identifying research problems based on empirical and theoretical data, followed by formulating research questions and hypotheses. A questionnaire is then designed and tested for validity and reliability. Once confirmed as valid and reliable, hypothesis testing is conducted, and the results are analyzed using relevant literature and the researcher's insights. Finally, conclusions are drawn, leading to recommendations based on the study's findings.

The population in this study is estimated at 108,239,290 respondents, based on the number of passengers at each airport in December 2024. The study employs a random sampling technique, ensuring that every individual in the population has an equal chance of being selected as a respondent during the research period. To determine the sample size, Slovin's formula, as cited in Arikunto (2021), is used, resulting in a total of 400 respondents.

The data collection method used in this study involves distributing e-questionnaires through an online survey platform. Respondents are presented with statements related to each variable, including environmentally friendly airport building design, airport reputation, subjective well-being, and behavioral intention.

### Data Analysis Technique

This study employs inferential analysis using Smart PLS software to evaluate the research model, which consists of the measurement model (outer model), structural model (inner model), and hypothesis testing.

1. Outer Model Testing

The outer model is assessed to ensure the validity and reliability of measurement indicators. It includes:

a) Convergent Validity: Measures how well indicators represent a construct, evaluated by factor loading (>0.7) and Average Variance Extracted (AVE > 0.5).
b) Discriminant Validity: Ensures constructs are distinct, assessed using cross-loading analysis and the Fornell-Larcker criterion, where the square root of AVE should be greater than correlations with other constructs.
c) Composite Reliability & Cronbach's Alpha: Measures internal consistency, with a threshold of 0.7 or higher, ensuring reliability in construct measurement.

2. Inner Model Testing

The inner model assesses relationships between constructs and the explanatory power of independent variables on dependent variables. Key indicators include:

a) R-Square ($R^2$): Measures the proportion of variance explained by independent variables (0.75 = strong, 0.50 = moderate, 0.25 = weak).
b) Predictive Relevance ($Q^2$): Evaluates model predictability using Stone-Geisser's $Q^2$, where $Q^2 > 0$ indicates a good predictive model.
c) *Quality Indexes* : The Goodness of Fit (GoF) test measures how well the research model fits the data by combining Average Variance Extracted (AVE) and R-Square ($R^2$) values. A higher GoF score indicates a better model fit, categorized as small (0.10), medium (0.25), or large (0.36). This test ensures the model effectively explains the relationships between variables.

3. Hypothesis Testing

In hypothesis testing, the study examines whether green airport design influences passenger behavior directly or through airport reputation and well-being. Using Smart PLS, a hypothesis is accepted if the t-statistic is above 1.96 and the p-value is below 0.05, meaning a significant effect exists. If not, the hypothesis is rejected. This method ensures reliable analysis of the proposed relationships.

## RESULTS AND DISCUSSION

### Outer Model and Inner Model

1. Convergent Validity

**Table 1. Validity Test Results for Environmentally Friendly Airport Building Design**

| No | Indicator | *Loading Factor* | Description |
|---|---|---|---|
| 1 | Eco-friendly space is already available at this airport (Eco-friendly space) | 0.853 | Valid |
| 2 | This airport rest area is designed to be environmentally friendly (Eco-friendly rest area) | 0.885 | Valid |
| 3 | Various flowers/trees and potted plants are available in many places, for example cafes, restaurants, shopping areas at this airport (plants) | 0.888 | Valid |
| 4 | A variety of green/eco-friendly interior decorations are easily visible at this airport (eco-friendly decorations) | 0.819 | Valid |

| | | | |
|---|---|---|---|
| 5 | Natural light through glass windows, walls and roofs is present in this airport. (natural light) | 0.898 | Valid |
| 6 | The air quality at this airport includes: temperature, circulation, humidity, natural aroma, and ventilation that feels fresh and comfortable (cool and fresh air). | 0.844 | Valid |
| 7 | Overall, the physical environment of this airport is designed to be environmentally friendly (environmentally friendly physical environment). | 0.868 | Valid |

Source: Smart PLS Data Processing Results by Authors

**Table 2. Validity Test Results for Airport Reputation**

| No | Indicator | *Loading Factor* | Description |
|---|---|---|---|
| 1 | In general, I think this airport has a good reputation. | 0.942 | Valid |
| 2 | This airport provides a different feel compared to other airports. | 0.959 | Valid |
| 3 | This airport is known for providing active support for environmentally friendly programs. | 0.948 | Valid |

Source: Smart PLS Data Processing Results by Authors

**Table 3. Validity Test Results for Subjective Well-being**

| No | Indicator | *Loading Factor* | Description |
|---|---|---|---|
| 1 | I feel healthy and happy when I am at this airport. | 0.928 | Valid |
| 2 | I feel comfortable when I am at this airport. | 0.928 | Valid |
| 3 | This airport played a vital role in making me feel relaxed. | 0.888 | Valid |
| 4 | Thinking about this airport makes me feel calm and peaceful. | 0.843 | Valid |
| 5 | This airport plays an important role in making me feel fresh. | 0.936 | Valid |

Source: Smart PLS Data Processing Results by Authors

**Table 4. Validity Test Results for Behavioral Intentions**

| No | Indicator | *Loading Factor* | Description |
|---|---|---|---|
| 1 | I have a plan to use this airport when traveling by air in the future. | 0.936 | Valid |
| 2 | I am willing to use this airport again when I travel by air transportation in the future. | 0.957 | Valid |
| 3 | Compared to other airports, I prefer this airport. | 0.965 | Valid |
| 4 | I would encourage others to use this airport. | 0.959 | Valid |
| 5 | I would recommend this Airport to anyone who asks for my advice. | 0.934 | Valid |
| 6 | I am willing to say positive things about this Airport to others. | 0.947 | Valid |

Source: Smart PLS Data Processing Results by Authors

Based on the validity test results presented in Table 1 – Table 4, the loading factor values for each indicator used to measure the variables exceed 0.7. This indicates that all indicators in this study meet the criteria for convergent validity. Next, table 5 below shows the value of the average extracted variance for each variable.

**Table 5. Average Extracted Variance (AVE) Results**

| Variable | *Average Extracted Variance (AVE)* |
|---|---|
| Environmentally Friendly Airport Building Design | 0,749 |
| Airport Reputation | 0,902 |
| Subjective Well-being | 0,820 |
| Behavioral Intentions | 0,902 |

Source: Smart PLS Data Processing Results by Authors

Based on Table 5, the AVE values for each variable are above 0.5, indicating that the AVE has met the criteria for convergent validity.

2. Discriminant Validity

The results of discriminant validity using Smart PLS 3.3 software are as follows:

**Table 6. Discriminant Validity Test Results**

| | DB | KS | NP | RB |
|---|---|---|---|---|
| DB1 | **0,853** | 0,483 | 0,533 | 0,628 |
| DB2 | **0,885** | 0,385 | 0,512 | 0,560 |
| DB3 | **0,888** | 0,454 | 0,475 | 0,613 |
| DB4 | **0,819** | 0,468 | 0,515 | 0,608 |
| DB5 | **0,898** | 0,397 | 0,472 | 0,567 |
| DB6 | **0,844** | 0,400 | 0,451 | 0,554 |
| DB7 | **0,868** | 0,473 | 0,474 | 0,627 |
| KS1 | 0,480 | **0,928** | 0,237 | 0,778 |
| KS2 | 0,469 | **0,928** | 0,220 | 0,757 |
| KS3 | 0,472 | **0,888** | 0,214 | 0,691 |
| KS4 | 0,405 | **0,843** | 0,122 | 0,652 |
| KS5 | 0,468 | **0,936** | 0,223 | 0,777 |
| NP1 | 0,536 | 0,219 | **0,936** | 0,472 |
| NP2 | 0,538 | 0,221 | **0,957** | 0,461 |
| NP3 | 0,545 | 0,210 | **0,965** | 0,451 |
| NP4 | 0,544 | 0,219 | **0,959** | 0,459 |
| NP5 | 0,548 | 0,225 | **0,934** | 0,452 |
| NP6 | 0,528 | 0,201 | **0,947** | 0,438 |
| RB1 | 0,664 | 0,728 | 0,476 | **0,942** |
| RB2 | 0,648 | 0,803 | 0,458 | **0,959** |
| RB3 | 0,649 | 0,777 | 0,432 | **0,948** |

Source: Smart PLS Data Processing Results by Authors

Based on the cross-loading output in Table 6, the loading values for each targeted construct are higher than those for other constructs, indicating that the questionnaire statements have met the criteria for discriminant validity testing.

3. Composit Reliability

**Table 7. Cronbach Alpha Test Result**

| No | Variable | *Cronbach Alpha* | Description |
|---|---|---|---|
| 1 | Environmentally Friendly Airport Building Design | 0.944 | Reliable |
| 2 | Airport Reputation | 0.946 | Reliable |
| 3 | Subjective Well-being | 0.945 | Reliable |
| 4 | Behavioral Intentions | 0.978 | Reliable |

Source: Smart PLS Data Processing Results by Authors

Based on the reliability test results shown in Table 7, the Cronbach's alpha values for the variables of environmentally friendly airport building design, airport reputation, subjective well-being, and behavioral intention are all greater than 0.70. This indicates that the research instrument is reliable and consistent.

**Table 8. Composite Reliability Test Result**

| No | Variable | *Composite Reliability* | Description |
|---|---|---|---|
| 1 | Environmentally Friendly Airport Building Design | 0.954 | Reliable |
| 2 | Airport Reputation | 0.965 | Reliable |
| 3 | Subjective Well-being | 0.958 | Reliable |
| 4 | Behavioral Intentions | 0.982 | Reliable |

Source: Smart PLS Data Processing Results by Authors

Based on the reliability test results shown in Table 8, the composite reliability values for the variables of environmentally friendly airport building design, airport reputation, subjective well-being, and behavioral intention exceed 0.70. This indicates that the research instrument is reliable.

**Inner Model**

The inner model analysis is conducted to ensure the strength and accuracy of the developed structural model. Several indicators are used in evaluating the inner model, including:

1. R-Square ($R^2$)

**Table 9. Coefficient of Determination Value**

| No | Variable | *R Square* | *R Square Adjusted* |
|---|---|---|---|
| 1 | Airport Reputation | 0.477 | 0.473 |
| 2 | Subjective Well-being | 0.258 | 0.256 |
| 3 | Behavioral Intentions | 0.394 | 0.389 |

Source: Smart PLS Data Processing Results by Authors

Based on Table 9, the coefficient of determination value indicates the accuracy level between actual values and predictions for the endogenous latent variables measured through the $R^2$ value. In the airport reputation model, an $R^2$ value of 0.477 or 47% suggests that airport reputation is influenced by environmentally friendly airport building design by 47%, while the remaining 53% is affected by other variables not examined in this study. In the subjective well-being model, an $R^2$ value of 0.258 or 25% indicates that subjective well-being is influenced by environmentally friendly airport building design by 25%, with the remaining 75% influenced by other unexamined variables. Lastly, in the behavioral intention model, an $R^2$ value of 0.394 or 39% shows that behavioral intention is affected by environmentally friendly airport building design, airport reputation, and subjective well-being by 39%, while the remaining 61% is determined by other factors not included in this study.

2. Predictive Relavance ($Q^2$)

**Table 10. Predictive Relevance Result**

| Variabel | $Q^2$ |
|---|---|
| Airport Reputation | 0,421 |
| Subjective Well-being | 0,207 |
| Behavioral Intentions | 0,325 |

Source: Smart PLS Data Processing Results by Authors

Based on the $Q^2$ measurement results, the airport reputation variable has a $Q^2$ value of 0.421, indicating that the explanatory variables provide predictive relevance and effectively predict the model. The subjective well-being variable has a $Q^2$ value of 0.207 ($Q^2 > 0$), meaning that the explanatory variables also offer predictive relevance and can accurately predict the model. Furthermore, the behavioral intention variable has a $Q^2$ value of 0.325 ($Q^2 > 0$), signifying that the variables effectively predict the model.

3. Quality Indexes

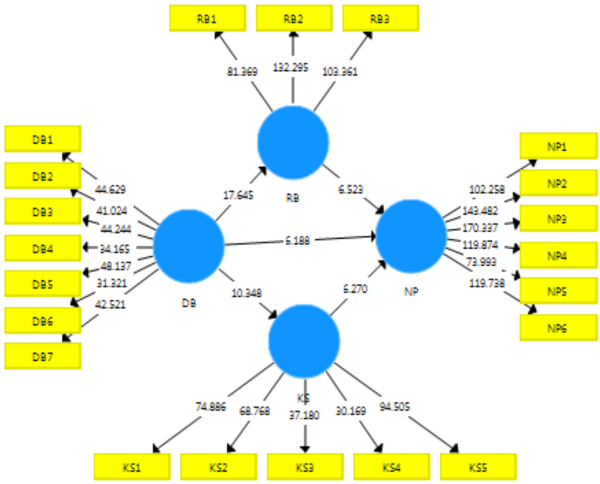
The model feasibility test, or goodness of fit (GoF), in this study was calculated manually by incorporating the average extracted variance (AVE) values obtained from Table 5 and the average R-Square values from Table 9. The GoF calculation is as follows:

$$GoF = \sqrt{\underline{AVE} x\ \underline{R^2}}$$
$$GoF = \sqrt{0{,}6746\ x\ 0{,}7620}$$
$$GoF = \sqrt{0{,}5140}$$
$$GoF = 0{,}7170$$

Based on this calculation, the model used in this study demonstrates a high level of model feasibility, with a GoF value of 0.7170, which significantly exceeds the GoF large threshold of 0.36.

**Hypothesis Testing**

This study employs Structural Equation Modeling (SEM) using the Smart PLS 3.3 software. Hypothesis testing is conducted to examine whether the independent variable, environmentally friendly airport building design, influences the dependent variable, behavioral intention, either directly or indirectly through the mediating variables of airport reputation and subjective well-being. The results of the hypothesis testing, presented in a path diagram, are displayed in Figure 1.




Source: Smart PLS Data Processing Results by Authors
**Figure 1. Hypothesis Testing Result**

Based on the data analysis using Smart PLS 3.3 software, as shown in the bootstrapping output, the next step is hypothesis testing. The results of this hypothesis test can be seen in Table 4.15.

**Table 11. Results of Direct and Indirect Effect Hypothesis Testsing**

| Influence | Statistics (\|O/STDEV\|) | P Value | Decision |
|---|---|---|---|
| The influence of environmentally friendly airport building design on airport reputation | 18.049 | 0.000 | H1 accepted |
| The influence of environmentally friendly airport building design on subjective well-being | 10.073 | 0.000 | H2 accepted |
| The influence of airport reputation on behavioral intentions | 6.343 | 0.000 | H3 accepted |
| The influence of subjective well-being on behavioral intentions | 6.182 | 0.000 | H4 accepted |
| The influence of environmentally friendly airport building design on behavioral intentions | 6.418 | 0.000 | H5 accepted |
| The influence of environmentally friendly airport building design on behavioral intentions through airport reputation | 5.709 | 0.000 | H6 accepted |
| The effect of environmentally friendly airport building design on behavioral intentions through subjective well-being | 5.795 | 0.000 | H7 accepted |

Source: Smart PLS Data Processing Results by Authors

**Hypothesis 1**

The hypothesis test results in Table 11 indicate that an environmentally friendly airport design significantly influences airport reputation, as evidenced by a t-statistic value of 18.049 or greater than 1.98 and a p-value of 0.000 or less than 0.05, confirming that the hypothesis is accepted.

An environmentally friendly design aims to create a sustainable environment, generating positive emotional responses related to environmental awareness among passengers. This, in turn, enhances user experience, increases the likelihood of repeat visits, and fosters a perception of a healthy environment.

**Hypothesis 2**

The hypothesis test results in Table 11 indicate that an environmentally friendly airport design significantly influences subjective well-being, with a t-statistic value of 10.073 or greater than 1.98 and a p-value of 0.000 or less than 0.05, confirming that the hypothesis is accepted.

Green design impacts customer responses and overall building evaluation. These responses can be both cognitive and emotional, ultimately influencing users' behavioral intentions.

**Hypothesis 3**

The hypothesis test results in Table 11 indicate that airport reputation significantly influences behavioral intention, with a t-statistic value of 6.343 or greater than 1.98 and a p-value of 0.000 or less than 0.05, confirming that the hypothesis is accepted.

The introduction of green airports represents an innovation in the aviation industry, promoting a more environmentally friendly approach. Green airports are based on environmental values and responsibilities, aiming to minimize the aviation sector's impact on the environment. Beyond being an environmental responsibility, green airports also serve as an innovation that enhances user experience by providing a natural, eco-friendly, and refreshing atmosphere for passengers.

**Hypothesis 4**

The hypothesis test results in Table 11 indicate that subjective well-being significantly influences behavioral intention, with a t-statistic value of 6.182 or greater than 1.98 and a p-value of 0.000 or less than 0.05, confirming that the hypothesis is accepted.

Subjective well-being is a measure of well-being as perceived by individuals and plays a crucial role in consumer behavior. It reflects passengers' overall satisfaction and comfort, which in turn affects their behavioral intentions when choosing an airport.

**Hypothesis 5**

The hypothesis test results in Table 11 indicate that environmentally friendly airport building design significantly influences behavioral intention, with a t-statistic value of 6.418 or greater than 1.98 and a p-value of 0.000 or less than 0.05, confirming that the hypothesis is accepted.

Green marketing addresses the social dimensions of marketing concerning limited environmental resources, the social and environmental impact of conventional marketing, and the greening of various aspects of traditional marketing. Green marketing has been highlighted as an emerging marketing approach that plays a crucial role in creating opportunities to enhance societal well-being.

**Hypothesis 6**

The hypothesis test results in Table 11 indicate that environmentally friendly airport building design significantly influences behavioral intention through airport reputation, with a t-statistic value of 5.709 or greater than 1.98 and a p-value of 0.000 or less than 0.05, confirming that the hypothesis is accepted.

Individuals who engage with natural elements and green environments rather than artificial building structures tend to experience higher levels of mental health and well-being.

**Hypothesis 7**

The hypothesis test results in Table 11 indicate that environmentally friendly airport building design significantly influences behavioral intention through subjective well-being, with a t-statistic value of 5.795 or greater than 1.98 and a p-value of 0.000 or less than 0.05, confirming that the hypothesis is accepted.

The atmosphere, design, and physical environment of a building are interconnected concepts. The architectural design and ambiance of a space create an experience that evokes specific emotional responses from users, ultimately influencing their decision to revisit and utilize the facility again.

## CONCLUSION

Based on the research findings and hypothesis testing discussed earlier, it can be concluded that environmentally friendly airport building design has a significant influence on airport reputation, subjective well-being, and behavioral intention. Additionally, behavioral intention is also influenced by airport reputation. Furthermore, the study results indicate that environmentally friendly airport design can affect behavioral intention indirectly through the mediating variables of airport reputation and subjective well-being.

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