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Beyond Awareness: Investigating How Moral Obligation Strengthens the Impact of Environmental Knowledge on Green Purchase Intention

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ABSTRACT

This study investigates the effect of environmental knowledge on green purchase intention and examines the moderating role of moral obligation in this relationship. A quantitative research design was employed using a survey approach. Data were gathered through an online questionnaire administered to 512 individuals who have prior experience considering or purchasing environmentally friendly products. The analysis was conducted using SmartPLS version 4.
The results reveal that environmental knowledge exerts a positive and significant influence on green purchase intention. In addition, moral obligation significantly moderates this relationship. Specifically, the impact of environmental knowledge on purchase intention becomes stronger when individuals possess a heightened sense of moral responsibility toward environmental preservation.
These findings support existing literature by highlighting the interplay between cognitive factors (knowledge) and moral considerations in shaping sustainable consumption behavior. The study also emphasizes the importance of combining educational efforts with ethical awareness in developing effective green marketing strategies.

1. Introduction

Sustainable environmental issues have become increasingly urgent due to the accelerating impact of climate change and environmental degradation. Human consumption behavior has been identified as a major contributor to environmental problems, particularly through unsustainable production and consumption patterns (Brosch, 2021). Consequently, promoting environmentally responsible consumption has become a key strategy in achieving sustainability goals. According to Indonesia's Environmental Statistics (2024), the number of eco-labeled products has shown a steady increase over the past five years (2019–2023). Based on the data,

the number of eco-labeled products in Indonesia increased from 60 products in 2019 to 376 products in 2023. This trend indicates a growing pattern of environmentally conscious consumption behavior in Indonesia. Green consumption behavior refers to a conscious action taken by individuals to select environmentally friendly products in order to minimize the negative impact of their consumption (Iqbal et al., 2024).

In Indonesia, the increasing availability of eco-labeled products reflects a growing level of consumer awareness regarding sustainability. However, awareness by itself is often not enough to generate actual behavioral change. Prior research highlights the presence of an attitude–behavior gap, where individuals who express concern for environmental issues do not always translate that concern into real purchasing actions (Ranney & Velautham, 2021). In recent years, the discourse surrounding green and eco-friendly consumption behavior has gained considerable prominence at both the organizational and societal levels. Nevertheless, knowledge alone does not consistently translate into behavioral change, as cognitive elements must interact with emotional, moral, and social drivers to effectively influence decision-making processes (Bouman et al., 2021). Green purchase intention is conceptualized as a consumer's internal psychological disposition, shaped by individual preferences toward the consumption of environmentally sustainable products (Song et al., 2019). When consumers are adequately informed regarding green products, they demonstrate a greater propensity to identify and opt for environmentally conscious alternatives (Cui et al., 2024).

Environmental knowledge is broadly acknowledged as a principal determinant of green purchase intention. Individuals possessing higher levels of environmental knowledge tend to exhibit a more profound comprehension of the consequences associated with their consumption choices, alongside a heightened inclination to adopt sustainable behavioral practices (Kaiser, 2021). Empirical evidence further substantiates that environmental knowledge substantially shapes both purchase intention and actual consumer behavior (Cui et al., 2024). However, this association is not always unequivocal, as individuals with considerable environmental knowledge do not invariably convert such understanding into tangible purchasing decisions. To explain this inconsistency, recent studies emphasize the importance of moral obligation as an internal driver of behavior. Moral obligation reflects an individual’s sense of ethical responsibility to act in environmentally responsible ways. Incorporating this variable into behavioral models may provide a clearer understanding of how knowledge is translated into action. Although previous studies have examined moral obligation as a direct predictor, its role as a moderating variable has received limited attention. Accordingly, the present study seeks to examine the impact of environmental knowledge on green purchase intention, as well as to explore the moderating function of moral obligation. In doing so, this study contributes to narrowing the existing gap between knowledge and behavior within the domain of sustainable consumption.

2. Literature Review

2.1 Theory of Planned Behavior (TPB)

Theory of Planned Behavior (Ajzen, 1991) explains that behavioral intention is influenced by attitude, subjective norms, and perceived behavioral control. In the context of green consumption, environmental knowledge contributes to shaping positive attitudes and behavioral control toward purchasing environmentally friendly products. Recent studies extend TPB by incorporating moral obligation to enhance predictive accuracy (Cui et al., 2024; Liao

et al., 2021). However, recent studies indicate that the explanatory and predictive capacity of the Theory of Planned Behavior (TPB) can be strengthened by incorporating additional variables such as environmental knowledge, moral obligation, and emotional factors (Dangelico et al., 2022). In the context of green consumption, TPB has been further developed to include both cognitive and normative dimensions in order to better reflect the complexity of pro-environmental behavior. This extension is important because sustainable behavior is not driven solely by rational assessment, but is also shaped by moral considerations and individual values.

2.2 Environmental Knowledge

Environmental knowledge encompasses an individual's comprehension of ecological issues and their associated consequences. It plays a fundamental role in influencing consumer attitudes and behavioral tendencies. A substantial body of prior research has consistently demonstrated that environmental knowledge exerts a positive effect on green purchase intention (Li et al., 2023; Zhang et al., 2024). Individuals who possess a heightened awareness of environmental issues are considerably more predisposed to recognize the significance of sustainability and to engage in ecologically responsible consumption practices. Moreover, such individuals tend to cultivate a more pronounced sense of accountability toward environmental preservation, which subsequently shapes their purchasing behavior (Cooray et al., 2024). However, environmental knowledge alone may prove insufficient, as behavioral decisions are equally influenced by intrinsic motivational factors and contextual circumstances.

2.3 Moderating Role of Moral Obligation

Moral obligation reflects an individual’s internal sense of ethical responsibility to behave in an environmentally responsible manner. It represents a personal commitment to act in ways that support environmental protection. As a normative factor, moral obligation strengthens the link between knowledge and behavior. From a behavioral perspective, individuals are often guided by dominant internal motivations when making decisions (Kaiser, 2021). In the context of environmental behavior, moral obligation can function as such a motivating force, encouraging individuals to act consistently with their knowledge. This construct holds a significant function in strengthening the association between knowledge and behavior. Empirical evidence indicates that individuals who possess a heightened sense of moral responsibility demonstrate a greater tendency to convert their cognitive awareness into concrete behavioral action (Kumar, 2023; Muller et al., 2021). Consequently, moral obligation is anticipated to amplify the effect of environmental knowledge on green purchase intention.

3. Research Methodology

3.1 Research Design

This study adopts a quantitative explanatory research design with a cross-sectional survey approach to examine the relationship between environmental knowledge and green purchase intention, as well as the moderating effect of moral obligation. The explanatory design is appropriate as it not only seeks to describe the observed phenomena but also aims to analyze causal relationships among variables based on established theoretical frameworks, particularly the Theory of Planned Behavior (TPB). A quantitative approach enables objective measurement of constructs through numerical data and supports hypothesis testing using statistical methods. This approach is especially suitable for analyzing relationships among latent variables and

determining the strength and direction of their effects. The cross-sectional design involves collecting data at a single point in time, which is effective for capturing respondents' perceptions and behavioral intentions within the current context. The survey method was selected as it facilitates the collection of standardized data from a relatively large number of respondents, thereby improving the reliability and generalizability of the findings within the defined population. Data were collected using a structured questionnaire distributed online, which is considered appropriate given the digital characteristics of the target respondents and allows for broader geographical reach. Overall, this research design is suitable for examining predictive relationships and testing the moderating effect of moral obligation in influencing green purchase intention, while ensuring methodological rigor and alignment with prior studies in sustainable consumer behavior research.

3.2 Participants

The sample in this study consists of 512 respondents selected through a purposive sampling technique. This non-probability approach was employed to ensure that only individuals who met specific criteria aligned with the research objectives were included. The inclusion criteria were established as follows: (1) participants must be at least 17 years old, indicating their ability to make independent purchasing decisions; (2) participants must have prior experience in considering or purchasing green products, ensuring familiarity with environmentally responsible consumption; and (3) participants must reside in Indonesia, as the study focuses on consumer behavior within the national context.

The use of purposive sampling is considered appropriate because it enables the selection of respondents who possess relevant knowledge and experience related to green consumption, thereby improving the accuracy and validity of the data. This method is particularly suitable for studies examining behavioral intentions, where respondents' prior exposure to the topic plays a significant role. Data were collected through an online survey, enabling broader geographic coverage and more efficient data collection. Although this sampling method does not ensure full statistical representativeness, the relatively large sample size enhances the robustness and reliability of the findings. Therefore, the respondents are considered sufficiently representative of consumers who are aware of and actively engage in environmentally friendly purchasing behavior.

3.3 Instruments

Provide Data were collected using a structured questionnaire distributed online. The questionnaire employed a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The study includes three main constructs:

a. Environmental Knowledge (independent variable), measured using 4 items adapted from Kang et al. (2013),
b. Moral Obligation (moderating variable), measured using 2 items adapted from Cui et al. (2024),
c. Green Purchase Intention (dependent variable), measured using 5 items adapted from Li (2025).

These instruments were selected based on previous studies to ensure content validity and relevance to the research context.

3.4 Data Analysis Procedures

The present study employed Partial Least Squares Structural Equation Modeling (PLS-SEM), utilizing SmartPLS version 4 as the analytical software. This analytical approach was selected due to its particular suitability for investigating complex theoretical models that incorporate latent variables and moderating relationships. Moreover, PLS-SEM demonstrates considerable robustness when applied to datasets characterized by non-normal distributions and moderately large sample sizes. The analytical process was systematically conducted across two principal phases: assessment of the measurement model (outer model) and assessment of the structural model (inner model).

The initial phase concentrated on evaluating the measurement model to establish the validity and reliability of all constructs under examination. Convergent validity was assessed based on outer loading values, whereby indicators yielding loadings of 0.70 or above were deemed satisfactory. In addition, Average Variance Extracted (AVE) values surpassing 0.50 were regarded as evidence that a given construct sufficiently accounts for the variance observed in its corresponding indicators. Internal consistency was examined through two reliability coefficients, namely Cronbach's alpha and composite reliability (CR), with threshold values exceeding 0.70 considered indicative of adequate reliability. Discriminant validity was established by contrasting the square root of each construct's AVE against its inter-construct correlation values, thereby confirming that each construct is conceptually and empirically distinguishable from the remaining constructs.

The subsequent phase entailed the evaluation of the structural model, aimed at examining the hypothesized relationships among the study variables. This phase encompassed the analysis of path coefficients, t-statistics, and p-values, all of which were derived through a bootstrapping resampling procedure to ascertain the statistical significance of each proposed relationship. Furthermore, the coefficient of determination (R^2) was employed to evaluate the model's predictive accuracy, reflecting the extent to which the independent variables collectively account for the variance in the dependent variable. The Variance Inflation Factor (VIF) was additionally computed to verify the absence of multicollinearity among the predictor variables. In summary, PLS-SEM was deemed the most appropriate analytical framework for this investigation, as it facilitates predictive modeling and enables a thorough simultaneous evaluation of both measurement and structural components, particularly in studies that incorporate moderating constructs such as moral obligation.

4. Finding

4.1 Statistic Descriptive

Respondents in this study were selected using a purposive sampling approach. The criteria required participants to be at least 17 years old, have experience purchasing green products, and reside in Indonesia. Based on Table 1, a total of 512 respondents participated, consisting of 423 females (82.6%) and 89 males (17.4%). The intention to purchase green products was most prominent among individuals aged 17 to 25 years (96.5%), the majority of whom held a bachelor’s degree. In addition, the most commonly purchased green product categories among respondents included food and beverages, as well as health and beauty products.

Table 1. Respondent Demographics

Description	Number
Age	
17-25	494
26-30	4
31-35	7
36-40	3
>41	3
Gender	
Male	89
Female	423
Product Type Purchased	
Food and Beverage	379
Health and Beauty Products	270
Kitchenware	109
Clothing	241
Vehicles	48
Education	
High School or Below	81
Diploma	241
Bachelor's Degree	177
Master's Degree	13

4.2 Validity and Reliability Test

Based on the results of the cross-loading factor analysis, each indicator in the study accurately measures the construct and is highly reliable, as evidenced by both Cronbach's Alpha and composite reliability (>0.7). Furthermore, no signs of multicollinearity were found among the variables, as the VIF values for all constructs were <5.

Table 2. Cross Loading Factor

	Loading	VIF	Cornbach's Alpha	Composite reliability (rho_c)	AVE
EK			0,810	0,875	0,637
EK1	0,833	1.813			
EK2	0,794	1.689			
EK3	0,797	1.703			
EK5	0,741	1.619			
GPI			0,857	0,898	0,638
GPI1	0,852	1.501			
GPI2	0,800	2.791			
GPI3	0,865	1.911			
MO			0,586	0,828	0,706
MO2	0,810	2.924			
MO3	0,869	1.588			

Furthermore, the results of the subsequent analysis confirm that discriminant validity is established for all constructs, as the square root of the AVE (diagonal values) exceeds the correlations between constructs (off-diagonal values), with all values above 0.50.

Table 3. Validity Discriminant

	EK	GPI	MO
EK	0,798		
GPI	0,454	0,799	
MO	0,422	0,750	0,840

Supplementary analyses were conducted to evaluate the model's goodness of fit by means of the Standardized Root Mean Square Residual (SRMR). The results indicate that the model achieves an acceptable level of fit, as evidenced by an SRMR value of 0.082 (> 0.05). In addition, the coefficient of determination (R^2) was examined to assess the predictive capacity of the independent variables within the model, yielding a relatively robust R^2 value of 0.586 (refer to Table 4).

Table 4 Coefficient of Determination

	R-square	R-square adjusted	SRMR
GPI	0,586	0,584	0,085
MO	0,178	0,176	

4.3 Structural Model Evaluation (Hypothesis Test)

The P-value test results indicate a significant relationship among the variables Environmental Knowledge, Moral Obligation, and Green Purchase Intention. This can be seen in the direct effects shown in the table below. The P-value obtained is 0.000. The strong relationship among the variables indicates that all hypotheses in the study are accepted (Table 5). Similarly, regarding the indirect effects among the variables, the P-value obtained is 0.000. This indicates that the moderating effect of the Moral Obligation variable on the Environmental Knowledge and Green Purchase Intention variables is accepted (Table 6).

Table 5. Direct Effect

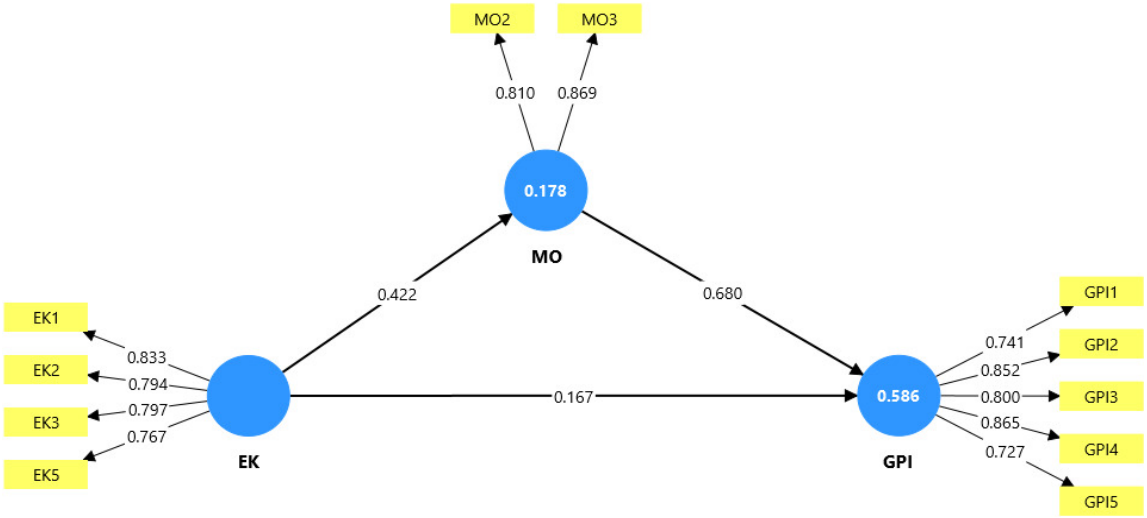
	T statistics (|O/STDEV|)	P values	Keputusan
EK -> GPI	**9,549**	**0,000**	**Diterima**
EK -> MO	**8,842**	**0,000**	**Diterima**
MO -> GPI	**20,284**	**0,000**	**Diterima**

Table 6. Indirect Effect

	T statistics (|O/STDEV|)	P values	Keputusan
EK -> MO -> GPI	**8,429**	**0,000**	**Diterima**

The results derived from the direct effect analysis, as presented in Table 5, reveal that environmental knowledge exerts a statistically significant impact on green purchase intention (H1), supported by a T-statistic of 9.549 and a P-value of 0.000. Additionally, environmental knowledge was found to significantly influence moral obligation, with a T-statistic of 8.842 and a P-value of 0.000. Correspondingly, moral obligation was demonstrated to have a substantial effect on green purchase intention, as evidenced by a T-statistic of 20.284 and a P-value of 0.000. Collectively, these findings affirm that both environmental knowledge and moral obligation serve as critical determinants in the formation of green purchase intention. With respect to the indirect effect analysis documented in Table 6, the results yielded a T-statistic of 8.429 and a P-value of 0.000, providing evidence that moral obligation operates as a moderating variable within the relationship between environmental knowledge and green

purchase intention. The path analysis diagram presented below further illustrates the interconnections among the three variables investigated in this study.



Gambar 1
Path Analysis

5. Discussion

The outcomes of this investigation confirm that environmental knowledge exerts a positive and statistically significant effect on green purchase intention. This finding is consistent with preceding scholarly work, which suggests that individuals possessing a comprehensive understanding of environmental issues, ecological consequences, and the significance of sustainable consumption are considerably more inclined to develop intentions toward purchasing eco-friendly products. Such knowledge equips consumers with the capacity to assess the environmental ramifications of their consumption patterns and facilitates more well-informed decision-making (Cui et al., 2024). Furthermore, environmental knowledge has the potential to shape individuals' attitudes and belief systems, reinforcing their perception that personal conduct contributes meaningfully to environmental conservation (Li et al., 2023).

Nevertheless, knowledge in isolation does not invariably translate into behavioral action without adequate intrinsic motivation. This observation is consistent with earlier empirical studies that documented a discrepancy between environmental awareness and actual behavioral outcomes (Thøgersen, 2021). Within this context, the present study identifies moral obligation as a pivotal moderating factor, given its significant role in moderating the relationship between environmental knowledge and green purchase intention. This implies that the effect of environmental knowledge on purchasing intention is amplified when individuals internalize a sense of moral responsibility toward environmental well-being. Such a finding aligns with Kumar (2023), who underscored the significance of personal ethics in shaping environmentally responsible consumption patterns. Moral obligation, therefore, serves as an internal psychological driver that facilitates the conversion of cognitive awareness into concrete behavioral intention.

From a theoretical standpoint, the present findings contribute to the advancement of the Theory of Planned Behavior (TPB) by integrating a normative dimension, specifically moral obligation.

This incorporation implies that behavior is governed not solely by intention and perceived behavioral control, but also by individuals' moral values and sense of personal accountability (Liao et al., 2021). From a practical standpoint, this suggests that environmental awareness campaigns will yield greater effectiveness when complemented by initiatives designed to cultivate ethical values and moral consciousness among consumers. In conclusion, this study not only corroborates existing theoretical frameworks but also provides deeper insight into the mechanisms through which cognitive and moral dimensions interact in shaping green purchase intentions.

6. Conclusion

The present study establishes that environmental knowledge exerts a considerable influence on green purchase intention, with moral obligation serving to reinforce this association. These findings underscore the necessity of incorporating both cognitive and ethical dimensions in fostering sustainable consumption behavior among consumers. Subsequent research endeavors are recommended to integrate a broader range of variables and employ more heterogeneous samples, with the aim of enhancing the external validity and generalizability of the findings.

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