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Exploring Mediators of Green Vehicle Fuel Purchase Intentions: The Roles of Environmental Belief, Concern, and Knowledge

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Abstract. This study explores factors impacting green vehicle fuel purchase intentions among 469 consumers in Bandung, Indonesia. Drawing on TPB and ISS models, the impact of environmental concern and knowledge on intentions is examined, with environmental beliefs as a proposed mediator. Results of the PLS-SEM analysis revealed that environmental concern and beliefs positively predicted intentions, while knowledge did not. Further, beliefs partially mediated the links from concern and knowledge to intentions. By illuminating this mediating role of pro-environmental beliefs, the research provides valuable practical insights into effectively promoting the adoption of eco-friendly fuels through engendering consumer confidence and trust.

Keywords: green purchase intention, environmental concern, environmental knowledge, environmental belief

1. Introduction

In recent years, research on factors influencing the use of environmentally friendly products has increased significantly (Y. S. Chen et al., 2015; Chin et al., 2018; Krishna Mohan et al., 2021). Increasing public awareness of environmental issues is a result of the escalation of the energy crisis, the emergence of climate change, and the intensification of environmental problems (Hameed et al., 2021; Yin et al., 2023). As environmental awareness grows, marketers are emphasizing that environmentally friendly products help preserve the environment (Sun et al., 2018; Trivedi et al., 2015). Despite growing environmental awareness, Indonesian consumer behavior toward eco-friendly products has not improved. In a 2022 Rakuten Insight survey in Indonesia, 64% of respondents said buying sustainable or eco-friendly products was most important. According to Sultana et al. (2022), increasing the affordability of eco-friendly products can encourage consumers to adopt more sustainable consumption practices.

Environmental protection has grown in popularity as resource waste has increased (Schill & Godefroit-Winkel, 2019). Sustainable consumption practices, which protect nature and the environment, have grown in popularity among businesses and consumers (Lau & Hashim, 2020). Daily green product purchases help address environmental issues (Asif et al., 2022; Choi & Johnson, 2019; Pandey & Yadav, 2023). Several factors influence environmentally focused behavior, but altruism is the most important (Choi & Johnson, 2019). Recycling-related behavioral research (Asif et al., 2022; Chen & Lee, 2022), energy preservation (R. Kumar et al., 2019), and the use of environmentally friendly products have relied on this approach, derived from personal norms, moral obligation, and altruism (Dhir et al., 2021). Roci and Rashid (2023) examined how pro-environmental attitudes and recycling practices demonstrate altruism. Intriguingly, consumers are increasingly interested in buying and using eco-friendly products (Kao & Du, 2020) to reduce environmental impacts and preserve the ecosystem (Panda et al., 2020; Sindhu et al., 2019). However, businesses and governments still struggle to attract customers (Morea et al., 2023; Zahid et al., 2018). Thus, decision-makers must understand the key factors influencing consumer purchase intent (Chauhan et al., 2021; Kim & Lee, 2023).

In recent years, the need to protect the environment has become increasingly appealing in tandem with the rise in resource waste (Schill & Godefroit-Winkel, 2019). Sustainable consumption practices, which protect nature and the environment, have grown in popularity among businesses and consumers (Lau & Hashim, 2020). Daily green product purchases help address environmental issues (Asif et al., 2022; Choi & Johnson, 2019; Pandey & Yadav, 2023). A lot of factors affect environmental behavior, but altruism is the biggest (Choi & Johnson, 2019). Personal norms, moral obligation, and altruistic attitudes have been fundamental in recycling-related behavioral research (Asif et al., 2022; Chen & Lee, 2022), energy preservation (R. Kumar et al., 2019), and the use of environmentally friendly products. Pro-environmental attitudes and recycling as altruistic values have been studied by Roci and Rashid (2023). Interestingly, consumers are increasingly interested in buying and using environmentally friendly products (Kao & Du, 2020) to reduce environmental impacts and preserve the ecosystem (Panda et al., 2020; Sindhu et al., 2019). However, businesses and governments continue to face difficulties in attracting enough customers (Morea et al., 2023; Zahid et al., 2018). Therefore, decision-makers must have a comprehensive understanding of the factors that significantly impact consumer purchase intent (Chauhan et al., 2021; Kim & Lee, 2023).

Moreover, the inclination and potentiality of individuals to give precedence to environmentally sustainable products and services in comparison to alternative non-green alternatives is reflected in the Green Purchases Intention metric (Ahmad & Zhang, 2020; Chauhan et al., 2021; Nekmahmud et al., 2022). A number of noteworthy factors have been recognized as critical in determining the green purchasing intentions of consumers, including beliefs, values, needs, knowledge, motivations, demographic characteristics, and attitudes (Al Mamun et al., 2023; Nguyen et al., 2019). The identification of a customer's need for a product during the evaluation phase influences their purchasing decision (Munerah et al., 2021). Purchase intent is an indispensable indicator of customer behavior prediction (Alganad et al., 2023). Traditionally, purchase

intent measures are employed as surrogates for tangible purchasing behavior (Li et al., 2021). While purchase intent has been examined in various contexts, there is a dearth of research concerning green purchase intent (Kim & Lee, 2023; Chauhan et al., 2021).

Experts have studied consumer intentions to buy and use environmentally friendly and energy-efficient products using theoretical frameworks, variables, and diverse contexts (Choi & Johnson, 2019; Mohd Suki, 2016; Szabo & Webster, 2021). Most of the research has been done in Asian countries, such as China (Cai & Li, 2018; Fu et al., 2020; Qin & Song, 2022; Xiao et al., 2023), Vietnam (M. T. T. Nguyen et al., 2019; Pham et al., 2022), India (R. Kumar et al., 2019; Rejikumar & Asokan-Ajitha, 2020), Iran (Naalchi Kashi, 2020), Saudi Arabia (Klabi & Binzafrah, 2023a), and Malaysia (Mohd Suki, 2016; Patwary et al., 2022). The Theory of Planned Behavior was used in some studies on environmentally friendly product purchases (Ajzen, 1991). The goal was to examine consumer attitudes, subjective norms, and perceived behavioral control in "purchase intention."

However, very little research has been done to explore environmental issues, environmental knowledge, environmental beliefs, and green purchase intentions (Heo & Muralidharan, 2019). Even when researchers are available, most study linear direct relationships between environmental concerns, knowledge, beliefs, and consumer behavioral intentions in various countries. (Asif et al., 2022; Taufique et al., 2017). This study fills the research gap by focusing on Bandung, Indonesia, consumers and using SDG variables (attitudes, subjective norms, and perceived behavioral controls), green beliefs, and eco-friendly labels to understand consumer behavioral intentions for environmentally friendly product purchases.

"Eco-friendly product" refers to a product designed to reduce environmental impact from design to use (Suhartanto et al., 2023). Tamar et al. (2021) define eco-friendly products as those that reduce their environmental impact through sustainable operations. Natural resource conservation is a hallmark of environmentally friendly products, according to Heo and Muralidharan (2019). Khan et al. (2022) define environmentally friendly products as those made by companies that take appropriate environmental measures. Despite disagreements on what a "green" product is, some researchers believe there is no universal standard (Choi & Johnson, 2019). This study considers Pertamax Turbo (RON 98), a vehicle fuel oil product that follows environmentally friendly practices at all stages, making it safe for the environment and consumers (Mohd Suki, 2016). Studying environmentally friendly vehicle fuels is intriguing for academics. A few studies (Panda et al., 2020; Roci & Rashid, 2023; Saleem et al., 2021) have been conducted to comprehend customers' motivations for using greener fuels and the reasons why. The automotive industry is one of the most resource-intensive and interconnected, so pro-environmental measures like using environmentally friendly vehicle fuel oil may help maintain sustainability (Hamzah & Tanwir, 2021; Zhu et al., 2023).

Consumer concern for environmental sustainability and ecological balance is unavoidable in the automotive and transportation industries (Awang Razli et al., 2020). Customers' awareness of the automotive industry's excessive air pollution, waste, and environmental impacts has grown worldwide (Fu et al., 2020). focusing on vehicle exhaust gases, customer preference for environmentally friendly fuels, and sustainable and ecological vehicle practices (Saleem et al., 2021). Previous research has shown that automotive consumers want to make environmentally friendly choices and like green fuel oil products (Bennett & Vijaygopal, 2018; Klabi & Binzafrah, 2023b). The green fuel industry must understand consumer perceptions, attitudes, and behaviors to meet rising demand for eco-friendly products and services, according to the researchers. This helps them understand customer awareness of fuel oil's eco-friendliness and their preference for green products. Researching consumer preferences and repurchase intentions is crucial (Costa et al., 2021; Nguyen et al., 2019; Pandey & Yadav, 2023).

Despite increased environmental awareness and knowledge, consumers have not fully adopted eco-friendly purchasing practices. Because consumer behavior may not always reflect the intent to buy and use fuel oil with a Research Octane Number of 98 (RON 98), Although consumer attitudes toward the selection of fuel oil are generally favorable (Bennett & Vijaygopal, 2018; Hamzah & Tanwir, 2021;

Zhu et al., 2023), the majority of customers claim that environmental concerns influence consumer purchasing behavior. Customers' environmental beliefs and attitudes don't match their ecological purchasing intentions and behaviors, such as buying eco-friendly vehicle fuel oil (Klabi & Binzafrah, 2023b; Saleem et al., 2021). Mismatched consumer attitudes and behaviors affect their decisions to buy environmentally friendly vehicle fuel oil (Liguo et al., 2023). This suggests that factors influencing the intention to buy eco-friendly products and actual behavior, particularly in fuel oil, are still unidentified. (R. Shah et al., 2023; Zahid et al., 2018).

According to previous research, most studies on the purchase intention of environmentally friendly products, especially motor vehicle fuels, and consumer purchasing behavior of green products have been conducted in Western countries like the US, Turkey, or Asia Minor countries like Hong Kong and Taiwan. Research is scarce in Asia (Hamzah & Tanwir, 2021; Liguo et al., 2023; Saleem et al., 2021). Lack of literature review and empirical frameworks have hindered attempts to understand motor vehicle fuel product purchase intentions (Zhu et al., 2023). Bandung, Indonesia, has 80 public fuel filling stations that use sustainable practices (Xu et al., 2023; Ricci et al., 2018; Abrar et al., 2021). However, especially in Indonesia, little research hasbeen conducted on the purchase intention preference of environmentally friendly products, particularly motor vehicle fuels. In Bandung, Indonesia, motor vehicle consumers' choice of environmentally friendly fuels appears unaffected by their environmental knowledge, concern, and beliefs. This study aims to fill this knowledge gap by developing a significant model to incorporate consumers' pro-environmental attitudes toward environmentally friendly vehicle fuel types in Bandung, Indonesia.

The study also examined the role of environmental belief as a mediator between environmental concern and environmental knowledge in choosing environmentally friendly vehicle fuel oils, a relationship that has not been extensively studied. Using the S-O-R model, TPB, and social identity theory, the current study links green purchase intention to vehicle fuel oil types like Pertamax Turbo RON 98 and discusses green knowledge, environmental concern, and environmental belief. The current study adds to the literature by developing a research model that combines environmental concern and knowledge on customer attitudes toward vehicle fuel oil (Pertamax Turbo RON 98) with environmental belief as a mediator.

2. Literature Review and Hypotheses

2.1. Underpinning Theory

Several internal and external factors can influence Indonesian consumers' energy-efficient product purchases. This study examines how attitudes, subjective norms, perceptions of control over behavior, environmental awareness, pro-environmental beliefs, and eco-friendly labels affect Indonesian consumers' intentions to buy and use environmentally friendly products. According to Ajzen's (1991) Theory of Planned Behavior (TPB), consumers' perceived attitudes can affect their intention to buy and use environmentally friendly products. The SDGs (Sustainable Development Goals) model states that elements near a person's behavior reflect their behavioral intentions, which are their willingness to take a specific action. The SDGs also consider a person's social and non-voluntary behavior and ability to implement them. The SDGs fit well with environmental psychology and eco-friendly consumer behavior. (Vanham et al., 2019) and have been widely used by researchers to promote recycling and eco-friendly products. New constructs can be added to existing models if they relate to rational consumer decision-making, are independent, and directly relate to the SDGs. It has been shown that adding previous constructs improves consumer behavior prediction (Ahmad et al., 2020; N. Sharma et al., 2022).

2.2. Environmental Concern (EC)

Concern for the environment is often thought to predict environmentally conscious behavior and directly motivate the purchase of eco-friendly products. This concept is often used to describe eco-

friendly behavior (Klabi & Binzafrah, 2023; Lau & Hashim, 2020; Thieme et al., 2015). Environmental studies date back decades. Researchers initially struggled to define environmental concern and compare it to an environmental attitude (Sultana et al., 2022a; Yue et al., 2020). Some studies consider environmental concern to be obvious, while others find it difficult to provide a precise definition (Borusiak et al., 2021; Sultana et al., 2022b). Environmental concern is often operationally defined, with different definitions used in different studies. The paradigm scale by Bulut et al. (2021) is the first quantitative environmental concern definition. Environmental concerns are currently divided into two categories (Heo & Muralidharan, 2019; Mukherjee & Chandra, 2022; R. Shah et al., 2023; Zahid et al., 2018): attitudes toward garbage disposal or water pollution and broad and universal environmental concerns (such as views on various ecological crisis issues and attitudes towards the relationship between people and the environment). The researchers used the latter definition, which defines environmental concern as a global and all-encompassing perspective on environmental issues.

Previous research on pro-environmental behavior has demonstrated a significant correlation between environmental responsibility and efforts to manage environmental problems (Chin et al., 2018; Tamar et al., 2021a). People with a higher level of environmental responsibility, as defined by Hamzah and Tanwir (2021), tend to be more concerned about environmental issues and to support green products because they believe that humans contribute to the development of environmental problems. Moreover, according to Simanjuntak et al. (2023), higher environmental responsibility leads to greater environmental concern. Environmentally responsible consumers value environmental benefits more (Taufique et al., 2017) and believe that humans are closely related to the environment (Sharma et al., 2020), particularly when they feel responsible for the preservation of fragile environments (Ghaffar et al., 2023). Additionally, they seek environmental solutions more often. According to the above, environmental responsibility increases environmental concern. Therefore, researchers proposed a hypothesis.

Hypothesis 1: Environmental concern (EC) is positively related to green purchase intention (GPI)
Hypothesis 2: Environmental concern (EC) is positively related to environmental belief (EB)

Previous research has demonstrated that environmental concern has a direct, positive effect on consumers' intentions to purchase green products (Heo & Muralidharan, 2019; A. Shah et al., 2023; Zahid et al., 2018). Individuals with a greater concern for the environment tend to be more responsive to environmental issues and to take proactive steps to protect the environment (Simanjuntak et al., 2023). X. Chen & Lee's (2022) research demonstrates the importance of environmental concern in predicting green consumption behavior and finds significant differences in environmental concern between green product buyers and non-buyers. According to Jin et al. (2022), customers who care about the environment are more likely to buy green products. A comprehensive survey of Chinese society found that environmentally conscious consumers are more willing to pay more for environmentally friendly products. (Fu et al., 2020; Y. Wang et al., 2015; Yue et al., 2020).

2.3. Environmental Knowledge (EK)

Eco-literacy, or environmental knowledge, is a person's understanding of environmental concepts, facts, and relationships (Taufique et al., 2017). Environmental knowledge includes knowing that natural resources can be depleted and must be protected to keep the planet safe for future generations. Sun et al. (2018) and Fawehinmi et al. (2020) explain that objective understanding and subjective experience affect pro-environmental behavior. Objective knowledge, gained through education, helps people understand how products affect the environment. However, subjective knowledge is gained through personal experience, such as that the product is environmentally friendly. People who view environmental knowledge as consumer knowledge about environmental events are more environmentally conscious (Asif et al., 2023; Taufique et al., 2017). Eco-literacy, or environmental

knowledge, is a person's thorough understanding of environmental concepts, facts, and relationships (Taufique et al., 2017). Environmental knowledge includes the realization that natural resources can be depleted and must be protected to keep the planet safe for future generations (Sun et al., 2018). Fawehinmi et al. (2020) explain that objective understanding and subjective experience affect pro-environmental behavior. Objective knowledge is gained through education, which helps people understand how products affect the environment. However, subjective knowledge is based on personal experience and states that the product is manufactured.

In addition, environmental knowledge is defined as "general knowledge of facts, concepts, and interrelationships concerning the natural environment and its major ecosystems" (Liguo et al., 2023). This knowledge includes an understanding of ecological processes as well as environmental issues and their root causes. Environmental knowledge can be divided into three types, according to Heo & Muralidharan (2019): (a)'systems knowledge,' which includes knowledge of environmental issues (Tamar et al., 2021b); (b) 'knowledge of related actions,' which refers to an understanding of behavior and what actions should be taken to address environmental problems (Wang et al., 2020); and (c) 'effectiveness knowledge,' which includes an understanding of the Simanjuntak et al. (2023) highlight the distinction between systems knowledge and related action knowledge as the ability to comprehend what to do and how to do it. One of the objectives of this study is to examine the effect of consumer knowledge on environmental issues. Earlier models proposed that knowledge influenced attitudes, which in turn influenced environmental support behaviors (Asif et al., 2022; Taufique et al., 2017). Sun et al. (2018) discovered that environmental knowledge of issues (such as system knowledge) significantly influences environmentally responsible behavior. Additionally, researchers note that when environmental knowledge and values are combined, it significantly explains the intent to behave ecologically (Abd-Mutalib et al., 2023a). Regarding Chinese consumers, Yue et al. (2020) discovered that those with strong environmental awareness have a strong desire to purchase environmentally friendly products. Khan et al. (2022) argue that accurate knowledge is necessary to facilitate the occurrence of behavior and that understanding consumer behavior that supports the environment is especially important in this regard.

Environmental knowledge, such as knowledge of environmental systems, does not predict environmentally responsible behavior (Khan et al., 2020). Comparative surveys of environmentalists and non-environmentalists show that environmental knowledge does not significantly affect environmentally supportive behavior. (Martinez-Martinez et al., 2019). Therefore, environmental knowledge alone cannot predict environmentally conscious purchasing behavior. Confusion about environmental issues, economic constraints, and the daily use of green products may explain this weak link between environmental knowledge and environmental support (Hamzah & Tanwir, 2021). However, Heo and Muralidharan (2019) explained that while knowledge of environmental issues may not affect environmentally supportive behaviors, it can reduce fear and anxiety, which can encourage protests. Given these contradictory findings and the importance of knowledge, this study examines how environmental knowledge predicts consumer intentions to buy environmentally friendly products and mediates environmental beliefs.

Hypothesis 3: Environmental knowledge (EK) is positively related to green purchase intention (GPI)
Hypothesis 4: Environmental knowledge (EK) is positively related to environmental belief (EB)

2.4. Environmental Beliefs (EB)

Environmental beliefs affect environmental behavior. Environmental issues and behaviors are pursued because people care about their impact (Pelcher et al., 2023). According to Han (2015), awareness of these consequences positively affects environmental beliefs. According to De Groot and Steg (2007), a person's level of awareness is proportional to their comprehension of the available actions in a given context. Johnson et al. (2004) have discussed the positive and significant impact of environmental

beliefs and awareness of their consequences in the context of climate change beliefs. In the meantime, Campbell-Arvai (2015) has identified a positive and statistically significant correlation between environmentally conscious behavior and the degree of awareness regarding its consequences. Environmental beliefs have a direct and positive influence on conservation behavior (Thi Khanh & Phong, 2020). According to Gadenne et al. (2011), environmental awareness is an integral part of behavioral science because it encompasses environmental beliefs. This study therefore hypothesizes that environmental beliefs can reflect the level of consumer awareness of the effects of work in Indonesia as well as their desire to purchase and consume environmentally friendly products.

Hypothesis 5: Environmental belief (EB) is positively related to green purchase intention (GPI)

2.5. Mediating Effect of Environmental Belief

In this study, we propose using environmental beliefs as mediators to promote the adoption of environmentally friendly vehicle fuel oil. According to Taufique et al. (2017), confidence is key to positive responses to eco-friendly products. Sustainability and a green lifestyle are becoming more important in the automotive industry (Ghaffar et al., 2023). Introducing eco-friendly vehicle fuel oil can boost brand image and green consumer confidence. According to research, companies' environmental performance builds environmental trust, which encourages consumers to pay more for green products and services (Fu et al., 2020). Mediating environmental beliefs is also important for environmental preferences, according to Asif et al. (2022).

Lack of consumer belief and confidence has been shown to negatively impact purchasing behavior (as evidenced by Taufique et al., 2017). Han (2015) and Thi Khanh & Phong (2009) also used environmental beliefs as a mediator to understand consumer intentions and purchasing behavior for green products. (2020). This study found that environmental concern positively affects green purchase intention, suggesting that the environment regulates this relationship. Thus, we hypothesize:

Hypothesis 6: Environmental belief mediates the relationship between environmental concern and green purchasing intention.

Hypothesis 7: Environmental Belief Mediates Environmental Knowledge and Green Purchase Intention

This study's research framework is shown in Figure 1. This framework treats environmental concern and knowledge as independent variables and green vehicle fuel oil product purchase intention as dependent. Green trust is also examined as a mediating variable to determine its indirect effect on environmental concern, knowledge, and purchase intention (see Figure 2).

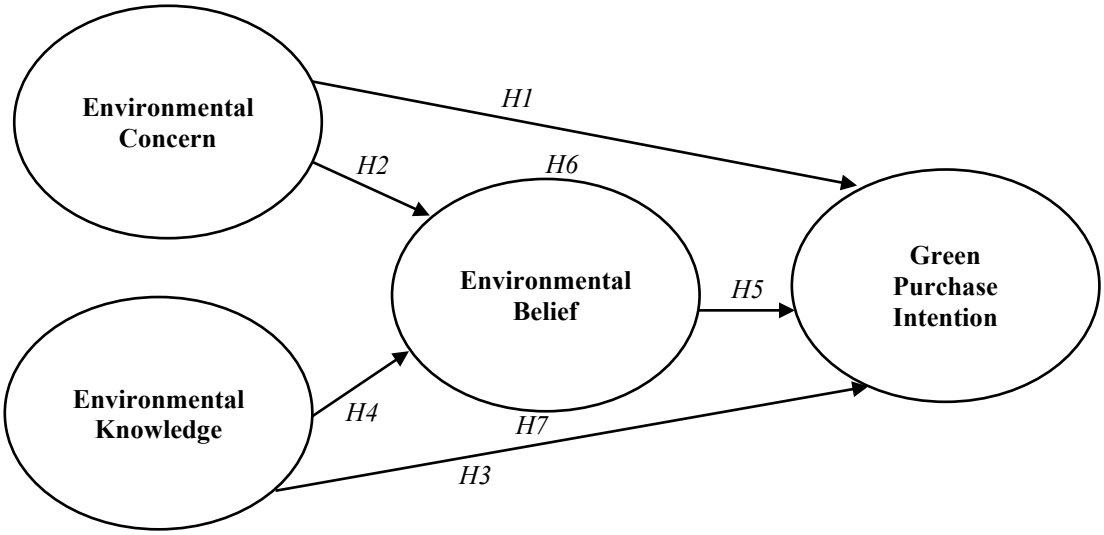

Fig.1: Framework

3. Methodology

3.1. Instrument Development

On a Likert five-point scale, respondents rate statements about the variable of interest, which is represented by several hidden concepts. This study identified environmental knowledge and concern as comprehensive concepts that influenced environmentally responsible purchasing. Prior research supports four claims (Sultana et al., 2022). Environmental concerns were assessed using a modified four-item scale. We also adapted four items from a previous scale to measure the intention to buy environmentally friendly products (Nguyen et al., 2019). Previous research informs our environmental consciousness scale (Bulut et al., 2021). Researchers also use a four-item scale based on prior research to assess green product knowledge (Fawehinmi et al., 2020).

3.2. Validation and Sample

To make questionnaires easier to complete, the survey instrument includes Indonesian statements. To validate the questionnaires, researchers used back-to-back questionnaires and consulted academic experts in consumer behavior, particularly environmental attitudes. Indonesian consumers who use environmentally friendly vehicle fuel oil (Pertamax Turbo RON 98) were studied. Through these steps, the author ensures that the survey instrument is free of translation or understanding errors for each question asked.The survey data is analyzed after completion. Given the quantitative nature of this study, the authors carefully chose Partial Least Square (PLS) to evaluate construct relationships. Researchers analyze data and evaluate measurement and structural equation models with Smart PLS 3.3.3. PLS was chosen because it can measure all paths without large sample sizes (Awang Razli et al., 2020). PLS-SEM was chosen for abnormally distributed data, complex relationships, research prediction, and other reasons (Hair et al., 2017).

3.3. Data Analysis

Survey data is analyzed after completion. Given the quantitative nature of this study, the authors carefully chose Partial Least Square (PLS) to evaluate construct relationships. Researchers analyze data and evaluate measurement and structural equation models with Smart PLS 3.3.3. PLS was chosen because it can measure all paths without large sample sizes (Awang Razli et al., 2020). PLS-SEM was chosen for abnormally distributed data, complex relationships, research prediction, and other reasons (Hair et al., 2017).

3.4. Sampling and Data Collection

In addition to Gelderman et al. (2021), Green Purchase Intention collects data from respondents who meet predetermined criteria (i.e., consumers who use and consume environmentally friendly vehicle fuel oil products). Participants were asked about environmental consciousness, issues, green product knowledge, and intent to buy. First, researchers tested each instrument on 30 customers. To reduce data collection method variations, researchers start interviews with anonymity and strict confidentiality.

4. Data Analysis and Findings

Researchers tested the hypothesis using SEM-PLS and robust maximum likelihood estimates. Researchers also gave 500 questionnaires to diverse respondents to ensure data validity. After adjusting for missing data (Hair et al., 2017) and assuming data normality, the researchers received 469 responses for analysis (Lin et al., 2020). The analysis results are in Table 1.

Table 1. Descriptive statistics (n = 469)

	Female (n = 303; 64.6%)	***Male (n = 166; 35.4%)***
Age (in years)		
18 - 22	58 (19.1%)	29 (17.5%)
23 - 30	64 (21.1%)	38 (22.9)
31 - 40	79 (26.1%)	35 (21.1%)
41 - 50	59 (19.4%)	33 (19.9)
51 or Above	43 (14.2%)	31 (18.7)
Level of Income (Monthly Income)		
3.500.001 – 5.500.000,- IDR	37 (12.2%)	16 (0.9%)
5.500.001 – 10.000.000,- IDR	68 (22.4%)	34 (20.4%)
10.000.001 – 15.500.000,- IDR	153 (50.4%)	89 (53.6%)
Above 15.500.000 IDR	45 (14.8%)	27 (16.2%)
Highest Educational Completed Today		
Bachelor's Degree	156 (51.5%)	82 (49.3%)
Master's Degree	138 (45.5%)	67 (40.3%)
Doctorate Degree/PhD	9 (0.3%)	17 (10.2%)
Occupation		
Civil Servant/Officials	109 (35.9%)	46 (27.7%)
Entrepreneur	92 (30.3%)	32 (19.3%)
Private Employees	68 (22.4%)	27 (16.2%)
Teachers/Lectures	23 (0.8%)	53 (31.9%)
Retired	11 (0.4%)	8 (0.5%)

Note: The percentage represents the number of female and male respondents in each category relative to the total number of female and male respondents.

Munerah et al. (2021) found that questionnaires can cause common method variance (CMV) when measuring study constructs. Researchers used exploratory factor analysis and the Harman single-factor test to assess the CMV's potential. The principal component analysis showed that the first factor explained 31%–50% of the variance. 2021 (Munerah et al. 2021) Researchers found no construct correlations above 0.90 in the correlation matrix (Awang Razli et al., 2020). Researchers maintain strict confidentiality during the survey process to encourage truthful and accurate responses (Witek & Kuniar, 2021). Thus, the Harman single-factor test, correlation matrix analysis, and procedural steps show that CMV did not affect our study.

4.1. Assessment of Measurement Model

In this section, researchers present multiple measurement model evaluation results. Researchers use this test to verify the measurement model's psychometric quality (Nunnally, 1994) and error rates (Adetola et al., 2021). In this study, researchers considered convergent and discriminatory validity. Table 2 shows Cronbach alpha reliability values of 0.78–0.83. Researchers evaluate internal consistency between measurement items using composite consistency (CR). This study followed the recommended threshold of 0.70 with CR values of 0.84–0.88 in 2017 (Hair et al., 2017).

To ensure convergent validity, researchers must examine each item's loading factor, which must be greater than 0.70, and the extracted average variance (AVE), which must be greater than 0.50. (Hair et al., 2017). The AVE values of all constructions exceeded the minimum requirement of 0.50, with values ranging from 0.58 to 0.71 (Table 2). All factor loading values, Cronbach, AVE, and CR alphas in Table

2 are acceptable, confirming the study's dependability and convergent validity.

Table 2.Reliability and convergent validity

Latent Variable	Constructs Question Item	Loadings	Cronbach's alpha	AVE	CR
Green Purchase Intention (GPI)	GPI-1	0.71	0.78	0.58	0.84
	GPI-2	0.73			
	GPI-3	0.77			
	GPI-4	0.88			
Environmental Concern (EC)	EC-1	0.84	0.80	0.71	0.86
	EC-2	0.78			
	EC-3	0.82			
	EC-4	0.80			
Environmental Knowledge (EK)	EK-1	0.86	0.79	0.61	0.87
	EK-2	0.75			
	EK-3	0.82			
	EK-4	0.80			
Environmental Belief (EB)	EB-1	0.79	0.83	0.63	0.88
	EB-2	0.83			
	EB-3	0.80			
	EB-4	0.82			

The Fornell-Larcker criterion, which equates AVE to the correlation value of all off-diagonal items, is also used to assess each construction's discriminatory validity. As shown in Table 3, the square root of the diagonal AVE is greater than any correlation value for other related constructions, meeting discriminatory validity standards (Kock, 2014; Fornell & Larcker, 1981). Henseler et al. (2015) found that the heterotrait-monotrait ratio (HTMT) accurately estimates the correlation between two constructions and was used to test discriminative validity. Discriminatory validity is defined by an HTMT value of 0.85 or 0.90 (Henseler et al., 2016). As shown in Table 4, our model meets the HTMT criteria because all values are below the acceptance threshold (0.85). Once the measurement model's discriminatory validity is confirmed, we can perform structural model analysis and hypothesis testing.

First, researchers used the Fornell-Larcker criterion to check the discriminatory validity of each construct. This criterion compares AVE (average variance extracted) to the correlation value between all major diagonal items and items outside the other diagonal.The square root value of AVE on the main diagonal in Table 3 is higher than any correlation value with other constructs. This means that the test is discriminatory (Kock, 2014; Fornell & Larcker, 1981).The heterotrait-monotrait ratio (HTMT) from Henseler et al. (2015) was used to find the exact correlation between the two constructs and judge their discriminatory validity.The standard HTMT cut-off for discriminatory validity is 0.85 or 0.90 (Henseler et al., 2016). In Table 4, all of our model's HTMT values are below the acceptance threshold (0.85). It proves the study's measurement model's discriminatory validity. Researchers can analyze structural models and test hypotheses after confirming these steps.

Table 3. Discriminant validity test using Fornell– Larcker criterion

	GPI	EB	EC	EK
GPI	0.75	0.37	0.44	0.29
EB	0.36	0.81	0.43	0.53

EC	0.44	0.43	0.78	0.35
EK	0.29	0.52	0.37	0.82

Table 4.HTMT ratio

	GPI	EB	EC
EB	0.45		
EC	0.52	0.53	
EK	0.37	0.65	0.47

4.2. Assessment of Structural Model

The coefficient of determination (R^2), path coefficient significance (β), effect magnitude (f^2), and predictive relevance are used to evaluate a structural model (Q^2). Table 5 shows this analysis's results and variance inflation (VIF) factors for multicollinearity (Hair et al., 2011). A VIF coefficient below 3.3 indicates no vertical or lateral collinearity in the model (Kock, 2015). In this structural model, collinearity is not a problem because Table 5 shows that the VIFs of the independent variables are all below 3.3 (Hair et al., 2010).

The research model's effect size was also assessed (f2). According to Cohen (1988), exogenous variables with F2 values of 0.02, 0.15, and 0 have small, medium, and large effects. Environmental knowledge had a large effect on environmental beliefs but no effect on green purchase intention (f2 = 0.23). The GPI is moderately affected by perceived green knowledge and confidence (f2 = 0.03; 0.16). Scientists also used Geisser & Stone's (1974) coefficient (Q2). Use the procedure to assess the study's predictive value (Adetola et al., 2021). In the current model, Q2 has 0.125 green purchase intention and 0.224 environmental belief. Q2 > 0 indicates that the research model has good predictive validity (Hair et al., 2017).

Table 5. VIF values

GPI-1	1.56
GPI-2	1.68
GPI-3	1.63
GPI-4	1.25
EC-1	1.62
EC-2	2.04
EC-3	2.72
EC-4	1.76
EK-1	1.47
EK-2	1.76
EK-3	1.59
EK-4	1.67
EB-1	1.52
EB-2	1.71
EB-3	1.82
EB-4	1.78

Table 6. Result of f^2 Effect Size

	GPI	EB	EC	EK
EB	0.03			
EC	0.16	0.11		
EK	0.00	0.23		

Hair et al. (2017) describe how Smart PLS 3 bootstraps standard path coefficients, t-values, and standard errors to analyze hypothesized variable relationships. The researchers also examined mediation using Hayes and Preacher's (2014) indirect relationship between environmental belief and green purchase intention. Cohen (1988) suggests measuring effect measures using the R2 value interval, where 0.02–0.12 is weak, 0.13–0.25 is moderate, and 0.26 and above is significant.

The structural model in this study has green purchase intention as the dependent variable, with the independent and mediation variables explaining 24% of the variance. However, environmental concern and knowledge explain 34.6% of the variance in environmental belief, the mediation variable. Table 7 reveals significant positive pathways between environmental concern and green purchase intention ($\beta = 0.32$, $p<0.05$) and environmental concern and environmental belief ($\beta = 0.28$, $p<0.05$). Positively significant pathways were found between perceived environmental knowledge and environmental belief ($\beta = 0.41$, $p<0.05$) and environmental belief and green purchase intention ($\beta = 0.20$, $p<0.05$). Except for the relationship between perceived environmental knowledge and green purchase intention ($\beta = 0.06$, $p > 0.05$), the study supports the hypothesized relationship.

The current study examines how environmental beliefs affect perceptions of environmental concern and environmental knowledge about green purchase intentions. According to Preacher and Hayes (2008), significant mediation is relevant if the confidence interval is not zero. Research indicates that environmental belief has a positive impact on the relationship between perception of environmental concern and green purchase intention ($\beta = 0.06$, $p<0.05$) and between environmental knowledge and green purchase intention ($\beta = 0.08$, $p<0.05$).

Table 7.Testing of hypothesis

Hypothesis	Relationship	Direction	St Beta	St error	t Stats	p values	Decision
H1	EC → GPI	Positive	0.32	0.084	3.871	0.000	Supported
H2	EC → EB	Positive	0.28	0.059	4.920	0.000	Supported
H3	EK → GPI	Positive	0.06	0.084	0.778	0.218	Not Supported
H4	EK → EB	Positive	0.41	0.057	7.311	0.000	Supported
H5	EB → GPI	Positive	0.20	0.093	2.223	0.013	Supported
H6	EC → EB → GPI	Positive	0.06	0.029	2.082	0.019	Supported
H7	EK → EB → GPI	Positive	0.08	0.042	2.049	0.020	Supported

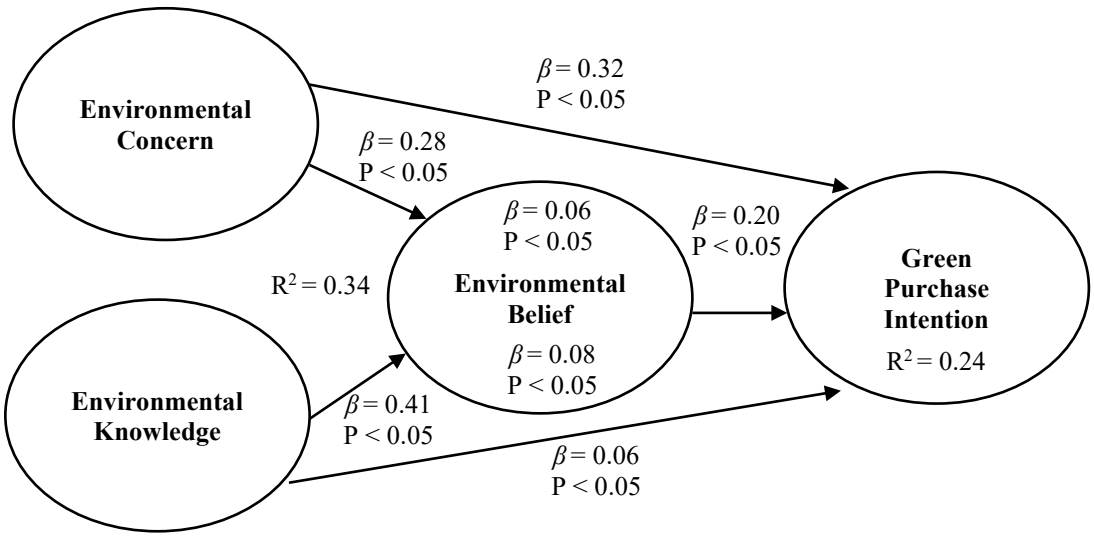

Fig.2: The Second Framework

5. Discussions and Implications of The Study

The green knowledge of vehicle fuel oil customers (Pertamax Turbo RON 98) about receiving services is still debated. This study examines and expands customer understanding and concern about using and buying fuel oil for cars (Pertamax Turbo RON 98). Like Adetola et al. (2021) and Saleem et al. (2021), the results show that customers' environmental knowledge can influence their intention to buy green products and services. According to researchers, vehicle fuel oil (Pertamax Turbo RON 98) is the most expensive, so the customer value for green vehicle fuel oil service must exceed the industry premium price, which in this case is the fuel oil filling station. Customers' environmental awareness determines the service value of environmentally friendly vehicle fuel oil products. Thus, eco-awareness is necessary for using, consuming, and buying green vehicle fuel oil (Saleem et al., 2021).

Customers' green knowledge of receiving vehicle fuel oil services (Pertamax Turbo RON 98) is still debated. This study examines customer understanding and concern about using and buying fuel oil for cars (Pertamax Turbo RON 98). Adetola et al. (2021) and Saleem et al. (2021) found that customers' environmental knowledge affects their intention to buy green products and services. Researchers also found that vehicle fuel oil (Pertamax Turbo RON 98) is the most expensive, so the customer value for green vehicle fuel oil service must exceed the industry premium price, which is the fuel oil filling station. Environmental awareness among customers determines the service value of environmentally friendly vehicle fuel oil products (Abd-Mutalib et al., 2023; Kumar et al., 2017; Pérez et al., 2022; Tamar et al., 2021a). Eco-awareness is necessary for using, consuming, and buying environmentally friendly vehicle fuel oil (Saleem et al., 2021). In this instance, Dietz et al. (1998) emphasize the challenges associated with environmental behavior that may be influenced by clear environmental concerns. Moreover, consumer environmental attitudes are significantly distinct among regions (Rizqiyana, 2020). Social identity theory claims that customers care about the environment when choosing eco-friendly products and services, but history and culture's complexity makes it difficult to recognize social identity differences. (Saleem et al., 2021). The most common reason for an insignificant association between environmental concern and green purchase intention in existing studies is that people in a region, such as a developing nation, believe consumers' eco-friendly practices will benefit society.

Several earlier studies (Shah et al., 2023; Sultana et al., 2022) found that how people choose to use, consume, and buy motor vehicle fuel oil products (Pertamax Turbo RON 98) is a key factor in determining their future plans to buy environmentally friendly accommodations.Green belief and purchase intention are positively correlated in this study. The findings support the expanded SDGs that customer trust reduces social hesitancy and improves behavioral control.

Thus, environmental awareness and knowledge can shape customers' green service opinions. Consumer value for pro-environmental actions increases consumers' intentions to consume, use, and purchase environmentally friendly motor vehicle fuel oil products (Pertamax Turbo RON 98). When green knowledge and environmental concern are considered, environmental concern mediates green purchase intention. Consistent with the findings of Heo & Muralidharan (2019) and R. Shah et al. (2023), customers can develop stimuli to choose environmentally friendly vehicle fuel oil products and psychological aspects of environmental well-being based on their environmental beliefs. (Chang et al., 2022; Kim & Lee, 2023). The findings are consistent with the Sustainable Development Goals (Qin & Song, 2022; Shah et al., 2023) in establishing a connection between perceived environmental knowledge, environmental concern, and green purchase intention. Environmental concern positively affects green purchase intention, both directly and indirectly, according to theory and research.

Although environmental knowledge does not affect green purchase intention, environmental belief does affect intentions like using environmentally friendly vehicle fuel oil.

However, the insignificance of environmental knowledge must be addressed in order to identify the determinants of eco-friendly consumer behavior that contradict the stated relationship. According to the idea of social identity theory, people who use fuel oil products in their daily lives may want to buy environmentally friendly products because they feel pressured to create a self-identity based on pro-environmental knowledge. People who use fuel oil vehicles may also be proud of protecting the environment to show that they are pro-environment (Ghaffar et al., 2023)

5.1. Theoretical and Practical Implications

This study has major theoretical and practical implications. This study pioneered a more comprehensive and detailed framework to identify the factors that influence the green purchase intention of motor vehicle fuel oil consumers in developing countries like Indonesia. The study also shows its TPB compatibility. The study explains environmental belief as a mediator using the S-O-R model. The study's theoretical contributions and practical implications will help marketers predict consumer behavior and develop green product and service strategies. This study offers several visions for the environmentally friendly motor vehicle fuel oil provider industry to develop green strategies to attract consumers by offering a variety of environmentally friendly products to buy, use, and consume in their daily driving. The vehicle fuel supply industry must implement adequate awareness programs to inform consumers of the potential consequences of not choosing and consuming fuel oil for daily-use vehicles because environmental knowledge and beliefs influence fuel oil use and consumption. Second, this research may encourage industry and government to promote and support environmental care programs with clear regulations to build trust. This clever method attracts eco-conscious customers, retains them, and launches eco-friendly campaigns.

Vehicle fuel oil marketers must emphasize motor fuel oil products' eco-friendliness to build consumer trust. Environmental credibility can help retain and attract customers. In conclusion, this study can help environmentally conscious motor vehicle fuel oil suppliers in the agriculture, pharmaceuticals, and chemical industries predict consumer intentions to buy green products and services. Consumers value environmental initiatives and organizations that promote sustainable societies, so the research can help develop eco-friendly product pricing models. This study examined how environmental concern, knowledge, and belief affect the green purchase intention of environmentally friendly motor vehicle fuel oil consumers. The benefits of eco-friendly and sustainable practices are becoming more apparent to consumers of all ages as environmental concerns and ecological sustainability issues grow. Environmental sustainability is a major global issue, especially in the automotive industry with fuel oil. Thus, the automotive and vehicle fuel oil supply industries can educate consumers about sustainable practices, environmental regulation, and government intervention. In conclusion, little research has examined how environmental belief affects environmental concern and knowledge to determine the green purchase intention of Bandung, Indonesia, motor vehicle fuel oil consumers.

5.2. Limitations of The Study and Future Research Direction

The limitations of this study may inform future green purchase intent research. The sampling method is this study's first limitation. Researchers use non-probability sampling and convenient, geographically diverse sample groups to collect data. Thus, the study's findings may not apply to everyone. Respondents were limited to Bandung due to data collection and analysis time constraints. Therefore, the results may not apply to all Indonesian consumers. Future researchers should conduct longitudinal studies with more diverse and larger samples to get more accurate results and reflect actual behavior. Thirdly, customer attitude, satisfaction, and tangible and intangible product and service aspects can affect green intentions (Asif et al., 2022). Thus, the research scope can include many other variables to address the same issue. This study only examines environmental belief as a moderating variable; future

researchers should also examine other mediating or moderation variables (e.g., consumption value, self-identity) to measure related issues.

6. Conclusions

This research investigates the continuous discourse concerning customers' ecological awareness regarding the use of Pertamax Turbo RON 98 motor oil. Its objective is to enhance our comprehension of customers' apprehensions and perceptions regarding the purchase and utilization of environmentally sustainable fuels. Drawing upon the research conducted by Adetola et al. (2021) and Saleem et al. (2021), the present study examines the correlation between the level of environmental awareness among consumers and their propensity to purchase green products and services. Pertamax Turbo RON 98 is the best option for this study because it shows how valuable people think green vehicle fuel oil services are and how they can beat the industry premium offered by oil refueling stations.The significance of customer environmental consciousness in assessing service value is further emphasized by the criticality of environmental consciousness in the procurement and utilization of fuel oil for environmentally friendly vehicles.

The research findings demonstrate a significant association between green trust and purchase intent. These results are consistent with the Sustainable Development Goals and underscore the criticality of customer trust in mitigating social reluctance and enhancing behavioral regulation. As customer perception of green services becomes more influenced by environmental knowledge and consciousness, the intention to purchase, consume, and utilize environmentally friendly motor vehicle fuel oil increases in tandem with the perceived value of pro-environmental action. Notwithstanding the relatively insignificant impact of environmental knowledge on the intention to make green purchases, the present study aims to examine the variations that arise with the purpose of enhancing comprehension of the factors that influence environmentally conscious consumer conduct. According to the integration of social identity theory, consumers may perceive pressure to construct a pro-environmental self-identity in conjunction with their intention to purchase eco-friendly products.

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