



Understanding the Effect of Health Consciousness and Perceived Risk on Intention to Consume Herbal Product Moderated by Trust Belief

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ABSTRACT

The growing trends in the use of herbal products has increased following COVID-19. People are opting for a healthier lifestyle, as the emergence of health disorders which encourages them to strengthen their immune systems. This study aims to investigate the role of health consciousness, perceived risk, and trust belief in consumer behaviour amidst the widespread concern about the safety of herbal products. Using purposive sampling, this study involved 357 respondents, 43% men and 57% women. Data processing of the structural model was performed using Smart PLS 3.0. SEM-PLS was chosen because it allows for the simultaneous measurement of latent variables and the examination of structural relationships within a complex model. The empirical results show that health consciousness and trust belief have a positive and significant effect on the intention to use the product. Meanwhile, Perceived risk fails to influence intention because consumers believe herbal benefits outweigh potential risks, which can be further minimized by choosing standardized products. Moreover, trust belief reduces the gap between perceived health benefits and perceived safety. This study demonstrated that the Theory of Planned Behaviour can be used effectively to explain health-related behaviour. In practice, the herbal industry cannot simply promote health benefits; it must actively foster consumer trust belief by transparent product information.

Keywords: Health Consciousness, Perceived Risk, Trust Belief, Herbal Product, Theory of Planned Behavior

JEL Classifications: D91, I12, M31, Q59

1. INTRODUCTION

A significant shift toward natural products has sparked numerous studies focused on the efficacy and safety of herbal product. The increasing consumer preference has led to extensive research related to herbal products. Several studies examined behavioral patterns and modalities decisions regarding the use of herbal medicines in a sample of India (Aragie and Afework, 2025), Italian women (Zaffani et al., 2006), and Malaysia (Ismail and Mokhtar, 2016). It has been reported that about half of those interviewed had used one or more herbal products in the past year. Research by Barner et al. (2010) and Aragie and Afework (2025) reports that 20% of African Americans have used complementary alternative medicine (CAM) to treat certain diseases. The use of herbal

medicines and supplements has grown rapidly over the past three decades, and no <80% of people worldwide rely on herbs for part of primary health care (Qadir and Raja, 2021; Ekor, 2014).

Research on herbal products provides insight that nature has provided plants that empirically benefit for human health. People are playing a more active role in their healthcare today. The shift towards a healthier lifestyle is gaining popularity, not only in terms of organic food but also in reducing the use of chemicals in medicine. The side effects of chemical drugs are driving people to turn to natural remedies. The use of herbs such as ginger, turmeric, curcumin, serei and other herbs is widespread in the community. Herbal medicine is considered health-promoting (Diah et al., 2024; Ekor, 2014; Elfahmi et al., 2014). Study Soltani et al. (2023)

implies that consumers believe natural products are safer and less risky than conventional medicines. People today take more active roles in their health care. Several studies on herbal products have been carried out.

The research related to consumer intentions are not yet conclusive. Research studies show that there are several influential consumer perceptions related to consumer intentions for natural products. Studies on consumer perception report that consumers are perceived that herbal medicinal products are not riskier (Zaffani et al., 2006) than chemical products (Jovanović et al., 2026). Several studies have shown that various factors influence consumers' intentions to consume herbal products, including attitudes, social influence, race, health concerns, safety, risk perception, and personal identity (Widyaningtyas, 2024; Ismail and Mokhtar, 2016). The consumer reluctance to consume herbal products is often analyzed from a safety perspective, and several studies indicate consumers' concerns about the safety of these product.

The use of herbal products has transformed the need for treatments into a lifestyle choice. There is a growing awareness that dietary habit influences health. As environmental quality deteriorates, a healthy lifestyle is becoming the preferred option for maintaining a fit body. While people are aware of the nutritional, health benefits of herb, and also the importance of a healthy lifestyle, this doesn't make herbal products the first choice for some groups, who tend to opt for prescription supplements. This study examines consumer confidence, which acts as a buffer and is expected to moderate the negative impact of perceived risk. The higher the consumer confidence, the lower the negative impact of safety risk on purchase intention. This study will empirically test whether consumer confidence can weaken the negative relationship between safety risk and purchase intention in consumer behavior regarding herbal products. Therefore, it is interesting to analyze in greater depth the actual behavior of herbal product consumers.

2. LITERATURE REVIEW

2.1. Theoretical Background and Hypotheses

The theory of planned behavior (TPB) explains that consumer behavior is determined by intention, which is influenced by three main factors: Attitude, subjective norm, and perceived behavioral control (Ajzen, 1991). TPB provides a framework for understanding consumer intention as the end result of risk considerations and beliefs. On the other hand, the health belief model (HBM), a theory frequently used in healthcare contexts, plays an important role in explaining safety risk. The HBM is highly relevant for measuring safety risk because it focuses on threat perception. The HBM explains why consumers experience anxiety, which influences their intention to use a product.

This study integrates the Health Belief Model to examine the dimensions of safety risk through perceptions of susceptibility and severity. Furthermore, the dimensions of the HBM are combined with the Theory of Planned Behavior to examine how these risk perceptions influence product use intentions through attitude formation. By combining these two theories, trust beliefs act as

moderators. The trust belief variable is positioned as a moderator that strengthens individual control in the face of risk uncertainty.

2.2. Intention and Health Consciousness

Intention is defined as a consumer's tendency to use a product in a particular situation. Planned behavior theory assumes that intention is a determinant of behavior. According to TPB, intention refers to the expression of interest during a decision-making process and is also influenced by attitudes and beliefs toward the product (Ajzen and Fishbein, 1974; Ajzen, 1991). The intention to consume is a psychological drive or the probability that someone will buy or use a product in the future. Furthermore, it is not simply a "want," but rather the strongest predictor before a purchase occurs. Meanwhile, health consciousness refers to the degree to which a person cares about their physical and mental well-being. People are naturally motivated to take steps that promote their health. Health consciousness encompasses dimensions of self-awareness, intrinsic motivation, and personal responsibility. Furthermore, it is one of the main drivers of the intention to consume herbal products.

2.3. Perceived Risk and Trust Belief

Perceived risk is the probability or likelihood of harm or negative impacts that could harm someone when using a product. Safety risk is often a major obstacle that reduces a person's intention to use a product. The higher a consumer's perception of a product's safety risk, the lower their intention to consume. To address safety risk, companies must build consumer confidence to increase their intention to consume the product. Trust is a consumer's expectation or belief that is not merely trust, but also a mental foundation (belief) before someone dares to take risks.

The conceptual framework in this study is described as follows:

- H₁: Health consciousness has a positively influence on the intention to consume herbal product
- H₂: Perceived risk has a positively influence on the intention to consume herbal product
- H₃: Trust belief has a positively influence on the intention to consume herbal product
- H₄: Trust belief moderated the relationship between perceived risk and intention to consume.

3. METHODOLOGY

Based on the research objectives, this study is descriptive and exploratory, employing hypothesis testing. In this study, we will test the hypothesis regarding the influence of health and safety risk awareness on consumption intentions, and we will also examine the moderating role of trust in addressing this phenomenon and the research problem. A questionnaire was designed to gather information from respondents, using a 5-point Likert scale.

The population for this study consisted of consumers of herbal products in Indonesia. The selected sample comprised 357 consumers from several major Indonesian cities, including Jakarta, Yogyakarta, Surabaya, Semarang, Bandung, and Aceh. This sample size allows the researcher to obtain accurate results. The sample selection used a non-probability sampling technique, specifically purposive sampling. Purposive sampling is a sampling

technique based on specific criteria determined by the researcher to ensure more accurate data.

The research analysis was conducted using Structural Equation Modeling - Partial Least Squares/SEM-PLS (Hair et al., 2022). SEM-PLS is a multivariate statistical analysis method that examines the relationships between a set of research variables. SEM-PLS allows for the simultaneous measurement of latent variables and the examination of structural relationships within a single complex model. SEM-PLS testing is performed in two stages. First, the outer model (measurement model) is used to verify the validity and reliability of the relationship between the indicators and their latent variables. Second, the inner model (structural model) is used to verify the strength of the relationship between the latent variables.

4. RESULTS

The measurement model test was conducted to evaluate the relationship between the indicators in each variable. An outer loading value >0.7 indicates that the individual indicators are strongly correlated with the underlying construct being measured (Figure 1). The outer model test consists of validity and reliability assessments.

Based on Table 1, it can be seen that all variables in this study have a Cronbach's alpha value >0.7, thus meeting the Cronbach's alpha criteria and demonstrating a good level of reliability. Similarly, the composite reliability value is >0.7. Meanwhile, the validity

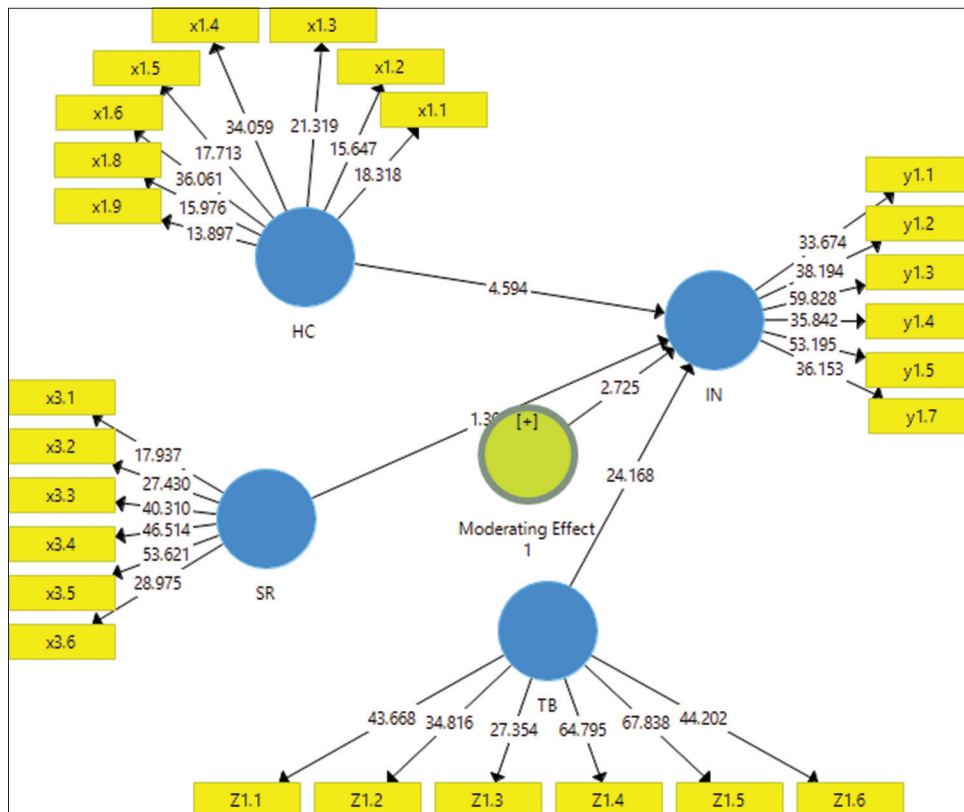
test results show an AVE value >0.5, meaning that all variables meet the average variance extracted (AVE) criteria and can be declared convergently valid (Hair et al., 2022). Convergent validity determines the validity of each relationship between indicators and latent construct variables.

The results of the discriminant test, viewed from the value of the Fornell-Lacker criterion (Table 2), show that the square root of the mean variance extracted (AVE) value of a construct is greater than the correlation value of that construct with other constructs in the model (Fornell and Larcker, 1981). Furthermore, the R-squared test results (Table 3) showed an adjusted R-squared value of 0.732. This value indicates that health awareness, safety risk, and trust contribute 73.2% to explaining the intention to consume. The remaining 26,8% is influenced by other variables external to the study, which were not the focus of this research.

The structural model tested the hypothesis using Partial Least Squares (PLS) analysis techniques with Smart PLS 3.0. The path coefficient evaluation is used to indicate the intensity of the effect or influence of the independent variable on the dependent variable. The following is a model of the PLS Inner Model. The path coefficients with fourth hypotheses consisting of three direct hypotheses and one moderation hypotheses.

According to Table 4, the results of the bootstrap statistical analysis allow us to conclude that health consciousness has a positive and significant effect on consumption intention, with a T-statistic of 4.594 > 1.66, and a P = 0.000 < 0.05. Furthermore, perceived risk does not affect purchasing decisions, as shown by the T-statistic

Figure 1: Structural model



of $1.309 < 1.66$ and a $P = 0.181 > 0.05$. Similarly, trust belief has a positive and significant effect on purchasing decisions, with a T-statistic of $24.168 > 1.66$ and a $P = 0.000 < 0.05$. Meanwhile, in the moderation test, the results show that trust belief moderates the influence of the safety risk on the intention to consume with a T statistic value of $2.725 > 1.66$ and a $P = 0.007 < 0.05$. Hypotheses results are presented in the Table 5.

5. DISCUSSION

5.1. The Influence of Health Consciousness on Intention to Consume

Health consciousness encourages consumers to strive to improve their health by adopting a healthier lifestyle. Herbal products are natural products containing active ingredients beneficial to health. Empirical results show that greater individual health awareness

Table 1: Reliability and validity

Variable	Cronbach alpha	Composite reliability	Average variance extracted
Health consciousness	0.864	0.890	0.504
Perceived risk	0.900	0.923	0.669
Trust belief	0.932	0.946	0.746
Intention to consume	0.920	0.938	0.715

Source: Own calculations using primary data research

Table 2: Fornell-Lacker

Variable	HC	IN	Mod	PR	TB
Health consciousness	0.710				
Intention to consume	0.641	0.845			
Moderating effect	0.069	0.049	1.000		
Perceived risk	0.411	0.401	0.066	0.818	
Trust belief	0.648	0.840	0.201	0.478	0.864

Source: own calculations using primary data research

Table 3: R-square

Variable	R-square	R-square adjusted
Intention to consume	0.735	0.732

Source: Own calculations using primary data research

Table 4: Path coefficient

Correlation	Sample mean	Standard deviation	T-statistics	P-value
HC → IC	0.160	0.035	4.594	0.000
PR → IC	0.038	0.036	1.309	0.191
TB → IC	0.781	0.032	24.168	0.000
Moderating effect	-0.094	0.039	2.725	0.007

Source: own calculations using primary data research

Table 5: Hypotheses results

Hypotheses	Influence	Results
H ₁	Health consciousness → Intention to consume	Accepted
H ₂	Perceived Risk → Intention to consume	Rejected
H ₃	Trust Belief → Intention to consume	Accepted
H ₄	Trust Belief as moderator perceived risk on Intention	Accepted

Source: Own calculations using primary data research

increases the intention to consume herbal products. The post-COVID-19 situation has increased awareness that vulnerabilities can affect anyone, making it important to boost metabolism and immunity. Herbal remedies can be used to complement healthcare. When experiencing health problems, people tend to try to manage them by resting or taking supplements before deciding on a treatment. Therefore, individual concern for their health will encourage them to choose herbal products, which are expected to stabilize or even increase their vitality.

A study by Parashar et al. (2023) examining the effect of determinant factors among consumers on their purchase intention of wellness product like organic food showed that health consciousness and environmental awareness had a significant positive effect. Another study on the use of organic products with samples of 210 employees of a Greek university with Theory of Planned Behavior also confirms this finding. Moreover, specific on herbal product this study also in line with (Syafrizal et al., 2024; Pan et al., 2025). Therefore, it can be concluded that a person's concern for their health can generate an impulse to consume herbal products.

5.2. The Influence of Perceived Risk on Intention to Consume

Perceived risk is the risk of suffering harm from side effects or hazards that may arise from the use of the product. Empirical results from the SEM-PLS bootstraps analysis indicate that perceived risk does not affect consumption intentions, meaning that a higher perceived risk does not necessarily decrease a consumer's desire to consume herbal products. In the context of herbal products, individual consumption intentions are also influenced by other factors, such as attitudes, beliefs, knowledge, and social influence.

Furthermore, individual concerns about the risk of herbal products can be minimized by selecting standardized herbal products, specifically those authorized by the BPOM/Indonesian Food and Drug Authority, which guarantees product quality. This can alleviate consumer concerns when choosing herbal products. Therefore, perceived risk is not a primary determining factor for consumers when using herbal products. The desire to lead a healthy life or cure an illness far outweighs the fear of side effects. People often feel that the health benefits offered by herbal products far outweigh the potential risks, which are not necessarily presented to them. This finding contradicts the research of Liu and Wu (2019) and Wang et al. (2019) which stated that risk negatively influences purchase intention. However, this result is consistent with the research of Hafez (2021) and Prasetyo (2021) a primary factor when consumers intend to use herbal products. This study in line with Phau and Suntornnond (2006) which state that perceived risk does not significantly inhibit purchase intention, especially if the health benefits or price offered are much more attractive. Therefore, despite concerns about the safety of herbal products, consumers wisely choose standardized herbal products, prioritizing their benefits.

5.3. The Influence of Trust Belief on Intention to Consume

The empirical results of Hypothesis 3 indicate that trust has a positive and significant effect on purchase intention. This means

that the greater a person's trust in an herbal product, the greater their intention to use it. Trust is the belief that underpins a person's sense of security when consuming herbal products, despite potential risks. According to (McKnight et al., 2002), trust can be built on the basis of competence, benevolence, and integrity. In the case of herbal products, this can be observed in claims about the product's nature and certifications. Therefore, trust can reduce risk and increase purchase intention.

The study of Nguyen (2021) incorporates five constructs shows that trust has a significant positive effect on purchase intention to promoting sustainable consumption. This research also aligns with (Vironika and Maulida, 2025), that stated sustainable consumption can be achieved through trust and knowledge. Therefore, consumer trust in herbal products is an important factor in a person's intention to use them. This finding supports the Theory of Planned Behavior, which posits that trust influences attitudes. If someone strongly believes in herbal products, they will have a positive attitude. This attitude is the strongest predictor of intention to use.

5.4. Trust Belief as a Moderator of the Effect of Safety Risk on the Intention to Use Herbal Products

Trust belief is a person's internal belief that something has integrity, capability, and reliability. This belief can arise without being based on concrete evidence. Empirical results show that trust can moderate the effect of safety risk on the intention to use herbal products. In general, the greater the perceived safety risk, the lower a person's intention to use the product. Trust belief moderates by suppressing this perceived risk, modifying the intensity of the risk to hinder the intention to use. When levels of trust are high, the negative influence of safety risk is weakened. In the context of herbal products, consumers are aware of the risks, but because they believe these can be minimized by choosing standardized herbs or relying on a well-informed herbal community, this trust may weaken the impact of safety concerns. Despite these safety risks, the intention to use remains relatively stable. The results of this study are consistent with (Qalati et al., 2021; Amalia et al., 2025) that reported trust was found to have a positive effect on purchase intention, while also contributing to an increased belief in fake news.

6. CONCLUSION, IMPLICATIONS AND LIMITATIONS

This study concludes that consumers' intention to use herbal products is driven not only by intrinsic motivation but also by perceived risk and trust belief. Based on the results of this study, several conclusions can be drawn, as detailed below. Both health consciousness and trust belief positively and significantly influence the intention to use herbal products. This indicates that consumers not only have a high level of health consciousness but also that they weigh safety risks against perceived benefits. This perceived risk can be minimized with strong trust; a high level of trust belief weakens the influence of perceived risk on the intention to use herbal products.

In this study, health consciousness was the primary factor, as herbal products were perceived as natural alternatives aligned with consumers' long-term health values. On the other hand, perceived

risk acted as a deterrent. The higher the perceived risk, the lower the intention to use herbal products. Trust belief, however, moderated the influence of perceived risk on the intention to use herbal products. Trust belief reduces the gap between perceived health benefits and perceived safety risks.

In practice, the herbal industry cannot simply promote health benefits; it must actively foster consumer trust belief. This can be achieved through transparent product information, product safety certification, and public education to minimize consumers' perceived risks.

Based on the research findings, the following improvements are recommended:

1. Further research could broaden the scope and identify other potential product safety factors, as well as investigate mediating factors related to the relationship between health awareness, perceived health, and consumption intention.
2. Further research is recommended to seek samples with different age characteristics to determine if there are differences in the influence of independent variables on consumption intention.

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