



Health awareness determines the consumer purchase intention towards herbal products and risk as moderator

La conciencia sobre la salud determina la intención de compra del consumidor hacia los productos herbales y el riesgo como moderador

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Abstract

Consumer interest in herbal products is an interesting topic related to the choice of a healthy lifestyle. The trend in consumer demand for herbal products has increased in recent years. During this pandemic, the demand for herbal products is getting higher. Herbal products are widely used for individual health care or alternative medicine. This study aims to obtain an objective behavioral study of consumer interest in herbal products. We further explore how risk moderates the relationship between health awareness and purchase intention. This research implies that health awareness has a positively influence on purchase intention, and risk perception moderates the impact of health awareness on consumer purchase intentions to use herbal products with a significant p-value of 0.003. The framework model will be obtained to predict consumer intentions in purchasing herbal products.

JEL Code: I12, M31, H51

Keywords: health awareness; risk perception; behavioral intention; herbal product; TPB

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Resumen

El interés de los consumidores por los productos a base de hierbas es un tema interesante relacionado con la elección de un estilo de vida saludable. Durante esta pandemia, la demanda de productos a base de hierbas está aumentando. Este estudio tiene como objetivo obtener un estudio conductual objetivo del interés de los consumidores por los productos a base de hierbas. Exploramos más a fondo cómo el riesgo modera la relación entre la conciencia sobre la salud y la intención de compra. Este estudio implica que la conciencia sobre la salud tiene un efecto positivo en la intención de compra. La percepción del riesgo modera el efecto de la conciencia sobre la salud sobre la intención de compra del consumidor con un valor p significativo de 0.003.

Código JEL: I12, M31, H51

Palabras clave: conciencia de salud; percepción de riesgo; intenciones conductuales; productos a base de hierbas; TPB

Introduction

Herbal products have experienced a rapid increase in their use in the health sector (Alkhateeb et al., 2006; Boullata & Nace, 2000; Irshad Ali & Yadav, 2015), for example as complementary alternative medicines and dietary supplements (Mohamed, 2004). Herbal products have experienced significant growth in product demand (Ismail & Mokhtar, 2016). The use of herbal products and supplements has increased over the past three decades, and as many as 80% of people worldwide trust herbs for primary treatment (Ekor, 2014).

Herbal products are natural products that contain active ingredients and can act as medicines, the benefits of which have been widespread for generations since ancient times. The chemical content in herbal plants is traditionally used individually or together with other plant species as medicine. These medicinal plants are known internationally as herbal medicine (Kardinan & Ruhayat, 2003). Herbal remedies, both traditional and standardized herbs, are used to prevent and treat diseases. Herbal products can be offered in the form of herbal capsules, powders, liquids, or tablets (Rezai et al., 2013).

In Indonesia, medicinal plants were the primary drug of choice for traditional communities until the nineteenth century (Elfahmi et al., 2014). During this pandemic, demand for herbal products in Indonesia increased (Infopublik, 2020). The impact of coronavirus also causes an increase in demand for herbs. The demand has tripled relates to the information that curcuma or ginger can ward off coronavirus (Jawapos, 2020). The need for good endurance is important to prevent the transmission of the virus. The statement by Mangestuti Agil, a professor, who focuses on the study of traditional medicines, she said that it is essential to strengthen immunity to ward off the coronavirus. Consuming traditional herbs such as turmeric are very good for strengthening the body's immunity because of its antioxidant (UNAIR News,

2020). Several studies report the use of herbal products that can provide benefits for consumers (Mounkoro et al., 2020; Kang et al., 2019; Kanodia et al., 2010).

The use of herbal products has led to a development in the need for medication to become a lifestyle. In a modern lifestyle, a healthy lifestyle is increasingly being chosen. It is therefore interesting to further investigate the consumer behavior of plant products. Individual culture and racial backgrounds influence the consumer when choosing plant products (Brown et al., 2009). A review of the literature shows that various factors influence consumer interest in herbal products, including attitudes (Uesangkomsate & Santiteerakul, 2016), social influence (Ismail & Mokhtar, 2015); as well as income, age, and occupation (Mohamed, 2013). The study by AhnPhan (2016) and Wee et al. (2014) highlighted the impact of perceived safety on consumer purchasing intentions of herbal products.

Previous studies explain that there are several consumer perceptions of natural products. (Michaelidou & Hassan, 2008; Mohamed, 2013; Wee et al., 2014; Uesangkomsate & Santiteerakul, 2016). Studies of herbal products show that herbs are no riskier than conventional medicine (Barnes, 2003). However, there are consumer concerns about the effects of using herbal products (Yee et al., 2005). Based on the recommendations of previous research, it is important to understand more precisely consumer health awareness, attitudes, and risks to determine the extent of consumer intentions toward herbal products.

The Covid-19 pandemic that hit the world in the last two years has an impact on people's behavior toward health. Public pays great attention to health. People try to increase their immune systems by consuming vitamins or supplements to maintaining their health. In the hope of reducing the risk of exposure to the coronavirus outbreak. Calcuttawala (2022) presents the importance of relevant nutrients to boost the immune system against COVID-19, such as macronutrients and food constituents that exhibit anti-inflammatory and antioxidant properties. Several studies were conducted to overcome this epidemic. In the herbal context, the latest study related to the use of herbs in coronavirus was revealed by Rahman et al. (2020) who reported that Zn and Nigella sativa herbs could inhibit SARS-CoV-2 replication by stopping the replication enzyme system. The increasing public appetite towards natural products, encourages several studies related to herbal products. However, studies on consumer behavior towards herbal products are poor discussed in international journals.

Rossenstock (1974) states that a person will act rationally to prevent and control disease, especially people with conditions susceptible to disease. The measures taken can be helpful to correct or reduce complaints. Nonetheless, the spread of issues related to the safety of herbal products (Peschel, 2007) is considered by consumers. The perception of risks can be a prerequisite for protective measures (Schmaelzle et al., 2017). The approach to risk is essentially determined by the tendency to take risks, which emanates from one's personality (Vasvári, 2015). Further, study Marzaleh et al. (2016) report that

there is a relationship between the perceived risk and changes in health behavior, and this influence can occur through deliberate behavior (Marteau et al., 2012). In addition, Portnoy et al. (2014) added that this relationship was observed in all health behaviors.

Health risks are taken into account by consumers when using herbal products. This is related to a pandemic condition where health risks are a major concern for an individual. Several studies have also explored public perceptions of risk at the start of the COVID-19 outbreak, such as the study by Nanda et al. (2020) which states that the perceived risk of a covid outbreak is the second highest compared to other diseases. This condition encourages a person to take precautions to maintain his health, one of which is by consuming herbs that are allegedly able to strengthen the immune system.

Theoretical background

Theory of planned behavior

Theory of Planned Behavior is used to predict and understand motivational influences on behavior that are not under individual control (Ajzen, 1991). The Theory of Planned Behavior is also explaining important aspects of human behavior such as why someone intends to buy a product. Based on the Theory of Planned Behavior, intention is the most important determinant of a person's behavior. In this study, the Theory of Planned Behavior was used to ensure the extent of consumer purchase intentions in using herbal products. Ajzen (1991) stated that a person's behavior depends on the desire to behave. The tendency of intention to behavior is influenced by attitudes towards behavior, subjective norms, and perceived behavioral control (Mohamed, 2004). Perceived behavioral control indicates that perceptions of ease and difficulty motivate a person to perform a certain behavior. Ajzen & Fishbein (2005) states that the perception of control is determined by an individual belief. It is related to the available resource and opportunity that supports or interrupt the implementation of this behavior.

Theory of planned behavior is a theory designed to predict and explain human behavior in a certain context. The theory of Planned Behavior has a strong basis in the perspective of a belief that will influence someone to carry out certain behaviors. Based on Theory of Planned Behavior, intention to behave is an important determinant of a person's behavior (Ajzen, 1991). In particular, attitudes are the main determinant of consumer intention (Heinrich, 2016; Michaelidou & Hassan, 2008; Tarkiainen & Sundqvist, 2005).

There is a significant relationship between attitudes toward intention and behavior (Chen & Li, 2007; Haque et al., 2011). Attitudes towards the use of herbal products were the only significant predictor of intention to use herbal medicines (Gupchup et al., 2006). This is backed up by a study by Natchaya &

Siriluck (2010) that consumer attitudes increase loyalty when buying Thai herbal products. In line with this, Heinrich (2016) reports that alongside psychological and socio-economic factors, attitude is the strongest factor in consumer intentions.

The Theory of Planned Behavior (TPB) was developed from the Theory of Reasoned Action (TRA) which has been criticized for ignoring the importance of other social factors that may be determinants of individual behavior. Purchase intention in TRA is only formed by subjective norms and attitudes (Ajzen, 1975) which is then added with perceived behavioral control on TPB. The Theory of Planned Behavior is used in this study because of its rational motives. The intention to use herbal products such as herbal for health supplements is a structured action carried out by someone with an antecedent attitude. In its development, several studies have expanded the Extended Theory of Planned Behavior (ETPB). Studi Chen & Tung (2014) verify that the extended TPB has a good explanatory power in behavior research. Other study which developing TPB model such as Tommasetti et al. (2018); Liao & Fang (2019) and Bashir et al. (2019). Therefore, risk perception and health awareness were chosen to support this research that is closely related to health topics to provide a accurate research explanation.

In relation to consumer perceptions of herbal products, health is one of the consumer's concerns. Health is the most common motive chosen by consumers when buying natural products (Squires et al., 2001; Zanolli & Naspetti, 2002). Wee et al. (2014) argue that health is the main determinant of consumer purchase intentions. The health awareness model is based on the understanding that someone will take health-related measures. Rosenstock (1974) argues that there are preventive or curative health measures (health motivation). Vulnerability is a person's perception of risk when they are in pain. In development, this individual's perception can pose a health risk if the disease is not treated immediately (severity). Hong (2009) stated that one of the dimensions of health awareness is the motivation of individuals to maintain their health and to be responsible for it.

Research hypotheses

The World Health Organization (WHO) developed a health concept in the late 1940s in which health basically comes from the word healthy, which means free from all disturbances or diseases, both physical and psychological. A person takes a step when he realizes that there are serious health consequences (Rosenstock, 1974). WHO defines health as a state of well-being of body, soul, and society that enables everyone to live productively socially, and economically. Health awareness refers to the extent to which a person tends to take action to improve the quality of their health. It is related to achieving a better quality of life through the inclusion of healthy behavior (Plank and Gould, 1990; Newsom et al., 2005).

Concerning natural products such as organics or herbal products, consumers tend to choose the use of natural products for health reasons motives (Squires et al., 2001).

A study by Padel & Foster (2005) confirm that health was the main reason for consumer motivation for buying organic products. Consumers see organic products as healthier alternative foods because they contain more nutrients (Magnusson et al., 2001; Baker et al., 2004; Padel & Foster, 2005), likewise, for herbal products, consumers perceive herbal products as being just as useful as dietary food supplements or alternative medicine (Bishop, 2006; Barner, 2010; Ekor, 2014). More specifically, it's stated that illness belief has an important role in explaining why people use complementary alternative medicines (Glanz & Bishop, 2010). The explanation of the relationship between health and intention is based on the tendency towards a positive relationship between health and intention: the more the consumer pays attention to health, the higher the intention is to use herbal products.

H1: Health awareness has a significant impact on the intentions of consumers to use herbal products.

Drawing from the Theory of Planned Behavior, Ajzen (1991) states that attitude is the first antecedent of intention. Attitude is the strongest antecedent of behavior, where a person makes a judgment that something is profitable or not. Perception of ease or difficulty will influence one's behavior. In a positive attitude, the perception of convenience will further stimulate the intention to behave (Ajzen, 1991). Several studies have reported that attitude is a powerful predictor of a person's interest (Natchaya & Siriluck, 2010; Zhang, 2018; Heinrich, 2016; Ajzen, 2015; Michaelidou & Hassan, 2008). To understand the underlying differences in attitudes toward using herbal products, Gupchup et al (2006) conducted a study on older adults in Mexico and reported that attitudes toward herbal use were the only significant predictor of intention.

Individual beliefs will influence the attitudes that affect behavior. Fishbein & Ajzen, (1975) state that attitude can influence behavior through intention. Attitudes toward behaviors are defined as the extent to which a person has advantages or useless perceptions of behavior (Alagoz & Hekimoglu, 2012). Previous studies have shown that consumer attitudes are dependent on perception, motivation, and other external factors. There is a significant relationship between attitude and intention and behaviour. (Tarkiainen & Sundqvist, 2005; Frishman, 2008; Ajzen, 2015; Zhang, 2018). Attitude is always a choice where a person can determine how to react to a situation (FCA, 2022). Studies by Chen & Chao (2011); Thapa (2012) show that there is a significant positive relationship between attitude and intention. Furthermore, attitude is seen as an important factor that can influence individuals' beliefs in understanding their behavior (Hoque et al., 2020).

The explanation of the relationship between attitude and intention is based on the tendency towards a positive relationship. The stronger the attitude that supports the behavior, the greater the person's intention to behave.

H2: Attitude has a significant impact on the intentions of consumers to use herbal products.

Risk, in general, is the possibility of loss or someone's loss experienced (Rousseau et al., 1998). Risk is also defined as the likelihood of an adverse event and the statistical expectation of an adverse event that may or may not occur (Boholm et al., 2016). Vulnerability conditions when someone is sick can increase the perception of the risk. Rachbini (2018) state that risk perception has a significant effect on purchase intention.

Health is the most important motive for consumers in choosing products related to health. A person's attention to health or health consciousness has a direct effect on consumer intentions to use the product (Michaelidou & Hassan, 2008). Moreover, consumers are motivated to improve their health and quality of life to stay healthy (Newsom et al., 2005). Self-motivation for health encourages a person to take preventive and corrective measures (Rosenstock, 1974) to reduce the risks.

Risk is also defined as the probability of an adverse event and the statistical expectation of an adverse event that may or may not occur (Hansson, 2013). Lee & Kiyoshi (2003) reported the relationship between herb content and safety. In the case of herbal products, this perception of risk was closely related to the perception of the quality of the product. The approach to risk is essentially determined by the tendency to take risks, which emanates from one's personality (Vasvári, 2015). Several studies on the role of risk as a moderator of intention have been investigated by Kambiz & Masoumeh (2016), Ahmed et al. (2013), and Alam et al. (2019). Especially with herbal products, perceived risk can moderate consumer intentions toward herbal products (Ismail & Mokhtar, 2015). The relationship between herbs and health behaviors puts risk as one of the consumers' concerns.

H3a: Risk perception has a significant impact on the intentions of consumers to use herbal products.

H3b: Risk perception as a moderating effect of health awareness and consumer intentions to use herbal products.

Methodology

We used a cross-sectional survey. The sample consisted of 300 Indonesian consumers in several major cities in Indonesia, such as Surabaya, Jakarta, Semarang, Yogyakarta, and Bandung. The sample of respondents refers to Hair et al. (2017) and this sample size has met the requirements for Structural Equation Modeling (SEM-PLS) testing, including the number of arrowheads pointing to a latent variable

in the path model. The questionnaire was given to respondents, with a few initial questions. Questionnaire filters were used only for respondents with the criteria of having interest to use herbal products in the last one month. The respondent's characteristics describe the respondent's demographic background, including gender, age, education level and income. Of the 300 questionnaires distributed, 271 complete and usable questionnaires were obtained. The remaining 29 questionnaires were not included in this study, most due to incomplete answers. The age range of respondents is between 18-65 years, and 50% of the respondents more than 35 years old. The majority of respondents have a background behind university education bachelor to doctoral degree reached 60.15%.

The survey uses a five-point Likert scale. Health awareness measurements were adjusted by Tarkiainen & Sundqvist (2005) and Michaelidou & Hassan (2008). Health responses to the intention to purchase herbal products were collected on a five-point Likert scale, ranging from "I strongly disagree" to "I totally agree". Measurement of risk indicators based on recommendations (Mieres et al., 2006) with six-item indicators.

From the question items for the health awareness variable, the construct with the highest mean score is "I am responsible for my health condition" as many as 70.48% of respondents stated that they strongly agreed, this construct also had the most strongly agree answers compared to other items. A higher score indicates that a strong concern for health awareness is an important factor in the respondent's decision to choose herbs. Attitude was tested were adapted from Tarkiainen & Sundqvist (2005) and Gupchup (2006). Two question items with a top loading value are "I use herbs because they are better than other alternative medicine options" and "I think choosing herbs is the right action" with a loading value of 0.815.

Structural Equation Modeling (SEM) techniques were used in this study. SEM was chosen based on the relationship between complex variables, the existence of concept variables (undetectable), and to test of the whole fitness model (Gudono, 2014). To answer the hypotheses, this research tested Structural Equation Modeling (SEM) techniques with Smart PLS 3.0. Partial Least Square (PLS) is an alternative approach that aims to test predictive relationships between constructs to a variant-based approach (Hair et al., 2017). Moreover, PLS can analyze phenomena with their complexity (Sarstedt et al., 2011).

Based on the hypothesis that was developed from the relationship between attitude, health awareness and risk perception as moderator on the relationship between health awareness, and purchase intention, the study model can be described as shown in Figure. 1.

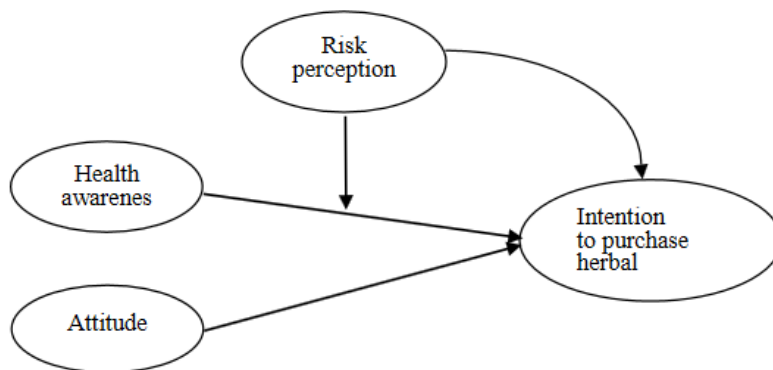


Figure 1. Conceptual framework
 Source: Own research model

Results

The first analysis was performed to test the outer model are the reliability and validity of the model. In testing the structural equation modeling, the structural model was estimated using bootstrap with a sample number of 500. Furthermore, an inner model is tested to obtain the bootstrap results and estimation of the goodness of fit model. The value of the R-square shows the degree to which the exogenous variables are determined in the direction of their endogenous ones, the criterion for evaluating the R-square is 0.75; 0.50; and 0.25 indicate the strong, moderate, and weak models. The parameters for the evaluation of the structural model refer to Hair et. al. (2017) by looking at the R-Square value as a goodness fit model.

Table 1 provides Cronbach alpha and Composite Reliability values for the scales.

The alpha values were checked before performing the validity analysis and all were above the recommended level of 0.6. (Hair et al., 2010). Testing was performed by evaluation of the outer model to check the construct's reliability and validity. The Cronbach alphas and composite reliability were calculated to check the internal consistency of the measurements.

Table 1
 Cronbach Alphas and Composite Reliability

Variabel	Cronbach Alpha	Composite Reliability
HE	0.869	0.915
ATT	0.875	0.903
RS	0.799	0.869
N	0.867	0.937

Source : own calculations using primary data research

Table 2 provides the validity of the constructs, as well as convergent and discriminant validity including latent variable correlation.

The validity test is performed by satisfying the discriminant and convergent validity. Average variance extracted value and outer loading factors are used to test the convergent validity. A variable can be accepted if the AVE value is greater than 0.5. (Hair et al., 2017). As presented in Table I, the AVE values for every construct have met the satisfactory level of AVE result of >0.5. While the discriminant validity was seen from the calculation of AVE roots and the correlation of latent variables.

Table 2
Average Variance Extracted

Variable	AVE value	AVE roots
HE	0.790	0.889
ATT	0.573	0.756
RS	0.625	0.790
IN	0.882	0.939

Source : own calculations using primary data research

The calculation results show that the root of AVE is greater than the correlation between constructs. This means that in this study one latent variable already explains the variance of its own indicators, which is better than the variance of other latent variables (Hair et al., 2017). The AVE roots for health (HE) were 0.889 greater than the HE-ATT correlation (0.562), HE-RS correlation (-0.309), HE-N correlation (0.646) as well as other constructs. The square root of the AVE of each construct is greater than the highest correlation with any other construct in either group. From the latent value of the correlation variable and cross-loading, it can be concluded that there is good discriminant validity. Thus, it shows that the model meets both the convergent and discriminant validity requirements well.

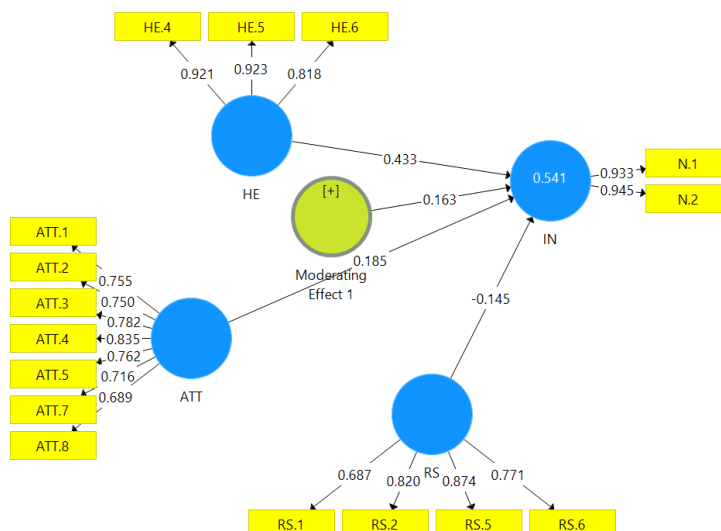


Figure 2. Structural model evaluation
Source: Own calculations using primary data research

Subsequently, the research model was analyzed to determine whether risk moderates the relationship between health and purchase intention. Path coefficient results indicate how strong the influence of the independent variables is on the dependent variable. Overall the model fits very well and works adequately with an R-squared of 0.541. It shows that the contribution of the influence of the independent variables on purchase intention is 54.1%, while the rest is influenced by other variables not included in the study.

Table 3
Path Coefficients

Hyphotesis	Predicted Effect	B	t-statistic	p-values	Finding
H1	HE -> IN	0.433	6.235	0.000	Supported
H2	ATT -> IN	0.185	2.423	0.016	Supported
H3	RS -> IN	-0.145	2.637	0.009	Supported
H4	Moderating Effect HE -> IN	0.163	3.018	0.003	Supported

Source : own calculations using primary data research

Table 3 shows that hypotheses 1, 2, and 3 are supported. The results of the attitude (ATT) on purchase intention (IN) refer to a path coefficient of 0.185 and t-statistic 2.423 greater than t table 1.96 (t statistic < t table). Thus, the attitude has a positive impact on intention. Support is also found in the

hypothesis that health awareness influences consumer intention. The relationship between health awareness (HE) on purchase intention (IN) has a p-value of 0.00. Hence, health awareness has a positive impact on purchase intention. These results indicate that health and attitude have a significant impact on purchase intention. The effect of risk perception on the relationship between health awareness and consumer intention as a moderator variable is examined. Moderation test results show a p-value of 0.003 is less than 0.05. It indicates that perceived risk moderates the relationship between health and consumer intentions.

Discussion

A healthy lifestyle is the choice of individuals today. People's tendency to be careful about changes in health or complaints. This is the case, the concern that the disease will worsen. (Rosenstock et al., 1988). Over time, herbs are positioned not only as complementary medicines but also as immune supplements for a healthier lifestyle. To achieve good health, people tend to choose natural products because of their low side effects. However, issues related to herbal safety are rife, so there is a need for product quality and safety standards. (Peschel, 2007). Motives and barriers can vary in consumers' decision-making to use natural products (Padel & Foster, 2005), one of these is health consciousness. The pandemic that occurred in the last two years provides insight into a high level of health awareness. To prevent susceptibility, a person will make efforts to protect himself or improve his health condition (Rosenstock, 1974). Using natural health products is an option for use due to several considerations such of being easy to obtain without a doctor's prescription, to lower risks if used continuously. Nonetheless, the safety of the consumed product is a concern of the consumer. For herbal products, consumer risk is a concern about the quality of the product for their health. The low-risk perception of the product will promote the consumer's intention to use the product.

Health and food safety are two aspects associated with buying intentions. (Ueasangkomsate & Santiteerakul, 2016). Consumer behavior towards herbal products is more common in an adult persons. It is alleged because at an adult age a person begins to experience various health issues such as tremor (Kang et al., 2019), back pain (Kanodia et al., 2010), schizophrenia (Mounkoro et al., 2020) so that he needs vitamins or health booster. The low risk of herbs as natural products is the choice for consumers. Meanwhile, in terms of gender, the use of herbs is more widely used by women. Several studies highlight the use of herbs in women (Abdollahi & Chareti, 2019; Zaffani et al., 2006). In addition, women are also more likely to be responsible for caring for the health of their families. There is a high demand for the use of herbs in women, not only for healthcare needs but also herbal extracts are used in beauty clinics, body slimming, and skin brightening treatments.

The results of the first hypothesis test can be explained that health awareness affects consumers' intentions to use herbal products. This can be seen from the p-value of 0.000, the p-value of <0.05 , indicating that it supports the hypothesis that health awareness affects consumers' intentions to use herbal products significance value of 0.000. Food intake affects health, this consciousness supports consumers to take natural products and appreciate healthy food. A study by Roman et al. (2017) clearly shows that food naturalness is crucial for the majority of consumers. The more the health benefits of herbal products, the higher the intent of consumers to use herbal products. The results of this study are also supported by what respondents said about the distribution of health awareness responses. The highest average is the point "I am responsible for my health status". This means that consumers are aware of the responsibility for health problems when using herbal products. The results of this study are consistent with the studies of Wee et al. (2014) that the perception of consumer health has a significant impact on consumers' intentions to purchase natural products.

Based on the results of the second hypothesis test, the relationship between attitude and purchase intention appears that attitude has a positive effect on the consumer's intention to use herbal products (p-value $0.000 < 0.05$). This means that the higher the attitude toward using herbal products, the higher the consumer's intention. Attitude towards intention relates to the extent to which a person has something to like. When using herbal products, attitude is an assessment of whether or not the use of herbal products is an appropriate or beneficial choice. The results of the hypothesis show that attitude has a positive impact on consumer intent to use herbal products. Then, it can be revealed that using herbal products is the right or beneficial treatment. This is supported by the respondent's answer to the question "I use herbal medicine because it's useful (beneficial)," with the overall percentage of respondents who responded agreeing at 88.56% of total respondents. This is in line with Mohamed, (2004), whose study reported that the consumer's intention in choosing herbal products is influenced by several factors and the attitude towards treatment is the main determinant of the tendency of the consumer's intention to consume herbal products.

In terms of the impact of risk perception on consumer intentions to use herbal products, hypothesis testing shows that risk perception harms consumer intentions to use herbal products. The lower the risk perception of using herbal products, the more the consumer intends to use herbal products. The effect of risk perception as moderating variable is also seen in the relationship between health awareness and purchase intention. Ueasangkomsate & Santiteerakul (2016) reports that health is the main factor influencing consumer intentions. A study by Wee et al. (2014) researched on 288 respondents in Kluang, Johor found that the perceived quality of natural products did not have a significant impact on consumer intentions, but consumer perceptions of health had a significant impact on consumer intentions to use natural products ($\beta = 0.132$, t-statistic 2.098, and p-value < 0.05). The perception of low risk in herbal products will encourage people to use herbal products for better health. In this regard, a person will take

actions related to health with the hope that herbal products will be able to support their health. Risk moderates the relationship of health awareness to intentions, and the results are significant with a significance value of 0.000.

Conclusions

This study applies a behavioral approach that examines variables attitude and purchase intention in the Theory of Planned Behavior and also adds health awareness and risk perception as independent variables. This study shows a moderating variable to see the relationship between health awareness and purchase intention. The results of this research indicate that health awareness, attitude, and risk perception influence the consumer intention to use herbal products. It is also concluded that risk perception moderates health awareness of consumers' intention toward herbal products. Herbal products are useful for supporting good health, this understanding is expected to encourage consumers' purchase intention to use herbal products.

As a theoretical implication, this research is expected to contribute to knowledge by simultaneously modeling health awareness, attitudes, and risk perceptions as predictors of intention toward herbal products. This research gives a different perspective than previous studies. The results of this study indicate the effectiveness of the Theory of Planned Behaviour through empirical study to explain problems in health-related behavior to determine consumer intentions in using herbal products.

There are several limitations related to our study that should be considered to generalize the results. First is regarding the location setting because each region has different characteristics, the possibility of consumer buying behavior is likely to differ in countries with different cultures, and different decision-making situations. Second, this study uses a questionnaire survey method thus there is a probability of subjective elements in each respondent's response. In addition, the study results cannot be generalized. Data collection can be followed by interviewing respondents to obtain more objective data to overcome the research limitations.

Our findings suggest that health awareness and attitudes are important predictors of consumer intent toward herbal products. Given the results of this study, future research may examine this design in other contexts, such as safety concerns, as it can be viewed as an important factor in choosing health-related products. This provides opportunities for advanced study to develop a model in a broader context.

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