

# **The Influence of Attitude, Subjective Norm, Perceived Behavioral Control, Purchase Intention, and Nutritional Awareness on the Purchase Behavior of Nutritious Food and Beverages among Adolescents**

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## **Abstract**

*Adolescence is a critical developmental stage that requires adequate nutritional intake to support physical, mental, and social growth. However, many adolescents adopt unhealthy eating behaviors influenced by trends, peer pressure, and limited nutritional awareness. This study analyzed the influence of attitude, subjective norms, perceived behavioral control, purchase intention, and nutritional awareness on the purchase behavior of nutritious food and beverages among adolescents in Makassar. Using a cross-sectional research design, data were collected from 119 students at SMA 10 Makassar through a structured questionnaire. Logistic regression analysis revealed that attitude (COR = 10.41, p = 0.001) and purchase intention (COR = 12.22, p = 0.001) significantly affected nutritious food purchasing behavior. Meanwhile, subjective norms, perceived behavioral control, and nutritional awareness did not show significant effects. These findings highlight the importance of developing youth-oriented nutrition programs that strengthen positive attitudes and purchasing motivation toward nutritious food products.*

**Keywords:** Attitude, Subjective Norm, Perceived Behavioral Control, Purchase Intention, Nutritional Awareness

## **INTRODUCTION**

Adolescents represent an age group undergoing a critical transitional phase, both physically, mentally, and socially. During this stage, adequate nutritional intake is essential to support growth and development, as well as to establish the foundation for long-term health. Unfortunately, many adolescents in Indonesia face various challenges in maintaining healthy dietary patterns, including difficulties in choosing nutritious foods and beverages [1].

In the current era of globalization and digitalization, adolescents are frequently exposed to advertisements, fast-food trends, processed foods, and lifestyle patterns that do not support healthy eating behavior. This exposure often weakens their awareness of the importance of nutrition, even though information regarding the benefits of nutritious foods is increasingly accessible [1]. Beyond nutritional awareness, the purchasing behavior of nutritious food and beverages is also influenced by psychological and social factors, including attitude, subjective norms, perceived behavioral control, and purchase intention [2], [3].

Attitude toward nutritious foods reflects an individual's evaluation of the benefits and relevance of such foods in their daily life. Subjective norms refer to social pressure from those around them, such as family, peers, or the community, which may influence purchasing decisions. Perceived behavioral control relates to the extent to which adolescents feel capable of accessing and consuming nutritious foods, and this factor plays a significant role. Meanwhile,

purchase intention serves as an initial motivational indicator before actual purchasing behavior occurs. These factors interact in complex ways and together shape purchasing behavior oriented toward nutritious food and beverage products [4].

Indonesia's cultural diversity, socioeconomic variations, and differences in access to information present additional challenges in understanding nutritious food consumption patterns among adolescents. Factors such as education, food product promotion, and family eating habits also influence these behaviors. With the increasing prevalence of health issues such as obesity, anemia, and non-communicable diseases among adolescents, it is essential to explore the determinants of nutritious food purchasing behavior as a preliminary step in designing effective interventions [5], [6].

This study aims to analyze the influence of attitude, subjective norms, perceived behavioral control, purchase intention, and nutritional awareness on the purchasing behavior of nutritious foods and beverages among adolescents in Indonesia. The findings of this study are expected to contribute significantly to the development of health policies, nutrition education programs, and more relevant promotional strategies to support healthy dietary patterns among adolescents.

## **METHODS**

### **Type of Research, Time, and Setting**

This study is quantitative research using a cross-sectional study design. A structured questionnaire was distributed to 11th-grade students, who completed the instrument through self-administered questionnaires under researcher supervision. The study was conducted at SMA Negeri 10 Makassar. The total sample in this study consisted of 119 students.

### **Research Variables**

Attitude is defined as an individual's overall evaluative judgment toward a concept. In this study, attitude was measured using the following indicators: 1). Preference for choosing nutritious food and beverages; 2). Actively seeking nutritious food and beverages; 3). Perceiving nutritious products as important; 4). Choosing nutritious products based on personal preference; 5). Considering nutritious products are important for others.

Subjective Norm refers to an individual's perception of social pressure from significant others to perform or not perform a behavioral action. The subjective norm variable in this study was measured using indicators: 1). Belief that close others (family and friends) will choose nutritious foods/beverages; 2). Others can influence me to purchase nutritious foods; 3). Close others prefer nutritious products over non-nutritious ones; 4). Close others believe nutritious food is more important than well-known but non-nutritious products; 5). Family emphasizes the importance of choosing nutritious foods/beverages [7].

Perceived Behavioral Control refers to an individual's perception of the ease or difficulty of performing a behavior. This variable was measured through the following indicators: 1). I am always able to find nutritious food/beverages; 2). There are many complete choices of nutritious foods/beverages available; 3). Nutritious foods/beverages are affordable; 4). It is easy to find nutritious foods [7].

Nutritional Awareness refers to the knowledge or understanding of nutritional value in foods consumed (Pramintasari & Fatmawati, 2017). This variable was measured using three items adapted from Aziz & Chok (2015) and Nurhasanah & Hariyani (2017): 1). Ensuring safe production processes with guaranteed nutritional quality; 2). Purchasing products only when

the production process is known to be clean and nutritiously assured; 3). Responsibility of producers regarding nutritional quality (Awan et al., 2015; Nurhasanah & Hariyani, 2017).

Purchase Intention is assumed to be a motivational factor influencing behavior and indicates how much effort a person is willing to exert to perform the behavior. Indicators used to measure purchase intention include: 1). Willingness to pay more for nutritious products; 2). Willingness to wait longer for nutritious products; 3). Willingness to purchase nutritious products; 4). Willingness to travel further to obtain nutritious products; 5). Intention to purchase nutritious products in the future (Abd Rahman et al., 2015).

Consumer Behavior refers to the behavior displayed by individuals in searching for, purchasing, using, evaluating, and discontinuing the use of products, services, or ideas (Nurcahyo & Khasanah, 2016). Purchase behavior in this study was measured by: 1). Having consumed nutritious products; 2). Continuing to consume nutritious products; 3). Being accustomed to consuming nutritious products (Ajzen, 1991).

### **Research Instrument**

The data collection instrument used in this study was a questionnaire. The questionnaire served as a data collection tool consisting of a series of questions to be answered by the respondents. The items were arranged systematically so that respondents could provide their responses clearly, and the questions were designed to be sufficiently detailed and comprehensive. The type of questions used in this study was closed-ended questions, meaning that the answer choices had been predetermined along with the available response options.

The data used were primary data, obtained directly from respondents. The structure of the questionnaire was as follows: Section I; Respondent characteristics. Section II; Independent variables. Section III; Dependent variable. Measurement Scale, Respondents' answers were measured using a Likert scale, which is designed to allow respondents to express varying levels of agreement with each statement related to the product or concept being evaluated. This scale enables respondents to indicate the intensity of their feelings, meaning that they must determine the degree to which they agree or disagree with each statement presented. In this study, a five-point Likert scale was used, consisting of: Strongly Agree (SA) = 5; Agree (A) = 4; Neutral (N) = 3; Disagree (D) = 2; Strongly Disagree (SD) = 1.

### **Data Analysis**

The data analysis used in this study consisted of univariate analysis to describe the distribution and frequency of each variable (independent and dependent). Bivariate analysis was used to examine the relationship between the independent and dependent variables, while multivariate analysis was conducted using binary logistic regression to calculate the Crude Odds Ratio (COR) or exposure association (risk factor). A p-value < 0.05 was considered to indicate statistical significance. Data analysis was performed using SPSS version 20.0.

## RESULTS

**Table 1. Respondent Characteristics**

<b>Variable</b>		<b>Frequency (n)</b>	<b>Percent (%)</b>
<b>Gender</b>	Female	97	81.5%
	Male	22	18.5%
<b>Parents' income</b>	≤3 jt	63	52.9%
	>3jt	56	47.1%
<b>Age</b>	≤15 year	41	48.8%
	> 15	78	51.2%
<b>Religion</b>	Muslim	119	100%

Table 1 presents the characteristics of the 119 respondents. The majority of respondents were female (81.5%), while the remaining 18.5% were male. A total of 52.9% of respondents came from families with parental income ≤3 million rupiah, whereas 47.1% came from families with income >3 million rupiah. Based on age, 48.8% were ≤15 years old, and 51.2% were >15 years old. All respondents (100%) were Muslim.

**Table 2. Distribution of Attitudes, Subjective Norms, Purchase Interest, Perceived Behavioral Control, Purchase Awareness, and Purchase Behavior of Nutritious Food/Beverages**

<b>Variable</b>		<b>Frequency (n)</b>	<b>Percent (%)</b>
<b>Attitude</b>	Good	74	62.2%
	Less	45	37.8%
<b>Subjective Norm</b>	Good	84	70.6%
	Less	35	29.4%
<b>Purchase Intention</b>	Good	65	54.6%
	Less	54	45.4%
<b>Perceived Behavioral Control</b>	Good	70	58.8%
	Less	49	41.2%
<b>Nutritional Awareness</b>	Good	93	78.2%
	Less	26	21.8%
<b>Nutritious Food Purchase Behavior</b>	Good	63	52.9%
	Less	56	47.1%

Table 2 shows the distribution of data regarding attitude, subjective norms, purchase intention, perceived behavioral control, nutritional awareness, and nutritious food and beverage purchasing behavior. The majority of respondents demonstrated good attitude (62.2%), good subjective norms (70.6%), good perceived behavioral control (58.8%), and good nutritional awareness (78.2%). However, only 54.6% of respondents showed good purchase intention, and 52.9% demonstrated good purchasing behavior, indicating the need to enhance both intention and actual purchasing behavior of nutritious foods and beverages.

**Tabel 3. The Relationship between Attitudes, Subjective Norms, Purchase Intention, Perceived Behavioral Control, Nutritional Awareness, and Purchase Behavior of Nutritious Food/Beverages**

Variable	Consumption Behavior				P- Value	
	Good		Less			
	f	%	f	%		
<b>Attitude</b>	Good	60	81.1 %	14	18.9 %	0.001
	Less	3	6.7 %	42	93.3 %	
<b>Subjective Norm</b>	Good	57	67.9 %	27	32.1 %	0.001
	Less	6	17.1 %	29	82.9 %	
<b>Purchase Intention</b>	Good	54	83.1 %	11	16.9 %	0.001
	Less	9	16.7 %	45	83.3 %	
<b>Perceived Behavioral Control</b>	Good	50	71.4 %	20	28.6 %	0.001
	Less	13	26.5 %	36	73.5 %	
<b>Nutritional Awareness</b>	Good	61	65.6 %	32	34.4 %	0.001
	Less	2	7.7 %	24	92.3%	

Table 3 presents the relationship between attitude, subjective norms, purchase intention, perceived behavioral control, and nutritional awareness with nutritious food and beverage purchasing behavior. The analysis results indicate that all variables had a significant association with purchasing behavior ( $p$ -value = 0.001). Respondents with a positive attitude demonstrated good purchasing behavior at 81.1%, while those with a less favorable attitude tended to show poor behavior at 93.3%. Respondents with strong subjective norms exhibited good purchasing behavior at 67.9%, whereas those with weaker subjective norms showed poor behavior at 82.9%.

Respondents with high purchase intention demonstrated good purchasing behavior at 83.1%, while those with low purchase intention showed poor behavior at 83.3%. Additionally, respondents with strong perceived behavioral control exhibited good behavior at 71.4%, whereas those with lower perceived control showed poor behavior at 73.5%. Respondents with high nutritional awareness demonstrated good purchasing behavior at 65.6%, while those with low awareness showed poor behavior at 92.3%. These findings reinforce that attitude, subjective norms, purchase intention, perceived behavioral control, and nutritional awareness play important roles in influencing nutritious food and beverage purchasing behavior among adolescents.

**Table 4. The Influence of Attitudes, Subjective Norms, Purchase Interest, Perceived Behavioral Control, and Purchase Awareness on the Purchase Behavior of Nutritious Food/Beverages**

Variable	Purchase Behavior of Nutritious Food/Beverages	P Value
	COR (95% CI)	
<b>Attitude</b>	10.41 (10.48-47.11)	*0.001
<b>Subjective Norm</b>	0.17 (0.02-1.52)	0.113
<b>Purchase Intention</b>	12.22 (2.90-51.42)	*0.001
<b>Perceived Behavioral Control</b>	1.74 (0.41-7.33)	0.453
<b>Nutritional Awareness</b>	1.82 (0.31-25.55)	0.335

Table 4 presents the analysis of the effects of attitude, subjective norms, purchase intention, perceived behavioral control, and nutritional awareness on nutritious food and beverage purchasing behavior based on the Crude Odds Ratio (COR) and p-values. Attitude showed a significant effect on purchasing behavior (p-value = 0.001) with a COR of 10.41 (95% CI: 10.48–47.11), indicating that respondents with a positive attitude were 10.41 times more likely to demonstrate good purchasing behavior. Subjective norms did not show a significant effect (p-value = 0.113) with a COR of 0.17 (95% CI: 0.02–1.52). Purchase intention showed a significant effect (p-value = 0.001) with a COR of 12.22 (95% CI: 2.90–51.42), meaning that respondents with high purchase intention were 12.22 times more likely to have good purchasing behavior. Perceived behavioral control was not significant (p-value = 0.453) with a COR of 1.74 (95% CI: 0.41–7.33). Nutritional awareness was also not significant (p-value = 0.335) with a COR of 1.82 (95% CI: 0.31–25.55). These results indicate that attitude and purchase intention have a significant influence on nutritious food and beverage purchasing behavior, while subjective norms, perceived behavioral control, and nutritional awareness do not show a significant effect.

## DISCUSSIONS

### Influence of Adolescent Attitudes on Nutritious Food and Beverage Consumption Behavior

The findings indicate that attitude has a significant influence on nutritious food and beverage purchasing behavior, with a high crude odds ratio (COR 10.41; p = 0.001). This reinforces the importance of positive attitude as a strong predictor of behavior, in line with the Theory of Planned Behavior (TPB) [8]. A positive attitude reflects adolescents' understanding and acceptance of the benefits of nutritious foods, which ultimately encourages healthier consumption behavior. Therefore, nutrition education efforts that foster positive attitudes toward nutritious foods and beverages should be prioritized in public health interventions ([8], [9]).

Adolescents' attitudes toward consuming nutritious foods and beverages greatly influence their food choices, which are often shaped by personal values, health knowledge, as well as social and cultural factors. In this context, attitude can be described as an individual's positive or negative evaluation of an object—in this case, nutritious foods. Previous studies have shown that positive attitudes toward nutritious foods are closely associated with increased healthy food consumption among adolescents [2], [3].

Several studies have found that adolescents who have a positive attitude toward nutritious foods, such as fruits and vegetables, are more likely to choose and consume healthy foods. Research by Liao et al. (2021) showed that supportive attitudes toward healthy eating—shaped by nutritional knowledge and understanding of health benefits—can motivate adolescents to choose nutritious foods even when they are faced with temptations from unhealthy foods, such as fast food. Conversely, adolescents with negative attitudes toward healthy foods often prefer foods perceived as tastier or more easily accessible, such as junk food or sugary snacks, despite the long-term negative impact on their health [10].

In addition, attitudes toward nutritious foods are influenced not only by individual factors but also by social and cultural environments. In many cases, these attitudes are shaped by family influence, peer interactions, and media exposure. Research by Lee et al. (2022) revealed that adolescents who grow up in families that encourage healthy food consumption are more likely to develop positive attitudes toward nutritious foods. Peer influence also plays a significant role, as the attitudes of peer groups toward healthy eating can shape an individual's attitudes and food choices [11].

However, even though a positive attitude toward nutritious foods can motivate adolescents to consume them, other factors such as accessibility, price, and taste preferences remain barriers [12]. Therefore, to increase nutritious food consumption among adolescents, interventions aimed at shaping positive attitudes—such as educational programs that introduce delicious and affordable ways to prepare healthy foods—are essential. Overall, adolescents' attitudes toward nutritious foods have a significant influence on their consumption behavior. Thus, strategies involving education, social support, and positive mindset development need to be implemented to foster attitudes that support healthy dietary patterns among adolescents [13]–[15].

### **Purchase Intention Toward Nutritious Food and Beverage Consumption Behavior**

Purchase intention also showed a significant influence (COR 12.22;  $p = 0.001$ ), even stronger than attitude. This indicates that although an individual may have a positive attitude, without a strong purchase intention, actual behavior will not occur. These findings provide a basis for developing more appealing strategies to promote nutritious foods among adolescents, such as social media-based approaches, the involvement of influencers, or campaigns that highlight the benefits of nutritious foods in ways that are relevant to adolescent lifestyles [16].

Purchase intention plays an important role in determining nutritious food and beverage consumption behavior, especially among adolescents who are frequently faced with diverse choices and external influences. Purchase intention, which refers to an individual's tendency to choose or buy a particular product, is influenced by various factors, including perceptions of quality, taste, price, and nutritional value. Previous studies have shown that purchase intention toward nutritious foods is often shaped by a combination of individual and external factors [17].

One of the main factors influencing purchase intention is knowledge and awareness of the importance of nutritious foods. A study by Liao et al. (2021) showed that adolescents who have a better understanding of the benefits of healthy foods are more likely to choose nutritious food products, even if these foods may be slightly more expensive or less visually appealing compared to less healthy alternatives such as junk food [10]. In addition, information obtained through various channels, such as social media, health campaigns, and family influence, can also increase purchase intention toward nutritious food products [16].

However, although nutritional knowledge is important, purchase intention is also influenced by price. Nutritious foods are often more expensive than more affordable options,

which becomes one of the main constraints for consumers, especially adolescents with limited budgets. Research by Dube et al. (2020) indicated that although adolescents may be interested in purchasing nutritious foods, higher prices often reduce their intention to do so. In this context, strategies that reduce the cost of nutritious foods or offer more affordable nutritious product options may help increase purchase intention among young consumers [18]–[20].

In addition, social factors, such as peer and family influence, also affect purchase intention toward nutritious foods. Adolescents tend to choose foods that are considered “cool” or aligned with the trends within their social groups. Therefore, when their friends or family perceive healthy foods as a good choice, the purchase intention toward these products is likely to be higher. A study by Yang et al. (2022) emphasized that peer groups play a significant role in healthy food purchasing decisions, indicating that efforts to increase purchase intention can leverage this social influence by creating trends of nutritious food consumption among adolescents [21], [22].

Overall, although adolescents may have interest in nutritious foods, factors such as price, availability, and social trends strongly influence their purchasing decisions. Therefore, strategies aimed at increasing purchase intention for nutritious foods must take these factors into account, whether by providing relevant information, reducing prices, or fostering social support for healthy food consumption.

### **Influence of Subjective Norms on Nutritious Food and Beverage Consumption Behavior**

Subjective norms did not show a significant influence on purchasing behavior (COR 0.17;  $p = 0.113$ ). This result differs from the assumptions of the Theory of Planned Behavior (TPB), which positions social norms as an important determinant. This may be due to the nature of social influence among adolescents, which tends to prioritize trends in popular foods rather than nutritional value. For example, fast food or trendy beverages may be more influenced by social appeal than by health benefits. Therefore, community-based interventions or peer-to-peer approaches may be effective strategies to shift social norms toward supporting nutritious food choices.

Subjective norms, which refer to an individual's perception of social expectations or the influence of social norms within their environment, play an important role in shaping nutritious food and beverage consumption behavior. According to the Theory of Planned Behavior, subjective norms involve a person's belief regarding social pressure that may influence their decisions, such as the views of family, peers, and society regarding healthy eating habits [9].

Subjective norms refer to an individual's perception of what is considered expected or approved by those around them, such as family, friends, or the wider community. In the context of nutritious food and beverage consumption behavior, subjective norms play an important role because individuals often make decisions based on social expectations and pressures they receive from their social environment. Previous studies have shown that these social norms can significantly influence eating habits, either positively or negatively [3].

A study by Albarracín et al. (2021) indicated that adolescents who perceive social norms as supportive of healthy eating are more likely to choose nutritious foods. When family members or peers value the consumption of healthy foods, adolescents often adopt similar behaviors as a way to gain acceptance within their social group. Conversely, if the prevailing social norms in their environment tend to encourage unhealthy eating habits, such as consuming fast food or processed foods, adolescents may feel less motivated to choose nutritious foods, even if they understand that such choices are better for their health [23].

Peer influence also plays a substantial role. A study by Yang et al. (2022) showed that

peers have a strong influence on adolescents' food choices. Adolescents who are part of peer groups that support healthy eating tend to have more positive attitudes and behaviors toward nutritious foods. In this context, social pressure to follow peer habits can motivate adolescents to consume more nutritious foods [21].

However, the effect of subjective norms is not always linear. Research also indicates that although social pressure can encourage healthy behavior, individuals with lower self-control or insufficient nutritional knowledge may be more vulnerable to social pressure that encourages the consumption of unhealthy foods. This suggests that while social norms can influence eating habits, internal factors such as nutritional knowledge and self-control still play an important role in determining food consumption behavior.

Overall, subjective norms play a significant role in shaping nutritious food consumption behavior, particularly among adolescents. Increasing awareness of the importance of healthy eating within social environments such as families, schools, and peer groups can help create norms that better support healthy eating habits. For instance, campaigns that involve families and peers in promoting healthy food consumption may be effective in shaping more positive social norms and encouraging adolescents to make more nutritious choices.

### **The Influence of Perceived Behavioral Control on the Consumption of Nutritious Foods and Beverages**

Perceived behavioral control was also found to be non-significant (COR 1.74;  $p = 0.453$ ), indicating that external constraints such as price or availability may not be major barriers for adolescents. This may be due to the fact that nutritious products are sufficiently available and affordable, or because adolescents are more influenced by personal preferences than by external limitations.

Perceived behavioral control, which refers to an individual's belief regarding the extent to which they can regulate their own behavior, is an important factor in shaping the consumption of nutritious foods and beverages. In the context of healthy eating behavior, perceived behavioral control pertains to the degree to which individuals feel capable of accessing and consuming nutritious foods, despite challenges such as time, cost, or the availability of healthy food options. According to the Theory of Planned Behavior, this perception of control can influence both intentions and ultimately actual food consumption behavior, including the decision to consume nutritious foods [9].

Previous research has shown that individuals who feel they have greater control over their food choices are more likely to choose healthy foods. This may occur because they feel capable of overcoming barriers such as high prices or difficulties in accessing nutritious foods. For example, adolescents who perceive that they can choose healthy foods even when price or access is limited are more likely to consume vegetables and fruits regularly [3], [4].

A study by Grunert et al. (2011) identified that high perceived behavioral control related to healthy food consumption is more common among individuals who feel they are able to manage and select their food despite external constraints. This indicates that they possess a better understanding of healthy food choices and feel more capable of overcoming existing challenges [24].

However, perceived behavioral control is not always absolute. In some cases, even when individuals feel they have control, other factors such as social norms or challenging environmental situations (such as the availability of fast food in their surroundings) may still influence their decisions. Research by Chen et al. (2023) indicates that even if individuals perceive themselves as having control, social pressure or pre-existing habits can diminish the

positive effect of perceived control on healthy eating behavior [25].

Overall, perceived behavioral control is a highly influential factor in promoting the consumption of nutritious foods. Therefore, interventions aimed at enhancing self-regulation in healthy eating patterns should consider factors that shape this perception, such as access to healthy foods, nutrition education, and social support from family or peers. Educating individuals to feel more capable of making healthier decisions, as well as creating environments that support those choices, can help improve nutritious food consumption.

### **The Influence of Perceived Behavioral Control on Purchase Awareness**

Although the majority of respondents demonstrated good awareness of the importance of nutritious foods, purchase awareness did not show a significant influence on purchasing behavior (COR 1.82;  $p = 0.335$ ). This indicates that awareness alone is not sufficient to motivate actual behavioral action. Additional motivational factors, such as emotional drives or product promotion, may be needed to encourage healthy purchasing behavior. These findings support the need for more practical educational approaches, such as introducing nutritious foods in schools or involving parents in promoting healthy consumption patterns.

Perceived behavioral control, which relates to the extent to which individuals feel they have control over their decisions and actions, plays an important role in shaping purchase awareness, particularly in the context of nutritious food and beverage products. Perceived behavioral control includes an individual's belief in their ability to purchase or select healthy products, whether in terms of price, availability, or the ability to make wise choices under certain circumstances. Previous research has shown that individuals with stronger perceived behavioral control tend to have higher awareness in making healthy purchasing decisions [2].

One relevant study shows that when consumers feel they have greater control over their food choices, they become more aware of the importance of purchasing healthy and nutritious foods. For instance, a study by Grunert et al. (2020) found that individuals who believe they can control their food choices—even when facing external barriers such as high prices or limited access—are more likely to regularly purchase healthy foods. This suggests that perceived behavioral control is associated with purchase awareness, meaning consumers' awareness in choosing more nutritious foods over unhealthy ones [24].

On the other hand, low perceived behavioral control often leads to lower purchase awareness, particularly when individuals feel constrained by external factors such as price or the availability of healthy products. A study by Yang et al. (2022) also identified that if individuals feel they lack control over their access to healthy foods, their awareness of the importance of purchasing healthy foods tends to decline. For example, in situations where healthy foods are perceived as too expensive or difficult to obtain, individuals may feel less motivated to engage in choosing nutritious foods [8].

As a solution, interventions that enhance perceived control—such as providing clear information about healthy food options, reducing access barriers through more affordable pricing policies, or increasing the availability of nutritious foods in local markets—can improve consumer purchase awareness. In addition, educational programs that introduce consumers to nutritional benefits and ways to choose healthier products can strengthen the relationship between perceived behavioral control and purchase awareness, helping individuals feel more capable of making healthier decisions [6].

Overall, perceived behavioral control greatly influences purchase awareness of nutritious food products. Enhancing individuals' sense of control over their food choices will have a positive impact on their decisions to purchase healthier and more nutritious products.

## CONCLUSIONS

The findings of this study emphasize the importance of strengthening attitudes and purchase intentions to improve nutritious food and beverage consumption behaviors among adolescents in Indonesia. Public health efforts should be directed toward educational and marketing strategies that align with the needs and preferences of adolescents in order to promote sustainable behavioral change. For instance, education related to how to read nutritional labels on food packaging, as well as the importance of paying attention to the nutritional content of foods and beverages to be consumed, can be implemented.

## RECOMMENDATIONS

Overall, these results reinforce the relevance of attitudes and purchase intentions as primary predictors of nutritious food and beverage purchasing behavior, while subjective norms, perceived behavioral control, and purchase awareness show weaker roles in this context. These findings suggest that the Theory of Planned Behavior may need to be adapted within the Indonesian cultural context, particularly for adolescents, by incorporating more contextual dimensions such as the influence of trends, media, and taste preferences.

From a practical perspective, public health interventions should focus on enhancing positive attitudes and interest in nutritious foods and beverages through relevant education, appealing marketing strategies, and youth trend-based campaigns. Meanwhile, community-based interventions may consider shifting social norms toward greater support for the consumption of nutritious foods.

## DECLARATION

### Ethical Approval and Consent to Participate

Informed consent was obtained from all respondents prior to their participation in this study. An explanation regarding the purpose and procedures of the research was provided before the distribution of the questionnaire, and participation was voluntary without any form of coercion.

### Conflict of Interest

The authors declare that there is no conflict of interest.

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