

Determinants of Purchase Decisions for Local Alternative Sweetener-Based Food Products among Generation Z: An Extended Theory of Planned Behavior Approach

Jeni Amelia Putri¹, Abdul Wahib Muhaimin², Silvana Maulidah^{3*}

¹Postgraduate of Agribusiness, Brawijaya University, Malang, Indonesia

^{2,3}Department Socio Economics, Brawijaya University, Malang, Indonesia

DOI: <https://doi.org/10.47772/IJRISS.2026.100601005>

Received: 19 June 2026; Accepted: 24 June 2026; Published: 10 July 2026

ABSTRACT

The increasing consumption of added sugar has become a major public health concern, particularly among younger populations, despite rising awareness of healthy diets. In Indonesia, this issue is further intensified by a high dependence on imported refined sugar and the underutilization of locally sourced alternative sweeteners. This study aims to analyze the determinants of purchase decisions toward local alternative sweetener-based food products among Generation Z by employing an extended behavioral framework. A quantitative approach was used through a survey of 125 Generation Z consumers, and the data were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS). The model examines the roles of attitude, subjective norm, and perceived behavioral control, extended by nutrition literacy and local brand image. The results reveal that attitude, subjective norm, and perceived behavioral control have significant positive effects on purchase intention, which subsequently influences purchase decision. Furthermore, nutrition literacy and local brand image are found to significantly strengthen consumer attitudes toward local alternative sweetener-based products. These findings indicate the presence of an intention–behavior gap and highlight the importance of integrating psychological and contextual factors in encouraging healthier consumption behavior. This study contributes by providing an extended framework to better explain consumer decision-making and offers practical implications for policymakers and industry stakeholders in promoting local alternative sweetener-based food products.

Index Terms: Generation Z, Local Alternative Sweetener, Nutrition Literacy, Purchase Decision, Theory of Planned Behaviour

INTRODUCTION

Over the past decades, the global consumption of added sugar has risen markedly, driven primarily by the proliferation of sugar-sweetened beverages and processed foods. This trend has been closely linked to the escalating burden of non-communicable diseases, particularly obesity and diabetes, which now represent critical public health challenges. The World Health Organization (2023) recommends limiting added sugar intake to below 10% of total daily energy intake, with a further reduction to 5% suggested for additional health benefits [1]. Despite these guidelines, actual consumption levels especially among younger populations remain substantially higher, indicating a persistent misalignment between health awareness and actual consumption behavior.

A similar pattern is observed in Indonesia, where high sugar consumption coincides with a rising prevalence of degenerative diseases [2]. At the structural level, the national food system remains heavily dependent on imported refined sugar, reflecting underlying vulnerabilities in domestic production and supply chains. Conversely, Indonesia possesses considerable potential to develop locally sourced alternative sweeteners, such as palm sugar, coconut sugar, and stevia, which are characterized by relatively lower glycemic indices and promising agribusiness value[3]. Alongside this, global market dynamics demonstrate a steady increase in demand for healthier and low-sugar food products, suggesting a favorable environment for the development of

local alternative sweetener-based food products [4][5]. However, the existence of market potential does not inherently translate into actual consumer adoption, thereby necessitating a deeper understanding of consumer behavior, particularly among Generation Z [6].

Generation Z represents a strategically important consumer segment, characterized by high digital exposure and heightened awareness of health and sustainability issues. Prior studies suggest that this cohort is more receptive to healthy lifestyle trends and food innovation [7][8]. Nevertheless, empirical evidence also indicates that they remain among the largest consumers of high-sugar products, particularly sugar-sweetened beverages [2]. This contradiction reflects an intention–behavior gap, wherein favorable attitudes and intentions toward healthy consumption are not consistently translated into actual purchasing behavior [6]. Accordingly, identifying the mechanisms that bridge this gap is essential for promoting the adoption of healthier food alternatives, including products based on alternative sweeteners.

Extant literature has extensively applied the Theory of Planned Behavior to explain consumer decision-making processes in the context of healthy and sustainable food consumption. Demonstrate that attitude, subjective norm, and perceived behavioral control significantly influence sustainable consumption intention [9]. Similarly, the dominant role of attitude and knowledge in shaping purchase intention among Generation Z has been widely recognized, while nutrition literacy has also been found to positively influence the core constructs of the proposed model [4], [5]. While these studies underscore the importance of psychological and cognitive determinants in shaping intention, they offer limited insight into how such intentions are effectively translated into actual purchase decisions, particularly in emerging product contexts.

Notwithstanding these contributions, empirical research focusing on purchase decisions toward local alternative sweetener-based food products remains scarce, especially within the Indonesian context [4],[9]. Existing studies predominantly concentrate on organic, sustainable, or low-calorie food products, thereby overlooking alternative sweeteners as a distinct and contextually relevant category of local food innovation. Furthermore, the incorporation of contextual determinants such as nutrition literacy and local brand image into the Theory of Planned Behavior framework remains underexplored, despite their potential to reinforce consumer attitudes and facilitate the transition from intention to behavior. Purchase decision refers to the stage at which consumers translate their preferences and intentions into actual buying behavior after evaluating available alternatives. Understanding purchase decision is essential because it reflects the final outcome of consumer decision-making processes and determines the actual market adoption of a product [10].

Against this backdrop, this study addresses a critical research gap by examining how psychological, social, and contextual factors interact in shaping purchase decisions among Generation Z toward local alternative sweetener-based food products. This study contributes to the literature by extending the Theory of Planned Behavior through the integration of nutrition literacy and local brand image, thereby offering a more comprehensive explanation of the mechanism through which purchase intention is formed and subsequently translated into actual purchase behavior [5].

Accordingly, this study aims to analyze the determinants of purchase decisions for local alternative sweetener-based food products among Generation Z using an Extended Theory of Planned Behavior framework, and to develop an empirical model that elucidates the relationships among attitude, subjective norm, perceived behavioral control, nutrition literacy, and local brand image in shaping purchase decisions. It is hypothesized that attitude, subjective norm, and perceived behavioral control positively influence purchase intention, purchase intention positively influences purchase decision, and nutrition literacy as well as local brand image positively influence consumer attitudes, thereby strengthening purchase decisions toward local alternative sweetener-based food products among Generation Z.

Research Methods

Subsection

This study employed a quantitative approach with a survey research design to examine the factors influencing purchase decisions toward local alternative sweetener-based food products among Generation Z. The research

object of this study is local alternative sweetener-based food products, particularly food products utilizing locally sourced sweeteners such as palm sugar, coconut sugar, and stevia as substitutes for refined sugar. The study examines the factors influencing Generation Z consumers' purchase decisions toward these products, including psychological, social, and contextual determinants.

The population of this study consisted of Generation Z consumers who have knowledge of or experience with alternative sweetener-based food products. The sample was determined using a purposive sampling technique [11], with criteria including respondents aged 17–26 years and those who have consumed or are familiar with such products. Specifically, the respondents were undergraduate students of Brawijaya University, representing Generation Z consumers who are highly exposed to health-related information and digital trends. A total of 125 respondents participated in the study and met the established sampling criteria. The sample size was determined in accordance with the requirements for Structural Equation Modeling–Partial Least Squares (SEM-PLS) analysis [12].

The data used in this study were primary data collected through an online questionnaire. The research instrument was developed using a five-point Likert scale to measure respondents' perceptions of the study variables, namely attitude, subjective norm, perceived behavioral control, nutrition literacy, local brand image, purchase intention, and purchase decision. The measurement indicators were adapted from relevant literature and adjusted to fit the research context [12], [13].

Data analysis was conducted using Structural Equation Modeling based on Partial Least Squares (SEM-PLS) with the assistance of SmartPLS software [12]. The analysis included the evaluation of the measurement model (outer model) to assess the validity and reliability of the constructs, as well as the evaluation of the structural model (inner model) to examine the relationships among variables and to test the proposed hypotheses [12]. The research model assumes that attitude, subjective norm, and perceived behavioral control influence purchase intention, which in turn affects purchase decision. In addition, nutrition literacy and local brand image are posited to influence consumer attitudes in shaping purchase decisions.

The proposed research model is illustrated in Figure 1, which depicts the structural relationships among all latent variables. The model presents nutrition literacy and local brand image as exogenous variables influencing attitude, while attitude, subjective norm, and perceived behavioral control act as predictors of purchase intention. Furthermore, purchase intention is modeled as a direct determinant of purchase decision, reflecting its mediating role in translating psychological and contextual factors into actual consumer behavior.

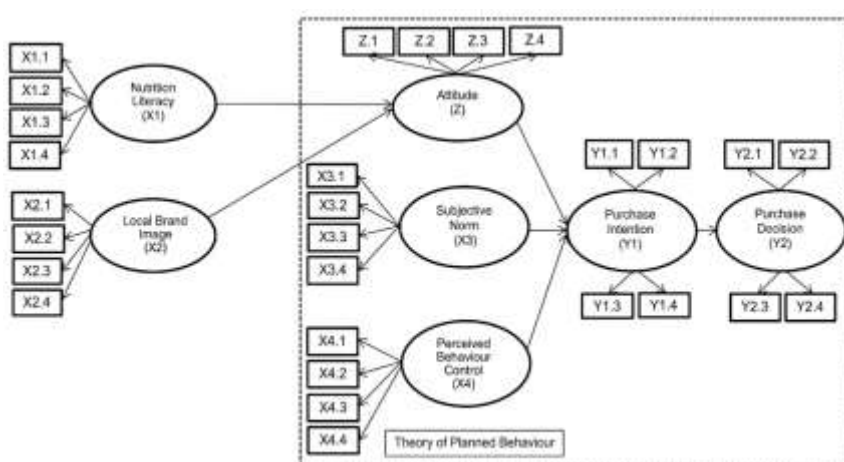


Fig. 1. Research Theoretical Framework

RESULT AND DISCUSSION

Result

This study examines the factors influencing purchase decisions toward local alternative sweetener-based food products among Generation Z using Structural Equation Modeling–Partial Least Squares (SEM-PLS). The

structural model was evaluated through the coefficient of determination (R^2) and convergent validity.

Measurement model validation

The construct reliability of the measurement model was assessed using Composite Reliability (CR), and Cronbach's Alpha (α), while convergent validity was evaluated through Average Variance Extracted (AVE) and factor loadings. All constructs meet the recommended thresholds, with CR, and Cronbach's Alpha values exceeding 0.70, AVE values above 0.50, and all factor loadings greater than 0.70 [14]. These results indicate that the constructs exhibit satisfactory internal consistency and are able to adequately represent their respective latent variables (Table 1).

Table 1: Construct Reliability and Convergent Validity

Constructs	Items	Loadings	CR	Cronbach's Alpha	AVE
Nutrition Literacy [15], [16]	NL1: Ability to obtain nutritional information	0,707	0.857	0.777	0.601
	NL2: Understanding product nutritional information	0,836			
	NL3: Ability to assess nutritional content	0,743			
	NL4: Evaluate the credibility of nutritional information	0,808			
Local Brand Image [17]	LBI1: Brand identity as local values and culture	0,702	0.832	0.734	0.554
	LBI2: Product suitability to local community needs	0,710			
	LBI3: Product identity as a local/domestic brand	0,785			
	LBI4: Social linkages with local communities	0,777			
Subjective Norm [18], [19], [20]	SN1: Family influence	0,775	0.858	0.780	0.602
	SN2: Peer influence	0,808			
	SN3: Influence of social media	0,752			
	SN4: Social expectations	0,768			
Perceive Behavioral Control [21], [18], [19]	PBC1: Financial ability to purchase products	0,744	0.821	0.710	0.535
	PBC2: Product availability	0,715			
	PBC3: Ease of obtaining products	0,748			
	PBC4: Ease of finding products	0,799			
Purchase Intention [22], [23], [24], [25]	PI1: Recommendation intent	0,799	0.854	0.773	0.595
	PI2: Immediate purchase intention	0,727			
	PI3: Intention to choose a product	0,738			
	PI4: Repeat purchase intention	0,817			

Purchase Decision [26], [27]	PD1: Positive feelings towards purchasing decisions	0,802	0.867	0.795	0.619
	PD2: Willingness to recommend	0,823			
	PD3: Repurchase	0,740			
	PD4: Satisfaction with purchasing decisions	0,780			
Attitude [28], [25]	ATT1: Perceived product benefits	0,819	0.874	0.808	0.634
	ATT2: Feelings of pleasure regarding product purchases	0,775			
	ATT3: Positive assessment of product purchases	0,783			
	ATT4: Positive attitude towards purchasing products	0,808			

Discriminant validity was subsequently assessed using the Fornell–Larcker criterion and cross-loadings. As presented in Table 2, the square root of the AVE for each construct (diagonal values) is higher than the corresponding inter-construct correlations (off-diagonal values), thereby satisfying the Fornell–Larcker criterion [14]. Furthermore, the cross-loading results shown in Table 3 indicate that each indicator loads higher on its associated construct than on other constructs, confirming that the indicators are well differentiated across the latent variables. These findings demonstrate that the measurement model satisfies the required discriminant validity criteria and is appropriate for subsequent structural model evaluation.

Table 2: Discriminant Validity (Fornell–Larcker Criterion)

	ATT	LBI	NL	PBC	PD	PI	SN
ATT	0.796						
LBI	0.488	0.744					
NL	0.414	0.457	0.775				
PBC	0.383	0.469	0.415	0.731			
PD	0.585	0.563	0.494	0.534	0.787		
PI	0.538	0.527	0.385	0.658	0.698	0.771	
SN	0.481	0.510	0.418	0.486	0.617	0.637	0.776

Table: 3Indicator Cross Loadings

Indicator	(NLT)	(LBI)	(ATT)	(SN)	(PBC)	(INT)	(PD)
NLT.1	0.707	0.347	0.316	0.218	0.144	0.213	0.402
NLT.2	0.836	0.338	0.281	0.413	0.406	0.393	0.441
NLT.3	0.743	0.315	0.300	0.224	0.321	0.184	0.323
NLT.4	0.808	0.402	0.370	0.425	0.408	0.390	0.368
LBI.1	0.235	0.702	0.292	0.387	0.394	0.440	0.403
LBI.2	0.274	0.710	0.332	0.221	0.295	0.346	0.355
LBI.3	0.403	0.785	0.416	0.428	0.406	0.412	0.396
LBI.4	0.415	0.777	0.395	0.464	0.307	0.383	0.518

ATT.1	0.289	0.355	0.819	0.424	0.261	0.431	0.461
ATT.2	0.332	0.418	0.775	0.355	0.347	0.420	0.527
ATT.3	0.386	0.389	0.783	0.361	0.257	0.349	0.410
ATT.4	0.315	0.391	0.808	0.392	0.347	0.503	0.460
SN.1	0.302	0.403	0.351	0.775	0.436	0.453	0.475
SN.2	0.241	0.447	0.363	0.808	0.344	0.539	0.491
SN.3	0.412	0.348	0.454	0.752	0.377	0.542	0.467
SN.4	0.341	0.382	0.304	0.768	0.358	0.415	0.481
PBC.1	0.274	0.308	0.231	0.406	0.744	0.478	0.475
PBC.2	0.339	0.415	0.300	0.286	0.715	0.453	0.353
PBC.3	0.325	0.342	0.288	0.405	0.748	0.508	0.384
PBC.4	0.279	0.311	0.304	0.321	0.719	0.483	0.349
INT.1	0.330	0.468	0.521	0.619	0.485	0.799	0.588
INT.2	0.270	0.310	0.278	0.477	0.441	0.727	0.465
INT.3	0.315	0.410	0.487	0.404	0.487	0.738	0.483
INT.4	0.273	0.423	0.359	0.454	0.608	0.817	0.603
PD.1	0.470	0.472	0.522	0.451	0.553	0.516	0.802
PD.2	0.401	0.421	0.450	0.466	0.371	0.571	0.823
PD.3	0.330	0.460	0.426	0.473	0.351	0.591	0.740
PD.4	0.359	0.416	0.445	0.554	0.418	0.508	0.780

Validating the structural model

The explanatory power of the structural model was evaluated using the coefficient of determination (R^2). To ensure the robustness of the results, a bootstrapping procedure with 5,000 resamples was employed to obtain t-statistics and estimate path coefficients, providing empirical support for the validity of the proposed model [12].

Hypotheses Testing

A bootstrapping procedure was employed to obtain t-statistics and estimate the path coefficients, thereby assessing the significance and robustness of the proposed relationships. The results of the path analysis and corresponding hypotheses are presented in Table 4 and Table 9. Overall, all hypothesized relationships in this study are empirically supported.

The findings indicate that perceived behavioral control has a positive and significant effect on purchase intention ($\beta = 0.412$; $t = 5.331$; $p = 0.000$), followed by subjective norm ($\beta = 0.331$; $t = 4.585$; $p = 0.000$). In addition, attitude ($\beta = 0.221$; $t = 3.188$; $p = 0.002$) also positively and significantly influences purchase intention. These results confirm that the three core constructs of the Theory of Planned Behavior significantly contribute to the formation of purchase intention toward local alternative sweetener-based food products. In addition, nutrition literacy and local brand image are found to have positive and significant effects on attitude, with coefficients of $\beta = 0.241$ ($t = 2.316$; $p = 0.021$) and $\beta = 0.378$ ($t = 4.224$; $p = 0.000$), respectively. These findings indicate that both consumers' understanding of nutritional aspects and their perception of local product image significantly contribute to the formation of favorable attitudes.

The indirect effect analysis further reveals that attitude significantly mediates the relationship between nutrition literacy and purchase intention ($\beta = 0.053$; $t = 1.975$; $p = 0.049$), as well as the relationship between local brand

image and purchase intention ($\beta = 0.083$; $t = 2.554$; $p = 0.011$). Furthermore, purchase intention significantly mediates the effects of attitude on purchase decision ($\beta = 0.154$; $t = 2.904$; $p = 0.004$), subjective norm on purchase decision ($\beta = 0.231$; $t = 4.124$; $p = 0.000$), and perceived behavioral control on purchase decision ($\beta = 0.288$; $t = 5.404$; $p = 0.000$). Regarding the serial mediation effects, local brand image demonstrates a significant indirect effect on purchase decision through attitude and purchase intention ($\beta = 0.058$; $t = 2.379$; $p = 0.018$). In contrast, the serial indirect effect of nutrition literacy on purchase decision through attitude and purchase intention is not statistically significant ($\beta = 0.037$; $t = 1.881$; $p = 0.061$). Overall, these results provide empirical support for the mediating role of attitude and purchase intention in linking contextual, psychological, and social factors to purchase decisions toward local alternative sweetener-based food products.

Coefficient of determination (R^2), effect size (f^2) and predictive relevance (Q^2)

The coefficient of determination (R^2) was employed to assess the explanatory power of the model for the endogenous constructs. The results indicate that the R^2 value for attitude is 0.284, while purchase intention and purchase decision have R^2 values of 0.600 and 0.488, respectively (Table 5). These values imply that 28.4% of the variance in attitude is explained by nutrition literacy and local brand image, whereas 60.0% and 48.8% of the variance in purchase intention and purchase decision are explained by their respective predictors. Based on the criteria used in this study, the R^2 value for attitude is categorized as weak, while purchase intention and purchase decision fall into the moderate category, indicating that the model has an adequate level of explanatory power in capturing consumer behavior.

The contribution of each exogenous variable was further evaluated using effect size (f^2), which reveals varying levels of influence across the structural relationships. Nutrition literacy shows a small effect on attitude ($f^2 = 0.064$), while local brand image has a moderate effect ($f^2 = 0.158$). In predicting purchase intention, attitude demonstrates a small effect ($f^2 = 0.090$), whereas subjective norm shows a moderate effect ($f^2 = 0.181$), and perceived behavioral control exhibits a relatively strong effect ($f^2 = 0.312$). Notably, purchase intention has a very large effect on purchase decision ($f^2 = 0.952$), indicating its dominant role in driving actual consumer behavior. Overall, these findings suggest that although all variables contribute to the model, perceived behavioral control and purchase intention emerge as the most influential predictors in shaping purchase decisions (Table 6).

The predictive relevance of the model was assessed using the blindfolding procedure to obtain Q^2 values. The results demonstrate that all endogenous constructs have Q^2 values greater than zero, indicating that the model has sufficient predictive relevance in explaining the observed data (Table 7).

In addition, the overall model fit was evaluated using the Standardized Root Mean Square Residual (SRMR). The results indicate that the SRMR value meets the acceptable threshold, suggesting that the model fits the empirical data well (Table 8). The final structural model of this study is presented in Figure 2.

Mediation Analysis

The mediating role of purchase intention was examined using a bootstrapping procedure with 5,000 subsamples to assess the indirect effects within the model. The mediation analysis aimed to evaluate whether purchase intention functions as an intervening variable in the relationship between attitude, subjective norm, and perceived behavioral control on purchase decision.

As presented in Table 9, the results indicate that attitude significantly mediates the relationship between nutrition literacy and purchase intention ($\beta = 0.053$; $t = 1.975$; $p = 0.049$), as well as the relationship between local brand image and purchase intention ($\beta = 0.083$; $t = 2.554$; $p = 0.011$). These findings suggest that consumers' nutritional knowledge and perceptions of local brand image contribute to purchase intention indirectly through the formation of favorable attitudes.

The results further reveal that purchase intention significantly mediates the relationship between attitude and purchase decision ($\beta = 0.154$; $t = 2.904$; $p = 0.004$), subjective norm and purchase decision ($\beta = 0.231$; $t = 4.124$; $p = 0.000$), and perceived behavioral control and purchase decision ($\beta = 0.288$; $t = 5.404$; $p = 0.000$). These findings confirm that the effects of psychological and social determinants on purchase decision are substantially

transmitted through consumers' purchase intention.

In addition, the serial mediation analysis demonstrates that local brand image has a significant indirect effect on purchase decision through attitude and purchase intention ($\beta = 0.058$; $t = 2.379$; $p = 0.018$). However, the serial indirect effect of nutrition literacy on purchase decision through attitude and purchase intention is not statistically significant ($\beta = 0.037$; $t = 1.881$; $p = 0.061$). This indicates that while nutrition literacy contributes to the formation of positive attitudes and purchase intention, its influence is not sufficiently strong to generate a significant sequential effect on actual purchase decision.

Overall, the mediation analysis provides empirical support for the proposed model, demonstrating that attitude and purchase intention serve as important mediating mechanisms linking contextual, psychological, and social determinants to purchase decisions toward local alternative sweetener-based food products among Generation Z consumers.

Table 4: Path Coefficient and Hypothesis Test Result

Hypotheses	Path Coefficient	T-Statistic	P-Value	VIF	Result
Nutrition Literacy (X1) → Attitude (Z)	0.241	2.303	0.022	1.264	Accepted
Local Brand Image (X2) → Attitude (Z)	0.378	4.758	0.000	1.264	Accepted
Attitude (Z) → Purchase Intention (Y1)	0.221	3.188	0.002	1.352	Accepted
Subjective Norm (X3) → Purchase Intention (Y1)	0.331	4.585	0.000	1.511	Accepted
Perceive Behaviour Control (X4) → Purchase Intention (Y1)	0.412	5.331	0.000	1.362	Accepted
Purchase Intention (Y1) → Purchase Decision (Y2)	0.698	12.743	0.000	1.000	Accepted

Table 5: Coefficient of Determination (R²)

Variabel Laten	R-Square	Interpretation
Attitude (Z)	0.284	Weak
Purchase Intention (Y1)	0.600	Moderate
Purchase Decision (Y2)	0.488	Moderate
R² Cumulative	0.853	Strong

Table 6: Effect Size f²

Variabel	F-Square
Nutrition Literacy (X1) → Attitude (Z)	0.064
Local Brand Image (X2) → Attitude (Z)	0.158
Attitude (Z) → Purchase Intention (Y1)	0.090
Subjective Norm (X3) → Purchase Intention (Y1)	0.181
Perceived Behaviour Control (X4) → Purchase Intention (Y1)	0.312
Purchase Intention (Y1)→ Purchase Decision (Y2)	0.952

Table 7: Predictive Relevance (Q^2) Results

Variabel Laten	Q^2 Predict	Interpretation
Attitude (Z)	0.234	Predictive Relevance
Purchase Intention (Y1)	0.542	Predictive Relevance
Purchase Decision (Y2)	0.428	Predictive Relevance

Table 8: Model Fit Indicator

	Saturated Model
SRMR	0.078
NFI	0.628

Table 9: Indirect Effect

Hypotheses	Path Coefficient	T-Statistic	P-Value	Result
Nutrition Literacy (X1) → Attitude (Z) → Purchase Intention (Y1)	0.053	1.975	0.049	Accepted
Local Brand Image (X2) → Attitude (Z) → Purchase Intention (Y1)	0.083	2.554	0.011	Accepted
Nutrition Literacy (X1) → Attitude (Z) → Purchase Intention (Y1) → Purchase Decision (Y2)	0.037	1.881	0.061	Rejected
Local Brand Image (X2) → Attitude (Z) → Purchase Intention (Y1) → Purchase Decision (Y2)	0.058	2.379	0.018	Accepted
Attitude (Z) → Purchase Intention (Y1) → Purchase Decision (Y2)	0.154	2.904	0.004	Accepted

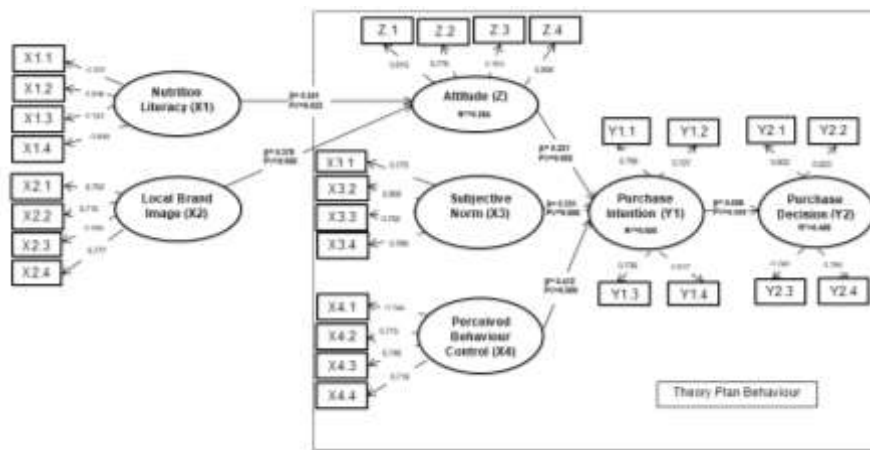


Fig. 2. Structural Model of the Study

This study investigates the determinants of purchase decision toward local alternative sweetener-based food products among Generation Z by extending the Theory of Planned Behavior with nutrition literacy and local brand image as contextual variables. The results demonstrate that all hypothesized relationships are supported. Specifically, nutrition literacy and local brand image significantly influence attitude, while attitude, subjective norm, and perceived behavioral control significantly affect purchase intention. Furthermore, purchase intention exerts a significant positive effect on purchase decision, confirming its role as the most immediate antecedent of actual consumer behavior [6], [10].

Among the antecedents of purchase intention, perceived behavioral control emerges as the strongest predictor, followed by subjective norm and attitude. This finding supports the theoretical proposition of the Theory of Planned Behavior that consumers are more likely to develop purchase intentions when they perceive sufficient control over their behavior [9], [29]. The result suggests that practical considerations such as accessibility, availability, and affordability of local alternative sweetener-based food products play a more decisive role than favorable evaluations alone. Even when consumers hold positive attitudes toward healthier food alternatives, limited access to products may reduce their intention to purchase. This finding is particularly relevant for Generation Z consumers, who often rely on convenience and product availability in making purchasing decisions.

Subjective norm is also found to significantly influence purchase intention, indicating that social influence remains an important determinant of consumption behavior among Generation Z. Recommendations and opinions from peers, family members, and online communities may shape consumers' perceptions regarding the desirability of local alternative sweetener-based products. This finding is consistent with previous studies demonstrating that social approval and peer influence significantly affect food-related purchase intentions among younger consumers [8].

Attitude positively influences purchase intention, supporting the theoretical assumptions of the Theory of Planned Behavior that individual evaluations toward a behavior contribute to intention formation [29]. A favorable perception regarding the health benefits, nutritional value, and overall attractiveness of local alternative sweetener-based products encourages stronger purchase intention among Generation Z consumers. This finding is in line with previous studies highlighting the important role of attitude in shaping purchase intention toward healthier and sustainable food products [4],[5]. However, compared with perceived behavioral control and subjective norm, the effect of attitude is relatively smaller, suggesting that positive evaluations alone may not be sufficient to generate strong purchase intentions without support from enabling environmental and social conditions.

The findings further reveal that both nutrition literacy and local brand image significantly contribute to the formation of attitude. Nutrition literacy enhances consumers' understanding of nutritional information and health-related consequences associated with alternative sweeteners, resulting in more favorable evaluations toward such products. This finding supports previous research emphasizing the importance of nutritional knowledge in influencing healthy food choices [5]. Meanwhile, local brand image demonstrates a stronger effect

on attitude than nutrition literacy, indicating that emotional and symbolic perceptions associated with local products play a substantial role in shaping consumer evaluations. Consumers tend to develop more favorable attitudes when local alternative sweetener-based products are perceived as authentic, trustworthy, and representative of local identity and values [17]. These results suggest that both cognitive and affective dimensions jointly contribute to attitude formation.

Beyond statistical significance, the magnitude of the structural relationships provides additional insight into consumer behavior. Purchase intention exhibits the strongest direct effect on purchase decision and demonstrates a very large effect size, indicating that actual purchasing behavior is primarily driven by consumers' willingness and readiness to purchase the product. This finding confirms the central role of intention as the key mechanism linking psychological and contextual factors to actual consumer behavior [6], [10]. Therefore, strategies aimed at increasing market adoption should prioritize strengthening consumers' purchase intentions.

The measurement model also provides practical insights regarding the indicators that contribute most strongly to each construct. The strongest indicator of perceived behavioral control relates to consumers' perceived ease of finding and accessing local alternative sweetener-based products, emphasizing the importance of product availability and distribution channels. Similarly, peer influence represents the most prominent indicator of subjective norm, suggesting that social interactions and recommendations significantly shape purchase intentions among Generation Z. For local brand image, local product identity emerges as the most representative indicator, indicating that consumers are more likely to develop favorable attitudes when products successfully communicate authenticity and local values. In addition, consumers' ability to understand nutritional information constitutes the strongest indicator of nutrition literacy, highlighting the importance of effective nutritional communication in influencing consumer evaluations.

The mediation analysis provides further evidence regarding the mechanisms through which the determinants influence purchase decisions. Purchase intention significantly mediates the effects of attitude, subjective norm, and perceived behavioral control on purchase decision. These findings indicate that the influence of psychological and social factors on actual behavior is largely transmitted through intention. In other words, positive attitudes, supportive social environments, and favorable perceptions of behavioral control are unlikely to result in actual purchases unless they first generate strong purchase intentions.

In addition to the mediating role of purchase intention, attitude significantly mediates the relationships between nutrition literacy and purchase intention as well as between local brand image and purchase intention. This finding indicates that consumers' nutritional knowledge and perceptions of local product image influence purchase intentions indirectly through the formation of favorable attitudes. The results therefore support the inclusion of nutrition literacy and local brand image as contextual extensions of the Theory of Planned Behavior.

The serial mediation analysis yields additional insights. While nutrition literacy significantly influences purchase intention through attitude, its indirect effect on purchase decision through the sequential pathway of attitude and purchase intention is not statistically significant. This suggests that nutritional knowledge alone may be sufficient to shape evaluations and intentions but not necessarily strong enough to drive actual purchasing behavior. In contrast, local brand image demonstrates a significant serial mediation effect on purchase decision through attitude and purchase intention. This finding implies that favorable perceptions of local identity, authenticity, and trustworthiness are more likely to be translated into actual purchase behavior through the sequential development of positive attitudes and purchase intentions.

Overall, the findings highlight that while the Theory of Planned Behavior remains a robust framework for explaining consumer behavior, the integration of nutrition literacy and local brand image provides a more comprehensive explanation of purchase decisions toward local alternative sweetener-based food products. The results underscore the importance of simultaneously addressing cognitive, social, emotional, and structural factors to effectively bridge the gap between purchase intention and actual consumer behavior. From a practical perspective, increasing consumer awareness alone may not be sufficient to drive market adoption. Efforts should also focus on improving product accessibility, strengthening local brand identity, enhancing nutritional communication, and expanding market visibility to encourage greater adoption of local alternative sweetener-based food products among Generation Z consumers.

CONCLUSION AND SUGGESTION

This study confirms that purchase decisions toward local alternative sweetener-based food products among Generation Z are influenced by psychological, social, and contextual factors within the Extended Theory of Planned Behavior framework. The findings reveal that attitude, subjective norm, and perceived behavioral control significantly influence purchase intention, while purchase intention significantly influences purchase decision. Among these factors, perceived behavioral control emerges as the strongest predictor of purchase intention, whereas purchase intention demonstrates the strongest effect on purchase decision. In addition, both nutrition literacy and local brand image significantly influence attitude, with local brand image showing a stronger effect than nutrition literacy.

The mediation analysis further confirms that attitude mediates the effects of nutrition literacy and local brand image on purchase intention, while purchase intention mediates the relationships between attitude, subjective norm, perceived behavioral control, and purchase decision. Furthermore, local brand image significantly influences purchase decision through the sequential pathway of attitude and purchase intention, whereas the corresponding indirect effect of nutrition literacy is not significant.

This study is limited to Generation Z consumers and was conducted within the context of local alternative sweetener-based food products. Therefore, future studies are encouraged to examine different consumer segments, product categories, and geographical contexts to enhance the generalizability of the findings. Future research may also incorporate additional variables beyond the Theory of Planned Behavior framework, such as health consciousness, perceived value, trust, product availability, or environmental concern, to provide a more comprehensive understanding of consumer purchase decisions toward healthier food alternatives.

REFERENCES

1. FAO, IFAD, UNICEF, WFP, and WHO, *The State of Food Security and Nutrition in the World 2024: Financing to End Hunger, Food Insecurity and Malnutrition in All Its Forms*. Rome, Italy, 2024, doi: 10.4060/cd1254en.
2. L. Lara-Castor "Intake of Sugar-Sweetened Beverages Among Children and Adolescents in 185 Countries Between 1990 and 2018: Population-Based Study," *BMJ*, vol. 386, Art. no. e079234, 2024, doi: 10.1136/bmj-2024-079234.
3. T. Sarkar, M. Mukherjee, S. Roy, and R. Chakraborty, "Palm sap sugar: An unconventional source of sugar exploration for bioactive compounds and its role on functional food development," *Heliyon*, vol. 9, no. 4, p. e14788, 2023, doi: 10.1016/j.heliyon.2023.e14788.
4. D. Jakubowska, A. Z. Dąbrowska, B. Pacholek, and S. Sady, "Behavioral Intention to Purchase Sustainable Food: Generation Z's Perspective," *Sustainability*, vol. 16, no. 17, Art. no. 7284, 2024, doi: 10.3390/su16177284.
5. R. F. Chilón-Troncos, E. E. García-Salirrosas, M. Escobar-Farfán, D. Y. Millones-Liza, and M. Villar-Guevara, "Predicting Willingness to Consume Healthy Brand Foods Using the Theory of Planned Behavior: The Role of Nutritional Literacy," *Frontiers in Nutrition*, vol. 11, Art. no. 1353569, 2024, doi: 10.3389/fnut.2024.1353569
6. Y. Liu, P. Wang, M. Zhang, X. Chen, K. Li, and J. Qu, "Bridging the Intention–Behavior Gap in Organic Food Consumption: Empirical Evidence from China," *Foods*, vol. 13, no. 14, Art. no. 2239, 2024, doi: 10.3390/foods13142239.
7. G. Sogari, C. Velez-Argumedo, M. I. Gómez, and C. Mora, "College Students and Eating Habits: A Study Using an Ecological Model for Healthy Behavior," *Nutrients*, vol. 10, no. 12, Art. no. 1823, 2018, doi: 10.3390/nu10121823.
8. E. Halicka, J. Kaczorowska, K. Rejman, and M. Plichta, "Investigating the Consumer Choices of Gen Z: A Sustainable Food System Perspective," *Nutrients*, vol. 17, no. 3, Art. no. 591, 2025, doi: 10.3390/nu17030591.
9. A. Nuh, M. Rizan, K. D. A. Sebayang, S. Suparno, and M. M. Munir, "Sustainable Food Consumption Behavior in Indonesia: An Approach Theory of Planned Behavior," *Journal of Business Management Education*, vol. 8, no. 1, pp. 127–137, 2023, doi: 10.17509/jbme.v8i1.57442.

10. S. Maulidah, A. D. Ekawati, F. Faizal, Nasikh, H. Sahro, and M. I. Shaleh, "The effect of sustainable marketing analysis on purchasing decisions with buying intention as a mediation: Evidence from zero waste shop in Indonesia," *Business: Theory and Practice*, vol. 25, no. 1, pp. 278–285, 2024, doi: 10.3846/btp.2024.19317
11. I. Etikan, S. A. Musa, and R. S. Alkassim, "Comparison of convenience sampling and purposive sampling," *American Journal of Theoretical and Applied Statistics*, vol. 5, no. 1, pp. 1–4, 2016, doi:11648/j.ajtas.20160502.20.
12. J. F. Hair, G. T. M. Hult, C. M. Ringle, and M. Sarstedt, *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, 3rd ed. Cham, Switzerland: Springer, 2021, doi: 10.1007/978-3-030-80519-7.
13. I. Ajzen, "The theory of planned behavior: Frequently asked questions," *Human Behavior and Emerging Technologies*, vol. 2, no. 4, pp. 314–324, 2020, doi: 10.1002/hbe2.195.
14. F. Hair, G. T. M. Hult, C. M. Ringle, and M. Sarstedt, *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, 2nd ed. Thousand Oaks, CA, USA: Sage Publications, 2017.
15. J.-H. Lim, K. Chinna, P. Khosla, T. Karupaiah, and Z. A. M. Daud, "Understanding how nutrition literacy links to dietary adherence in patients undergoing maintenance hemodialysis: A theoretical exploration using partial least squares structural equation modeling," *International Journal of Environmental Research and Public Health*, vol. 17, no. 20, p. 7479, 2020, doi: 10.3390/ijerph17207479
16. H. D. Gibbs, E. F. Ellerbeck, B. Gajewski, C. Zhang, and D. K. Sullivan, "The nutrition literacy assessment instrument is a valid and reliable measure of nutrition literacy in adults with chronic disease," *Journal of Nutrition Education and Behavior*, vol. 50, no. 3, pp. 247–257, Mar. 2018, doi: 10.1016/j.jneb.2017.10.008.
17. B. Swoboda, K. Pennemann, and M. Taube, "The effects of perceived brand globalness and perceived brand localness in China: Empirical evidence on Western, Asian, and domestic retailers," *J. Int. Mark.*, vol. 20, no. 4, pp. 72–95, 2012, doi: 10.1509/jim.12.0105.
18. E. E. Hall and N. Sevim, "Halal food consumption intention by Turkish immigrants," *International Journal of Business and Management Invention*, vol. 5, no. 11, pp. 36–40, 2016.
19. K.Y. Koay and K. M. Lee, "Understanding the role of social media influencers' personal and content characteristics in affecting consumers' intentions to purchase," *Journal of Marketing Communications*, pp. 1–19, 2024, doi: 10.1080/13527266.2024.2419023.
20. A. Arora, N. Rani, C. Devi, and S. Gupta, "Factors affecting consumer purchase intentions of organic food through fuzzy AHP," *International Journal of Quality & Reliability Management*, vol. 39, no. 5, pp. 1085–1103, 2022, doi: 10.1108/IJQRM-01-2021-0019.
21. Escobar-Farfán, E. E. García-Salirrosas, M. Guerra-Velásquez, I. Veas-González, L. Gómez-Bayona, and R. Gallardo-Canales, "Psychological determinants of healthy food purchase intention: An integrative model based on health consciousness," *Nutrients*, vol. 17, no. 7, p. 1140, 2025, doi: 10.3390/nu17071140.
22. F. Bukhari, S. Hussain, R. R. Ahmed, K. A. Mubasher, M. R. Naseem, M. Rizwanullah, and F. Ahmed, "Consumers' purchase decision in the context of western imported food products: Empirical evidence from Pakistan," *Heliyon*, vol. 9, no. 10, p. e20358, 2023, doi: 10.1016/j.heliyon.2023.e20358.
23. Y. Jin, A. Osman, A. H. A. Manaf, and M. S. Abdullah, "The mediating effect of consumers' purchase intention: A perspective of online shopping behavior among generation Y," *Journal of Marketing and Consumer Research*, vol. 18, pp. 101–112, 2015.
24. S.-H. Liao, D.-C. Hu, and H.-L. Chou, "Consumer perceived service quality and purchase intention: Two moderated mediation models investigation," *SAGE Open*, vol. 12, no. 4, 2022, doi: 10.1177/21582440221139469.
25. Shanbag, S. Nayak, and R. D'Souza, "Factors influencing consumers' purchase intention towards healthy food products: An application of the theory of planned behavior," *Journal of Agriculture and Food Research*, vol. 13, Art. no. 100657, 2023, doi: 10.1016/j.jafr.2023.100657.
26. R. Hanaysha, "An examination of the factors affecting consumer's purchase decision in the Malaysian retail market," *PSU Research Review*, vol. 2, no. 1, pp. 7–23, 2018.
27. E. T. Maziriri, T. F. Rukuni, and T. Chuchu, "Factors influencing food consumption satisfaction and purchase decisions of restaurant consumers," *Cogent Business & Management*, vol. 8, no. 1, p. 1968731, 2021, doi: 10.1080/23311975.2021.1968731.



28. Q. Hu and B. Xu, "Differential game analysis of optimal strategies and cooperation in omni-channel organic agricultural supply chain," *Sustainability*, vol. 11, no. 3, p. 848, 2019, doi: 10.3390/su11030848.
29. Ajzen, "The theory of planned behavior," *Organizational Behavior and Human Decision Processes*, vol. 50, no. 2, pp. 179–211, Dec. 1991, doi: 10.1016/0749-5978(91)90020-T.