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Reasons for Examine Food Label: A study on Rangpur District

Md. Ferdush Rahman
Professor
Department of Marketing
Begum Rokeya University, Rangpur Rangpur5404
Bangladesh Email:ferdushhstu@yahoo.com

Abstract

Food label provide consumers with information which may influence their purchasing decisions. For example, consumers may want to know nutritional properties, what ingredients are in a food product, how to cook it, how it should be stored, use-by date etc . In a rapidly evolving consumer market, where health, safety, quality, economic value, durability etc. are core concerns, food labels are a crucial tool for informed decision-making. This study explores why consumers examine food labels, focusing on five independent variables— economic value perception, health and safety, product identity and traceability, shelf life and durability, quality and assurance, and their impact on label examination and, consequently, purchasing decisions. A conceptual model based on consumer value theory was tested using partial least squares structural equation modeling (PLS-SEM) and survey data collected from 370 consumers in Bangladesh. The results showed that all factors significantly and positively influenced label checking behavior, with product characteristics and quality having the most significant impact. The result also show that health and safety has not significant and positive impact on attitude towards label examination Furthermore, label checking was found to significantly predict purchase decisions, confirming its mediating role between the independent variables and consumer purchase decision. These insights have important implications for policymakers, food manufacturers, and health educators aiming to promote responsible and informed food consumption.

Keywords: Food labeling, consumer behavior, economic value perception, , health and safety, product identity and traceability, shelf life and durability, quality and assurance, label examination, purchase decision

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1 Introduction

In the modern food marketplace, consumers increasingly rely on food labels as a gateway to key product information: nutritional values, origin, certifications, allergen warnings, price, and ethical designations such as organic or religious compliance labels (Campos et al., 2011; Shahiduzzaman and Naskar, 2024). These labels can serve as decision aids, particularly when consumers are evaluating new products or comparing similar alternatives across multiple attributes. However, food labeling also represents a marketing tool and may influence perception of the food quality, dietary choice of consumers etc. For this reason, there is growing research in the field of food labeling and the evaluation of its effects on consumers. Consumers' motivations for reading labels typically stem from five key dimensions: product identity and traceability, health and safety, economic value perception, shelf life and durability, quality and assurance, For example, consumers may be interested in whether a product is organic (quality), free of allergens or harmful chemicals (safety), adheres to religious or ethical standards (ethical/cultural), and offers value for money (economic) (Wong & Tzeng, 2021; Iqbal et al., 2021). While previous research has explored these drivers, the complex interactions between them and how they collectively motivate consumers to check labels and in turn, influence purchasing decisions have remained underexplored. In Bangladesh and similar settings, where religious dietary compliance (e.g., halal, BSTI certification) is intertwined with safety concerns, understanding the multidimensional reasons why consumers check labels has both academic and regulatory implications.

1.2 Problem Statement

Although food labeling laws and regulations have significantly improved over the past few decades, a significant number of consumers still either do not carefully read labels or misunderstand the information on them (Cowburn & Stockley, 2005). Despite legal requirements for nutrition and safety labeling, many consumers either ignore or misinterpret labels (Cowburn & Stockley, 2005; Shahiduzzaman & Naskar, 2024). Furthermore, in culturally and religiously diverse regions such as Bangladesh and parts of Southeast Asia, halal certification or national safety standards such as BSTI (Bangladesh Standards and Testing Institution)plays a key role but is often overlooked in existing label design and research (Sirieix et al., 2013). Existing literature rarely explores the relationship between consumers' reasons for checking food labels and the five basic motivations, particularly how label inspection influences actual purchases.

1.3 Research Objectives

i)To assess the influence of product identity and traceability on food label examination.
ii)To examine how health & safety concerns motivate label use.
iii)To investigate how economic value perception affects label attention.
iv)To explore the role of shelf life and durability in prompting label-checking.
v)To examine how quality and assurance motivate label use.
vi)To know how these factors influence purchasing decisions mediated by label examination behavior.

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1.4 Research Questions

i)What role does play product identity and traceability in encouraging label reading?
ii)What extent do health and safety concerns (e.g., allergens, chemicals) motivate consumers to carefully review labels?
iii)What role does perceived economic value or price fairness play in encouraging consumers to read labels?
iv)How do shelf life and durability signals motivate consumers to review labels?
v)How do quality and assurance factors influence label use?
vi)How does label review, influenced by these factors, influence consumer purchasing decisions?

1.5 Significance of the Study

This study enables consumers to better understand how their concerns and values are (or aren't) reflected in the labels they read, potentially assist consumers make more informed food choices. Research helps producers and marketers as well as manufacturers to improve label design and communication by identifying which elements receive the most attention and focus as well as provide guidance to policymakers on improving mandatory labeling standards, particularly with regard to safety or religious compliance.

1.6 Conceptual Framework

Based on consumer value theory (Sheth et al., 1991), this study considers label inspection as a mediating variable between five value-based independent variables and the dependent variable (purchase decision):

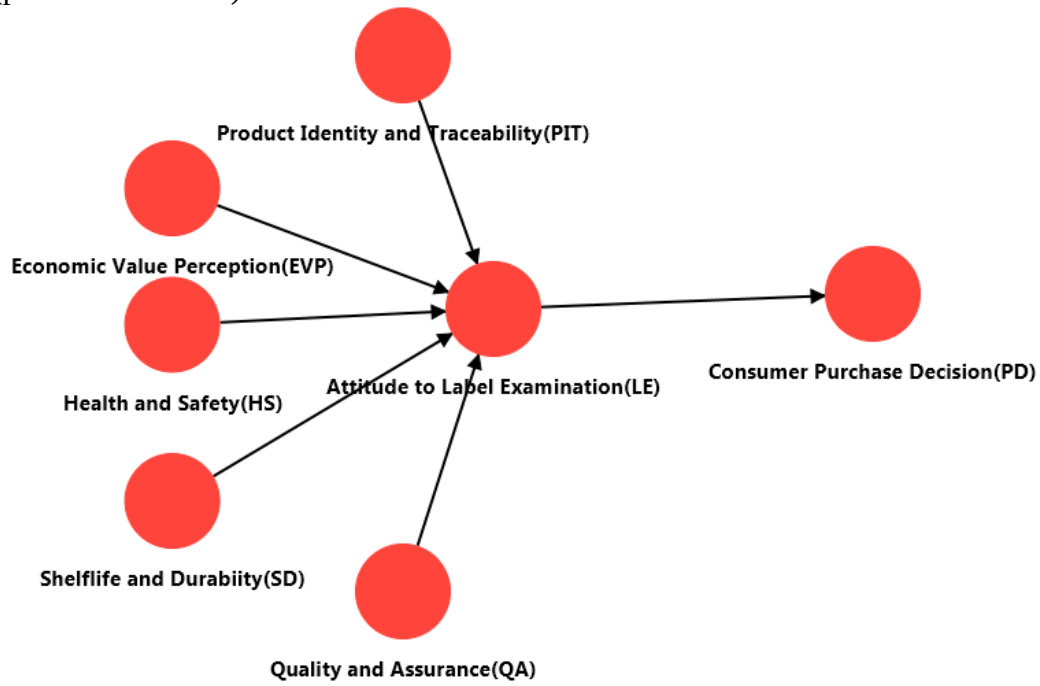

Figure: Conceptual framework

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1.7 Hypotheses

H_1: Economic value perception has a positive impact on label examination.
H_2: Health and safety concerns has a positive impact on label examination.
H_3: Product identity and traceability has a positive impact on label examination.
H_4: Quality and assurance value has a positive impact on label examination.
H_5: Shelf life and durability has a positive impact on label examination.
H_6: Label examination has a positive impact on purchase decisions.

2 Literature Review

Label reading is influenced by personal characteristics (health awareness, education), cognitive load, and perceived importance; barriers to reading include time constraints and information overload (Cowburn & Stockley, 2005; Shahiduzzaman & Naskar, 2024). Despite this, consumers will take the time to read label information when they have specific concerns, such as allergies or certifications.

2.1 Economic Value Perception and Label Examination

Economic value refers to the price consumers are willing to pay for a good or service. Perceived value for money influences how people evaluate labels. Reasonable pricing coupled with a high-quality product or health benefits can motivate people to inspect and purchase. Perceived economic value is a customer's assessment of the financial value of a product or service based on the benefits received versus the costs. Perceived economic value item questions regarding perceived fairness of price and benefits. It determines what consumers are willing to sacrifice for a product. Consumers are increasingly turning to food labels to guide their purchasing decisions, particularly when assessing value for money. A study by Campos et al.,(2011) found that label analysis focuses not only on health or safety but also on confirming the cost-benefit ratio. According to a study by Grunert et al., (2010) indicates that people with greater price sensitivity are more likely to examine food labels for value-related information like quantity, unit price, and nutritional benefits.

2.2 Health & Safety Concerns and Label Examination

Health and safety problems related to the physical and mental health of individuals or groups. Health awareness and food safety concerns like allergens, chemical residues significantly influence label inspection and purchase intention, especially for organic products (Iqbal et al., 2021; Wong & Tzeng, 2021). According to Wong & Tzeng, (2021) health and safety concerns refer to any situation or condition that could cause harm, injury, or illness to a person's physical or mental happiness. Food safety attitudes mediate the effect of label awareness on purchase intention. These provide crucial information, such as nutritional content, allergen warnings, and ingredient lists, helping consumers choose safer and healthier foods (Campos et al., 2011). A study by Hersey et al. (2013) revealed that physical health and safety concerns are the primary reason consumers examine food labels. Various studies have shown that health and safety concerns are the main reason consumers check food labels.

2.3 ***Product Identity and Traceability and Label Examination***

Product traceability and identity information on food labels are increasingly important for consumers seeking transparency. It also assurance about the origin of food products. Product identity refers to the attributes that a manufacturer links with a product's label. Product identity is the unique identifier assigned to a product at each stage of the supply chain, like a batch code, unique serial number, barcode etc. Product identity and traceability effect on label examination. A study by Jensen et al.,(2019) shows that the presence of detailed traceability information on labels positively influences consumer confidence and purchase intentions. Furthermore a research study by Van Rijswijk and Frewer,(2008) found that consumers concerned about food safety, environmental impact often closely examine labels for traceability cues, such as country of origin, certification or logos.

2.4 Product Quality and Assurances and Label Examination

Product quality and assurance also link with label examination. A study by Shahiduzzaman and Naskar (2024) revealed that quality signals, like brand reputation, organic labeling, origin, and user guides, convey not only functional but also cognitive attributes. Product quality refers to the extent that a product meets customer needs, fulfills its purpose, and conforms to defined standards and expectations. Accurate and comprehensive food labeling plays a crucial role in conveying these quality attributes, helping consumers make informed purchasing decisions (Islam et al., 2024). However, when labels are unclear or misleading, they can harm the perception of product quality and decrease consumer confidence (Jones and Richardson, 2007). According to Pereira et al., (2009) product quality in the food industry encompasses characteristics such as safety, nutritional content, freshness, and consistency which are often communicated to consumers through labeling. Furthermore, a study by Islam et al., (2024) have shown that the lack of key information on labels, such as ingredient breakdowns, expire date, can misrepresent poor product quality. Technologies like machine vision have improved quality control, but the benefits may not be reflected in consumer perception without clear labeling (Tan et al., 2022).

2.5 Self life and Durability and Label Examination

Label examination also link self life and durability. Shelf life and durability are essential to ensuring the safety, quality, and value of products for consumers and also information about shelf life and durability on food labels significantly influences consumer behavior and purchasing decisions. Durability is a product's ability to withstand physical, chemical, and other challenges over time and during use. It encompassing a wide range of wear resistance. Durability of labeling is also related to consumers' perceptions of product quality (Wognum et al., 2011). Shelf life is the period during which a product remains safe and fit for consumption to consumer, maintaining its desired quality and nutritional properties, under specific conditions. A study by Grunert and Wills (2007) revealed that consumers often examine labels to assess how long a product will remain safe and fit for consumption, especially in the case of perishable goods. Furthermore, shelf-life details, like best-before and expiration dates, are the most frequently reviewed label elements (Van Boxstael et al., 2014). A study by Newsome et al., (2014) found

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that consumers are to trust the product and make a purchase when shelf life information the clearer and more understandable.

2.6 Label Examination and Purchase Decision

Food labeling plays a vital role to consumer in purchasing decisions. A consumer's purchase decision is the precise moment when they choose to obtain a specific product or service from a alternative options. After having defined consumer needs, gathered information, and evaluated various alternatives consumer make purchase decision. Label verification is fundamental for consumer safety, brand integrity, legal compliance, and other aspects to consumer. It ensures that products are safe for consumption and this critical stage marks the final selection process, where factors such as price, brand reputation, quality, and perceived value significantly influence the final decision. I is important to take purchase decision after inspection of food label. A study by Campos et al. (2011) indicates that labels provide essential information that helps consumers assess the quality, freshness, and safety of food products. Furthermore, a study by Cowburn and Stockley, (2005) found that when consumers actively read and understand food labels, they are more likely to make healthier purchasing decisions. A study by Graham and Jeffery, (2011), label use is driven by health concerns, allergies, or dietary restrictions, which directly influence their purchasing decisions for many consumers.

2.7 PLS-SEM in Consumer Behavior Research

Partial least squares structural equation modeling (PLS SEM) is widely used for models involving multiple constructs and paths, especially when data are nonnormal or the model is complex (Sustainability 2020; Applied Science 2025). It allows for simultaneous assessment of measurement validity (convergent/discriminant) and structural paths, including examining the mediating role of labels between four independent variables and purchase decisions.

2.8 Gaps in the Literature

This study addresses these limitations using partial least squares structural equation modeling (PLS SEM), using data collected through a consumer survey in Rangpur, Bangladesh.
(i)The mediating effects of label inspection and path to purchase are rare.
(ii)Research integrating all five variables into a single model is limited.
(iii)Cultural contexts such as Bangladesh, where religious certification plays a significant role, are under researched.

3 Methodology

3.1 Research Design

This quantitative study used a cross-sectional survey design to collect consumer data. Partial least squares structural equation modeling (PLS SEM) was chosen because of its flexibility in handling non normal data and its small sample size requirement.

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3.2 Population and Sample

The target respondents were Bangladeshi consumers from Rangpur district aged 18 years and above. Based on precedent (Shahiduzzaman & Naskar, 2024) and the PLS rule of thumb, this study aimed to collect approximately 370 valid questionnaires to ensure rigorous concept testing. A 5 point Likert scale is used. A pilot test (n=40) refines clarity and reliability.

3.3 Data Collection

Primary data were collected over three months time frame amid the January to March, 2025. Data were collected through online and face-to-face surveys in urban and rural area under Rangpur district, Bangladesh. Demographic data such as gender, age, income, education etc. were also included for comparative analysis.

3.4 Data Analysis with PLS-SEM

Analysis proceeds in two stages:

3.4.1 Measurement Model

Measure model consider Reliability, Convergent validity, Discriminant validity.

3.4.2 Structural Model

Path coefficients examine the direct effect of each variable on label inspection and purchase decisions, as well as its indirect effect through mediating effects. R^2 was the predictive correlation of the endogenous variables. Path significance was assessed using bootstrapping (e.g., 5,000 subsamples). The SRMR (Standardized Root Mean Square Residual) is a measure of model.

4 Data analysis and Finding

4.1 Introduction

This section begins with a demographic profile of the survey participants. These analyzes followed the widely accepted reporting style of PLS analysis suggested by previous studies. PLS-SEM (Partial Least Squares -Structural Equation Modeling) is an advanced multivariate analysis method used to analyze the relationship between a set of independent variables and a set of dependent variables by examining the shared variance between them(Hair et al., 2017). The PLS-SEM analysis included both measurement and evaluation of the structural model.

4.2 Respondents Demographics

In this section describe the demographic statistics of the respondents.

Table1:Demographic Profile of the Respondents

Sex		Age						Education						
Male	Female	Less than	Between 20 years	Between 30 years	Between 40 years	Between 50	More than	Prima	Secon	Higher	Bachelor	Master	Ph. D	Oth

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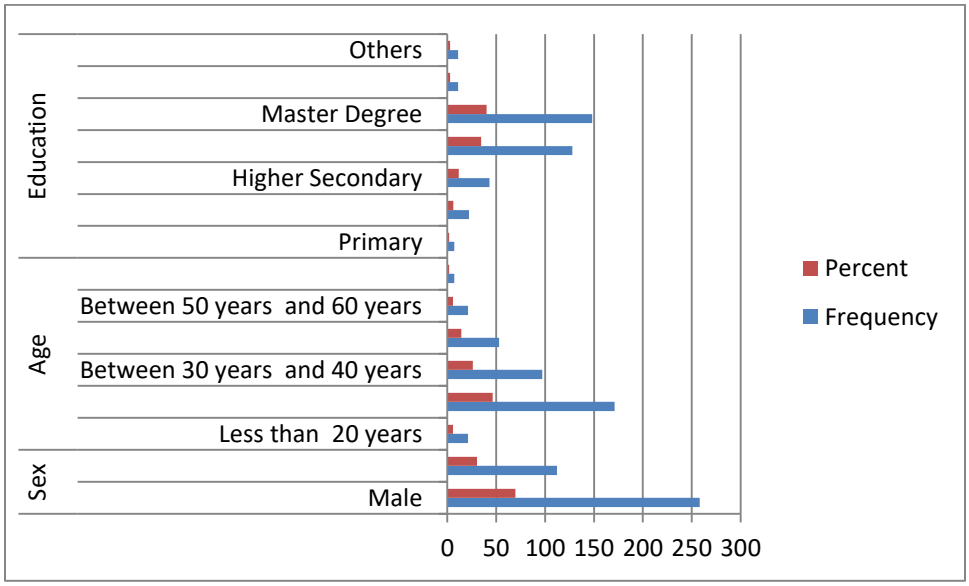
			20 years	and 30 years	and 40 years	and 50 years	years and 60 years	60 years	ry	dary	Secondary	Degree	Degree	Degree	ers
Frequency	258	112	21	171	97	53	21	7	7	22	43	128	148	11	11
Percent	69.7	30.3	5.7	46.2	26.2	14.3	5.7	1.9	1.9	5.9	11.6	34.6	40.0	3.0	3.0



Figare1:Demographic statistics

4.2.1 Sex Distribution

Males make up the majority of the sample, accounting for 69.7% of the population (258 out of 370) females represent 30.3% of the population (112 out of 370).

4.2.2Age Distribution

The young adult 46.2% (almost half) of the sample dominated population which is largest age group20–30 years. The second-largest group is 26.2% (30–40 years)showing a strong presence of adults in early mid-life. 40–50 years is 14.3% moderate representation of the population. Few minors or teenagers 5.7% which is less than 20 years. Age 50–60 years 5.7% small older adult group. Over 60 years 1.9% minimal senior representation.

4.2.3 Education Distribution

The largest number of sample master degree holder which is 40%, second Largest 34.6% bachelor degree holder and smallest group 1.9% is complete primary education.

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4.3 Model Assessment

Two types of model analyze by smart PLS software. First, measurement model which is also called outer model and second structural model which is also called inner model.

4.3.1Measurement Model

Measurement model first evaluates the reliability of the indicators. Reliability is measured by factor loading, internal consistency is measured by Cronbach's alpha, Roa-A, and composite reliability Roa-C , next convergent validity is measured by average variance extraction (AVE) and discriminative effectiveness is measured by HTMT ratio, Fornell-Larcker criterion and Cross loading. The results of the measurement model are shown below to establish a quality standard for the measurement model.

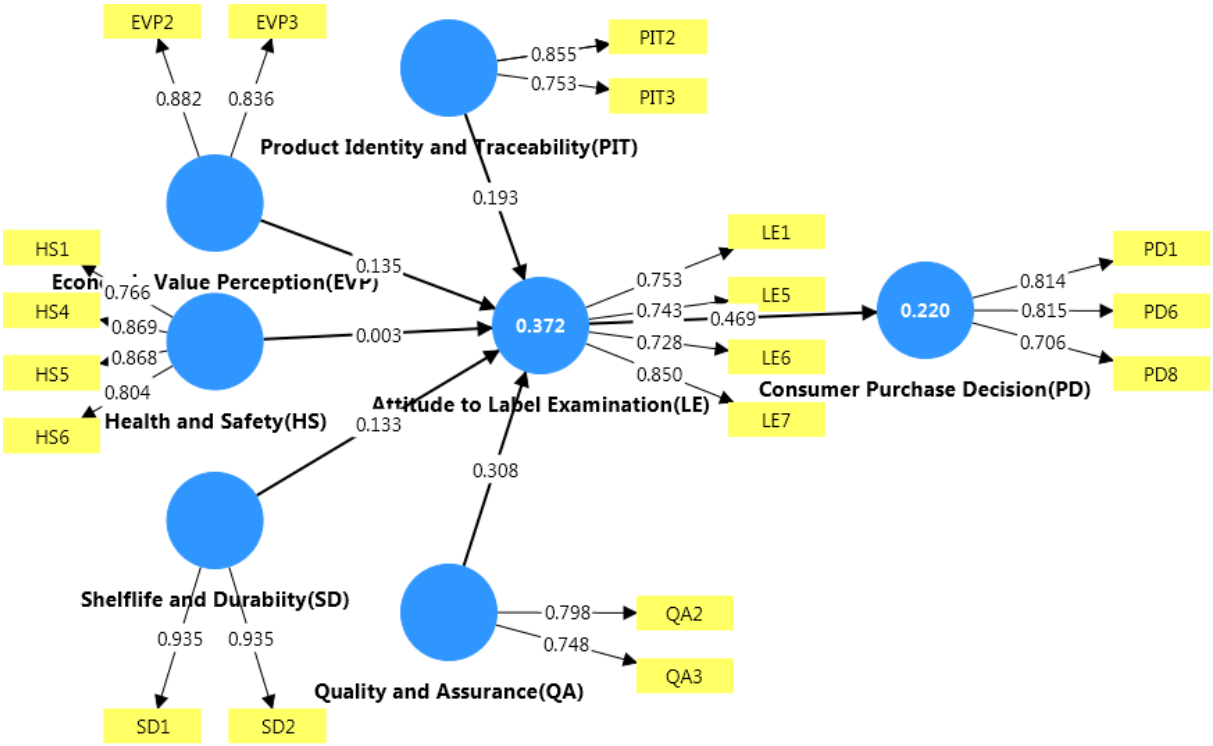

Figure2: Measurement model

4.3.2 Factor Loading

Factor loadings reflect how well the observed metrics measure the underlying structure, and it should be above a certain threshold (usually 0.7) to be considered valid (Chen et al., 2017).

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Table 2: Factor Loadings

	Attitude to Label Examination (LE)	Consumer Purchase Decision (PD)	Economic Value Perception (EVP)	Health and Safety(HS)	Product Identity and Traceability(PIT)	Quality and Assurance(QA)	Shelflife and Durabiity(SD)
EVP2			0.882				
EVP3			0.836				
HS1				0.766			
HS4				0.869			
HS5				0.868			
HS6				0.804			
LE1	0.753						
LE5	0.743						
LE6	0.728						
LE7	0.85						
PD1		0.814					
PD6		0.815					
PD8		0.706					
PIT1					0.713		
PIT2					0.855		
PIT3					0.753		
QA2						0.798	
QA3						0.748	
SD1							0.935
SD2							0.935

Based on the analysis, all items in the measurement model exhibited loading exceed 0.70 ranging from 0.706 to 0.935. All items are significant at the level of 0.001.

4.3.3 Internal Consistency /Reliability Analysis

The most common methods for determining reliability are Cronbach's Alpha, Rho-A, Rho-C. The PLS-SEM measurement model uses Cronbach's alpha to assess the quality of the measurement model, Cronbach's alpha is a measure of internal consistency, ranging from 0 to 1, with higher values indicating more reliable measures (Nunnally & Bernstein, 1994). According to Vandenberg & Lance, (2000), Rho-A is a measure of convergent validity used to assess how well observed metrics converge on latent variables and the cutoff for rho-A is usually set at 0.7 or higher, any lower value indicates a lack of convergent validity (Hair et al., 2017).A study by Chin, (2010), Rho-C is the coefficient of determination of the measurement model in PLS-SEM, which measures the degree to which latent variables explain the variance of the indicator variable. When the value of Rho-C is greater than 0.7 that is considered an acceptable model.

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Table3: Construct Reliability and validity (Overview):

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)
Attitude to Label Examination(LE)	0.771	0.782	0.853
Consumer Purchase Decision(PD)	0.683	0.705	0.823
Economic Value Perception(EVP)	0.647	0.657	0.849
Health and Safety(HS)	0.855	0.883	0.897
Product Identity and Traceability(PIT)	0.668	0.687	0.819
Quality and Assurance(QA)	0.329	0.331	0.748

From the above table show that cronbach's alpha ranges from 0.329 to 0.855, while the composite reliability (rho_a) statistic ranges from 0.331 to 0.883 and the composite reliability (rho_c) statistic ranges from 0.748 to 0.897.

4.3.4 Convergent Validity- Average variance extracted (AVE)

According to Hair et al., (2017), AVE (Average Variance Extracted) measures the amount of variance that is explained by an indicator relative to the total amount of variance it has. AVE is a measure of convergent validity and should be greater than 0.5 to be considered valid (Hair et al., 2017).

Table4: Convergent Validity

	Average variance extracted (AVE)
Attitude to Label Examination(LE)	0.593
Consumer Purchase Decision(PD)	0.608
Economic Value Perception(EVP)	0.738
Health and Safety(HS)	0.685
Product Identity and Traceability(PIT)	0.602
Quality and Assurance(QA)	0.598

Here value of AVE more than 0.5. So convergent validity is establish.

4.3.5 Discriminant Validity HTMT

The Heterotrait Monotrait (HTMT) Index is a convergent validity measure used to assess the relationship between multiple indicators of a construct in Partial Least Squares Structural Equation Modeling (Henseler, Ringle, & Sarstedt, 2016). According to Henseler et al., (2016), the threshold for the HTMT value is 0.7.

Table5: Heterotrait Monotrait (HTMT

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	Attitude to Label Examination(LE)	Consumer Purchase Decision(PD)	Economic Value Perception(EVP)	Health and Safety(HS)	Product Identity and Traceability(PIT)	Quality and Assurance(QA)	Shelflife and Durabiity (SD)
Attitude to Label Examination(LE)							
Consumer Purchase Decision(PD)	0.624						
Economic Value Perception(EVP)	0.614	0.554					
Health and Safety(HS)	0.225	0.142	0.246				
Product Identity and Traceability(PIT)	0.608	0.398	0.599	0.338			
Quality and Assurance(QA)	1.058	0.876	1.122	0.536	0.993		
Shelflife and Durabiity(SD)	0.546	0.544	0.663	0.241	0.619	0.979	

The HTMT results show in the above table that the HTMT ratio of all constructs is less than the required threshold of 0.7 except two variables. Thus, discriminant validity is partially confirmed.

4.3.6 Discriminant Validity- Fornell-Larcker Crirerion:

The Fornell-Larcker (1981) criterion is a measure of the discriminant validity of a partial least squares structural equation model (PLS-SEM). This criterion compares the loading size of the latent variable with the size of the correlation between the indicators and it is an overall assessment of the discriminative effectiveness of the model. According to Fornell and Larcker, (1981), the threshold for a good structural model is 0.5, which means that the magnitude of the loading should be at least 0.5 larger than the correlation between indicators.

Table6: Fornell-Larcker Crirerion

	Attitude to Label Examination(LE)	Consumer Purchase Decision(PD)	Economic Value Perception(EVP)	Health and Safety(HS)	Product Identity and Traceability(PIT)	Quality and Assurance(QA)	Shelflife and Durabiity (SD)
Attitude to Label Examination(LE)	0.77						

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Consumer Purchase Decision(PD)	0.469	0.78					
Economic Value Perception(EVP)	0.439	0.386	0.859				
Health and Safety(HS)	0.203	0.095	0.191	0.828			
Product Identity and Traceability(PIT)	0.452	0.282	0.398	0.283	0.776		
Quality and Assurance(QA)	0.537	0.417	0.521	0.297	0.462	0.773	
Shelflife and Durabiity(SD)	0.45	0.43	0.495	0.212	0.472	0.516	0.935

Above table show that the square root of AVE for a construct is greater than the correlation with all other constructs and all values more than 0.7 . So, discriminant validity is established.

4.3.7 Collinearity Statistics VIF (Variance Inflation Factor)

The VIF (Variance Inflation Factor) is a statistical measure that assesses the degree of multicollinearity in a measurement model (Cheung & Lau, 2015). A VIF value of 1 indicates no multicollinearity, while values greater than 10 indicate substantial multicollinearity (Hair, Black, Babin, & Anderson, 2010).

Table7: VIF (Variance Inflation Factor)

	VIF
EVP2	1.297
EVP3	1.297
HS1	1.287
HS4	2.723
HS5	4.101
HS6	3.341
LE1	1.364
LE5	1.616
LE6	1.408
LE7	1.941
PD1	1.31
PD6	1.382
PD8	1.306
PIT1	1.204

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PIT2	1.497
PIT3	1.374
QA2	1.04
QA3	1.04
SD1	2.278
SD2	2.278

Here value of VIF less than 10. So indicates that no multicollinearity

4.4 Structural Model

Assessment of the structural model begins with the assessment of model fit. Standard structural model assessment criteria include the coefficient of determination (R^2), and the statistical significance and relevance of the path coefficients.

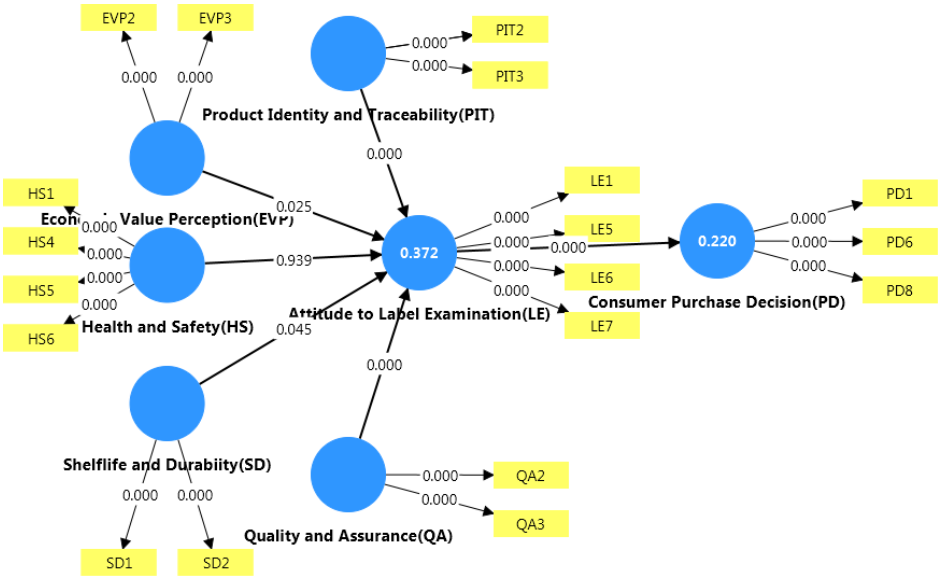

Figure3: Structural model

4.4.1 Model Fit

4.4.1.1 SRMR (Standardized Root Mean Square Residual)

According to Hair Jr et al., (2017), SRMR (Standardized Root Mean Square Residual) is a measure of model fit for PLS-SEM and is used to assess the degree of misfit between the actual and estimated covariance matrices. The SRMR is calculated as the square root of the average of

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all residuals divided by the average of the variances. A lower SRMR value indicates that a better fit between the model and the data (Henseler et al., 2017). The SRMR threshold is generally considered to be 0.08 (Cheung & Rensvold, 2002).

4.4.1.2 NFI

NFI stands for Normed Fit Index and measures how well a model fits the data (Hair, Hult, Ringle, & Sarstedt, 2017). NFI is calculated by dividing the difference between the chi-square value of the model and the c hi-square value of the baseline model by the chi-square value of the baseline model and the higher the NFI, the better the model fit.

Table8: SRMR and NFI

	Saturated model	Estimated model
SRMR	0.083	0.091
d_ULS	1.444	1.738
d_G	0.519	0.541
Chi-square	1152.88	1187.413
NFI	0.632	0.621

The results of the model SRMR is 0.08 and NFI value is 0.676 that is good for model fit.

4.4.2 Coefficient of Determination (R^2)

R^2 represents the variance explained in each endogenous construct and measures the model's explanatory power, also referred to as in-sample predictive power. It explains how much change in the dependent variable can be accounted for by one or more independent variable(s). $\mathbf{R^2}$ value from 0 to 1 and higher value indicate greater explanatory power. According to Cohen, (1988) stated that (R^2)values, value between 0.02 and 0.12 were conserved week, 0.13 to 0.25 were deemed moderate, 0.26 and more were deemed big.

Table9:(R-square overview)

	R-square	R-square adjusted
Attitude to Label Examination(LE)	0.372	0.363
Consumer Purchase Decision(PD)	0.22	0.218

The present study show that $\mathbf{R^2}$ values for label examination and consumer purchase decision is 0.372 and 0.22 respectively. Here, 37.2% changes in attitude towards food label examination is being explained by five exogenous variable and 22% changes in consumer purchase decision is

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being explained by six exogenous variables. Result show that R2 for all endogenous constructs is more than 0.22 that means model explanatory power is substantial.

4.4.3 Assess the Significance and Relevance of the Structural Model Relationships (Hypotheses Testing)

In this step, the significance and relevance of the structural model relationship have been assessed to test the hypothesized relationship. A bootstrapping approach has been used with 5,000 bootstrap samples to assess the significance of the suggested pathways. The path analysis findings determine the acceptance or rejection of the proposed hypotheses. The hypothesized path coefficient findings, t-statistics, and significance level for each proposed path have been presented in following Table .

Table10: Path Coefficient

	Original sample (O)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Economic Value Perception(EVP) -> Attitude to Label Examination(LE)	0.135	0.06	2.237	0.025
Health and Safety(HS) -> Attitude to Label Examination(LE)	0.003	0.039	0.077	0.939
Product Identity and Traceability(PIT) -> Attitude to Label Examination(LE)	0.193	0.047	4.063	0
Quality and Assurance(QA) -> Attitude to Label Examination(LE)	0.308	0.051	5.991	0
Shelflife and Durabiity(SD) -> Attitude to Label Examination(LE)	0.133	0.066	2.006	0.045
Attitude to Label Examination(LE) -> Consumer Purchase Decision(PD)	0.469	0.058	8.138	0

Note: β= Beta Coefficient, SD=Standard Deviation, T= t statistics, P=Probability(p) value

H_1 assesses whether economic value perception of consumer significantly and positively affects attitude to label examination. The result show that economic value perception has significant and positive impact on attitude towards label examination (β= 0.135, sd=0.06, t= 2.237, p= 0.02). Hence H_1 was supported.

H_2 assesses whether health and safety of consumer significantly and positively affects attitude to label examination. The result show that health and safety has not significant and positive impact on attitude towards label examination (β= 0.003, sd=0.039, t= 0.077, p= 0.939). Hence H_2 was not supported.

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H₃ assesses whether product identity and traceability **(**significantly and positively affects attitude to label examination. The result show that product identity and traceability has significant and positive impact on attitude towards food labeling (β= 0.193, sd=0.047, t= 4.063, p= 0.). Hence ***H₃*** was supported.
H₄ assesses whether quality and assurance significantly and positively affects attitude to label examination. The result show that quality and assurance has significant and positive impact on attitude towards label examination (β= 0.308, sd=0.051, t= 5.991, p= 0.). Hence ***H₄*** was supported.
H₅ assesses whether shelf life and durability significantly and positively affects attitude to label examination. The result show that shelf life and durability has significant and positive impact on attitude towards label examination (β= 0.133, sd=0.066, t= 2.006, p= 045.). Hence ***H₅*** was supported.
H₆ assesses whether attitude to label examination significantly and positively affects consumer purchase decision. The result show that label examination has significant and positive impact on consumer purchase decision (β= 0.469, sd=0.058, t= 8.138, p= 0Hence ***H₆*** was supported.

4.5 Practical Implications

i) For manufacturers or Marketer: When manufacturer or marketer design food labels, clearly highlight quality marks, safety certifications, religious certifications, and price advantages. Clear and concise visuals will enhance consumer trust and engagement.
ii) For policymakers: Policymakers like BSTI enforcing more detailed and understandable food labeling standards can improve public health and increase food safety literacy.
iii) For health educators: Education related to health campaigns for increasing consumer awareness of food labeling and promote healthier and more culturally appropriate food choices.

5 Conclusion

The path coefficient results revealed varying degrees of influence among the independent variables **(**economic value perception, health and safety, product identity and traceability, quality and assurance, whether shelf life and durability**)** on the dependent variable label examination**,** and subsequently from label examination to consumer purchase decision. The relationship between health and safety and label examination was found to be statistically insignificant**.** Economic value perception as well as shelf life and durability has a significant and positive effect on label examination**.** The relationship between product identity and traceability and label examination is strong and statistically significant**.** Among all predictors of label examination**,** quality and assurance has the strongest positive and significant effect**.** The path from label examination to consumer purchase decisions is highly significant and positive**,** with the highest beta and t-value in the model. This confirms that improvements or increases in label examination substantially enhance consumer purchase decisions. The findings can help stakeholders across the food supply chain design more meaningful. Effective labeling systems also empower consumers, increase transparency, and foster a safer and more proper food market. The sample only represents consumers from a district of Bangladesh, hereby there is a limitation regarding the generalizability of findings to other consumers in other district of Bangladesh. Next, some

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other variables ignore by researcher which is influence on label examination and consumer's purchase decisions. Furthermore, compare label inspection patterns in urban and rural areas in Bangladesh. So, there is a large opportunity to do research for future researcher using the gaps and consider potential moderating or mediating variables and other independent variables to refine the model in this field.

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