

# IMPACT OF FOOD LABELLING ON CONSUMER BEHAVIOUR

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## ABSTRACT

**Background:** Packaging and labelling are the primary interface for consumers before purchase. This research investigates how food label information influences consumer purchasing decisions, focusing on various labelling factors.

**Objectives:** The study's goal is to evaluate the impact of food labelling information on consumer behaviour by looking at how different labels influence purchasing decisions, assessing consumer awareness and use of food labels, and investigating the effects of demographic characteristics on label perception and use.

**Methods:** The study employed a survey research design with convenience sampling to gather 182 responses via social media, using SPSS and MS Excel for data analysis through correlation, regression, and ANOVA techniques to achieve the desired outcomes.

**Results:** The study found a strong, statistically significant positive relationship between consumer behaviour and several factors related to food labelling, including how often consumers read labels, their awareness and use of label information, the perceived impact of specific labels, and consumer preferences. This indicates that food labelling plays a crucial role in influencing consumer purchasing decisions.

**Conclusion:** Research exhibits that clear, easy-to-understand, and detailed food labelling significantly influences consumer behaviour. Label readability, consumer awareness, and the perceived impact of labelling are critical drivers of purchasing decisions, highlighting the crucial role of effective on-package communication for manufacturers aiming to shape consumer choices.

**Recommendation:** Based on this research, manufacturers should focus on clear and effective on-package communication, taking proactive steps. The packaging should attract consumers and enable prompt message comprehension. Consolidating sustainability messages into design is also crucial due to rising eco-consciousness. Future studies could explore the impact of specific design elements on consumer behaviour across different demographics.

**Keywords:** Consumer behaviour, label reading habit, food label awareness and usage, specific label impact, preferences.

## 1. INTRODUCTION

A customer is an individual with the power to decide what to purchase, influenced by commercials and marketing efforts. Consumer behaviour is defined as the study of individuals, groups, or organizations and the methods they employ to choose, acquire, utilize, and discard goods, services, or ideas to fulfill their needs, as well as the impact of these actions on

both consumers and society (Manasa, 2021). Purchasing behaviour, specifically, refers to the actions and decision-making processes of individuals when buying and utilizing goods, involving a complex process of identifying the product, evaluating its characteristics, benefits, and drawbacks, and making a purchasing decision (Kodali & Telaprolu, 2018). Consumer attitudes, as highlighted by behavioural research, have a significant influence on purchasing behaviour, making them essential for understanding business practices (Madhavan & Kaliyaperumal, 2015).

Labelling, as defined by the Federal Food, Drug, and Cosmetic Act (FFDCA) of the United States, includes any written, printed, or graphic material attached to a product or its packaging, serving as an essential component of the product's marketing strategy (Khalid, 2015). The Food and Drug Administration (FDA) of the USA emphasizes that a label should represent key marketing decisions, providing consumers with vital information, including the product name, ingredient list, allergen information, shelf life, net weight, nutrition data, storage instructions, and manufacturer details (Darrow et al., 2020). Food labels, by detailing the nutritional content, assist consumers in making informed choices regarding their dietary intake, facilitating healthier eating habits (Prathiraja & Ariyawardana, 2003). Food labelling has been shown to significantly impact consumer purchasing behaviour, promoting a shift from "unhealthy" to "healthy" food choices (Zarkin & Anderson, 1992). This initiative, aimed at combating diet-related chronic diseases, has been adopted in many countries to enhance public health, enabling consumers to make better-informed choices about the nutritional content, shelf life, and ingredients of the products they purchase (Grunert & Wills, 2017).

Despite growing concern about the health and safety of food among consumers, the extent to which food labels influence purchasing decisions remains unclear, particularly in the context of local consumers in Pokhara. This gap in understanding affects food choices and overall health, compounded by evolving tastes, cultural factors, and potentially deceptive marketing practices. This study seeks to address this gap by investigating the influence of food labelling on consumer behaviour in Pokhara, aiming to enhance labelling practices, increase consumer awareness, and contribute to a healthier food environment.

This research aims to answer questions regarding the impact of food label information on consumer decision-making, the extent to which consumers engage with food labels, the specific label features that influence consumer choices, and general consumer opinions and preferences toward food labelling.

## 2. REVIEW OF LITERATURE

Food label information is an important communication tool between food manufacturer and the consumer, offering key information on a product's composition, nutritional value and other relevant characteristics. Many studies have examined the elements and effectiveness of food label information in impacting consumer behaviour and health consequences (Kodali & Telaprolu, 2018).

### 2.1 Consumer Behaviour

Consumer buying behaviour, the focal point of this study, encompasses the decision-making processes and actions individuals undertake when acquiring, using, and disposing of products or services to satisfy their needs and wants (Schiffman et al., 2009). In the context of food products, it involves a complex interplay of factors, including product attributes, consumer perceptions, and external influences. Consumer food choices are complex, influenced by numerous factors including personal preferences, health concerns, socio-economic status, and cultural factors (Prathiraja & Ariyawardana, 2003). Actively reading food labels can lead to better, more informed purchasing decisions. In contrast, the fall in label adoption among some demographics raises concerns regarding nutritional quality and health outcomes (Helfer & Shultz, 2014; Oostenbach et al., 2019).

### 2.2 Food Label Reading Habit

The term "food label reading habit" refers to consumers' regular patterns of behaviour while engaging with food labels. This covers the frequency with which labels are read, the precise information sought, and how much attention is paid to label content (Silva et al., 2019). Reading food labels can have a substantial impact on consumer choices since it helps people make informed selections based on their health, dietary preferences, and ethical considerations (Campos et al., 2011; Grunert & Wills, 2017). Studies employing observational and survey methodologies have shown that consumers who frequently read food labels are more likely to choose healthier goods and avoid those with undesirable substances, such as excessive sugar or fat content (Drichoutis et al., 2006). Furthermore, research utilizing demographic analysis has indicated that younger consumers and those with higher education levels as well as those with specific health concerns or dietary restrictions, exhibit a stronger tendency to read labels (Cowburn & Stockley, 2005; Pettigrew et al., 2017a). Furthermore, people who are health-conscious or have specific dietary requirements, such as allergies or chronic health concerns, are more likely to check labels to ensure that the food satisfies their needs (Pettigrew et al., 2017b). These findings suggest a direct correlation between label reading and informed health-conscious consumer behaviour. Moreover, research has explored the impact of label design and consumer education, highlighting the importance of simplification and clarity in promoting effective label use (Grunert & Wills, 2017). Building upon this body of evidence, which consistently demonstrates the power of food labels in shaping consumer

choices. Considering this, the following hypothesis is established.

*H1: There is a significant impact of the habit of reading food labels on consumer behaviour.*

### 2.3 Food Label Awareness and Usage

Food label awareness refers to how well customers understand the presence and value of information on food labels. This includes being aware of the numerous elements of food labels, such as nutritional information, ingredient lists, health claims, and certification marks (Dumoitier et al., 2019). Usage, on the other hand, relates to how frequently and in what ways consumers use this information to make purchasing decisions. The gap between awareness and usage is significant because a customer may be aware of food labels but not necessarily use the information for its intended purpose, such as making better food choices (Prathiraja & Ariyawardana, 2003). Customers who are more aware of food labels are more likely to compare products, assess nutritional quality, and avoid unhealthy substances. This tendency is most noticeable among health-conscious consumers who actively seek out low-calorie, low-fat, or nutrient-dense foods (Mhurchu et al., 2018; Oostenbach et al., 2019). Based on this, the following hypothesis has been formulated.

*H2: There is a significant positive impact of food label awareness on consumer behaviour.*

### 2.4 Specific Label Impact

The phrase "specific label impact" refers to the distinct impact that certain types of food labels have on consumer behaviour. Labels that are clearer and easier to understand tend to be more successful in influencing customers to choose healthier foods (McCluskey & Loureiro, 2003). For example, traffic light labels, which use colour coding to signify a product's healthiness, can swiftly communicate important information, facilitating consumers' ability to make educated judgments. Consumers' attitudes toward healthier food options are positively impacted by comprehensive and accessible nutritional information, illustrating how the label's readability and clarity influence consumer perspectives (Helfer & Shultz, 2014). With this premise, the following hypothesis is constructed.

*H3: There is a significant positive impact of specific label impact on consumer behaviour.*

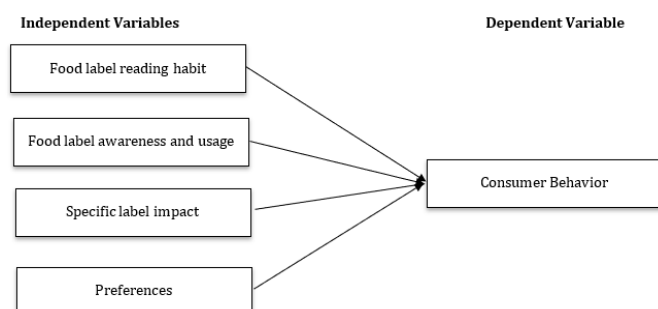
### 2.5 Preference

The inclinations and decisions that customers make while choosing food goods are referred to as consumer preferences. Perceived health benefits, taste, brand loyalty, and ethical factors like organic certification or environmental sustainability are often the main drivers of preferences (McCluskey & Loureiro, 2003). Specific labels, like health or eco-labels, can make a product more appealing by matching the values and preferences of the consumer. Customers' willingness to pay more for products with an eco-label suggests that they prefer goods that are seen as being environmentally friendly. This preference can impact market trends, the availability of labeled products in

retailers, and individual purchasing decisions (Loureiro et al., 2005). Using this foundation, the following hypothesis is established.

*H4: There is a significant positive impact of preferences on consumer behaviour.*

**Figure 1: Conceptual Framework of the Study**



Source: Loureiro et al., 2005, Helfer & Shultz, Dumoitert et al.

### 3. MATERIALS AND METHODS

The study used quantitative and descriptive research design with a cross-sectional survey approach to explore variables that affect the consumer when buying packaged foods with food label information. A pre-tested questionnaire consisted of several questions pertaining to consumer awareness of food label information, the impact of food labelling on buying decisions and the willingness to pay of consumers and probable consumers. The questionnaire was thoughtfully constructed to ensure comprehensiveness while maintaining simplicity, addressing multiple dimensions including food label reading habit, food label awareness and usage, specific label impact, consumer perception and preferences. 182 respondents were randomly selected from Pokhara applying various social media platforms like Email, Facebook messenger, Instagram, WhatsApp, Viber etc. The questionnaire prepared featured both multiple-choice questions and Likert scale items, enabling subsequent statistical analysis. The study effectively employed Google Docs and social media to gather data from diverse and representative samples familiar with shopping practices. Throughout the data collection process, rigorous adherence to ethical principles was maintained, which included ensuring participant anonymity, confidentiality, and respect. Any information that could potentially identify participants was either anonymized or excluded from the dataset to protect confidentiality. There were no boundaries on the participation criteria, respondents from sectors such as private and government sector employees, students, homemakers, and entrepreneurs were all welcome, aiming for a diverse representation of consumer behaviour. Age was another consideration; individuals aged 20 and above were all included to ensure that participants had different levels of experience and could provide informed consent. Language expertise was also a requirement; the questionnaire was administered in English, so participants needed to be comfortable with the language. Ultimately, an informed consent form that was

provided at the start of the questionnaire had to be approved by each and every participant.

Ensuring validity and reliability of the research is a crucial step for the study design. Likert scale question evaluated using Cronbach's alpha that has been widely used for similar kinds of research and has contributed to the reliability of the data collection instrument. The study was also supported with the help of ethical considerations to make it more valid. Analysis of data provides the backbone for generating insights out of collected data. Correlation analysis, Regression analysis and ANOVA techniques are used to study the relationship between variables related to consumer behaviour. SPSS and MS Excel further supported data analysis to be done in a structured manner aligned with the research objectives and questions. Tables, graphs, and lines are used to better understand the result.

## 4. RESULTS

### 4.1 Demographic Characteristics of Respondents

By evaluating variables including age, gender, educational background, field of employment, marital status, and other relevant criteria, we can acquire a better picture of the respondents' various opinions.

The analysis of demographic features provides a platform for investigating how these variables influence consumer purchasing behaviour. For example, age and gender may influence preferences and purchasing decisions, with younger consumers possibly favouring digital and health-conscious goods, whilst older populations may emphasize alternative variables. Similarly, respondents' knowledge and awareness of food label information might be shaped by their academic qualifications and sector of employment, influencing their use and choice of food labels.

**Table 1: Demographic Profile of Respondents**

Profile	Group	Frequency	Percent (%)
<b>Gender</b>	Male	98	46.2
	Female	84	53.8
<b>Age</b>	20-25	81	44.5
	25-30	79	43.4
	30 and above	22	12.1
<b>Education</b>	Higher Secondary	60	33
	Bachelors	106	58.2
	Masters/PhD/Postdoc	15	8.2
<b>Occupation</b>	Private Sector Employee	59	32.4
	Govt/Public sector employee	20	11
	Self Employed/Entrepreneur	26	14.3
	Housemaker	40	22
	Student/ Unemployed	37	20.3
<b>Marital Status</b>	Single	94	51.6
	Married	88	48.4

Source: survey, 2024

Table 1, Illustrates the gender distribution of the respondents, 53.8% are female while the remaining 46.2% are male. The age distribution of the participants reveals that the majority 44.5% are between the ages of 25 and below, similar range is seen with respondents among 25-30 years with 43.4% whereas only 12.1% contributed by people of



age group 30 and above. The respondents mostly had a bachelor's degree with 58.2%, 33% had only higher secondary education and 8.2% had a master's degree/PhD/Postdoc. The table further illustrates the occupation description of the respondents with 32.4% engaged in private sector jobs, 22% were housemakers, 20.3% were students/unemployed, 14.3% were self-employed/entrepreneurs and at least 11% had government or public sector jobs. The marital status represents that the majority 51.6% were singles and the remaining 48.4% were married.

#### 4.2 Result of Regression Analysis

Table 2 presents the coefficients of the regression analysis, detailing the impact of various independent variables on the dependent variable. The "Constant" has an unstandardized coefficient (B) of 1.047 with a t-value of 4.02, which is statistically significant ( $p = 0$ ). For the independent variables, "Label reading habit" has a B value of 0.366 and a standardized coefficient (Beta) of 0.371, with a significant t-value of 5.45 ( $p = 0$ ). "Food label awareness and usage" has a B value of 0.167 and a Beta of 0.192, with a t-value of 2.876, significant at  $p = 0.005$ . "Specific label impact" has a B value of 0.147 and a Beta of 0.191, with a t-value of 2.532, significant at  $p = 0.012$ . "Preference" shows a B value of 0.049 and a Beta of 0.062, with a t-value of 0.834, which is not statistically significant ( $p = 0.406$ ). This table indicates that "Label reading habit," "Food label awareness and usage," and "Specific label impact" are significant predictors of the dependent variable, whereas "Preference" is not.

- Consumer Buying Behaviour =  $\beta + \beta_1(\text{Food label reading habit}) + \beta_2(\text{food label awareness and usage}) + \beta_3(\text{Specific label impact}) + \beta_4(\text{Preference})$
- $\beta_0$  represents the intercept, which is the expected value of consumer buying behaviour when all independent variables are zero

$\beta_1$ ,  $\beta_2$ ,  $\beta_3$  and  $\beta_4$  represent the regression coefficients, which represent the change in consumer buying behaviour associated with a one-unit change in the corresponding variables, holding other variables constant.

The regression analysis results are presented in Table which summarizes the relationship between the independent variables (label reading habit, food label awareness and usage, specific label impact, and preference) and the dependent variable (consumer buying behaviour).

The model summary in Table 2 reveals a moderate to strong correlation between the independent and dependent variables, as indicated by the "R" value of 0.638. The "R Square" value of 0.408 shows that 40.8% of the variance in consumer buying behaviour is explained by the model, suggesting a reasonable explanatory power.

The ANOVA (Analysis of Variance) results, which assess the overall significance of the regression model. F-statistic of 30.45, along with a p-value of .000, indicates that the regression model is statistically significant. This suggests that the independent variables collectively predict the dependent variable, consumer buying behaviour.

**Table 2: Coefficient**

Variable	Unstandardized Coefficients(B)	Standardized Coefficients (Beta)	t-value	Significance Value	VIF (Variance Inflation Factor)
(Constant)	1.047		4.02	0	
Label reading habit	0.366	0.371	5.45	0	1.39
Food label awareness and usage	0.167	0.192	2.876	0.005	1.33
Specific label impact	0.147	0.191	2.532	0.012	1.7
Preference	0.049	0.062	0.834	0.406	1.66
"R"	0.638				
R square	0.408				
F value (ANOVA)	30.45				

Source: Survey,2024

#### 5. DISCUSSION

This section presents the research findings and conducts a thorough analysis, rigorously testing hypotheses that examine the relationships between the dependent variable (Consumer Behaviour) and independent variables (Food Label Reading Habit, Food Label Awareness and Usage, Specific Label Impact, and Preference) using strong statistical techniques. In summary, this part provides a thorough explanation of the research findings, adding to current knowledge and providing useful insights for both researchers and practitioners.

Our goal is to thoroughly investigate the results of these findings, taking into account the varied character of our research and its significance within the larger context of consumer behaviour in food labelling.

The regression study revealed important insights into the complicated interaction between the independent variables and customer purchasing behaviour. The considerable positive association between food label reading habits and consumer purchasing behaviour emphasizes the importance of information-seeking behaviour among consumers. The value of 0.366 indicates that when customers read more food labels, their purchasing decisions become more informed and intentional. This finding is consistent with the research of (Helfer & Shultz, 2014; M.Loureiro et al., 2007) which highlights the importance of particular product information in customer decision-making processes. Similarly, a coefficient of 0.167 indicates a positive association between food label knowledge and usage and consumer purchasing behaviour, emphasizing the significance of customers' familiarity with and faith in food labels. This shows that initiatives focused at educating consumers about food labels can greatly affect their choices, potentially leading to healthier and more educated purchasing decisions which is consistent with the findings of (Grunert & Wills, 2017; Miller et al., 2017).

The specific label impact, with a coefficient of 0.147, additionally had significant impacts on customer purchasing behaviour. This research implies that visual components and specialized information on food labels, such as nutritional information or ethical certifications, have a significant

impact on customer decisions. This finding is consistent with previous research stressing the importance of clear and appealing label design in grabbing consumer attention and creating trust (Helfer & Shultz, 2014; Tarabella et al., 2016). Interestingly, there is no significant relationship between preference and perception and consumer purchasing behaviour (coefficient of 0.049,  $p=0.406$ ), indicating that while consumers may have certain preferences about food products, these factors do not strongly influence their purchasing decisions. This result may reflect the complexities of customer behaviour, in which practical concerns such as price, convenience, and specific product qualities may outweigh overall desires (Hartmann et al., 2019; M.Loureiro et al., 2007). The conclusions of this study have important consequences for marketers and politicians. Finally, the debate demonstrates a comprehensive knowledge of the complex relationships between food label reading habit, awareness and usage, specific label impact, preference and perception, and their impact on consumer purchasing behaviour. These findings provide the groundwork for further research and practical applications in increasing customer participation and fostering informed purchasing decisions in the context of food labelling.

## 6. CONCLUSION

From the study, it can be concluded that consumer behaviour is influenced by independent variables like food label reading habits, food label awareness and usage, specific label impact, and preference. The majority of respondents were female, highlighting higher engagement in food-related activities. The diverse age distribution, particularly among younger respondents aged below 25, underscores the significance of targeting younger females who are early in the stage of grocery shopping for themselves and their families. The study further revealed that most respondents had at least a bachelor's degree, implying that educated young consumers have a habit of reading and understanding food labels, and that the information provided on food labels is crucial to them when purchasing. The findings demonstrate that clear, informative, and visually appealing labels greatly influence consumer behaviour. The regression analysis further supports these insights, showing that the selected variables significantly influence consumer behaviour. The R Square value of 0.408 indicates that approximately 40.8% of the variability in consumer behaviour can be explained by the independent variables of the model. Additionally, the ANOVA analysis contributes to the model's fitness, with a very low p-value and a high F-value, indicating statistical significance. The beta values of three independent variables, namely label reading habit, food label awareness and usage, and specific label impact, demonstrated a positive impact, while preference had the lowest beta value, indicating an insignificant relationship with consumer behaviour. Additionally, the VIF implies very little or no multicollinearity, supporting that each independent variable contributes unique information to the model. To sum up, these findings emphasize that effective food labelling is crucial for shaping consumer behaviour and

there is a need for continuous improvement in label design and transparency in information conveyed.

## 7. IMPLICATIONS

Based on the comprehensive analysis conducted in this study examining the impact of food labelling information on consumer behaviour, several recommendations are proposed for food manufacturers and future researchers. For food manufacturers, there is a need to prioritize in providing clarity, easy-to-understand, detailed information on their product packaging. Packaging acts as the "face" of the product. Designing attractive and consumer friendly packaging is crucial. This includes legible fonts, visually appealing layouts, and intuitive information placement. Manufacturers must ensure full compliance with government-mandated labelling regulations. This not only avoids legal issues but also builds consumer trust. Promoting transparent information enhances consumer trust so details about accurate details about sourcing, processing and the product's environmental impact should be mentioned in the package. Additionally, incorporating recyclable packaging and easy-to-open designs can attract consumer interest, as these features are generally appreciated by consumers.

For future researchers, it is recommended to explore how demographic factors such as age, gender, education level, and marital status may influence the effectiveness of food labels on consumer behaviour, which could lead to more targeted and effective labelling strategies. Conducting longitudinal studies could provide insight into how consumer behaviour regarding food labels evolves over time, determining whether such behaviours are sustained or tend to change. Furthermore, future studies could explore the direct health outcomes associated with the use of food labels, linking food label reading habits to actual health metrics to emphasize the benefits and significance of using food labels.

## 7. LIMITATIONS OF THE STUDY

Although this research study aims to provide an in-depth understanding of consumer behaviour related to food labels, several limitations should be noted as they may have influenced the interpretation of the results. These limitations offer insights for cautious interpretation and highlight areas for improvement in future research based on this study. First, the sample size of 182 may not adequately represent the shopping behaviours of consumers across various sectors, which could impact the generalizability of the findings. Second, the cross-sectional design limits the ability to observe variables over time, thereby constraining the study from establishing cause-and-effect relationships. Additionally, the use of self-reported data through questionnaires may have introduced social desirability bias, potentially leading to inaccurate recall by participants. Lastly, the survey was conducted in English, which may have excluded individuals with limited English proficiency, thus limiting the diversity of perspectives in the study.

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## APPENDIX

### Questionnaire

#### Dependent Variable

##### Consumer buying behaviour

1. Typically plan my grocery shopping trips in advance.
2. I usually compare price and brands before purchasing food products.
3. I tend to stick to familiar brands when buying food products.
4. I am more likely to buy food products on sale or promotion
- 5.1 impulse buy food items on occasion

#### Independent Variables

##### Food label reading habit

1. I always read the labels on the food products before purchasing them
2. I actually skim the nutritional information on food labels.
3. I only read food labels if I have specific dietary concerns
4. I find it difficult to understand the information on most food habits.
5. I trust the information provided on food labels to be accurate.

##### Food Label Awareness and Usage

1. I am very concerned about the healthiness of the food I consume.
- 2.1 am worried about the presence of artificial ingredients in food products.
- 3.1 prioritize food safety when making food purchase decision.
4. I believe food packaging plays a significant role in ensuring food safety.
5. Expiry dates on food packaging are very important to me.

##### Specific Label Impact

1. Eye-catching graphics on food packaging are important to me.
2. I consider the color scheme of food packaging when making purchase decision.
- 3.1 prefer food packaging that is easy to open and reseal
4. The material used in food packaging is a factor in my purchase decision
5. I am interested in food packaging that is recyclable or biodegradable.

##### Perception and preferences

1. I don't prefer buying a food product with dull and unappealing graphics on the packaging.
2. I don't purchase the product if the color scheme of the food packaging is not visually appealing to me.

3. Clear and concise information on the packaging may influence my decisions to purchase a food product.
4. I get influenced to purchase a food product if it had packaging made from recycled materials.
5. I am willing to pay a slightly higher price for food with more informative or transparent labelling.