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IMPACT OF NUTRITION LABELS ON CONSUMER PURCHASE DECISIONS

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ABSTRACT

This study looks at how nutrition labels affect consumers' purchasing choices. In many nations, food packaging now frequently includes nutrition labels that list the ingredients and nutritional value of a product. While some studies have indicated that consumers' decisions regarding the foods they choose to purchase and consume can be significantly influenced by nutrition labels, other studies have indicated that many consumers either ignore nutrition labels or do not fully comprehend the information provided on them.

The literature that has already been written about the influence of nutrition labels on consumer behavior is reviewed and analyzed in this paper. This includes studies that have looked at the connection between the use of nutrition labels and dietary outcomes as well as studies that have looked at the variables that affect how consumers use and interpret nutrition labels. The study points out gaps in the body of knowledge and suggests areas for further investigation.

Additionally, the article explores the efficacy of various nutrition labels, including front-of- package labels, color-coded labels, and traffic-light labels, in influencing consumer purchase decisions. It also looks at how demographics affect the use of nutrition labels and how it affects food choices.

The paper explores the implications of the findings for policy and practice, emphasizing the need for consumer education regarding the significance of nutrition labels as well as the requirement for uniform, clear labelling standards that apply to all types of food products and brands. This study concludes that more research is necessary to fully understand how nutrition labels may be utilized to encourage healthy eating and help consumers make decisions given the potential impact of nutrition labels on consumer behavior and dietary outcomes.

INTRODUCTION

Nutrition labels are becoming a standard feature on food packaging in many countries worldwide. These labels offer detailed information about the nutritional composition of food products, including the number of calories, fat, sugar, and sodium. The goal of nutrition labelling is to provide consumers with the necessary knowledge to make informed food choices. Despite a generally positive view of nutrition, research shows that consumers are more concerned about the nutrients they want to avoid. Therefore, this study aims to investigate the importance of nutritional information in customers' food choices.

Research has shown that nutrition labels can significantly influence consumers' food choices. However, some studies indicate that many consumers either ignore or have a limited understanding of nutrition labels. There are two main types of nutrition labelling: mandatory and voluntary. Mandatory labelling is required by law in many countries and typically includes information on serving size, calories, and nutrient levels. Voluntary labelling is provided by food manufacturers and includes additional information on vitamin and mineral content, nutritional claims, and health claims.

Nutrition labelling can benefit consumers by increasing their awareness of nutrient content, promoting healthier food options, enhancing customer confidence in food products, and assisting in the management of chronic diseases. This study aims to investigate how much consumers rely on nutrition labels to make food choices and how much of an impact these labels have on their purchasing decisions. It will also examine obstacles to the successful use of nutrition labels and the variables that influence how consumers interpret and apply this information.

Nutrition labels have become an increasingly important factor in the food purchasing decisions of consumers in recent years. With concerns over health and wellness at an all-time high, people are

becoming more mindful of the nutritional value of the foods they consume. Nutrition labels provide information on the amount of calories, fat, sugar, and other nutrients contained in a product, allowing consumers to make informed choices about their food intake.

The impact of nutrition labels on consumer purchase decisions is a topic of great interest to researchers, health professionals, and food industry experts alike. Studies have shown that the presence of nutrition labels on products can significantly influence consumer behavior, particularly when it comes to choosing healthier options.

One of the main ways in which nutrition labels affect consumer behavior is by increasing awareness of the nutritional content of foods. People who regularly check nutrition labels are more likely to make healthier choices, as they are better informed about the potential health risks associated with certain foods.

In addition, nutrition labels can also influence consumer perceptions of a product's quality and value. Products that are perceived as healthier due to their nutritional content may be seen as more valuable by consumers, leading them to choose these products over others.

However, there are also some potential drawbacks to the use of nutrition labels in consumer decision-making. Some consumers may find the information provided on nutrition labels confusing or difficult to understand, leading them to make uninformed choices. In addition, there is some concern that nutrition labels may be used by food manufacturers to mislead consumers, as certain marketing tactics may be used to downplay the negative aspects of a product's nutritional content.

Despite these potential drawbacks, the impact of nutrition labels on consumer purchase decisions remains a crucial area of research in the food industry. By understanding how nutrition labels affect consumer behavior, food manufacturers and policymakers can work to develop more effective strategies for promoting healthy eating habits and reducing the risk of chronic disease.

LITERATURE REVIEW

Nutrition labels have become an important tool for consumers to make informed decisions about the food they purchase. The objective of this literature review is to examine the role of nutrition labels in consumer purchase decisions and how they are used by consumers when making food choices.

Awareness towards nutrition labels affecting purchase decision: Numerous studies have demonstrated that nutrition labels play a significant role in consumer purchasing behaviour. According to a study conducted by Drichoutis et al. (2014), consumers who were aware of nutrition labels were more likely to consider them when making purchasing decisions. In another study, Grunert et al. (2010) found that 87% of consumers used nutrition labels when buying food, and 54% of them claimed that they had altered their food choices based on the information provided on the label. These findings suggest that consumer awareness towards nutrition labels affects their purchase decisions.

Transparency of nutrition labels playing an important role in consumer purchase: The transparency of nutrition labels plays a vital role in consumer purchase decisions. According to a study conducted by Wansink and Park (2001), consumers are more likely to choose products with simple and easy-to-understand nutrition labels. Furthermore, a study conducted by Roberto et al. (2010) found that consumers tend to be more responsive to nutrition labels that provide information about calorie content and serving sizes. These findings suggest that the transparency of nutrition labels plays an essential role in consumer purchase decisions.

Effectiveness of different types of nutrition labels and customer lifestyle choices: Several studies have been conducted to evaluate the effectiveness of different types of nutrition labels and customer lifestyle choices. For instance, a study by Golan et al. (2001) found that the use of the FDA's daily value (DV) nutrition labels resulted in lower calorie and fat intake by consumers.

Another study by Pomeranz et al. (2013) found that color-coded nutrition labels were more effective in communicating nutritional information to consumers than the standard black and white labels. These findings suggest that the effectiveness of different types of nutrition labels varies and is dependent on customer lifestyle choices.

1) **Aschemann-Witzel, J., Grunert, K. G., van Trijp, H. C., & Bialkova, S. (2013)-** Effects of nutrition label format and product assortment on the healthfulness of food choice. Nutrition labels on food products can be an effective way to inform consumers about the healthfulness of their food choices. However, there is debate about the most effective format for nutrition labels, and whether they are influenced by the assortment of products available. The study used a 2x2 factorial design, where participants were presented with four different product assortments and two different nutrition label formats. The product assortments were either healthy or unhealthy, and the nutrition label formats were either the Guideline Daily Amounts (GDAs) or the traffic light system. The study involved 3,308 participants from three European countries, namely Germany, the Netherlands, and Poland. The participants were recruited through an online survey panel and were a representative sample of the population in each country in terms of age, gender, education level, and household income. Participants were asked to complete an online shopping task where they were presented with a range of food products and asked to choose which ones they would purchase for a hypothetical shopping trip. The products were presented in one of four product assortments (healthy vs. unhealthy) and were labelled with one of two nutrition label formats (GDA vs. traffic light). The study found that the nutrition label format had a significant impact on the healthfulness of food choices made by consumers. Specifically, the traffic light system was found to be more effective in promoting healthy food choices than the GDA format. Participants who saw the traffic light labels were more likely to choose healthy products than those who saw the GDA labels. However, the study did not find any significant effects of product assortment on food choices. Participants were equally likely to choose healthy products regardless of whether they were presented in a healthy or unhealthy assortment. The study suggests that the nutrition label format can play an important role in promoting healthy food choices, and that the traffic light system may be more effective in this regard than the GDA format. However, the study did not find any significant effects of product assortment on food choices, suggesting that consumers are not influenced by the assortment of products available when making food choices.

2) **Tripathi, N., & Singh, D. V. (2015)-** Impact of nutritional labeling on consumer buying behavior: with special reference to Delhi and NCR. Journal of Food Science and Technology The study by Tripathi and Singh (2015) aimed to investigate the impact of nutritional labeling on consumer buying behavior in Delhi and the National Capital Region (NCR) of India. The study was conducted through a survey of 400 consumers and analyzed using descriptive statistics, chi-square tests, and logistic regression. The study involved a survey of 400 consumers, consisting of both men and women, aged between 18 to 50 years. The survey was conducted in six major retail outlets in Delhi and NCR, and data was collected through a self-administered questionnaire. The study found that a majority of the consumers surveyed (68.5%) reported that they read nutritional labels while purchasing food products. Additionally, the study found that consumers who read nutritional labels were significantly more likely to make healthier food choices than those who did not read labels. Furthermore, the study found that the most important information on nutritional labels for consumers was the amount of calories, followed by fat content, sugar content, and salt content. The study also found that consumers who were more educated and had higher income levels were more likely to read nutritional labels than those who were less educated and had lower income levels.

3) **Kaur, A., Randhawa, G., Sharma, M., & Sharma, M. (2018)-** Effect of nutrition labeling on consumer purchase behavior in India. Journal of Food Products Marketing The study suggests that nutritional labeling can have a significant impact on consumer buying behavior, particularly in terms of promoting healthier food choices. The study also highlights the importance of providing clear and easy-to-understand nutritional information on food labels, and the need to target educational campaigns towards consumers who are less likely to read labels, such as those with lower education and income levels. The study by Kaur et al. (2018) investigated the effect of nutrition labeling on consumer purchase behavior in India. The study was conducted through a survey of 300 consumers

and analyzed using descriptive statistics and logistic regression. The study involved a survey of 300 consumers, consisting of both men and women, aged between 20 to 50 years. The survey was conducted in three major cities in India, and data was collected through a self-administered questionnaire. The study found that a majority of the consumers surveyed (66.7%) reported that they read nutritional labels while purchasing food products. Additionally, the study found that consumers who read nutritional labels were significantly more likely to make healthier food choices than those who did not read labels. Furthermore, the study found that the most important information on nutritional labels for consumers was the number of calories, followed by fat content, sugar content, and salt content. The study also found that consumers who were more educated and had higher income levels were more likely to read nutritional labels than those who were less educated and had lower income levels. The study suggests that nutrition labeling can have a significant impact on consumer purchase behavior in India, particularly in terms of promoting healthier food choices. The study also highlights the importance of providing clear and easy-to-understand nutritional information on food labels, and the need to target educational campaigns towards consumers who are less likely to read labels, such as those with lower education and income levels. After going through all these research papers, we found the following gaps and this study aims to fill those gaps-

Research Gap

- The impact of nutrition labels on consumer purchase decision across various age groups.
- The effectiveness of different types of nutrition label formats.
- The impact of nutrition labels on the consumption behavior of children and adolescents.
- The impact of transparency in nutrition labels on consumer purchase decision.

This paper aims-

Research Objective

- To examine the role of nutrition labels in consumer purchase decisions and how they are used by consumers when making food choices.
- To identify customer awareness towards nutrition labels affecting their purchase decision
- To determine how transparency of nutrition labels plays an important role in consumer purchase.
- To evaluate the effectiveness of different types of nutrition labels and customer lifestyle choices in the purchase decisions
- To contribute to the existing literature on nutrition labelling and consumer behavior by providing a more in-depth understanding of the impact of nutrition labels on consumer purchase decisions.

Research Questions

- What are the factors that influence consumers' understanding and use of nutrition labels, including demographic characteristics, prior knowledge, and information sources?
- Does the type of nutrition label (e.g., traffic light, % Daily Value) affect consumers' purchase decisions?
- How often do consumers use nutrition labels when making food purchases?
- How does the availability of alternative information sources (e.g., online reviews, recommendations from friends) affect the use of nutrition labels and purchase decisions?

RESEARCH METHODOLOGY

- Research Design: The study will use a quantitative & exploratory research design, specifically a survey method, to collect data on the impact of nutrition labels on consumer purchase decisions.
- Sampling Technique: The study will use a non-Probability sampling- convenience sampling technique, & Snowball sampling technique.
- Sample Size: The sample size is of 121 participants.

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● Data Collection: Data will be collected through a self-administered questionnaire. The questionnaire will include questions on the frequency of use of nutrition labels, the impact of nutrition labels on food purchasing decisions, understanding of nutrition labels, and barriers to using nutrition labels.

● Data Analysis: The data collected will be analyzed using Smart PLS descriptive statistics using a technique named as PLS-SEM. Regression will be used to examine the relationship between the use of nutrition labels and food purchasing decisions.

Research Model

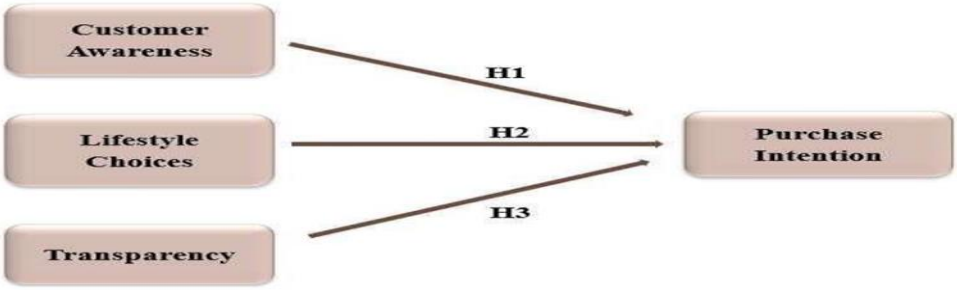

Fig 1.1 – Research Model

Hypothesis Development

- H1- Impact of customer awareness of nutrition labels on purchase intention
- H2- Impact of lifestyle choices on purchase intention
- H3-Impact of transparency of nutrition labels on purchase intention

DATA COLLECTION & ANALYSIS

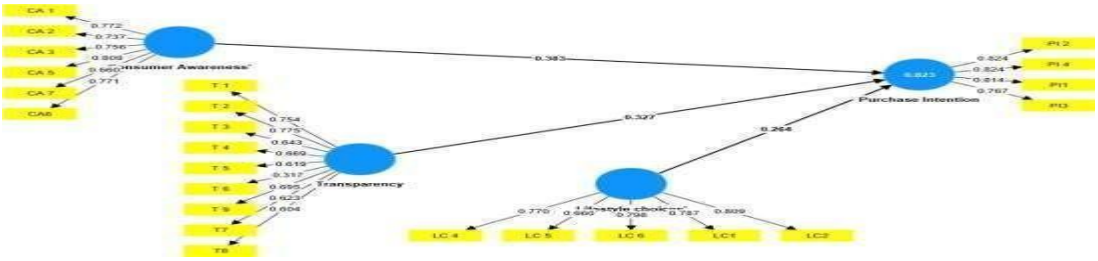

Fig 1.2 Smart PLS Analysis

- H1- Impact of customer awareness of nutrition labels on purchase intention
- H2- Impact of lifestyle choices on purchase intention
- H3-Impact of transparency of nutrition labels on purchase intention

Design a conclusion as all three hypothesis affect consumer purchase intention

Construct reliability and validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Consumer Awareness'	0.846	0.851	0.886	0.566
Lifestyle choices'	0.824	0.832	0.876	0.588
Purchase Intention	0.822	0.825	0.882	0.652
Transparency	0.815	0.837	0.861	0.417

Fig 1.3 – Construct reliability & Validity

Industrial Engineering Journal
ISSN: 0970-2555
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Discriminant validity

	Consumer Awareness'	Lifestyle choices'	Purchase Intention	Transparency
Consumer Awareness'				
Lifestyle choices'	0.944			
Purchase Intention	1.021	0.985		
Transparency	0.970	0.939	1.009	

Fig 1.4 – Discriminant Validity

Model Fit summary

	Saturated model	Estimated model
SRMR	0.094	0.094
d_ULS	2.674	2.674
d_G	1.161	1.161
Chi-square	683.953	683.953
NFI	0.641	0.641

Fig 1.5 – Model Fit Summary

Variance Inflation Factor

	VIF
CA 1	1.998
CA 2	1.778
CA 3	1.755
CA 5	2.272
CA 7	1.509
CA6	1.819
LC 4	1.614
LC 5	1.426
LC 6	1.746
LC1	2.227
LC2	2.235
PI 2	1.921
PI 4	1.802
PI1	1.731
PI3	1.624
T 1	2.019
T 2	1.980
T 3	1.991
T 4	1.578
T 5	1.634
T 6	1.495
T 9	1.902
T7	1.486
T8	1.532

Fig 1.6 – Variance Inflation Factor

Hypothesis	T statistics (|O/STDEV|)	P values	
Consumer Awareness-> Purchase Intention	4.195	0.0250	Supported
Transparency -> Purchase Intention	5.03	0.0010	Supported
Lifestyle choices -> Purchase Intention	4.55	0.0000	Supported

R square

	R-square	R-square adjusted
Purchase Intention	0.823	0.818

Fig 1.7 – Hypothesis & R square

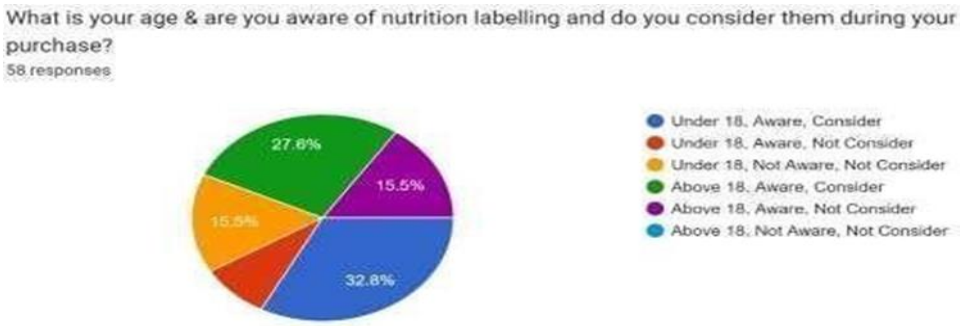

Fig 2.A-Age & Nutrition

Interpretation

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We can conclude that nutrition labels play a significant role in children's purchase decisions by looking at this pie chart, which shows that people under the age of 18 are the most likely to be aware of nutrition labelling and take it into consideration when making purchases (32.8%). However, 15.5% of people are unaware of nutrition labels and do not include them when making purchases.

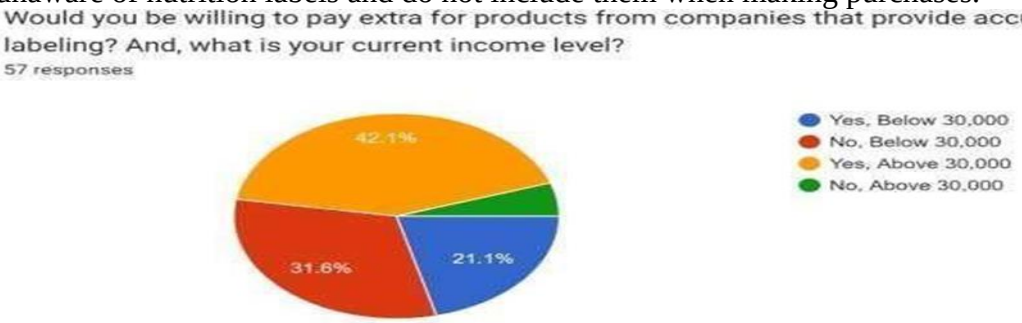

Fig 2.B-Income & Nutrition

Interpretation

As we can see from the pie chart, people with salaries above 30,000 (42.1%) are willing to pay more for an accurate nutrition labelling, whereas those with incomes below 30,000 (31.6%) do not want to pay extra for the accurate nutrition labelling. This clearly demonstrates the importance of income level in viewing nutrition labels and taking it into consideration when making purchase decisions.

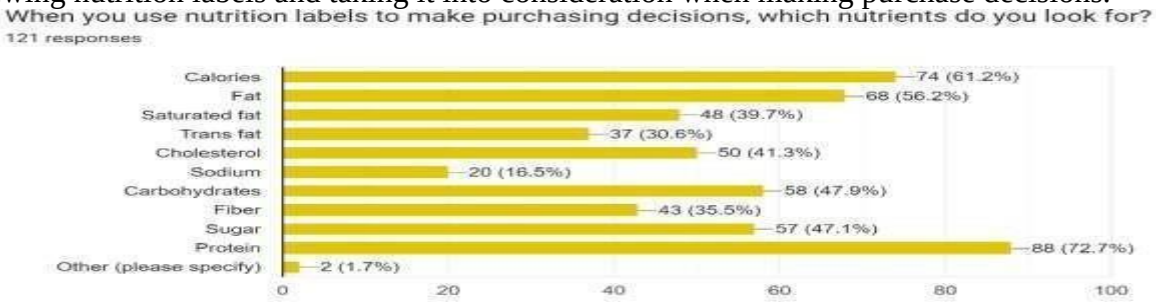

Fig 2.C-Type of nutritional preferences

Interpretation

This pie chart clearly demonstrates that the most widely known nutrients, such as protein (72.7%), fat (56.2%), and calories (61.2%), are crucial for understanding and viewing the nutrition label while other nutrients and information, such as sodium (16.5%) and trans fats (30.6%), are ignored. As a result, the basic nutrition label and information are crucial for viewing the nutrition label and taking it into consideration when making a purchase decision.

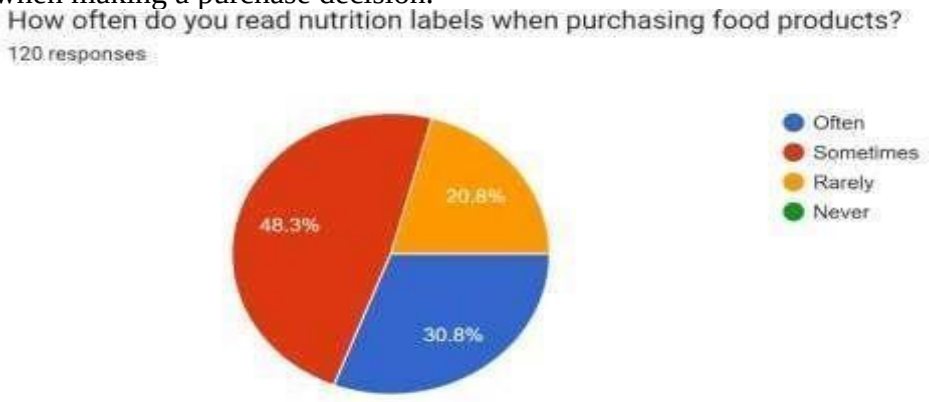

Fig 2.D-Frequency of reading labels

Interpretation

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This pie chart illustrates the level of consideration that consumers give to nutrition labels when making purchase decisions. While 30.8% of consumers frequently consider nutrition labels when buying food, 48.3% occasionally do so, and 20.8% rarely do so The pie chart clearly demonstrates that a very small percentage of people consider the nutrition label when making food purchases, which may be due to a lack of nutrition label knowledge and awareness.

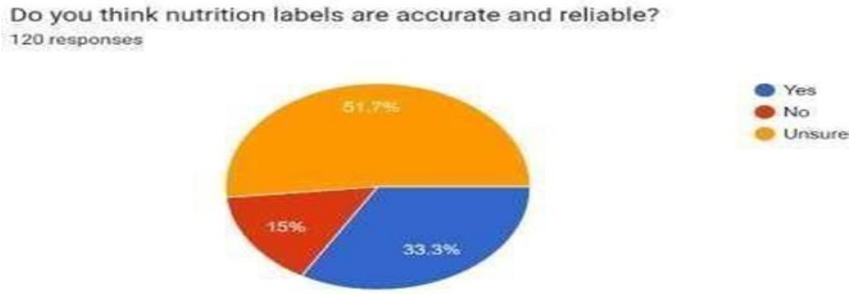

Fig 2.E-Nutrition labels accuracy & reliability

Interpretation

This pie chart clearly illustrates how many people believe in the authenticity of nutrition labels and whether they believe them to be accurate or not, as it shows that 15% of people do not believe in the information and that 51.7% of people are unsure about whether the information on nutrition labels is accurate or not. This is because businesses lack transparency and inflate and manipulate numbers to increase sales, and there is less regulation in the body that regulates nutrition labels.

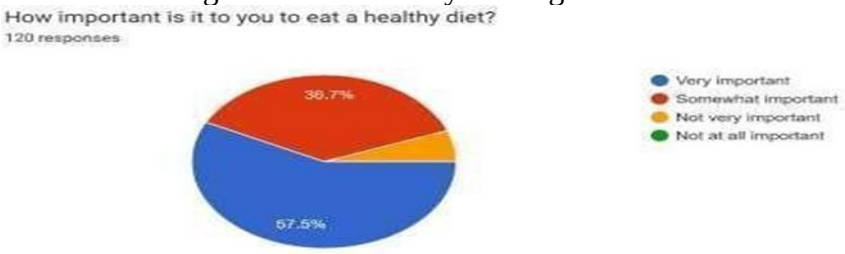

Fig 2.F- Importance of healthy eating

Interpretation

This pie chart demonstrates how leading a healthy lifestyle facilitates reading nutrition labels. According to the data, 57.5% of people consider eating a healthy diet to be a crucial aspect of life and they invariably read the nutrition label before making a purchase decision because they want to know what they should be consuming to maintain a healthy lifestyle.

FINDINGS

Assumptions for the model are:

- **Variance Inflation Factor (VIF) –**to check multicollinearity between variables Cutoff Value is 4 & our model shows all of them are **below 4**, **(average 1.8)**

Hence no multicollinearity exists among independent variables

- **Cronbach's alpha**-determinant for reliability which tells us internal consistency

Cut off value is 0.7, any value greater than 0.7 is good. In our model value is **0.82** so the *model is significant*

- **Average Variance Extracted (AVE)**- used to measure variance & captures the relationship of amount of variance in terms of measurement error

Cut off range- 0.5 to 1, all the values are greater than **0.5**. Hence the *variance is evenly spread.*

- **Model Fit-**

i) Standardize Root Mean Residual (SRMR) : average discrepancies between observed and expected predictions.

Cutoff<0.1 , model depicts **0.09** thus *the model fit is good.*

ii) Normed Fit Index(NFI): It is a measure of goodness of statistical model Cutoff>0.5, model shows **0.64**, thus a *good fit.*

- **Hypothesis** is supported by model with R square value of **0.82** & p value is less than **0.05**, p value also known as confidence values are **0.025** (consumer awareness), **0.001** (transparency), **0** (lifestyle choices)

CONCLUSION

Based on the results obtained from the Smart PLS software, it is evident that all three hypotheses have a significant impact on consumer purchase intention. The analysis showed that there is no multicollinearity among independent variables, indicating that each variable is contributing to the model independently. The Cronbach's alpha value of 0.82 indicates good internal consistency and reliability of the model. The AVE values greater than 0.5 suggest that the variance is evenly spread.

The model fit measures, including the SRMR and NFI, show that the model is a good fit. The R-squared value of 0.82 indicates that the model explains 82% of the variance in consumer purchase intention. The p-values of all three hypotheses are less than 0.05, indicating that they are statistically significant. The p-values for consumer awareness, transparency, and lifestyle choices are 0.025, 0.001, and 0, respectively.

Therefore, the results from this study suggest that all three hypotheses significantly affect consumer purchase intention. Consumer awareness of nutrition labels, lifestyle choices, and transparency of nutrition labels all play important roles in shaping consumer behavior and decision-making. These findings have important implications for policymakers, food manufacturers, and retailers, as they suggest the need for more comprehensive and transparent nutrition labeling practices and consumer education initiatives to promote healthier food choices and improve public health outcomes.

This study investigated the impact of customer awareness of nutrition labels, lifestyle choices, and transparency of nutrition labels on consumer purchase intention. The results obtained from Smart PLS software showed that all three hypotheses significantly affect consumer purchase intention, with no multicollinearity among independent variables and good internal consistency and reliability of the model. These findings suggest the need for comprehensive and transparent nutrition labeling practices and consumer education initiatives to promote healthier food choices and improve public health outcomes. Therefore, policymakers, food manufacturers, and retailers should take note of these findings and implement measures to provide clear and accessible information to consumers, address personal factors that influence consumer behavior, and ensure honest and accurate product labeling to build consumer trust and loyalty. In summary, this study highlights the importance of a comprehensive approach to nutrition labeling and consumer education in promoting healthier food choices and improving public health outcomes.

LIMITATION

- Consumer Understanding: Not all consumers may understand or interpret the information presented on nutrition labels correctly. For example, some may not understand the differences between different types of fats or the importance of recommended daily values.
- Labelling Accuracy: Inaccurate or incomplete information on nutrition labels can mislead consumers and impact their purchasing decisions. This can occur due to errors in labelling or intentional misrepresentation by manufacturers.
- Marketing and Branding: The impact of nutrition labels on consumer purchasing decisions can also be influenced by marketing and branding tactics used by manufacturers, which can sometimes override the importance of nutritional information.

MANAGERIAL IMPLICATIONS

- Increase transparency of nutrition labels: Clear, concise language and comprehensive information on ingredients and nutrients should be used to make nutrition labels easy to understand and readable.
- Educate consumers on the importance of nutrition labeling: Food companies should invest in advertising campaigns and educational resources to inform consumers about the significance of reading nutrition labels.
- Cater to specific consumer lifestyles: Food companies should provide options that meet the varying lifestyles and dietary requirements of consumers, such as gluten-free or vegan options.
- Use nutrition labeling as a marketing tool: Comprehensive and transparent nutrition labels can be used to differentiate products from competitors and position companies as leaders in the health and wellness space.
- Continuously improve nutrition labeling: Nutrition labeling should be an evolving field, with companies working to improve labels based on emerging research and consumer needs.
- Collaborate with health professionals to provide accurate and consistent nutrition information on labels, increasing consumer trust and positively impacting purchase decisions, while ensuring consistency in labeling.

FUTURE SCOPE

1. Evolving Nutrition Label Design: There may be continued efforts to improve the design and format of nutrition labels to make them more user-friendly and understandable for consumers. For example, there may be more emphasis on highlighting key nutritional information, simplifying language, and using graphics or symbols to convey information.
2. Increasing Awareness: With growing public concern about health and wellness, there may be an increased awareness among consumers about the importance of reading nutrition labels and making informed food choices.
3. Personalization: As technology advances, there may be opportunities to create personalized nutrition labels that are tailored to individual consumers based on their dietary needs and preferences.
4. Regulatory Changes: Governments and industry bodies may continue to implement regulatory changes related to nutrition labeling, which could have significant impacts on consumer behavior and purchasing decisions.

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