

Food Product Ingredient Information and Consumers Believability of Product Health Claims.

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ABSTRACT

Consumers' believability of product health claims on food packs is essential for healthy purchase decision and food choices. This study examined food product ingredient information and consumers believe of product health claims. The specific objectives are; to find out the number of consumers who read the health claims contained in the ingredient information on food packs, to ascertain who among the consumers believe that the health claims on these product packs are true, to determine how many among the consumers buy food products because of the belief that the product ingredient composition makes for good health. This study was designed as a survey. Using an online sample size calculator, a sample of 348 civil servants was drawn from 21 Ministries in Anambra State. The study was anchored on the Health Belief Model (HBM). Findings from the survey indicate that a greater number of Civil Servants in Anambra state read healthclaims contained in the ingredient information on food packs. It was also discovered that majority of theCivil Servants in Anambra State believed to a large extent that the ingredient information on food packs are true and that this has in the long run influenced their purchase decisions, thereby making them buy products with such health claims. The study concluded that consumers believe health claims on product packs andthis influences their purchase decisions. The study recommended that there is need to make product ingredient information on food pack more legible as it is one of the major challenges to reading the product ingredient information. Also, food manufacturers and brand designers should include all products' health claims for consumers' readership and digestion.

Keywords: product ingredient information, believability, health Claims

INTRODUCTION

Consumers' product is rife with information from the sublime to the ridiculous. Ingredient information on product packs might influence hearts and mind or even shape people's opinion concerning such product. Following a balanced nutritional diet is however, considered one of the most important aspects to prevent cardiovascular diseases, cancer, diabetes and obesity, which represent a major cause of death, and will account for 75% of deaths in the world by 2020 (WHO 20015).

The knowledge on product ingredient information can affect people's eating habit. As long as food products display ingredients, expiration date and health information, consumers will always rely on them when they assess the food quality attributes. (Dacinia, Iris & Ruxandra, 2019). Product ingredient information invariably, is a good tool for keeping consumers informed about their food and diet composition. This means that the consumers' ability to read, interpret, belief, make healthier choices through correct application of the product ingredient information is crucial because consumers must comprehend the messages about these claims for the information to be helpful. (Adesina, Ajayi, Amoo, Adeyeye, Ajayi, Olawande, Olawole, & Udume, 2022). Consequently, (Jáuregui, Vargas, Nieto, Contreras, Alejandro, Tolentino, Hall, & Barquera, 2020) pointed out that the benefits of these claims are only realized when the

consumer comprehends and applies the product ingredient information in every areas of their eating lifestyles. Hence, the researchers intend to engage a survey study on the consumer believability of product ingredient information health claims.

BACKGROUND OF STUDY

Before now, Product ingredient information, have always been made known through advertisements, public relations, and digital marketing. But today, nutritional labels have helped to communicate the ingredient information of products to customers. (Adesin, Ayayi, Amoo, et al., 2022). This ingredient information is usually written by manufacturers who in a bid to sell their products tell consumers what they stand to gain, by using such products. To help consumers in making healthier food choices, most food packs contain product ingredient information and health claims. However, in the United States, the Ingredient Labeling and Education Act of 1990 was actually what led to the introduction of the product ingredient panel on food packs, which show the ingredient value of the food in a distinctive and easy to read manner.

Health claims according to (Food Safety and Standards Regulations, 2018) are any representation that states, suggests, or implies that a relationship exists between a food or a constituent of that food and health. An example could be: “Diets low in saturated fat and ‘cholesterol may reduce the risk of heart disease’”. The aim of these claims as explained by (Azzurra and Angela, 2019) may influence consumer preference and facilitate well-informed food choices. Hung and Verbeke, (2019) points out that health claims are becoming wide spread and if applied correctly, have the potential to enhance consumers’ nutritional knowledge and healthy eating. (p.99)

According to the 2019 guide on pre-packaged food labelling in Nigeria, as stipulated by NAFDAC, it is compulsory for manufacturers to provide truthful and not misleading ingredient information on food packs. Studies have shown that in European countries, it is not compulsory to provide this ingredient information on food packs, unless the packs contain a claim about the ingredient value, like “Sugar free”. In practice, however, most packs do contain this kind of information. Many products have a list of ingredient and related information, on the information panel that is usually on the side or rear of the package. (*E.g. Barley-malt extract, full cream milk powder, sugar, glucose syrup, vegetable oil, whey powder, cocoa powder, sodium, magnesium, phosphorus, iron etc*). Oostenbach, Slits, Robinson and Sacks (2019) however, stated that There is some evidence that, in the presence of a nutrition or health claim on the front of food product packs, consumers are generally less inclined to take heed of other product ingredient information (e.g., nutrition panels or front-of-pack labels), and are more inclined to only use the claim. Furthermore, Chandon (2020) also explained that despite the fact that product ingredient health claims can be useful tools to informed food purchasing, previous reviews have also shown that they can have a ‘health halo’ effect, therefore making food products carrying claims seem healthier than they are. In addition, there is evidence that product ingredient health claims can influence consumers’ perceptions, potentially leading to overconsumption and lowering perceived energy intake (Murphy, Benson, MacCloat, Elliot, Mooney, Elliott, Dean, & Lavelle, 2021). This as explained by (Lavelle, Bucher, Dean, Brown, Rollo, & Collins, 2020), is because

it has proven to be a source of information that most consumers like and trust. However, some consumers can’t always take time to read them because of the tiny and illegible nature. While some low literacy consumers’ too do not understand them.

Statement of Research Problem

It is apparently common placed to find product ingredients information on food product packs. Communication is purpose oriented. Therefore, ingredient information on food packs is not aimless; they are directed at some audience. As a result of this, the Nigerian Agency for Food and Drug Administration and control NAFDAC (2019) stipulated that companies that make claims on food products must prove that

their claims are truthful and that their advertising does not mislead consumers. However, regulation on Health claims made on foods, states that they can only be used if there is the expectation that the average consumer will understand the health claims inscribed on these food product packs. This regulation as assert by Danilola, Omotesho, & Animashaun, (2019) applies to health claims made in commercial communications, labeling, presentation or advertising, regarding food products delivered to the final consumer. In today's grocery stores, consumers encounter a great variety of food products and their packages are full of information (Johann, Meike, & Ulrich, 2019). Invariably, the use of health claims according to (Hieke, Kuljanic, Pravst, Miklavec, Kaur, Brown, Egan, Pfeifer, Gracia, & Rayner, 2016) links the food product to healthiness by stating positive nutritional characteristics or naming an explicit health benefit of the nutrients it contains. Therefore, around one third of the products in grocery stores are labeled with health claims. Despite the availability of product ingredient information on food packs, studies have shown that a good number of customers make purchases without even considering the available information while the ones that attempt to read the product ingredient information and health claims, run into an intellectual roadblock because they do not grasp what is said.

Against this backdrop, the problem now is, how many of these consumers read these health claims contained in the ingredient information on food packs? How many understands it? How many really believe that the health claims on these product packs are true and healthy for them and finally, how many buy food products because of they believe the health claims?

Objectives of Study

In order to examine consumers understanding and evaluation of product health claims, the researcher's specific objectives are:

1. To find out the number of consumers who read the health claims contained in the ingredient information on food packs.
2. To ascertain whether the consumers believe the health claims on food product packs
3. To determine whether the consumers buy food products because they believe the health claims

Research Questions

Based on the above objectives, the paper sets out with the following research questions:

1. What number of respondents read the health claims contained in the ingredient information on food packs?
2. Do the respondents believe the health claims on the products packs?
3. Do consumers buy food products because they believe the health claims?

LITERATURE REVIEW

Product Ingredient Information

Unhealthy diets are underpinned by the over-consumption of packaged products. Hence product ingredient information has become increasingly important, particularly as products move from the status of basic commodities to highly processed. (Gaines, Shahid, Huang, Davies, Taylor, Wu, & Neal, 2021). However, Product ingredient information on groceries items as posit by (Sadler, Grassby, Hart, Raats, Sokolovic, & Timotijevic, 2021) allows consumers to consume a range of healthy foods, maintain optimum weight and choose a diet with low fat and cholesterol. It also helps consumers select a diet with abundance of vegetables, fruits, and grain products, and restrain from sugars, salt and sodium that are considered unhealthy. Consumers can use health claims, which appear on food packages, to recognize foods with

positive ingredient qualities related to risk factors and wellness. These are the claims about the relationship between ingredients or food and the risk of an illness or health-related condition (Ahuja, Li, Bahadur, Nguyen, Haile, Pehrsson, & IngID 2021).

Despite the product Ingredient Facts, a study by (Wansink, 2003, as cited in Azzurra, & Angela, 2019), found out that consumers still have problems to comprehend ingredient information. In addition, (Moorman, 1990, as cited in Oostenbach, Slits, Robinson & Sacks, 2019) pointed out that consumers do not even utilize ingredient information when buying food.

Studies have shown that consumers' major source of information on food claims and healthiness are ingredient information labels, yet, most consumers do not use such ingredient labels due to lack of time, and difficulties in understanding the information. However, this has been shown to vary by demographic factors. People with a higher level of education tend to have a better understanding of product ingredient labels and are more likely to use the information. Furthermore, these groups of people believe health claims on food packs and are convinced to a large extent that they are in safe hands and their health also safeguarded. (Drewnowski, Moskowitz, & Reisner, 2012). Roe, Levy, and Derby (2018) assert that health claims have a positive effect on consumers' perception of products, meaning that product featuring a health claim are perceived as healthier.

Many product packages have claims such as "Low fat", "high fiber", "reduced calories", "Cholesterol free", "fortified with vitamin A" etc. the question now is, do consumers believe the product ingredient information on food packs as safe?

Similarly the people who have much time to spend on grocery shopping are found to be more label users (Azzurra, & Angela 2019). It can also be seen that consumers who are more anxious about their health and nutrition give more time to read the printed product ingredient labels likewise consumers who are on a special diet or organic buyers or even those that have any kind of disease prefer to search for on-pack printed product ingredient information (Drichoustis et al, 2006, as cited in Azzurra, & Angela, 2019). Product ingredients information also, reduces the usage of products which contain harmful ingredients and increases the consumption of products containing healthy ingredients. (Peschel, Orquin, & Loose 2019).

Purpose of product ingredients information, is to educate consumers to shift to healthier food choices this is why printed product ingredients information or facts, represents a helpful tool in making consumers make informed decisions about their diet and lifestyle. (Nyamragchaa, Bridget, Anne-Therese, & Heathe, 2020).

It is a well-known fact that if the product does not contain ingredient information the consumer may be unaware of its ingredient contents. Consumers usually form their own belief regarding the ingredient value of the product on the basis of information they get from different sources. However this perception usually leads to either over or under value of the ingredients of the product.

Nigeria's emerging economy is witnessing exceptional boom in the organized retail growth. Her consumers are in the process of changing their consumption/buying behavior especially with respect to food items. (Adesin, et al., 2022). Consumption of processed and packaged food items has grown tremendously in the recent past therefore necessitating an increase in the demand for healthy food products by consumers. (Elizabeth, Machado, Zinöcker, Baker, & Lawrence, 2020). Therefore, with this kind of change in lifestyle and consumption pattern, the quality of food and its safety standards are becoming essential from public policy perspective.

Consumers' Knowledge about Product Ingredients

Consumer awareness refers to knowledge of the consumer about a particular product. This knowledge

according to (Van Trijp & Van der Lans, 2007, as cited in Strijos et al., 2016) allows the consumer make better, well- informed choices based upon information they find trustworthy. Furthermore, consumer behaviour is not only influenced by information the consumer has about a certain food product, but also by the health image of food products. For instance, a health claim on food product with a positive health image is evaluated as more positive by consumers (Coyle, Shahid, Dunford, Mhurchu, Mckee, Santos, Popkin, Trieu, Marklund, & Taylor, 2020).

Due to globalization, consumers are becoming more aware about product ingredient information because there is an increase in the food information available to them through sources such as food product labeling, electronic and print media. However, Studies has shown that advertising involvement is another marketing concept that helps to identify consumer interest in processing product ingredient information (Coyle, et al., 2020).

When people became more aware of nutrition and health outcomes, they became more concerned on the food products they purchase. This then is an opportunity for industries to use health and nutrition claims in packaging to attract more consumers to purchase their products (Muna, Rafeah, & Ali, 2020).

NAFDAC on the other hand plays an essential role by imposing restrictions on the consumption of some products thereby regulating product labeling especially on food packs. This has a positive effect on consumer's behavior as they can get to know the amount of ingredients content present in a food. With the guidance of dietary health experts, consumers can utilize the ingredient panel to make better choices and to maintain a well-balanced diet.

According to NAFDAC (2019), consumers can enjoy a variety of foods; have a hale and hearty diet with low cholesterol/fats. Take a diet with different fruits or grains and can moderate the usage of salt and/or sodium if product ingredient information is practiced.

Health Claims

Health claims on food packages are just one vehicle for informing consumers about diets and health relationships. The use of health claims on food products aims, among others, to inform and educate consumers as well as affecting consumers' awareness and behaviour. (Strijbos, Schluck, Bisschop, Buli, de Jong, van Leeuwen, von Tottleben, & van Breda, 2016).

As regards public health, it is important that consumers with different backgrounds read and understand information about nutrition and health on food packages in the ways intended. Health claims therefore are statements about the beneficial effect on the body of a food, or its ingredients. Health claims generally can alert consumers to a product's health potential by stating that certain foods may reduce the risk of a certain disease (Kaur, Scarborough, & Rayner, 2017). Although a claim can encourage people to eat a healthy diet it is also a marketing tool for the producers to sell their product (Cerri, Testa, & Rizzi, 2018).The conflict of interest between providing information versus advertisement, could be confusing for consumers. Similarly, health Claims are not allowed to misinform consumers, therefore there are rules for food labeling. But each country has its own rules and regulations guiding it. Product ingredients and health claims are always seen on food product parks, but the issue of illegibility of text and lack of understanding gives room for worry. Many consumers do not even read the product ingredient probably because the claim information on the packs are too tiny or that they don't consider it as important as the highly educated consumers' who considers their health status before making food choices.

Theoretical Framework

The Health Belief Model (HBM) is a psychological model that attempts to explain and predict health

behaviors. This is done by focusing on the attitudes and beliefs of individuals. The HBM was first developed in the 1950s by social psychologists Hochbaum, Rosenstock and Kegels working in the U.S. Public Health Services. The model was developed in response to the failure of a free tuberculosis (TB) health screening program. Since then, the HBM has been adapted to explore a variety of long- and short-term health behaviors, including sexual risk behaviors and the transmission of HIV/AIDS. An added concept, cues to action, would activate that readiness and stimulate overt behavior. A recent addition to the HBM is the concept of self-efficacy, or one's confidence in the ability to successfully perform an action. This concept was added by Rosenstock and others in 1988 to help the HBM better fit the challenges of changing habitual unhealthy behaviors, such as being sedentary, smoking, or overeating

The HBM is based on the understanding that a person will take a health-related action, if that person feels that a negative health condition can be avoided, have a positive expectation that by taking a recommended action, he/she will avoid a negative health condition and believes that he/she can successfully take a recommended health action with confidence.

The HBM was spelled out in terms of four constructs representing the perceived threat and net benefits: perceived susceptibility, perceived severity, perceived benefits, and perceived barriers. These concepts were proposed as accounting for people's "readiness to act."

In accordance with the principles of HBM, the study assessed consumers' belief in relation with susceptibility, and benefits of the health claims inherent in food product information on one hand and self-efficacy, which is the confidence in the ability of the consumer to successfully perform an action (i.e. buying of food product with good ingredient compositions) on the other hand. Underpinning Perceived susceptibility to the study, it means consumers believe that they are likely to develop various diseases if they do not make healthier food choices. And that their consumption of unhealthy food products will definitely expose them to terminal diseases. However, consumers can use health claims, which appear on the front of food packages, to recognize foods with positive ingredient qualities related to risk factors and wellness. On perceived benefits, the consumers believe that reading through product ingredient information before making purchases would protect them from making wrong food choices and then save them from diseases of any sort. Then finally self-efficacy helps the HBM better fit the challenges of changing habitual unhealthy behaviors, such as being sedentary, smoking, or overeating. It is one's belief in oneself that he is capable of executing the recommended behaviour that will produce the desired outcomes e.g. consumers confident in using product ingredient information correctly in all circumstances.

METHODOLOGY

The research design adopted for this study was survey. The population of this study covers only the Anambra State Senior Civil Servants. The target Civil Servants in Anambra State were between grade levels 07 and above. Anambra State Civil Service has staff strength of 3,598 from grade level 7 to 16 which forms the population of this study. **(Data from Anambra State Civil Service Commission Annual Report 2016)**

A sample size of 348 was statistically determined for this study using online calculator for determining sample size.

This calculator computes the minimum number of necessary samples to meet the desired statistical constraints.

This means 348 or more measurements/surveys are needed to have a confidence level of 95% that the real value is within $\pm 5\%$ of the measured/surveyed value.

The multi-stage sampling technique was used. At the first stage, 21 Ministries in Anambra state were

divided into 3 groups or clusters according to their functions as follows; Administrative sector, Economic sector and social sector .To ensure that every civil servant within the ministries in the clusters had equal chance of being sampled, a simple random sampling technique adopted, using a “**Statistical Random Numbers Table**”. Randomly, each group in the population of study was assigned a number. From the numbers in the random numbers table, two ministries from each sector were randomly chosen as shown in the table below. From each of the Ministries, a particular number of respondents were chosen based on the proportion represented by each ministry in the sample (348) calculated as follows:

$$NR = n \times 348$$

N

Where NR = number of units (to be selected from a cluster)

n = total number of units in cluster

Group	Ministry	Population	Sample Size
Administrative Sector	Office of head of service	168	47
	Ministry of Diaspora affairs, culture and Tourism.	134	38
Economic Sector	Ministry of Agriculture.	321	90
	Ministry of Lands.	215	60
Social Sector	Ministry of Health	133	37
	Ministry o Education	270	76
Total	6 Ministries	1241	348

N= Population

In distributing the questionnaire, the researchers used a Non- Probability Convenience Sampling, whereby copies of the questionnaires were given only to respondents who were available at the time and showed willingness to be sampled, when the researcher visited each of the chosen ministries. The Questionnaire which contained 16 questions (open-ended and closed-ended) was used as the instrument for data collection. Data gathered were presented and analyzed using SPSS 19 data analysis software.

The Pre-test/ Validity

The pre-test and validation of the research instrument involved 25 respondents, to test the validity of the field, to assess if the items in the instrument are best suited to address the measurable variables and to use the information generated to evaluate the preliminary research questions. The results from the pre-test showed that the instrument was understood by the respondents as virtually all the respondents could fill out the items. All the ambiguity was cleared before data collection.

Data Presentation and Analysis

Findings from this study were drawn from data obtained from 348 respondents from the 21 Ministries in Anambra state.

Demographic Data

In terms of age of the respondents, 7 respondents representing 2.0% of the entire 348 respondents were between the ages of 30-34 while 296 respondents representing 85% were between 35-39. Also, 34 respondents or 9.8% were between 40-44, while 11 respondents representing 3.2% of the entire respondents were within the ages of 45 and above. From the data, it can be deduced that the respondents were more of young civil servants. On gender status, 237 respondents representing 68.1% were females while 111 respondents representing 31.9% were males. This shows that the majority of the respondents are female. On marital status, 334 of respondents representing 96.0% were married, while 14 respondents about 4% were single. This shows that majority of the respondents are married. On Grade level of Respondents, out of the 348 respondents surveyed, 222 respondents representing 63.8% were in grade levels 7-9, 86 respondents representing 24.7% of the entire respondents were in grade levels 10-12, while 40 respondents 11.5% were in grade levels 13-16. From the foregoing analysis, a large number of civil servants that are in grade levels 7 to 12 responded to the questionnaire, possibly, because they are readily available and less busy unlike the top management cadre from grade levels 13 and above. On educational level of the respondents, 239 respondents representing 68.7% were degree holders, 102 respondents about 29.3% had master degree while 7 respondents, about 2% had PhD degree.

Research question 1: What number of Civil Servants read the health claims contained in the ingredient information on food packs?

Table 1

Variables	Responses	Frequency	Percentage
Are you aware of product ingredient information on food packs?	Yes	7	2.0%
	No	341	98.0%
Total		348	100%
How often do you read ingredient information on Food products packs?	Sometimes	90	25.9%
	Always	211	60.6%
	Not at all	47	13.5%
Total		348	100%
Do you understand the ingredient information on these food product packs?	Yes	261	75.0%
	Partially	40	11.5%
	Not at all	47	13.5%
Total		348	100%

Responses to table 1 above show that majority of Civil Servants read product ingredient information on food packs (98%), on the frequency of reading, 60.6% said they always such information, 25.9% said they sometimes read and only 13.5% said they never read such information. Also, the majority of the respondents understand the ingredient information on the products 75.0%, 11.5% said they partially understand while 13.5% do not understand

Research question 2: Do the respondents believe the health claims on the products packs?

Table 2:

Variables	Response	Frequency	Percentage
Do you believe that health claims contained on these product packs are true?	To a large extent	111	31.9%
	To some extent	237	68.1%
Total		348	100%
Do you consider these ingredient information misleading?	Yes	121	34.7%
	No	227	65.3%
Total		348	100%

Responses to table 2 above show that majority Civil Servants in Anambra State believed to some extent the ingredient information on food pack are true(68.1%). And they also considered the information as not misleading (65.3 %) This could be as a result of constant reading of the ingredient information over time which correlates with the findings in first table.

Research question 3: Do consumers buy food products because they believe the health claims?

Table 3

Variables	Response	Frequency	Percentage
Do these claims influence your purchase decisions?	Yes	279	80.2%
	No	69	19.8%
Total		348	100%
How often do you buy products based on health information claims?	Often	239	68.7%
	Very often	102	29.3%
	Rarely	7	2.0%
Total		348	100%
Has any product in any way helped to improve your health?	Yes	241	69%
	No	107	31%
Total		348	100%
What are the major constraints encountered in reading the ingredient information on product packs?	Illegible fonts	85	24.5%
	Price of products	40	11.5%
	Issues of interpreting ingredient compositions	223	64.0%
Total		348	100%

Responses to table 3 above show that the majority of Civil Servants in Anambra State buy food products based on the belief that the ingredient compositions makes for good health (80.2%). And they also affirm that they often buy the food products as a result of the ingredient composition (68%), it further showed that the product they bought on health information claims have helped in improving their health conditions (30.7%).

Analysis of Research Questions

The first research question sought to discover the number of respondents who read the health claims contained in the ingredient information on food packs. Data in Table 1 indicate that the majority of show that majority of Civil Servants read product ingredient information on food packs(98%), and on the frequency of reading, 60.6% said they always read such information, 25.9% said they sometimes read and only 13.5% said they never read such information. Therefore, it could be stated, that a greater number of Civil Servants in Anambra state read health claims contained in the ingredient information on food packs.

The second research question sought to find out the number of the respondents who really believe that the health claims on these products packs are true. Data in Table 2 indicate that that majority Civil Servants in Anambra State believed to some extent the ingredient information on food pack are true(68.1%). And they also considered the information as not misleading (65.3 %). Therefore, it could be stated, that Civil Servants in Anambra State believe that the health claims on the food packs are true and not misleading.

The third research question sought to find out the number of civil servants who buy food products because they believe the health claims. Data in Table 3 show that the majority of Civil Servants in Anambra State buy food products based on the belief that the ingredient composition makes for good health (80.2%). And they also affirm that they often buy the food products as a result of the ingredient composition (68%), it further showed that the product they bought on health information claims have helped in improving their health conditions and that their major constraint in reading product ingredient information on food packs is interpreting some of ingredient compositions (64.8%); followed by illegibility fonts used in writing the product ingredient information. Consequently, it may be admitted that **majority of civil servants in Anambra state buy food products because of their belief that the product ingredient information makes for good health.**

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

It was discovered in this study that a greater number of Civil Servants in Anambra state read health claims contained in the ingredient information on food packs, the study also revealed that Civil Servants understand the information claims on the food packs. The implication of the foregoing is that this group are conscious of their health and nutrition because of their educational background and this has made them to always read and understand the health information claims on food packs which is in contrast with the findings of the study by (Wansink, 2003, as cited in Azzurra, & Angela, 2019) that consumers still have problems to comprehend ingredient information.

The study identified that majority Civil Servants in Anambra State believed to some extent the ingredient information on food packs are true. Hence it has influenced their purchase decisions, making them buy products with such health claims on the packs. This is a reflection of the study by Roe, Levy, and Derby (2018) that health claims have a positive effect on consumers' perception of products, meaning that products featuring a health claim are perceived as healthier. Similarly, (Nyamragchaa, Bridget, Anne-Therese, & Heathe, 2020) opine that Purpose of product ingredients information, is to educate consumers to shift to healthier food choices this is why printed product ingredients information or facts, represents a helpful tool in making consumers make informed decisions about their diet and lifestyle. This is against the findings of the study by (Moorman, 1990, as cited in Oostenbach, Slits, Robinson & Sacks 2019) that consumers do not

even utilize ingredient information when buying food. The findings are also in line with the tenets of the health belief model which proposes that people are more likely to engage in health related preventable behaviours if they perceive that they are susceptible to the potential problem. In this study, the consumer could be seen to have perceived susceptibility of potential health problem if they do not make healthier food choices; which can be prevented when they read through the products ingredient information that appear on the food packs before making purchases.

This study concludes that consumers especially Civil Servants who read health claims on product packs are influenced to purchase the products because of their belief and trust on the product ingredient compositions on the product packs, this is aptly captured by Drewnowski, Moskowitz & Reisner (2012) that Consumers belief on health or a nutrient claim on food packs to a large extent convinces them that they in safe safeguarded hands and their health to a large extent, is. However, illegibility and difficulty in interpreting some of the product ingredient information are still the major challenges in reading health claims on some products by consumers.

The study recommends as follows;

1. Since consumers purchase products based on the health claims on the packs, manufacturers and brand designers should include all the health benefits contained in the product for the consumers' readership and digestion.
2. Agencies like NAFDAC, ICPC and SON should enforce that manufacturers should make product ingredient information on product packs to be bolder and more legible for consumers to read without much difficulty.
3. Further studies should be conducted using a larger population to ascertain the believability or otherwise of health claims on product packs, to find out other factors that influence purchase decisions of consumers other than the health claims on the packs.

REFERENCES

1. Adesina, E.; Ajayi, B.; Amoo, E.O.; Adeyeye, B.; Ajayi, M.P.; Olawande, T.; Olawole-Isaac, A.; Udume, M.E.(2022). Consumers' Knowledge and Use of Nutritional Labelling Information in Lagos, Nigeria. *Sustainability* 578. *Academic Editor: Giuseppe Antonio Di Vita.* <https://doi.org/10.3390/su14010578>
2. Ahuja, J.K.C.; Li, Y.; Bahadur, R.; Nguyen, Q.; Haile, E.; Pehrsson, P.R. IngID: (2021). A framework for parsing and systematic reporting of ingredients used in commercially packaged foods. *J. Food Compos. Anal.* 2021, 100, 103920.
3. Azzurra, A.; Angela, M. (2019). Do Consumers Care about Nutrition and Health Claims? Some Evidence from Italy. *Nutrients* 2019, 11, 2735; doi:10.3390/nu11112735, www.mdpi.com/journal/nutrients.
4. Cerri, J.; Testa, F.; Rizzi, F.(2018). The more I care, the less I will listen to you: How information, environmental concern and ethical production influence consumers' attitudes and the purchasing of sustainable products. *J. Clean. Prod.* 2018, 175, 343–353.
5. Chandon P. (2020). How package design and packaged-based marketing claims Lead to overeating. *Appl Econ Perspect Policy.* 35:7–31. <https://doi.org/10.1093/aep/pps028>
6. Coyle, D.H.; Shahid, M.; Dunford, E.K.; Mhurchu, C.N.; Mckee, S.; Santos, M.; Popkin, B.M.; Trieu, K.; Marklund, M.; Taylor, F.(2020). Contribution of major food companies and their products to household dietary sodium purchases in Australia. *Int. J. Behav. Nutr. Phys. Act.* 2020, 17.
7. Dacinia C , Iris. V, Ruxandra M, &Petrescu M. (2019). Consumer Understanding of Food Quality, Healthiness, and Environmental Impact: A Cross-National Perspective, *International Journal of Environmental Research and public health*

8. Danilola, S.T.; Omotesho, O.A.; Animashaun, J. Consumer awareness of the use of food labels in Lagos state, Nigeria. *Int. J. Food Stud.* 2019, 8, 53–64. [CrossRef].
9. Derby, B.M., and Levy, A.S. (2018). Do food labels work? Gauging the effectiveness of food labels pre- and post- NLEA. In P.N. Bloom and G.T. Gundlach (Eds.), *Handbook of marketing and social society* (pp. 372 – 398): Sage, Thousand Oaks, CA.
10. Drewnowski A, Moskowitiz H, & Reiser M.(2012). Testing consumer perception of nutrient content claims using conjoint analysis. *Public Health Nutr* 13, 688–694.
11. Elizabeth, L.; Machado, P.; Zinöcker, M.; Baker, P.; Lawrence, M.(2020) Ultra-Processed Foods and Health Outcomes: A Narrative Review. *Nutrients* 2020, 12, 1955.
12. Food Safety and Standards (Advertising and Claims) Regulations, (2018) F. No. Stds/SP(L&C/A)/Oil Claims/FSSAI-2018, dated 9th October, 2020
13. Gaines, A.; Shahid, M.; Huang, L.; Davies, T.; Taylor, F.; Wu, J.H.; Neal, B. (2021). Deconstructing the Supermarket: Systematic Ingredient Disaggregation and the Association between Ingredient Usage and Product Health Indicators for 24,229 Australian Foods and Beverages. *Nutrients* 2021, 13, 1882. <https://doi.org/10.3390/nu13061882>
14. Hieke, S.; Kuljanic, N.; Pravst, I.; Miklavec, K.; Kaur, A.; Brown, K.A.; Egan, B.M.; Pfeifer, K.; Gracia, A.; Rayner, M.(2016). Prevalence of Nutrition and Health-Related Claims on Pre-Packaged Foods: A Five-Country Study in Europe. *Nutrients* 2016, 8, 137.
15. Hung, Y.; Verbeke, W.(2019) Consumer evaluation, use and health relevance of health claims in the European Union. *Food Qual. Prefer.* 2019, 74, 88–99.
16. Jáuregui, A.; Vargas-Meza, J.; Nieto, C.; Contreras-Manzano, A.; Alejandro, N.Z.; Tolentino-Mayo, L.; Hall, M.G.; Barquera, S.(2020). Impact of front-of-pack nutrition labels on consumer purchasing intentions: A randomized experiment in low- and middle-income Mexican adults. *BMC Public Health* 2020, 20, 463.
17. Johann .S., Meike. J. and Ulrich, .H (2019). Who Buys Products with Nutrition and Health Claims? A Purchase Simulation with Eye Tracking on the Influence of Consumers’ Nutrition Knowledge and Health Motivation. *Nutrients* 2019, 11, 2199; doi:10.3390/nu11092199. www.mdpi.com/journal/nutrients.
18. Kaur, A.; Scarborough, P.; Rayner, M. (2017) A systematic review, and meta-analyses, of the impact of health-related claims on dietary choices. *Int. J. Behav. Nutr. Phys. Act.* 2017, 14, 93.
19. Lavelle, F.; Bucher, T.; Dean, M.; Brown, H.M.; Rollo, M.E.; Collins, C.E.(2019). Diet quality is more strongly related to food skills rather than cooking skills confidence: Results from a national cross-sectional survey. *Nutr. Diet.* 2019, 77, 112–120.
20. Muna, S. ,Rafeah,. T, Ali .T, (2020), The Relationship of Health and Nutrition Claims towards Purchasing Choices among Consumers in Shah Alam, Selangor, *Journal of Nutritional Science and Vitaminology* · January 2020 DOI: 10.3177/jnsv.66.S222.
21. Murphy, B.; Benson, T.; McCloat, A.; Mooney, E.; Elliott, C.; Dean, M.; Lavelle, F.(2021) Changes in Consumers’ Food Practices during the COVID-19 Lockdown, Implications for Diet Quality and the Food System: A Cross-Continental Comparison. *Nutrients* 2021, 13, 20. [https:// dx.doi.org/10.3390/nu13010020](https://dx.doi.org/10.3390/nu13010020).
22. NAFDAC (2019). Re-packaged food (labeling) regulations 2019. Retrieved from http://www.nafdac.gov.ng/index.php?option=com_content&view=article&id=46:nafdac-organisation .
23. Nyamraghaa C, Bridget K, Anne-Therese M and Heather Y.(2020) Prevalence and Credibility of Nutrition and Health Claims: Policy Implications from a Case Study of Mongolian Food Labels, *Int. J. Environ. Res. Public Health* 2020, 17, 7456; doi: 10.3390/ijerph17207456 www.mdpi.com/journal/ijerph.
24. Oostenbach, L. H.; Slits, E.; Robinson, Eand Sacks, R.(2019). Systematic review of the impact of nutrition claims related to fat, sugar and energy content on food choices and energy intake. *BMC Public Health* 19:1296 <https://doi.org/10.1186/s12889-019-7622-3>.
25. Peschel, A.O.; Orquin, J.L.; Loose, S.M. Increasing consumers’ attention capture and food choice through bottom-up effects. *Appetite* 2019, 132, 1–7.

26. Rosenstock, I. (1974). Historical Origins of the Health Belief Model. *Health Education Monographs*. Vol. 2 No. 4.
27. Rosenstock, I., Strecher, V. and Becker, M. (1988). The Health Belief Model and HIV Risk Behaviour Change. In R.J. DiClement and J.I. Peterson (Eds), *Preventing AIDS: Theories and Methods of Behavioural Interventions* (pp. 5 -24). New York: Plenum Press.
28. Sadler, C.R.; Grassby, T.; Hart, K.; Raats, M.; Sokolovi'c, M.; Timotijevic, L.(2021) Processed food classification: Conceptualisation and challenges. *Trends Food Sci. Technol.* 2021, 112, 149–162.
29. Slavica G , Radoslav G , Dor?e P &Jelena G, (2013) The Importance of Consumers' Knowledge About Food Quality, Labeling and Safety in Food Choice; *Journal of Food Research*. Retrieved from <http://dx.doi.org/10.5539>.
30. Strijbos.c., Schluck .M, Bisschop. J. Buli .T, de Jong. I, vanLeeuwen, von Tottleben .M, van Breda .S.G.(2016). Consumer awareness and credibility factors of health claims on innovative meat products in a cross- sectional population study in Netherlands. *ScienceDirect* 2016, 13-22 Food Quality and Prederence, vol 54.<https://doi.org/10.1016/j.foodqual.2016.6.014>.
31. The principal regulations were published in the Gazette of India, Extraordinary, Part III, Section 4 vide notification number F.No. 1-94/FSSAI/SP(Claims and Advertisements).2017 dated the 19th November, 2018 and subsequently amended vide notification no.: 1. F. No. Stds/SP(L&C/A)/Oil Claims/FSSAI-2018, dated 9th October, 2020.
32. US Food Labeling Regulations: Implementing the Nutrition Labeling and Education Act of 1990. 1993. *Federal Register*, Vol. 58 No. 72, pp. 2065–2964.
33. Washi, S. (2012), “Awareness of Food Labeling among Consumers in Groceries in Al-Ain, United Arab Emirates”, *International Journal of Marketing Studies*. Vol. 4 No. 1, pp. 38–47.
34. WHO (World Health Organization) (2015), Retrieved from <http://www.who.int/topics/diet/en?>
35. Wolfson, J.A.; Lahne, J.; Raj, M.; Insolera, N.; Lavelle, F.; Dean, M.(2020). Food agency in the united states: Associations with cooking behavior and dietary intake. *Nutrients* 2020, 12, 877.