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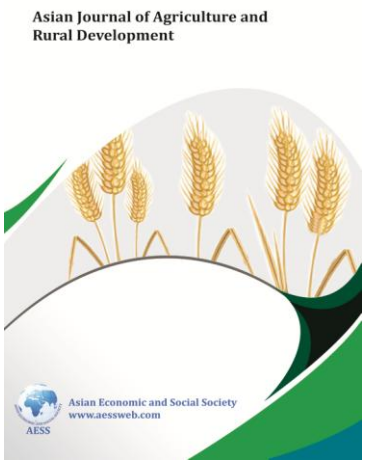

Consumers' Use and Understanding of Food Label Information and Effect on their Purchasing Decision in Ghana; A Case Study of Kumasi Metropolis

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Abstract

This study explored consumers' use and understanding of food label information and the effect on their purchasing decision in the Kumasi Metropolis. It also investigated the association between socio-demographic factors and the use of food label, the understanding of the information read as well as the type of information sought. The study surveyed 250 consumers who were conveniently selected from five different sub-metros in the metropolis. Questionnaires were formulated to sample data and information from consumers on their use and understanding of Food Label Information. Results suggested that the sample was gender sensitive (57.6% male) with a modal aged group between 15-30 years (60.8%) who had never been married (54.0%), with a greater number who had tertiary education (36.4%) and earning low income between GH¢50-499 (61.6%). About 79.6% (n=199) of the respondents, recounted accessing food label information before purchase and they read the information occasionally (29.6%) during initial purchase (37.2%). Majority of the respondent said advertisement (31.6%) and price (31.2%) other than food label (10.0%) were the central stimuli to purchase a canned food product. Highly-educated, male consumers ($\chi^2 = 17.602, df =, p = 0.007,$) were those more likely to use various types of food label information than others. A positive relationship was observed between male, youthful (31-45) consumers and consumer who were never been married and their use and understanding of food label information.

Keywords: Food, Label, Information, Package, Consumers, Kumasi.

Introduction

With the improvement of living standards, consumers have become increasingly concerned about their health and general well-being since natural food is increasingly being replaced with conventional foods. To make a product unique and distinctive, firms spend more money and time on packaging more than advertisement because packaging is mostly the utmost distinguished marketing element (Dickson, 1994). According to Héroux et al. (1988), marketers as well as manufacturers spend considerable time and substantial amount of money on packaging products in a manner that will attract consumer attention and enhance the product consumption. Food label has now become a popular policy tool.

At present, there are many reasons why foods are processed and packaged, some of which include, adding value to a food, improving visual appeal, and convenience. The act has now developed far beyond its initial purpose of

product protection. In Ghana, The Food and Drugs Board (FDB) regulates food product manufacturing, importation, exportation, advertisement and distribution. In pursuance of section 47(b) (ii) of the Food and Drugs Law, 1992 (P.N.D.C.L 305B) guidelines are made to regulate the use of health claims in food labeling and advertisement in Ghana.

Research on food label and consumers have gained much momentum in recent times. A survey by the American Dietetic Association, (1995) found that almost 50% of respondent found nutritional label confusing. In India, it was found out that consumers have an inability to understand food label information because of difficult terminology and small font sizes. Therefore television, friends and magazines are commonly used for assessing the nutritional information, (Manisha, 2008). A study conducted by Allen et al. (2001) on patients understanding and use of Snack and Package Nutrition Labels, suggests majority of consumers (patients) do not understand snack food nutrition labels well enough to make informed dietary choices. Study conducted in Malawi by Kasapila and Shawa, (2011) showed that among all label users (n=60), 7.3% reported to understand well what they read on the nutrition panel, 18.9% understood it partly and the rest (73.8%) did not understand the numerical information and terminology used. Moreover, the rural consumers were not familiar with the English language (64.3%) on food packages.

Food labels are of tremendous importance to the consumer (provide them a means of evaluating the food before purchase), the firm producing and selling the product (a means of communicating to the potential consumer the attributes and qualities of the product), and regulatory bodies (a means of ensuring that food produced and sold meet required standards and a means of protecting the interest of the general public). Despite these benefits of food labels, there have been many reported instances where non-certified, expired, illegal or fake food products are sold to the public. Cases in point are sale of uncertified sachet water, the sale of expired canned tomatoes and frozen chickens, and the sale of uncertified imported food products on the Ghanaian market.

From the above it can be confidently argued that these instances and their frequency of occurrence can be considerably alleviated if the needed attention is paid to the food label information by consumers, if the regulatory bodies had enforced their constitutionally mandated responsibilities, and had all the manufacturing companies complied with the act of Ghana Standards Board (GSB) and Food and Drugs Board (FDB) as stated above. In the event that manufacturing firms and regulatory bodies are unable to adequately carry out their mandate, it is incumbent on consumers to critically examine the food before purchase. An important means of assessing food product is through the labels. Against the backdrop of alleged frequent sale of expired and uncertified food products it can be asserted that consumers either do not refer to food labels when buying or they do not understand what the information contained on food labels mean. This might either be due to ignorance or lack of awareness and also an attitude of indifference.

An important issue worth addressing is whether consumers refer to food labels for product information before and during purchase and whether consumers really understand what these information mean. Also, even if they do refer to food label information, little is known about the extent to which consumers' food purchasing decision is affected by food label information. Knowing whether or not consumers understand food label information, the type of information consumers look out for and whether consumers' choice of food is affected by food label information will help manufacturers make informed decisions in this regard. Improvement on the part of these manufacturing firms in turn will help consumers make well-informed choice, reduce the risk of food poisoning, buying fake products etc.

The study therefore seeks to address the issue of how consumers use food label information and the effect it has on the purchasing decision of consumers.

The rest of the paper is organized as follows; section two reviews literature relevant to this study whilst the research methodology is presented in section three. Section four presents

and discusses the results/findings of the study whilst the conclusions and recommendations are presented in the last section, five.

Literature Review

Hu et al. (2006) noted that consumers' behaviour in response to reading food labels will depend upon the reference points from which they came and the values that they bring to food purchasing. Labels are one of the most important features of product packaging, and they are designed to communicate a message (Héroux et al. 1988). But consumer behaviour is complex, very often difficult to understand and they differ across borders and also between and within regions, (DG SANCO, 2005).

Decision to purchase

A number of factors influence consumers' decision-making, but Prathiraja and Ariyawardana (2003) anticipated nutritional labelling to affect consumers' purchasing behaviour significantly. Consumers' ability to choose their diets depends partly on the quantity as well as quality of information available through a variety of sources, including nutrition panel of food labels (Caswell and Padberg, 1999).

Underwood et al., (2001) and Silayoi and Speece (2004), found out that packaging elements act as a tool for differentiation. This helps consumers to choose the product from a wide range of similar products and stimulates customers buying behaviour. Thus food package performs an important role in marketing communications and could be treated as one of the most important factors influencing consumer's purchasing decision. The research findings of Rita (2009) show that the impact of package elements on consumers purchasing decisions can be stronger. She concludes that a package could be treated as one of most valuable tool in today's marketing communications, necessitating more detailed analysis of its elements. The impact of package and its elements on consumer's purchase decision can be revealed by analysing the importance of its separate elements for consumer's choice.

The pre-purchase search of nutritional information could be measured in terms of label use (Nayga, 2003). Thus consumer's preference and decision to purchase can have some appreciable amount of link to the labels and therefore suggest having an impact on the choice behaviour. However, consumers' purchasing behaviour does not always reflect their stated preferences (Henneberry and Armbruster, 2003). Unlike Malawi where price is a major determinant of purchase (Kasapila and Shawa, 2001), in Lesotho (Mahgoub et al., 2007), it was clear that nutritional information was the major factor that affects the decision of participating in the studies to purchase the types of food they buy.

Consumer demographic characters and effect on purchasing decision

There are a lot of factors that influence choice and decision to buy or not to buy. Due to increasing self-service and changing consumers' lifestyle, the interest in package as a tool of sales promotion and stimulator of impulsive buying behaviour is growing increasingly. Previous researches suggest that the acquisition of information, and consequently behaviour, are influenced by various demographic factors such as age (Nayga, 1997; Govindasamy and Italia, 1999); sex (Mintel, 2006; Beus and Dunlap, 1992); household size (Nayga, 2003) and race (Katona and Mueller, 1995; Putler and Frazao, 1994); by the marketing environment, including urbanization and region (Park et al., 1989); by education (Schultz, 1975; Hu et al., 2006); by factors that affect time constraints, such as employment (Becker, 1977; Beatty and Smith, 1987); and by perception factors (Guthrie et al., 1995).

Gellynck et al. (2006) also found that responsiveness of Belgian consumers to information about food traceability was significantly associated with education, though not with gender and age. A study by the Ministry of Agriculture, Fisheries and Foods in the UK (MAFF, 1994) found that the educational level of UK consumers did not affect their interpretation and responses to the information provided on labels. Grossman, (1972) found that the rate of appreciation for good health increases with age. Consequently, older individuals might be more cautious about what they eat for health reasons. Hence these

factors may increase consumers desire to know more about the nutritional aspects of the food they eat.

Perception variables such as product safety, nutrition, price, and taste when food shopping, as well as perceptions on healthfulness of one's diet and degree of diet-disease belief are also factor that promote the use of food label information. The result of Rodolfo, (1996) suggests that main meal planners who hold a stronger belief that discernment in what is consumed can help to reduce the risk of developing a major health disorder such as heart disease and cancer are more likely to use nutritional information related to fibre, fat, and sugar content on food packages.

Price can hide other aspects of the label, especially for lower income consumers. Those with high income displayed different attitudes to those with lower income in terms of the perceived options available to them. Also, main meal planners of higher-income households are more likely to use nutritional information concerning calories, sodium, fibre, fat, and cholesterol content than main meal planners of lower-income households, (Rodolfo, 1996).
In Lesotho, majority (71.2%) of the participants claimed that they use a shopping list. And a positive relationship was seen between food label usage and age, income family size and education. Less than half of the participants (40.5%) indicated that nutritional information on food labels, rather than price, taste, appearance, habit, convenience, or brand name, was their main motivator to purchase foods (Mahgoub et al., 2007).

Some food label information consumers consider during purchase
The level and extent of information required is often driven by specific dietary needs or underlying health conditions (MORI, 2010).

Food Safety
The labels that help consumers determine whether food products are safe, hygienic and of high quality are country of origin traceability (of the origin, production process and product information of food), quality assurance, and use-by/best-before dates. The latter are seen as good indicators of freshness, shelf-life and general food safety, (Philip et al., 2010). Most consumers are willing to pay the most for food label. They believed the label denote food safety and quality (Umberger et al., 2003).

Country of Origin
Country of origin labelling is basically for the traceability of food products and also to fulfil the demand of Mandatory Labelling. There is generally the belief that one's own country or region produces safer and better food than other countries or regions (Philip et al., 2010). This was echoed by Wier et al. (2008), who found in their survey of consumers in Britain and Denmark that 72% of all respondents would prefer to buy conventional domestic fruits and vegetables rather than organic foreign produce. Banterle and Stranieri (2008) have found that country of origin is an important indicator for consumers of both the quality and safety of food. Research by Umberger et al. (2003) reveals that the surveyed consumers in Chicago and Denver were willing to pay a premium for Country-of-Origin Labelling. This reflects a common belief that local, or near-local produce is not only safer, better tasting, and of superior quality, but that it is also easier to verify its quality, (Philip et al., 2010).

Quality
When consumers choose among competing products, they are faced with quality and product performance uncertainty. Package is one of the main elements of the product appearance and as such is an important source of information since consumers rely heavily on labels for product information and also packaging is a significant marketing expenditure larger than advertising itself, (Pires and Ricardo, 2008). Hoback (2008) found that, "consumers see organic products as purer, healthier and better tasting than conventional food and other products". Padel and Foster (2005), however concluded that "price remains a barrier for many consumers, but it is possible that its significance could be diminished if consumers were made more aware of the reasons for the higher price, and convinced that organic food is a value for money choice despite the premium". Although consumers look for date labels, there is evidence that many misunderstood what terms like 'best before' and 'use by' actually represent (MORI, 2010).

Health Claims

"***Health claim***" means any claim that states, suggests or implies that a relationship exists between a food category, a food or one of its constituents and health, (FDB, 1992). Nutrition and Health information help consumers make informed choices about health risks and how to balance these risks. Generally, participants tended to look out for reassurance of specific qualities such as no electronic numbers, no caffeine, and low fat (or most frequently 'lite') (MORI, 2010). Some consumers also look at food label because of health consciousness (Prathiraja and Ariyawardana, 2003).

Price

Price is one of the most important labels for most consumers, and one that influences their food purchasing decisions. Price ranks alongside country of origin and expiry/use-by dates as the most commonly sought information on food labels, (Philip et al., 2010). Price can eclipse other aspects of the label, especially for lower income consumers. Those with high income displayed different attitudes to those with lower income in terms of the perceived options available to them. Consumers in lower paid jobs paid more attention to special price offers, and thus respectively paid less attention to food labelling directly, (MORI, 2010). Charles, (2002) released in his study that 70% of purchasing decision is based on price, taste and expiry date alone. ''For the lowest income group, food price was the major determining factor of the types of foods they buy'' (Mahgoub et al., 2007).

Methods

Research Area

Kumasi is Ghana's second largest city and capital of the Ashanti region found in southern Ghana. Kumasi covers approximately 299 square kilometre size of land and is located in the transitional forest zone and is about 270km (by road) north of the national capital, Accra.

Sampling and data collection

The research concentrated on consumers (from 15 years and above) of canned/tinned foods in the Kumasi metropolis because of its highly concentrated cosmopolitan population. The metropolis is divided into ten sub-metros out of which five were selected by simple random sampling. Fifty consumers were conveniently selected (after attempts to use probability sampling proved not feasible) from the five sub-metros. Questionnaires were formulated and used to collect and sample data on consumers' use, understanding of food label and their demographics. This was administered through personal interviews with consumers in the selected areas. Data were collected through the use of well-structured survey questionnaires. Consumers, specifically individuals from 15 years and above were drawn based on convenience and asked if they purchased any form of canned foods and were enthusiastic to contribute to the study. These consumers were considered old enough to make informed purchasing decision. Canned/tinned food was chosen because it is one of the arrays of food that fall under mandatory labelling. These food groups are required to provide a complete labelling on their packaging.

Consumers' buying behaviour was measured through self-reported use and understanding of food label information, when they read it and any impact on purchasing decision. The socio-demographic information of the respondents (age, sex, education, marital status and level of income) was also obtained.

Method of data analysis

Data entry and analysis was done using SPSS computer package version 19. Descriptive and inferential statistics were created and used to define and explain the results.

A chi square (X^2) statistic was used to investigate whether distributions of categorical variables differ from one another. It shows a quantitative measure used to determine whether a relationship exists between two categorical variables. The Pearson's chi-squared test was used to assess whether the two paired observations / variables were independent.

Results and Discussions

Socio-demographic Statistics of the Sample

As displayed in table 1below, results showed that the sample was gender sensitive (male = 57.6) with the modal age group being 15-30

years (60.8%) who had never been married (54.0%) and with a greater number who had tertiary education (36.4%) earning between GH¢50-499 (61.6%).

Table 1: Socio-demographics of the sample

Variable		Frequency	Percentage
Sex:	Male	144	57.6
	Female	106	42.4
Age groups:	15-30	152	60.8
	36-45	74	29.6
	46-60	15	6.0
	< 60	9	3.6
Marital status:	Single	135	54.0
	Married	86	34.4
	Divorced/ Separated	15	6.0
	Widowed	14	5.6
Level of education:	None	19	7.6
	Basic	58	23.2
	Secondary	82	32.8
	Tertiary	91	36.4
Income levels:	(50-499)	154	61.6
	(500-999)	72	28.8
	(1000 and above)	24	9.6

Frequency and time of use of Food Label Information

From table 2, most consumers reported reading food labels occasionally (29.6%) with always (22.8%), often (19.6%) and rarely (7.6%) ranking 2nd, 3rd and 4th respectively during initial purchase (37.2%). And 20.4% say that they never read food labels.

Table 2: When and how often consumers refer to Food Label Information

When consumers read label	**Frequency**	**Percentage** (%)
Initial purchase	93	37.2
When comparing products	43	17.2
When buying some particular product	63	25.2
How often they refer to label	**Frequency**	**Percentage** (%)
Rarely	19	7.6
Occasionally	74	29.6
Often	49	19.6
Always	57	22.8
Total	**199**	**79.6**

Though the study indicated that, majority of the consumers use label information, they only do this occasionally on initial purchase. This is probable because consumers assumed they know the product to have reached minimum standard (MORI, 2001) or the search cost is expensive as pointed out in the research done by Gianfranco et al., (2006).

A cross tabulation of frequency of use of food labels and when they are read revealed that, consumers who report reading food labels do that during initial purchases, always (n=31, 15.58%) These proportions are similar to the findings from Mintel (2006) which suggest that approximately half of food consumers from UK read the labels on initial purchases, always (32%) or usually (20%).

Consumers' Use and Understanding of food Labels

Results from table 3 show that about 79.6% (n=199) of the respondents, recounted to access

food label information before purchase with 54.8% understanding the information somehow.

Table 3: Consumers' use and understanding of food label information

Do you read food label?	Frequency	Percentage (%)
Yes	199	79.6
No	51	20.4
Do you understand what you read?		
Very well	77	38.7
Somehow	109	54.8
Don't understand	13	6.5

Out of the 79.60% (n=199) respondent who claimed to use label information during purchasing any canned food, 93.3% said they understood the information they read while 6.5% don't understand what even they read being it the terminology or technical terms used or numerical gen. Among the label users (n=186, 93.3%) who understand, 54.8% said they understood the information somehow while 38.7% understand it very well. This result was different from the answers of Mahgoub et al., (2007) that found out that majority (59.0%) of consumers' in Lesotho understand food label very well.

The kind of information consumers look out for

Date label (99.5%) was found to be the information consumers most seek on any canned food. It recorded the highest score followed by ingredient (78.4%), health claim (66.8%) and nutritional information (65.3%) placing fourth. Information like net weight (24.1%), producers or manufacturers (30.7%), country of origin (47.7%) and net weight (24.1%) were least considered.

Table 4: The kind of information consumers look out for

Food Label Information	Multiple Response			
	Yes		No	
	Freq.	%	Freq.	%
Nutritional information	130	65.3	69	34.7
Health Claims	133	66.8	66	33.2
Ingredient	156	78.4	43	21.6
Expiry Date/ Use Before	198	99.5	1	0.4
Country of Origin	95	47.7	104	52.3
Net Weight	48	24.1	151	75.9
Producers /manufacturers	61	30.7	138	69.3
Instruction for use	99	49.7	100	50.3

From table 4 above, it was evident that consumer were more interested in date label than any other information on a labelled package. This is mostly used to determine the safety, freshness, wholesomeness and quality of food products. Date label comes in the form of manufacturing date which signifies the product was made, use by which specifies beyond which food should not be consumed and best before/expiry date gives an indication of quality life span of the product. This result is similar to the finding of Tessier et al, (2000) who reported that date labels were the most commonly sought information on food labels on a wide range of food products amongst Scottish consumers. A research by MORI 2010 also revealed that once consumers are at home the only information important to them is the date label. Sabbe et al., (2009) found that expiry date is commonly used by consumers as an indication of freshness, shelf life and food safety across a range of foods.

Other sets of general food label information that consumers look out for during purchase are ingredient (78.4%), health claim (66.8%) and nutritional information (65.3%).

Results of Rodolfo 1996 also indicate that consumers residing in Non-metro areas are more likely to use nutritional information concerning ingredients, sodium, vitamins/ minerals, and fibre content on food packages than others in the sub-urban and urban areas. Rather result from this study contrast his findings where consumers in sub-urban and urban areas are more concern with ingredient and nutrition information. Net weight (24.1%) was least considered probable because similar product might have same weight or volume but at different prices. A research conducted by Alice and Michelle (2006) found out that size really does not matter to consumers.

Factors that influence consumers' decision to purchase a canned product

It was found out that advertisement (31.6%) and price (31.2%) were the major factors that influence most consumers decision to do purchase of canned food, with food label information ranking fourth (10.0%) after taste (12.0%) of the product. Further details are presented in table 5.

Table 5: Factors that influence sampled consumers decision to purchase a canned product

Determinants	Frequency	Percentage (%)
Price	78	31.2
Food label	25	10.0
Advertisement	79	31.6
Packaging	21	8.4
Taste	30	12.0
Product name	11	4.4
Convenience	6	2.4

Food label information is not the key informant to consumer buying behaviour. Factors like advertisement (31.6%) and price (31.2%) are keys among the factors that influence consumer decision. "Advertisement is commonly used for judging the nutritional information", Manisha, (2008).

Though advertisement plays an important role in conveying product massages, labels do much influencing consumer-decision since Labels provide concise information. This research finding has proved contrary to that. Many consumers use television, screen and magazines as a means of escape, a source of information and as an intellectual stimulus (OCED, 2000).

Majority of the respondent were low income earners. This could be the reason why price had concealed other aspects of the food product, especially food label. This however could not be directly related to income earned by consumers but could be different consumer perspectives and values.

Among the respondents (n=199, 79.6%) who use food label information when making purchasing, 37.2% were using it on initial purchase, 17.2% when comparing products and 25.2% when buying certain kind of products. This result suggests that food label information is an important source of new knowledge that aid consumers when doing some purchasing. This shows a great tendency of consumers' use of food label and thus influence or change their purchasing decision. Prathiraja and Ariyawardana (2003) noticed that 77.8% of their research respondent considered nutritional information on food items as vital instrument for purchasing decisions.

Consumer demographics and food label information

It was hypothesized that male consumers were less likely to use food label information during shopping than women. The guess was precluded; since the result disclosed that male consumers were more concerned with the use of food label information $(\chi^2 = 39.754, df = 1, p = 0.000)$ than their female

counterparts ($\chi^2 = 13.757, df = 1, p = 0.032$) (details in table 7 below). The Mintel (2006) survey reports that women read food labels more than men but this difference is much less when women are compared with men who live by themselves. This has been confirmed by the results of the study since greater part of the male respondent were never married (39.6%) and were living on their own.

Results from table 7 also revealed that youthful (31- 45) consumers, ($\chi^2 = 21.863, df = 6, p = 0.002$) and consumer who were had never been married ($\chi^2 = 20.238, df = 6, p = 0.006$) were also apt to refer food label information before purchase.

Findings from Nayga (2003), suggest that income and age are positively related to diet quality regardless of label use, and that people with at least some college education have a higher Healthy Eating Index than people with no college education. Contrarily, consumers' income levels has no significant influence on their use ($\chi^2 = 4.566, df = 6, p = 0.601$) or understanding of food label ($\chi^2 = 2.710, df = 2, p = 0.258$) neither does it have any influence on their purchasing decision ($\chi^2 = 10.017, df = 4, p = 0.040$) but level of formal education ($\chi^2 = 29.870, df = 6, p = 0.000$) has a positive association with making better choices (results presented in table 8).

Those with high income displayed different attitudes to those with lower income in terms of the perceived options available to them. Consumers in lower paid jobs paid more attention to special price offers, and thus respectively paid less attention to food labeling directly'', MORI (2010).

Consumers with tertiary education ($\chi^2 = 17.602, df = 6, p = 0.007$) as well as basic education ($\chi^2 = 19.250, df = 6, p = 0.004$) were more disposed to turn to food label information before purchase, (refer to table 7 for more details).

Though highly educated consumers (34.0%) were likely to refer to food label ($\chi^2 = 17.602, df =, p = 0.007,$ table 5.2.1) than those with secondary (26.8%), basic (18%) and no education (0.8), results has shown a negative correlation with consumers use (R^2=- 0.418, p=0.000) and understanding of food label information (R^2=- 0.308, p=0.000) as well as their purchasing decision (R^2=- 0.275, p=0.000), table 7.

The use and understanding of food label, effect on purchasing decision

There a significant likelihood that when consumer read food label, it will influence their decision to purchase a canned food product ($LR = 249.754, df = 3, p = 0.000$). Therefore consumers' use of label has a significant influence on purchasing decision ($\chi^2 = 249.754, df = 3, p = 0.000$). Also a positive relationship exist between understand and how well they understood what information they read (R^2= *0.592, p = 0.000).* Again there is a positive relation between understanding and choosing among alternatives or making better choices (R^2*=0.215, p = 0.002).* Furthermore the level of understanding of food label has a significant influence on consumer purchasing decision ($\chi^2 = 18.093, df = 4, p = 0.001$) and positive correlation (R^2*=0.266, p = 0.000).* Details of results in table 7 and 8 at the appendix.

Association between consumers' use of food label and their demographic variables and the type of information sought

Both males (59.3%) and female (38.1%) consumers aged between 31-45 years (47.2%) whether married (33.2%) or not (66.3), have high education (42.2%) or not (1.0%) earning between GH¢50-999 (71.2%) were most interested in date label. This contrast with those aged from 46 years (75.9%) who were more interest in the health claims on the label provided on any canned food. Meanwhile those between 15-35 years (51.3%) were also concerned with instructions on how the product will be used. But those earning above GH¢1000 (21.6%) were much in involved in the origin of the product.

Table 6: consumers' socio-demographics and the kind of information sought

Consumer demographics	NI (%)		HC (%)		In (%)		ED (%)		CO (%)		MC (%)		NW (%)		P/M (%)		IU (%)	
	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Sex Male	44.7	18.1	42.2	13.6	46.7	6.5	59.3	-	29.1	32.7	16.1	45.7	19.6	42.2	34.7	27.1	48.2	13.6
Female	20.6	17.1	24.6	19.6	31.7	15.1	38.1	0.5	18.6	21.1	8.0	30.1	11.1	27.1	15.1	23.1	31.6	6.0
Age 15-30	7.5	34.4	12.6	14.4	7.0	38.6	2.5	-	17.0	0.5	1.0	15.6	-	1.5	11.6	22.6	51.3	1.5
31-45	32.7	12.5	22.6	19.1	46.2	20.0	47.2	-	30.6	17.1	30.2	12.1	28.1	14.6	7.0	30.6	12.6	24.6
46-60	6.0	27.2	33.7	12.1	23.7	19.1	5.5	-	2.5	11.1	18.1	12.0	27.1	12.1	9.0	18.6	30.4	16.1
> 60	1.0	0.5	42.2	11.1	22.6	16.1	2.0	0.5	-	-	0.5	11.1	14.1	8.0	-	4.5	26.1	9.0
MS Single	46.7	20.1	48.2	18.6	52.3	14.6	66.3	0.5	30.6	36.2	15.6	51.3	20.6	46.2	34.7	34.2	55.3	11.6
Married	18.6	14.6	18.6	14.6	26.1	7.0	33.2	-	17.1	16.1	8.5	24.6	10.1	23.1	16.1	17.1	24.6	7.5
LFE none	0.5	0.5	0.5	1.0	0.5	0.5	1.0	-	-	1.5	-	1.0	-	1.0	-	1.0	0.5	0.5
Basic	11.6	11.1	12.0	22.6	15.6	7.0	22.6	-	10.1	12.6	4.5	18.1	5.0	17.6	8.0	14.6	14.1	8.5
Secondary	21.1	12.1	21.1	19.1	28.6	5.0	33.7	-	19.1	14.6	7.0	26.6	12.1	22.1	14.6	18.6	28.1	5.1
Tertiary	32.2	11.1	33.4	30.2	34.2	9.0	42.2	0.5	18.6	24.6	12.6	30.2	14.1	28.6	27.1	16.1	37.2	5.5
IL: 50-499	30.4	16.8	31.6	14.4	36.4	9.6	46.8	0.5	5.2	24.4	10.0	36.8	12.4	6.4	23.2	28.8	36.4	7.2
500-999	20.0	12.4	14.0	10.8	21.6	4.4	24.4	-	14.5	13.2	4.8	20.0	8.0	15.6	12.0	14.0	17.6	6.8
>1000	9.8	2.4	6.0	0.8	6.4	2.4	8.8	-	21.6	4.6	4.8	4.8	2.4	32.3	5.6	2.8	8.0	0.8

LFE = Level of Formal Education, IL = Income Level, NI= Nutritional Information, Y = Yes HC = Health Claims, In = Ingredient, ED = Expiry Date, CO= Country of Origin, NW = Net Weight N = No, MC = Minimum Concentration, P/M = Producers /manufacturers, IU = Instruction for Use

Though some relationships were observed on consumer demographics and their use of food label, it does not affect their buying behaviour. Result from table showed that low income has a significant $(\chi^2 = 13.937, df = 4, p = 0.007)$ relationship with purchasing decision, table 9. This could be as a result of majority of consumers within the youthful years with high education been in that category.

Studies have shown that aging consumers are more interested in their health and well-being. This could probable account for the result pointing out that consumers aged from 46 years (75.9%) were more interested in the health claims than the other information provided. Research by Umberger et al. (2003) reveals that the surveyed consumers in Chicago and Denver were willing to pay a premium for Country-of-Origin Labelling. This could be revealed in why higher income earners would ascertain a product by its country of origin.

''Price can eclipse other aspects of the label, especially for lower income consumers. Those with high income displayed different attitudes to those with lower income in terms of the perceived options available to them. Consumers in lower paid jobs paid more attention to special price offers, and thus respectively paid less attention to food labelling directly", MORI (2010).

Conclusions and Recommendations

The aims of the study were to find out the use and understanding of food label information and its impact on purchasing decision among consumers in the Kumasi metropolis. The results showed there is some awareness food label usage among consumers. Though they somehow understand what they read, it is not the main determinant of purchasing decision. Advertisement and prices were seen to the key factors that influence purchasing decision. This might be as a result of majority of the respondent been among the low income earners. Since firms spend considerable amount of money on product labels, it important for them to know the way labels influence purchasing decision especially for young consumers. They should therefore conduct research periodically to know how consumers perceive the label they read and those of keen interest in order to elaborate them.

It was also found out that most consumers are not aware that information provided on food packages are renewed periodically therefore they only refer to labels occasionally during initial purchase. This could make consumers easily switch from one product to the other since they might not be aware that an old product might have received value addition. Therefore educating consumers about the importance of food label.

It would be very useful to determine the use of the label on a much wider scale among a bigger, more demonstrative section of the Ashanti Region that will compare the use of food label information among rural and urban consumers.

Individual features of food label information can be researched individually to find their influence and impact on consumer purchasing decision as well as how consumers the information they read.

Implications for this study are that it will manufacturers know what consumers are interested in and therefore focus that information to attract consumers. Again regulatory bodies being government agencies can in turn inform the public on the importance of food label knowing the percentage of the population that read label information. Furthermore, this study will prompt the awareness of food label information among consumers, thereby demanding more information on the products they consume. This will compel manufacturing firms to provide the right information to meet the demand of consumers as well as enhancing the work of regulatory bodies knowing that consumers are much interested in product information. This study will also add to knowledge by serving as secondary information to studies revolving around the same topic.

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Appendix

Chi-square estimate of variables

Table 7: Chi-square estimate of variables

Measure of Consumers' understanding and demographics																	
Level of understanding	**Sex**		**Age**				**Marital Status**				**Level of Formal Education**				**Income Level**		
	Male	Female	15-30	31-45	46-60	>60	Not married	Married	Divorced	widowed	none	Basic	Sec.	Ter.	50-499	500-999	<1000
Pearson chi-square (x^2)	123	76	132	56			118	66	9	6		45	67	85	115	62	
Significance	0.000***	0.000***	0.000***	0.000***			0.000***	0.000***	0.011	0.014		0.000***	0.000***	0.000***	0.000***	0.000***	
Pearson correlation (R^2)	0.54	0.653	0.5	0.707			0.547	0.62	0.746	1		0.73	0.441	0.497	0.648	0.531	
Significance	0.000***	0.000***	0.000***	0.000***			0.000***	0.000***	0.021	0.000***		0.000***	0.000***	0.000***	0.000***	0.000***	
Degree of freedom (*df*)	2	2	2	2			2	2	2	1		2	2	2	2	2	
Frequency of use of food label information, level of understanding and consumer demographics																	
Pearson chi-square (x^2)	39.8	13.76	13	21.2	0.6	5	17.991	20.2	5.8	2.4		19.3	11.65	17.602	34.514	6.113	0.725
Significance	0.000***	0.032	0	0.002**	0.7	0.08	0.082	0.006*	0.215	0.212		0.004**	0.07	0.007**	0.000***	0.411	0.696
Pearson correlation (R^2)	-0.27	-0.39	-0	-0.44	0	-0.2	-0.28	-0.4	-0.44	-0.63		-0.34	-0.26	-0.292	-0.393	-0.22	-0.066
Significance	0.002**	0.000***	0.002**	0.001***	1	0.72	0.002**	0.003***	0.241	0.178		0.02	0.033	0.007**	0.000***	0.089	0.77
Degree of freedom (*df*)	1	1	6	6	2	2	6	6	4	1		6	6	6	6	6	2

Table 8: Chi-square estimate of variables

Consumer demographics and their frequency of use of food label information					
	Sex	**Age**	**MS**	**LFE**	**Income**
Pearson chi-square (X^2)	8.157	13.152	19.024	11.225	4.566
Significance	0.043	0.156	0.025	0.261	0.601
Pearson correlation (R^2)	0.000	0.068	0.079	0.132	0.129
Significance	0.999	0.341	0.265	0.063	0.069
Degree of freedom (*df*)	3	9	9	9	6
Consumer demographics and their understanding of food label information					
Pearson chi-square (X^2)	1.444	4.888	1.841	34.660	2.710
Significance	0.229	0.180	0.606	0.000***	0.258
Pearson correlation (R^2)	0.085	0.048	0.094	-0.234	-0.116
Significance	0.232	0.504	0.187	0.001**	0.102
Degree of freedom (*df*)	1	3	3	3	2
Consumer demographics and how well they understand food label information					
Pearson chi-square (X^2)	2.062	8.612	6.985	44.157	2.947
Significance	0.357	0.197	0.322	0.000	0.567
Pearson correlation (R^2)	0.095	0.0722	0.116	-0.308	0.049
Significance	0.181	0.313	0.104	0.000***	0.496
Degree of freedom (*df*)	2	6	6	6	4

Table 9: Chi-square estimate of variables

Consumers' level of understanding and their demographics; effect on purchasing decision																	
	Sex		Age				Marital Status				Level of Formal Education				Income Levels (GH¢)		
	Male	Female	15-30	31-45	46-60	>60	Never married	Married	Divorced/ separated	Widowed	None	Basic	Sec.	Ter.	50-499	500-999	>1000
Pearson chi-square (X^2)	10.324	7.775	9.51	10.431	0.240	0.139	9.993	6.025	4.371	0.600	-	5.618	4.973	6.438	13.937	2.957	3.454
Significance	0.035	0.100	0.060	0.034	0.624	0.709	0.041	0.197	0.112	0.439	-	0.230	0.290	0.169	0.007*	0.565	0.178
Pearson correlation (R^2)	0.236	0.293	0.238	0.390	0.200	0.167	0.272	0.209	0.347	0.316	-	0.275	0.163	0.227	0.311	0.169	0.295
Significance	0.009*	0.010	0.006*	0.003**	0.704	0.789	0.003**	0.092	0.360	0.541	-	0.068	0.187	0.036	0.001***	0.189	0.183
Likelihood Ratio (LR)	12.476	10.382	11.267	13.030	0.403	0.138	12.236	8.109	4.531	0.908	-	7.876	5.691	7.427	17.820	4.087	4.541
Significance	0.014	0.034	0.024	0.011	0.526	0.710	0.016	0.088	0.104	0.341	-	0.096	0.223	0.115	0.001***	0.394	0.103
Degree of freedom (*df*)	4	4	4	4	1	1	4	4	2	1	-	4	4	4	4	4	2