

**IMPACT OF HEALTH CLAIMS AND USER-FRIENDLY FOOD LABEL ON  
CONSUMERS' PACKAGED FOOD PURCHASE INTENTION**

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**ABSTRACT**

The food consumption pattern of consumers has changed the nature of diseases. Human diseases are in transitional phase from acute diseases to dietary diseases. The cause of this change is inappropriate consumption of packaged food and past studies have suggested designing a method for consumer awareness. The intended study has tried to contribute to filling this gap and for this purpose, four variables were employed such as health claims, user friendly food label, attitude towards food label and intention to consume package food. It was examined that what extent health claims and user-friendly food labels are decisive for consumers for informed package food choices. The food label attitude was taken as mediating role for establishing a relationship with health claims, user friendly food label and intention to consume food label. The results were analyzed by using SEM AMOS 21. The outcome of analysis has explained that there was no direct relationship between health claims, user friendly food label and intention to consume package food. Whereas for making relation among these variables the mediation of attitude towards food label was very significant. The researchers of the intended study have suggested that there is a need for a comprehensive model to figure out which factors play a significant role in creating awareness among consumers to consume balance package food. Because the understanding of food label information is essential for informed package food selection.

**KEYWORDS**

Health claims, user friendly food label, attitude, intention

**INTRODUCTION**

There are several risk factors for chronic diseases, and unhealthy diet is one of them (Aygen, 2012). Aforementioned studies have witnessed that in 2050 the percentage of annual cost pertaining to overweight and obesity with respect to male and female will be 60% and 50% respectively (Butland et al., 2007) and the cost will be 9.7-Billion-pound annual. The upward trend of package food consumption in all corner of the world has highlighted the shift of human diseases from acute diseases to chronic diseases (Ollberding, Wolf, &Contento, 2010). The emerging marketing strategies also provoke consumers towards the consumption of packaged food (Kessler, 2009; Nestle and Nesheim, 2012; Swinburn et. al., 2011). Changing lifestyle and dietary habits have better benefits

than medical care (Wansink, 2006). But it's a challenge to change individuals' habits from taste and convenience to nutritional food choices (Blaylock et al., 1999; Barreiro-Hurlé et al., 2010).

Food choice especially healthy food selection is a complex decision for consumers (Eldesouky et al., 2015). The perception and expectation of consumer are very decisive which need to be focused on food processing companies while targeting consumers (Gadioli et al., 2012). There is no standard method to educate consumers for the healthy package food selection except food label (Bialkova et al., 2013). Numerous policymakers aim to design attractive food labels to assist consumers in making healthy food selection decisions. It has been noticed in empirical research that label information plays a pivotal role in package food selection (Eldesouky et al., 2015). In contrary to these results, some researchers have reported that food labels get limited attention (Drichoutis et al., 2006; Rawson et al., 2008) and consideration of food choices. Even some studies have indicated that overcrowded information on food labels confuse consumers for better food choice (Hooker and Teratanavat, 2008; Kapsak et al., 2008; Urala et al., 2003).

Notwithstanding, the food label is the most effective method to aware consumers for informed food choice (van Trijp, 2009). Moreover, traditionally back of pack labeling method was in practice which includes nutritional table and nutritional fact panel (Campos et al., 2011). Whereas the emerging concept of the front of pack labeling has introduced a new strategy to target consumers for the selection of healthy food items (Gonzalez-Zapata et al., 2009). The front of pack labeling scheme is comprised of traffic lights symbols, health claims/nutritional claims and percentage guideline daily amount (Hersey et al., 2013). Although the display of symbols, logos, colors and numerical information at food label is not new and the popularity of front of pack labeling has made all these traditional elements more effective and prominent (Hersey et al., 2013).

But studies have also unfolded the fact that consumers' demand for easy to read food label still exist (Aschemann-Witzel et al., 2013). Therefore, there is need to explore factors which effect on consumers' intention to select healthy packaged food. The aim of the current study was to investigate the effect of health claims and overall user friendly food label on consumer purchase intention towards package food items. And also to examine the mediating role of attitude towards food label in making the relationship between health claim, user friendly food label and intention to consume healthy packaged food. This study has tried to fill the literature gap that either the health claims which is the part of the front of pack label are more decisive for making consumer intention towards package food or consumer is interested in overall user friendly food label for healthy food choice.

## LITERATURE REVIEW

Researchers have reported that poor diet and sedentary lifestyle can also be the cause of death (Mokdad et al., 2004). The increasing trend of global supermarkets is bringing an excess of new pre-packaged foods to the developing nations (Kasapila, 2011). Aforementioned studies have illustrated that across the world the consumption and production patterns of food is in a transitional phase (Popkin and Slining, 2013; Black et al., 2013). Consumers are more inclined towards the consumption of processed package food than traditional homemade food (Wahlqvist, 2011; Monteiro and Cannon, 2012) and the cause behind this shift is taste and convenient characteristics of package food (Stuckler and Siegel, 2011; Stuckler et al., 2012; Monteiro et al., 2013). Therefore, to educate

consumer pertaining to nutrients contained by various foods is necessary. For that purpose, there is no formal method to enhance consumers' nutritional knowledge except food labels. There are some key factors which were identified for informed food choices such as knowledge, education and information (Ippolito, 1999) and food label is the most extensively preferred method (Barreiro-Hurlé et al., 2009). Moreover, Drichoutis et al. (2005) have indicated that there is a strong positive link between food purchase decision and food label consultation. However, the use of food label information while purchasing food products improve the cognitive ability consumers (Guthrie et al. 1995; Variyam, 2008) and finally leads towards the healthy food choices (Kim et al., 2001a). The nutritional information displayed on food label encourage consumers to purchase healthy diet (Baltas, 2001; Cheftel, 2005).

Several studies have raised questions regarding the food labels such as do consumers read these labels, does the information displayed at food label helpful for the healthy food selection, does the information is understandable by consumers (Grunert et al., 2009). Some researchers have taken the initiative to shed some light on these questions (Cowburn&Stockley, 2005; Drichoutis, Lazaridis, &Nayga, 2006; Grunert&Wills, 2007). Interpretation of food label information is akey factor which effects on consumers' attitude to reading food label at the point of purchase. Studies have acknowledged that easy to understand food label/nutritional label make consumer decisions better (Draper et al., 2011). Therefore, the concept of the front of pack food labeling was introduced to provide precise and easy to understand nutritional information to end consumers (van Kleef&Dagevos, 2012). The strategy of the front of pack labeling has received a high level of favorable feedback due to its simplicity and preciseness (Gerrior, 2010; Louie et al., 2008; Williams &Colyer, 2009). Front of pack labeling comprises of traffic lights symbols, health claims/nutritional claims and guideline daily amount percentage (Campos et al., 2011). The concept of health claims was the first time floated in Japan and later its popularity disseminated in USA, Europe and another part of the world (Verhagen et al., 2010). The objective of thehealth claim is to provide benefits of package food in simplified form (Wills et al., 2012).

The idea behind the health claims was to provide health-related benefits to consumers (Nocella& Kennedy, 2012). Beales et al., (1981) have indicated that all claims must be compatible with consumers' preference and sellers' incentives. Health claims are used to transfer information which is related to nutritional benefits of products to the consumer for healthy choices. Researchers have disclosed the fact that consumers are interested in understanding the package food benefits (Calfee and Pappalardo, 1991; Ippolito and Mathios, 1991; Wansink, 2003) and for that purpose health claims play asignificant role. Health claims are helpful for grabbing consumers' intention and making their attitude to consult food label before putting food items in their shopping cart (Grunert et al., 2011). Although countries have designed regulations concerning to processed and packaged food, nevertheless results are uncertain pertaining to the understanding of food label information (Asp and Bryngelsson, 2008; Richardson et al., 2003). Therefore, it is necessary to examine the effectiveness of health claims that to what extent it can easily provide technical nutritional information to consumers (Svederberg&Wendin, 2011).

Food processing companies differentiate their products with various marketing strategies by promoting products attributes and food label is one them (Grunert& Wills,

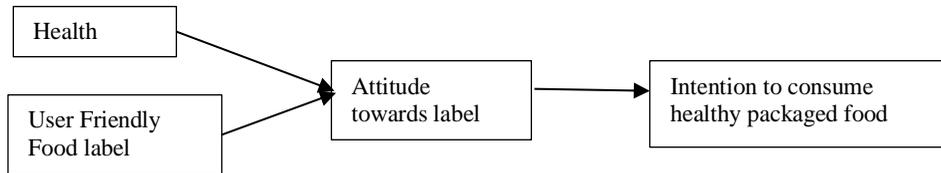
2007). It has been postulated that due to increasing amount of package food the issue of public health is mounting which can be tackled with the use of food label information at the point of purchase (Berrington de Gonzalez et al., 2010; Keystone Center, 2006; Nestle & Jacobson, 2000). Aforementioned studies have investigated that the reported statistics regarding food label usage are different from actual figures (Cowburn&Stockley, 2005; Grunert& Wills, 2007; Malam et al., 2009). There can be several factors behind that difference but the factor reported in studies is differences in label formats (Vasiljevic et al., 2015). Consumers' demand for food label information varies from country to country but one common preference among all consumers is easy to understand food label (Crockett, Hollands, Jebb, & Marteau, 2011). The reasonable body of existing studies has also indicated that most often consumers overestimate their understanding towards food label information and select unhealthy food products (Hoogland, De Boer, & Boersema, 2007; Sharf et al., 2012). Owing to the limited knowledge about nutrients (Parmenter& Wardle, 1999), technical language use for food label information and crowdedness of food label deviate consumers make their attitude to read label information at the point of purchase (Dickson, Spillmann, Siegrist, & Keller, 2011). Therefore, it is necessary to provide easy to understand food label for consumers for healthy food choices.

### **METHOD AND CONCEPTUAL FRAMEWORK**

Cross-sectional data were collected with convenient sampling. For the collection of data questionnaire method was adopted and for each variable questions were taken from the published article. The motive of an adopted questionnaire for the current study was to avoid reliability and validity issues. There were four variables to achieve the present study's goal such as health claims (Troth, 2015), user friendly food label (Byrd-Bredbenner, 1994), attitude (to read food label) (Ajzen, 1991) and intention (to consume package food) (Ajzen, 1991). For each variable questions were taken from different articles and combined in the current study such as health claims (Cavaliere et al., 2015), user friendly food label (Post et al., 2010), attitude (Van der Merwe et al., 2014) and intention (Cavaliere et al., 2015). The target population was unknown therefore sample size was drawn from Umea Sekaran's and Krejic& Morgan's table method.

Therefore, the sample size was 385 and to achieve the required sample two big retail stores were selected such as Metro and Hyperstar which are situated in the big city of Pakistan named Lahore. These international grocery stores grabbing more customers' attention than other mom and pop traditional stores. Pakistani consumers are fond of imported package food items considering them healthy and high standard. These retail outlets have some policies that without permission no one can approach customers to get any kind of feedback in documented form. Therefore, due to their policies, ethical and moral obligations, a permission request was tabled to concern authorities with detail information and objective of the survey. In the request, it was specifically mentioned that researchers need two weeks for data collection. Concern authorities have granted permission and assign two salesmen for researchers' assistance while data collection. The questionnaires were filled at the time of payment by requesting customers to participate in the survey. The questions were short and precise statements which have taken fifteen minutes. There was no research grant but researchers have arranged a small amount and provided a chocolate to each participant as a gift. This thankful gesture has motivated to

other customers and data were easily collected within that two weeks. Figure 1 is presenting the graphical relationship among all variables.



**Figure 1: Consumer purchase intention towards package food**

### HYPOTHESE OF THE STUDY

- H1. Health claims have positive relation with intention to consume package food
- H2. Attitude towards food label have positive effect on intention to consume package food
- H3. Health claims have positive relation with attitude towards food label
- H4. Attitude towards food label has mediating effect in establishing relationship between health claims and intention to consume package food.
- H5. User-friendly food label has positive relation with intention to consume package food
- H6. User-friendly food label has positive relation with attitude towards food label
- H7. Attitude towards food label has mediation effect in establishing relationship between user friendly food label and intention to consume package food

### RESULTS

To achieve the objective of current study researchers have distributed 770 questionnaires among the respondents in two retail outlets at the time of payments. The questionnaires were distributed and collected on the spot by giving chocolate to each respondent, therefore, the response rate was 100%. But later at the time of data entry, it was realized that respondents have missed some questions and left unmarked. The questionnaire having missing data more than 5% were not involved in final analysis and for rest of the questionnaires missing data treatment were applied and missing values were replaced with mean values (Hair et al., 2010). At the final stage, 432 usable questionnaires were left for analysis. There were two demographical questions such as age and gender. In 432 the percentage of male and female were 57% (246) and 43% (186) respectively. Whereas the average age of male was 32.5 and female was 29.5. To check the outlier Mahalanobis test was conducted. Some of the respondents were deleted in Mahalanobis test and after deletion 398 questions were left for further measurement. The data normality is also decisive in primary data which explain the shape of the data distribution (Hair et al., 2006). To check the normality test skewness and kurtosis test was conducted. To achieve the normality assumption the skewness values should fall within -3 and +3 whereas for kurtosis the required bracket is -7 to +7 (Chou & Bentler 1995; Hu, Bentler & Kano, 1992; Ghozali, Fuad & Seti, 2005). To examine the multicollinearity researchers' have run the VIF test and the result is presented in table 1.

**Table 1.**  
**Multicollinearity Diagnostic**

	Collinearity Statistics	
	Tolerance	VIF
User Friendly Food Label	.731	1.368
Health Claims	.573	1.746
Intention to consume package food	.829	1.206
Attitude towards food label	.619	1.615

According to Hair Jr. *et al.*, (2010) if the tolerance value is less than .10 and variance inflation factor (VIP) is greater than 10 then it violates the multicollinearity assumption. Researchers have employed structural equation model for result analysis for that purpose run the measurement model and path model. Before running the model on AMOS 21 the composite reliability and discriminant validity were also examined. Table 2 is having composite reliability values whereas table 3 is having discriminant validity results with average variance extraction.

**Table 2.**  
**Composite Reliability**

Variables	CR
Health Claims	0.755
Intention to consume Package food	0.813
User friendly food Labels	0.744
Attitude towards food labels	0.831

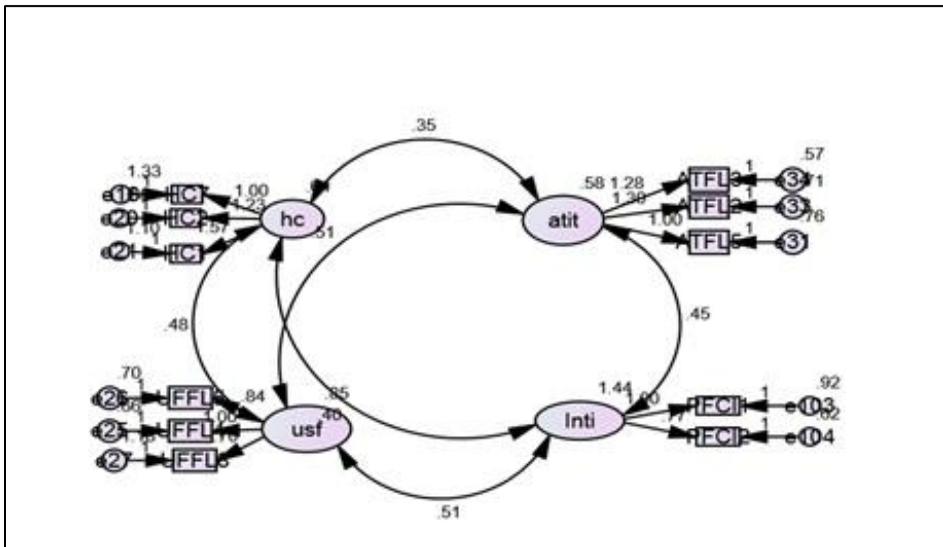
**Table 3.**  
**Average Variance Extracted (AVE)**

Variables	AVE
User friendly food labels	0.592
Attitude towards food labels	0.621
Health Claims	0.510
Intention to Purchase package food	0.525

For SEM researchers of the intended study have used AMOS 21. To accomplish the goodness of fit for model there are three basic assumptions which need to be fulfilled. Table 4 is comprised of these assumptions. The current models almost fulfill all the assumptions for the goodness of fit model. Figure 2 is the graphical representation of measurement model and figure 3 is path model Hair *et al.*, (2010).

**Table 4.**  
**Values for Exogenous and Endogenous**

Indicators	Threshold value
<b>Absolute Indices</b>	
Ratio/Comindf	Less than 2
RMSR	Less than 0.10
<b>Incremental</b>	
GFI	0.90 and above
IFI	0.90 and above
CFI	0.90 and above
TLI	0.90 and above
NFI	0.90 and above
AGFI	0.90 and above
<b>Parsimonious Indices:</b>	
RMSEA	Less than 0.08
P-value	Greater than 0.05



**Figure 2: Confirmatory factor of Exogenous and Endogenous variables**

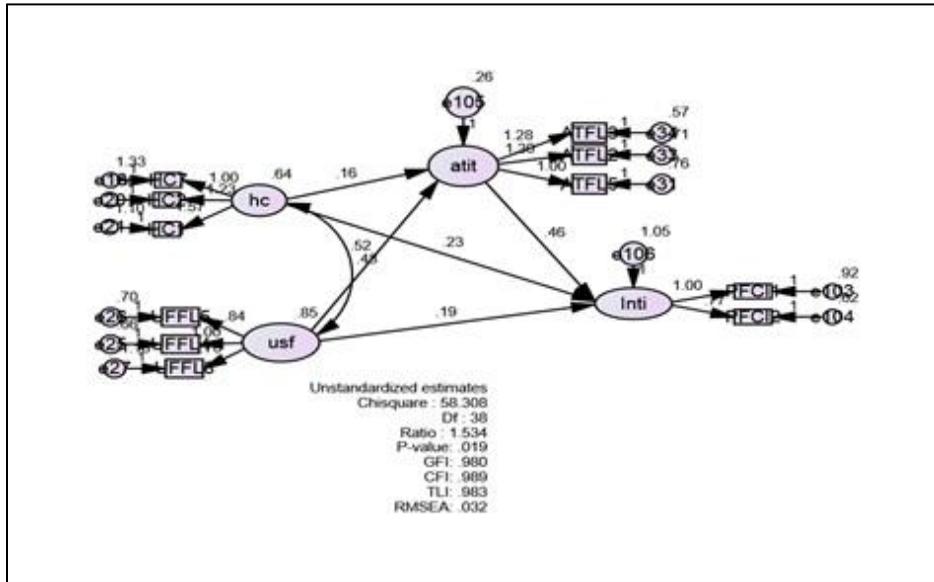


Figure 3: Path diagram

Table 5 is comprised of the hypothesized model’s results. According to the table information, there is no direct relationship exist between health claims and intention to consume package food as well as user friendly food label and intention to consume package food. For establishing this relation attitude towards food label play a pivotal role. Therefore, results have indicated that there is full mediation effect of attitude towards food label.

Table 5.  
 Hypotheses standardized results

			Estimate	S.E.	C.R.	P	Status
Health claims	Attitude	Intention	0.163	0.072	2.276	0.023	Full Mediation
User Friendly Food label	Attitude	Intention	0.516	0.074	7.005	***	Full Mediation
Intention	<---	Health Claim	0.234	0.123	1.902	0.057	Not Supported
Intention	<---	User friendly food label	0.19	0.147	1.288	0.198	Not Supported
Intention	<---	Attitude	0.458	0.155	2.962	0.003	Supported

## DISCUSSION

The results have indicated that health claims and user friendly food label have no direct effect on intention to consume package food. In the present study, it was investigated that what extent health claims and user friendly food labels have directly and indirectly effect on consumers' intention to consume package food items. The final finds have exposed that for Pakistani consumers there is no direct effect of health claims and user friendly food labels on consumers' intention to consume package food items. Aforementioned studies have also presented similar results where it was expressed by researchers that effect of food is based on regions (Cowburn and Stockley, 2005; Williams, 2005; Drichoutiset al., 2006) some regions have appositive response and some have no effect (Grunert and Wills, 2007). Furthermore, some outcomes of the past studies match with current studies with respect to food label format confusions. It was indicated that due to the presence of various formats of food labels it creates confusions among consumers to consult them at the time purchase (Draper et al., 2011). Majority of Pakistani consumers consult food label to check the manufacturing date, expiry date, ingredients, and producer of the products (Zafar, 2014). There is a need to develop an awareness among the Pakistani consumers pertaining to the decisiveness of nutritional information and easy method of display.

This big factor can also be the cause of insignificance relationship of health claims and user friendly food label with the intention to consume package food items in the current study. Attitude towards food label fully mediated in making a relationship with a health claim, user friendly food label and intention to consume package food. Past studies have disclosed that food label information aware consumer in making an informed choice and then this awareness leads towards the selection of healthy packaged food items (Annunziata &Vecchio, 2012). The intended study has unfolded the fact that Pakistani consumers are inclined towards the overall user friendly food label as compared to health claims because the explanatory power of user friendly food label is higher than health claims such as 62% and 15% respectively. Aforementioned studies also having some statistics in which it was found that understanding of health claims has inconsistent results (Wills et al., 2012). The review of some articles has exposed that brand price, taste, the attractiveness of products and packaging are a more decisive factor for consumers than health claims (Lalor et al., 2011; Ares et al., 2010; Lyly et al., 2007; Krystallis et al., 2008). Notwithstanding, health claims is abetter method for providing nutritional information for consumers. Studies have suggested that there is no standard method to design health claims and each country have their own rules and legislation for health claims according to the understanding capabilities of their nations. Therefore, it is advised by the intended researchers to explore what kind of health claims are best understood by Pakistani consumers.

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