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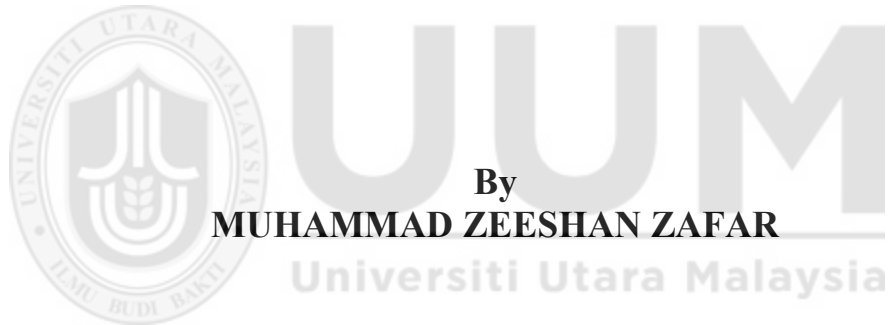# FACTORS AFFECTING CONSUMER'S HEALTHY-PACKAGE FOOD CONSUMPTION INTENTION

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FACTORS AFFECTING CONSUMER'S HEALTHY-PACKAGE FOOD CONSUMPTION INTENTION

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ABSTRACT

Eager of convenience is the natural phenomena of all mankind. Similar pattern has been observed in food related decisions. Owing to the rising trend of individuals towards the consumption of packaged food the transition of disease pattern from acute to chronic has also been noticed. Psychologically, individuals' intention is the foundation of their actual behavior. Individuals' intention and actual behavior are correlated with each other, therefore, it is expected that positive strong intention direct towards actual purchase of any object. Furthermore, the research on consumers' intention towards packaged food in developing and under developing countries are still far behind to figure out the solution on this issue. Therefore, this study has targeted Pakistani consumers to examine their intention towards healthy packaged food consumption. The objective of the study was accomplished with traffic lights symbols, health claims, user friendly food label, subjective norm, self-efficacy, attitude towards food label, five personality traits and intention to consume healthy packaged food. Ajzen's theory of planned behavior was used as the underpinning theory. For data collection self-administered questionnaire was employed to target MBA students of fourteen universities. The sample size was 537 and technique was systematic random sampling. Structural equation modeling was used to analyze the complete model. The traffic lights symbol was having ineffective for Pakistani consumers whereas health claims and user friendly food label indirectly influenced consumers' intention with the mediation of attitude. In addition to, subjective norm and self-efficacy were having positive significant effect on intention to consume healthy packaged food. Moreover, conscientiousness and agreeableness were supported for moderation effect. Theoretical and practical implications are also discussed. Finally, this research provides suggestions for future research.

Keywords: Front of pack labeling, big five personality traits, intention to consume healthy packaged food

ABSTRAK

Hasrat kepada kesenangan merupakan fenomena semulajadi bagi setiap manusia. Pola yang hampir sama telah dipertimbangkan dalam membuat keputusan berkaitan makanan. Disebabkan oleh aliran peningkatan individu terhadap penggunaan makanan yang dibungkus, maka peralihan pola penyakit daripada keadaan tidak normal kepada kronik turut disedari. Secara psikologi, keinginan individu menjadi asas kepada tingkah laku sebenar mereka. Keinginan dan tingkah laku individu berkaitan antara satu sama lain, di mana ia menjangkakan bahawa keinginan positif yang kuat cenderung ke arah pembelian sebenar bagi sesuatu objek. Selain itu, kajian tentang keinginan pengguna terhadap makanan bungkus di negara-negara membangun dan kurang membangun masih jauh di belakang untuk mendedahkan penyelesaian bagi isu ini. Oleh itu, kajian ini mensasarkan pengguna-pengguna Pakistan untuk menilai keinginan mereka terhadap penggunaan makanan bungkus berkhasiat. Objektif kajian ini telah dicapai melalui symbol lampu isyarat, tuntutan kesihatan, label makanan mesra pengguna, norma subjektif, efikasi kendiri, sikap terhadap label makanan, lima sifat utama keperibadian dan keinginan terhadap pengambilan makanan bungkus berkhasiat. Teori Ajzen berkenaan tingkah laku yang dirancang telah digunakan sebagai teori pendukung. Bagi pengumpulan data, soal-selidik yang dikendalikan secara peribadi telah mensasarkan pelajar-pelajar MBA dari empat belas universiti. Saiz sampel melibatkan 537 pelajar dengan penggunan teknik persempalan rawak yang sistematik. Model persamaan struktur telah digunakan untuk menganalisis model yang sempurna. Simbol lampu isyarat tidak berkesan bagi pengguna-pengguna Pakistan sebaliknya tuntutan kesihatan dan label mesra pengguna secara tidak langsung telah mempengaruhi keinginan pengguna dengan pengantara tingkah laku. Di samping itu, norma subjektif dan efikasi kendiri mempunyai kesan positif yang signifikan terhadap keinginan dalam pengambilan makanan bungkus berkhasiat. Tambahan pula, kesedaran dan penerimaan telah disokong oleh kesan yang sederhana. Implikasi teori dan praktikal turut dibicangkan. Akhir sekali, kajian ini menyediakan cadangan untuk penyelidikan pada masa hadapan.

Kata kunci: Label hadapan bungkusan, lima sifat utama keperibadian, keinginan terhadap pengambilan makanan bungkus berkhasiat.

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CHAPTER ONE

INTRODUCTION

1.1   Background of the Study

Chapter one is comprised of brief description of healthy packaged food consumption intentions, problem statement, objective of the study, research questions, significance of the study, study scope and brief description of all the variables used in current study.

1.2   Packaged food consumption intention

Types of packaged food available in the market are ready to eat packaged food and ready to cook packaged food. Ready to eat packaged food is a food which does not need to reheat them such as cooked meet, smoked fish, desserts, cheese and sandwiches. On the other hand ready to cook packaged food further subdivided into ready to cook at burner, ready to cook in oven and ready to cook in microwave. In ready to cook packaged food companies pre-cook or half cook these products and little effort is required from consumer to make them eatable such as vermicelli, pure spices, meal mix, snack mix and frozen food. The researcher of the current study did not categorized the packaged food for research but to focus on the labels of these packaged food which should be informative and easy to interpret by average consumers for healthy packaged food consumption. Owing to the unavailability of formal method to educate consumers pertaining to the selection of healthy food the food label is the best source to achieve this objective. The printed information on food

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label plays a pivotal role for changing consumer intention and decision. Furthermore, due to the technicality of printed information consumer avoid consulting food label at the point of purchase but when the printed information would be easy to understand then it would be convenient for consumer to read it at point of purchase. Moreover, consumer does not spend much time for purchasing food item therefore to inform consumers about package food nutrients the format of information printed on food label should be precise and effective. Therefore, the objective of the current study was to investigate the factors which affect instantly on consumer intention for selection of healthy packaged food.

Most researches have expounded that worldwide food production and consumption patterns have been in a transitional phase (Popkin & Slining, 2013; Black, Victora, & Walker, 2013). The consumption of processed packaged food among consumers is steadily increasing due to its ready to consume and convenient characteristics (Wahlqvist, 2011; Monteiro & Cannon, 2012; Stuckler & Siegel, 2011; Stuckler, McKee, Ebrahim, & Basu., 2012; Monteiro, Moubarac, Cannon, & Popkin., 2013). The transition in food consumption from homemade cooking to excessive consumption in processed food has also affected individuals' disease pattern which is also in transitional phase from acute and infection diseases to chronic diseases (Moubarac. Parra, Cannon, & Monteiro., 2014). Initially, developed countries' consumers were inclined towards processed food but later the popularity of processed food with excessive consumption has been observed in middle income and low income countries (Vandevijvere, Monteiro, Krebs-Smith, Lee, Swinburn, Kelly, Neal, Snowdon, & Sacks et al., 2013). Ludwig (2011) have highlighted the need to tackle

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the over increasing consumption of processed food among consumers by designing comprehensive and effective models.

Overweight, obesity and chronic lifestyle diseases are cause of poor dietary quality and low consumption of fruits and vegetables. The aforementioned studies have disclosed the fact that obesity and diabetic ailments have extended to widespread proportion in the world (Beaglehole, Bonita, Alleyne, Horton, Li, Lincoln, & Piot., 2011) and treatment required urgently (Gregori, Ballali, Vögele, Gafare, Stefanini, & Widhalm, 2014). It has also been notice in past studies that prevalence of obesity and overweight is not confined to limited countries but observed across the world (Olstad, Vermeer, McCargar, Prowse, & Raine, 2015) The increase in per capita income of developed and developing countries have changed the lifestyles and food consumption patterns of individuals (World health organization, 2012). The transition of dietary pattern from traditionally homemade food to large consumption of processed packaged food directing consumers towards chronic diseases (Monteiro et al., 2010).

Moreover, the disease patterns in Pakistan are in a transition phase from acute and infection diseases to chronic diseases (Rehman, Rizvi, Siddiqui, Ahmad, Sophie, & Siddiqui, 2003). The results of various studies have accounted that the increasing cause of chorionic diseases in Pakistan is the excessive consumption of processed food (Jahan, 2014). With the statistics of Sindh Bureau of Statistics the increasing percentage of processed food among Pakistani consumers the registered complaints pertaining to chronic diseases in various Sindh province have increased (Fazal, Valdettaro, Friedman, Basquin, & Pietzsch, 2013). With a scientific evidence the

demerits of processed food are it contains high saturated fat, fat, sodium, salt and low fiber contents which are harmful for health (Martins, Levy, Claro, Moubarac, & Monteiro, 2013; Moubarac et al., 2013). There are some commercial characteristic of processed food which make it able to consume more as compare to fresh food such as less perishable, ready to consume, hyper palatable and above all being low cost (Sparrenberger, Friedrich, Schiffner, Schuch, & Wagner, 2015). On the other hand the huge consumption of packaged processed food increasing the diet related diseases burden on the world which cost around $ 1.4 Trillion (Shetty, 2013; Food and Agriculture Organization United Nation, 2013).

The rapid decline in homemade cooking, the maximum food consumption outside home and growing interest of individuals in processed food items have increased the morbidity obesity among consumers (Popkin, Adair, & Ng, 2012). The trend of poor dietary quality among Pakistani consumers is drastically affecting individuals' health. Owing to imbalanced diet and poor nutrients intake, the ratio of being overweight in Pakistan among female and male is 25% and 18.8% respectively (Bhanji, Khuwaja, Siddiqui, Azam, & Kazmi, 2011). Therefore, overweight and obesity are the factors which are becoming the cause in increasing the risk of chronic diseases in Pakistan like hypertension, cardiovascular diseases, variety of cancers and type II diabetes (Bhanji et al., 2011).

Patterson, Warnberg, Poortvliet, Kearney, and Sjostrom (2010) have reported that there is no formal accepted method for the identification of healthy food. Notwithstanding, the area is very challenging for researchers. Researchers are working to define a proper way of dietary quality and healthy food intake

(Drewnowski & Darmon, 2005; Lobstein & Davies, 2009). Some directions have been given by food based dietary guideline regulations (FAO/WHO, 1998; Becker, 1999). Alexander, Anderssen, Aro, Becker, Fogelholm, and Lyhne, (2004) have recommended some recommendations regarding dietary quality of consumers. Dietary quality is a consumption of fruits, vegetables, cereals, milk, fish and potatoes along with low fat diet, sodium and the limited energy-dense diet.

Past studies' statistics have unveiled the fact that low income countries are having hug deficiencies in taking nutrients and involved in consumption of processed packaged food (International Food Policy Research Institute, 2015). Some studies have discussed that the concept of "westernization" and inspiration from industrial countries are the cause of increasing trends towards excessive consumption of processed food in developing and under developing nations (Vos, Barber, Bell, Bertozzi-Villa, Biryukov, Bolliger, & Duan, 2015). Lack of adherence has been found among Pakistani consumers regarding internationally recommended food quality. Jahan et al., (2014) have indicated that consumption of fruits, in Pakistan, are 3.44% in male and 2.53% in female and the consumption proportion of vegetables among male and female are 41.37% and 41.77% respectively. Pakistan has encountered simultaneously with overweight and underweight issues. With respect to underweight problems, mostly adolescent females and young mothers are victims (Saleem, Ahmed, Mulla, Haider, & Abbas, 2013). The underweight issue has increased some complications among Pakistani females like, infertility, anemia and complications in pregnancy. These complications are detrimental to mothers and new born babies.

Flegal, Carroll, Ogden, and Curtin (2012) claimed that obesity and poor dietary quality are public health concerns. In contrary to other countries Pakistani government, unfortunately, spends less than 1% of its budget on medical sector (Budget, 2015-2016). This pathetic percentage on medical facilities for the nation has maximized the private medical expenses of individuals in Pakistan. The consumption of nutritional food coupled with unhealthy processed food unpin the solution for under nutrients and non-communicable diseases (Ezzati & Riboli, 2013). According to a medical practitioner (Dr. Mercola, 2015) for an optimal health it is recommended to consume 90% fresh food and 10% commercially processed food, however, the actual facts are contrary. Therefore, there is a need to find factors which can create intention among consumers at the time of packaged food purchase to select healthy packaged food rather blindly put every packaged food items in shopping cart which later indulged them in non-communicable diseases.

In the USA, almost 50% adults are observed to have engaged in consumption of commercially prepared food products, for instance, fast food (Kant & Graubard, 2004; Laska, Larson & Story, 2013). According to statistics the consumption of fast food in the USA is 30.5% (Braig, 2002; Calle, Rodriguez, Walker & Thun, 2003). Besides, the Pakistani market is also very lucrative for fast food products. The fast food lovers fall in the age between 18-40 years in both genders. The percentage of this consumption is 57% in male and 35% in female (Ramzan, Ali, & Khan, 2008; Hanif, 2010). This consumption pattern has amplified the diseases ratio. The updated statistics have demonstrated that food related diseases among male and female are 32.4% and 30.6% respectively in Pakistan (Jahan et al., 2014). In comparison with home-cooked meals, commercially prepared meals contain maximum percentage of

saturated fat, calories, cholesterol and sodium, and minimum proportion of nutrients like fibers and calcium (Guthrie, Lin, & Frazao, 2002; Hawkes, Smith, Jewell, Wardle, Hammond, Friel, & Kain, 2015; Acheampong & Haldeman, 2011).

The early age of consumers like, adolescent and young adults, are found to be more inclined towards packaged food, fast food and restaurants cooked food (Nelson, Story, Larson, Neumark-Sztainer, & Lytle, 2008; Laska, Larson, Neumark-Sztainer, & Story, 2010). Nelson, Story, Larson, Neumark-Sztainer, & Lytle (2008) have suggested to designing effective promotional awareness campaign for the young adults for the selection of balanced packaged food in daily life. There is a need to investigate packaged food consumption intention of Pakistani consumers due to the increasing ratio of food retail sector (Lhussier, Bangash, Dykes, Zaman, & Lowe, 2012). Therefore, to enhance the dietary quality of Pakistani consumers it is essential to create rational intention among them pertaining to the consumption of processed food.

Actually, the quality of diet is associated with the composition of food eaten in daily routine and the amount consumers have taken from food in the form of nutrients (Torjusen, Lieblein, Næs, Haugen, Meltzer, & Brantsæter, 2012). Some of the researchers have investigated on organic packaged food usage intention. The aim of the study was selection of organic packaged food by consumers which is considered to be healthy food. Armon, Melamed, Shirom, Shapira, & Berliner, (2013) have noted that organic packaged food produced with the concept that it contains natural vitamins, antioxidants (Worthington, 2001), Poly unsaturated fatty acids (Butler, 2010), and lower levels of heavy metals (Cooper, Sanderson, Cakmak, Ozturk,

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Shotton, Carmichael, Haghighi, Tetard-Jones, Volakakis, Eyre, & Leifert, 2011), mycotoxins (Bernhoft, Clasen, Kristoffersen, & Torp, 2010) and pesticide residues (Baker, Benbrook, Groth, & Lutz, 2002; Lu, Toepel , Irish , Fenske, Barr, & Bravo, 2006) in a crops and milk.

Few studies do not make distinction between organic packaged food and traditional processed food production, with respect to health benefits. In this connection, Dangour, Dodhia, Hayter, Allen, Lock, & Uauy (2009) have reported that no fundamental differences have been found between organic packaged food and traditional processed food production regarding nutritional richness. Therefore, organic packaged food selection is not the ultimate source of nutritional food and better dietary quality.

The dietary quality of consumers has been examined in multidimensional ways. Some researchers have found that socioeconomic differences among consumers are also the cause of poor dietary intake. Therefore, dietary quality has also been tested by taking dietary cost as predictor of dietary quality. Mackenbach, Stirbu, & Roskam, (2008) have described that the discrepancies exist among the consumers with respect to dietary quality and it is the cause of socioeconomic differences. High socioeconomic consumers are habitual of taking high nutrients foods like fruits and vegetables whereas low socioeconomic consumers are more conscious about enough food rather nutritious food (Kant & Graubard, 2007; Lopez-Azpiazu, Sanchez-Villegas, Johansson, Petkeviciene, Prättälä, & Martínez González., 2003; Irala-Estevez , Groth, Johansson, & Oltersdorf, 2000; Bihan, Castetbon, & Mejean, 2010; Mullie, Clarys, &

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Hulens, 2010; Dynesen, Haraldsdottir, & Holm, 2003; Boylan, Lallukka, Lahelma, Pikhart, Malyutina, Pajak, & Simonova, 2011).

Drewnowski and Eichelsdoerfer (2010) have added that the cause of dietary inequalities is the cost of diet. The unaffordability and the lack of access to nutritional food, low socioeconomic consumers are deprived of healthy food. There are some studies that have suggested that the nutritional diet can be composed at low price (Carlson, Lino, Juan, Hanson, & Basiotis, 2007). The change in food consumption pattern with socioeconomic development has also been observed in Pakistan. It has been noticed that convenience seeking behavior in food and increasing percentage of food outside home is now common trend in Pakistan. There are several reasons of this change in Pakistan and one of them is the growing percentage of female contribution in employment (Ahmed, 2011). The following table 1.1 has described the previous few years' male and female employment percentage:

Table 1.1
Gender employment trends in Pakistan

Employment contribution	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2008-2009	2009-2010	2010-2011
Male	78.6%	77.6%	77.6	79%	79.6%	79.1%	78.5%	78%
Female	13.7%	13.6%	15.6%	19%	19.4%	19.9%	21.0%	22.0%

Source: Pakistan employment trend (2011)

The above mentioned table 1.1 has indicated that per capita income of one household has increased. The traditional house hold women of Pakistan are now employed and do not have enough time for meal preparation at home. Therefore, readymade and easy to cook food options are attracting middle income consumers. But the significance of dietary quality is inevitable for consumers.

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The food purchasing behavior indicates the intention of consumer towards quality of diet (Ni Mhurchu, 2010). The consumers' inclination towards outside packaged food purchasing is noticeable. Todd, Mancino and Lin (2010) have reported that almost 42% of an individual consumer's budget is consumed at outside home food. The growing interest of Pakistani consumers in processed and packaged food has also been observed (Shnitzler, Aoki, Marketing, & Miyamoto, 2011). A study has unfolded the fact that in Pakistan the annual increment in consumption of processed food is 8.6% to 20% (Smith & Charter, 2011). The retail food sector of Pakistan has conducted a survey in 2011 and found that popularity of an imported packaged food product is increasing in Pakistan (Ahmed, Ullah & Paracha, 2012).

Sedentary life pattern (Pearson & Biddle, 2011) and easy availability of processed food (Cavaliere, Ricci & Banterle, 2015) are the causes of poor dietary habits among consumers, especially in young adults and adolescents. Young adults, especially university male and female students, are supposed to be habitual for taking healthy food and must be conscious about dietary quality. Unfortunately, facts are contrary to supposition. Young literates are also found to be indulged in unhealthy food habits and deprived of essential nutrients (Premala & Sowmya, 2012; Aravind, Mondal, Gandhi, Arora, & Bhattacharjee, 2011; Kruger, Blaqnck, & Gillespie, 2005; Richard, Champe. & Ferrier, 2005). Fazal, Valdettaro, Friedman, Basquin and Pietzsch (2013) have conducted a research to investigate the food related behaviors of university students in Karachi, Pakistan. Results have demonstrated that even university students who are the benchmark for other citizens indulged in excessive use of processed food rather homemade food. These Pakistani young educated students, later in practical life, become the opinion leaders of their families. Therefore, the intention of these

students towards healthy food is decisive to influence the rest of the family members. Mancino, Lisa, Jessica, and Biing-Hwan (2009) have added that the estimation of outside food intake is more than expected. In addition to it has also been noticed that the percentage of nutritional food consumption is modest whereas intake of processed packaged food is at fast track (Tillman & Clark, 2014).

Quality of diet prevents consumers from diet related diseases like cardiovascular, hypertension and type 2 diabetes (Rao & Al-Weshahy, 2008; Carrier, 2009). However, some researchers have suggested totake some strong preventive measures to handle the diet related diseases and to develop sense of balanced processed food consumption among consumers (Imamura, Micha, Khatibzadeh, Fahimi, Shi, Powles, Mozaffarian, Dis, 2015; McDermott, Oliver, Simnadis, Beck, Coltman, Iverson, & Sharma, 2015). International food companies and governments are working together to promote healthy food awareness among consumers. And to improve public health various forms of labeling schemes have been suggested (World Health Organization, 2013). There is no formal method to educate consumers towards selection of healthy packaged food except food label itself. Numerous researchers have exposed the fact that food label is very crucial component which is being utilized by food processing companies to display relevant information for the convenience of consumer (Ares & Deliza, 2010; Becker, van Rompay, Schifferstein, & Galetzka, 2011; Labbe,Pineau, & Martin, 2013; Ng, Chaya, & Hort, 2013). Werle et al., (2016) have indicated that food label is not only a decisive marketing tool but can also be taken as a means of promoting healthy food selection.

The increasing consumption of processed foods has positive relation with companies' market share and negative relation with the medical expense of health ministry and individuals and to tackle this issue companies are proposing various kinds of labeling schemes (Lobstein & Davies, 2009). Moreover, the operating sense at the time of purchasing processed food is vision of an individual consumer (Labbe, Pineau, & Martin, 2013) and attractive food label provoke consumers to purchase food (Rebollar, Lidon, Martin, & Fernandez, 2012). The labeling schemes are Front of Pack (FoP) labeling which consists of traffic lights symbols, health claims and health logos and Back of Pack (BoP) labeling which consists of guideline daily assistance, nutritional tables, expiry dates, manufacturing dates and ingredients (Sacks, Tikellis, Millar, & Swinburn, 2011). However, the contents of font of pack labeling scheme are getting popularity among consumers due to their friendliness (van Kleef and Dagevos, 2012). The focal dimensions of front of pack labeling depends upon the shape, color, graphics and precise and most relevant information related to packaged food (Celhay, Boysselle, & Cohen, 2015; Ng et al., 2013; Sester, Dacremont, Deroy, & Valentin, 2013). Although, there are several questions arises on the food marketing which is sometimes considered to be the cause of increasing percentage of obesity among consumers (Chandon & Wansink, 2011). However, few researchers have investigated the effect of food label information on consumers' packaged food selection intention (Deng & Srinivasan, 2013; Madzharov & Block, 2010).

It is the right of an individual to live healthy life to maintain high dietary quality and to take nutritional food. The unhealthy life of consumers is determined by several factors like the inactive life pattern of consumers (Thorndike, Riis, Sonnenberg, & Levy, 2012), the easy availability of packaged food (Brownell & Koplan, 2011), the

shift from homemade meal to food away from home, the growing interest in processed food or packaged food, the lack of awareness and knowledge about nutrients and the reducing interest in fruits, vegetables and fibers. All these factors are dragging consumers towards poor dietary quality and finally fall in dietary diseases. The growing intention of consumers towards packaged food demand awareness among them to choose healthy and balanced packaged food (Blumenthal & Volpp, 2010; Carbone & Zoellner, 2012). Therefore, the intention to use nutrients in daily life is most decisive to increase and maintain the dietary quality of consumers and for that purpose content of front of pack labeling will be effective.

The target population of the intended study is Pakistani students enrolled in university MBA program. To explain their dietary quality intention, the researcher will employ facets of theory of planned behavior like, attitude, subjective norms and perceived behavioral control (Ajzen, 1991), personality traits facets like extraversion, openness (to experience), agreeableness, conscientiousness and neuroticism (Goldberg, 1990) and traffic lights symbols, health claims and user friendly food labels as predictor of attitude towards food label. It will be hypothesized in the current study that all the variables are correlated with each other. Traffic lights symbols, health claims and user friendly food labeling will be the predictor of attitude towards packaged food label. Attitude towards packaged food label will mediate in explaining the relation of traffic lights symbols, health claims and user friendly food labeling with healthy packaged food consumption intention. Subjective norms and self-efficacy will predict healthy packaged food consumption intention independently and big five personality traits will moderate to strengthen or weaken the relation between attitude to read food labels and healthy packaged food consumption intention.

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1.3   Problem statement

A report published in Express TRIBUNE, Pakistan has elaborated that majority of food consumed by Pakistani consumers are processed and packaged which is a bad news not only for environment but also for consumers (Moazzam, 2014). Moreover, Sonnenberg, Gelsomin, Levy, Riis, Barraclough, and Thorndike, (2013) have explained that effective food labeling has a potential to reduce the obesity prevalence and enhance the health behavior of individuals at the time of food purchase. Likewise, food labels should be easily interpretable by all consumers (Carbone and Zoellner, 2012). Furthermore, aforementioned studies have disclosed that the effectiveness of food label efficacy is equivocal (Blumenthal and Volpp, 2010; Borra, 2006; Dumanovsky et al., 2011). In addition, the interpretation of nutritional information which guides consumers in selection of healthy food is not easy to understand neither for illiterate nor for literate (Easton, Entwistle, & Williams, 2010). Moreover, researchers have suggested making food label easy to understand which creates awareness among consumers to select healthy packaged food because there is no formal method available to develop sense of informed food selection among consumers except food label (Carbone & Zoellner, 2012). In addition, nutritional label at packaged food enhance consumer ability to select balanced nutrient's enriched packaged food at the point of purchase (Roberto & Khandpur, 2014). Likewise, studies witnessed that designing and implementing the effective food labels which participate in consumer decision making at point of purchase is a challenging task for food processing (Bialkova, Sasse, & Fenko, 2016). Moreover, the availability of nutritional information at food label is initial step to motivate consumers for healthy food selection (Hieke & Harris, 2016) the understanding of printed information is next level for informed decisions. The availability of packaged food with various food

labels misleads consumers most often. In contrary to that empirical facts have indicated that understanding of food label information varies from country to country.

Hall, Moore, Harper, and Lynch (2012) have noted that according to the World Health Survey an increasing trend in packaged food consumption has been observed among Pakistani consumers. The lack of awareness towards healthy packaged food selection has indulged Pakistani consumers in diet related diseases such as cardiovascular, cancer, hypertension and diabetics (Basit, Riaz, & Fawwad, 2015). Food processing companies working in Pakistan are also found to be concern in developing sense among consumers pertaining to healthy packaged food selection. Nestle food Pakistan which is the flag holder of customer social responsibility has proposed to design future oriented policy with title "*eating the right amount at the right frequency*" (Olierhoek, 2015). According to Annunziata & Vecchio, (2012) the food labels are considered to be not only a source of information but also the first means for directly connecting products with a consumer whereas the potential of food label is most often not well exploited. In addition, the opinion of public health experts is that food processing companies are simply adhere the government policies while printing information at food label but there is need to think beyond the scope of government policies (Pettigrew, Talati, Miller, Dixon, Kelly, & Ball, 2017). The impact of Front of Pack (FoP) labeling which contain simplified information, health claims, traffic lights symbols, colors and symbols is more effective than Back of Pack (Label) which comprise of numeric and scientific information, guideline daily amount and nutritional fact table (Hersey, Wohlgenant, Arsenault, Kosa, & Muth, 2013). The objective of Front of Pack (FoP) labeling contents such as health claims and traffic lights symbols is to provide relevant food related information to consumers

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conveniently (Kleef & Dagevos, 2015). Moreover, studies could not conclude that which front of pack labeling format is easy to interpretable and effective at point of purchase for healthy food selection (Hamlin, McNeill, & Moore, 2015). Therefore, researcher of the intended study is going to employ both FoP labels formats such as health claims and traffic lights symbols to investigate their effect on healthy packaged food consumption intention.

Traffic light symbols are considered to be the most useful and easy to interpret food label patterns (Cowburn and Stockley, 2005; Gorton, Ni Mhurchu, Chen and Dixon, 2009; Kim and Kim, 2009; Grunert, Fernández-Celemín, Wills, Bonsmann, & Nureeva, 2010). Some studies have unfolded the fact that traffic light symbols are helpful in selecting healthy packaged food items as compared to other patterns like mentioning the percentage or healthy choice labels (Möser, Hoefkens, Van Camp & Verbeke, 2010; Hawley, Roberto, Bragg, Liu, Schwartz & Brownell, 2012). The color coding of different nutrients on food labels with traffic light symbols enables consumers to read food labels for selecting healthy food and ultimately maximizes the dietary quality (Borgmeier & Westenhoefer, 2009; Hawley et al., 2012; Kelly et al., 2009). The color coding system of traffic light not only increases the interest of frequent label users but also changes the behavior of non-users of food labels and grabs the consumer's attention at least for a moment. This first sight attraction of color coded traffic light symbols to non-users motivates consumers to read the food labels and unintentionally spend few seconds on reading and understanding of food label (Scarborough et al., 2015). These few seconds have long lasting effect on consumers' future behavior towards their reading of the food labels and the dietary quality (Brownell & Koplan, 2011).

According to Levy, Riis, Sonnenberg, Barraclough and Thorndike (2012) traffic light symbols are affecting the market share of food producers and increasing the sale of food products which are wrapped with symbols like traffic light labels. Sonnenberg et al., (2013) have demonstrated that traffic light symbols are the best source for nutritional food awareness as well as in developing attitudes to consult food labels at the time of purchase.

Chandon and Wansink (2007) have mentioned that sometime it is also observed that consumers select food with the perception of healthy food but in reality the selected food is unhealthy. It happens due to the lack of knowledge about nutritional food. Moreover, after educating them through food label information, by using traffic light symbols, consumers can change their behavior towards actual nutritional food selection.

Numbers of studies have taken traffic light symbols like green, yellow and red to inform consumers about the low, medium, high fat, saturated fat, sodium and salt (Roberto, Bragg & Schwartz, 2012). Sacks, Tikellis, Millar and Swinburn, (2011) investigated the effect of food market share with traffic light colors labeling. In addition, Sacks, Veerman, Moodie & Swinburn, (2010) examined the impact of traffic lights colors labeling to restrain consumers to take unhealthy food. Likewise, Ollberding, Wolf & Contento, (2010) investigated the effect of traffic lights colors' labeling on consumers. However, scare studies are available which have investigate traffic lights symbols as an awareness dimension in making attitude towards packaged food labels and subsequently to investigate its impact on healthy packaged food consumption intention. Moreover, food label information depends on how much time

consumer spends on shopping. Lack of timing is a big hurdle that consumer avoid using label information even for health conscious consumers. Therefore, to tackle short time frame of consumers there is need to present nutritional information with symbols, colors and graphs.

There are two types of health claims. One is nutritional claims and the second is health claims. Health claims are the precise statements printed on the front of the packaged food. The purpose of this claim is either to provide the benefit of food usage or to protect from any health related risks. It is a well-recognized way to communicate consumers about healthy food (Cannoosamy, Pugo-Gunsam & Jeewon, 2014). Gilsenan (2011) has noted that health claims explain the relationship between the food and health. The food product packaged which contains the health claim statement demonstrates that what will happen after using this food such as "iron contributes to the normal growth of children" (Navas-Carretero & Martinez, 2015) since the product contains iron nutrient which is useful for the growth of children. Along with that these claims would also create awareness among average consumers in making decision regarding healthy packaged food at the time of purchase (Svederberg and Wendin, 2011).

Owing to the growing need of nutritional interest and food safety, Europe has made a claim regulation (Regulation (EC) 1924/2006). The introductory phase of regulation was the "average consumer". In this concept, the food processing companies have displayed the health claims which are understandable by average consumers. Cheftel (2005) has indicated that most of the time consumers misunderstand these health claims due to the lack of scientific knowledge. Consumers need easy to understand

and simple health claims (Ares, Gime´nez, & Ga´mbaro, 2009; Kapsak, Schmidt, Childs, Meunier, & White, 2008).

According to Food labeling guide (2008), health claims should be limited to statements which protect or facilitate consumers. Because health claims are used to provide useful information to consumers concerning the health benefits of processed food (Nocella & Kennedy, 2012). Health claims were first time introduced in Japan in the 20 century (Verhagen, Vos, Francl, Heinonene & Loveren, 2010). Thereafter, the popularity of health claims has been accepted in the USA, Europe and other countries. Researchers have explored the impact of health claims with respect to understanding of label information (Garretson & Burton, 2000; Kozup et al., 2003). In addition, a few researchers have investigated that health claims on food labels are the symbol of trust regarding nutrients (Barreiro-Hurle, Gracia & de-Magistris, 2010) and few of the researchers' opine that understanding of health claims are country specific (Bech-Larsen & Grunert, 2003) which were later examined in comparison with Australia and Dutch (Williams, Ridges, Batterham, Ripper & Hung, 2008). Researchers have notion that health claims can be a source to develop awareness among consumers towards selection of not only healthy but balance packaged food (Van Wezemael, Caputo, Nayga, Chryssochoidis, & Verbeke, 2014). Svederberg and Wendin (2011) have claimed that this is unarguable that health claims educate consumers and guide them to increase their dietary quality. However, the health claims in making attitude to read food labels and subsequently to make healthy packaged food consumption intention has not yet been investigated.

Sharf, Sela, Zentner, Shoob, Shai, and Stein-Zamir (2012) have mentioned that consumers always prefer simple, easy to understand and clear food labeling. Food labeling is the most significant population based method to inform consumers about healthy and unhealthy foods (Mahan & Escott-Stump, 2004). A few, studies have investigated the user friendly and easy to interpret food labels (Saha, Vemula, Mendu, & Gavaravarapu, 2013). Most of the studies have been conducted on the use of labels with respect to consumers' knowledge, practice and perception (Laxmaiah, Sudersha &, Rao et al., 2009).

Moreover, the concept of user friendly food labeling also varies from county to country as health claims (Vijaykumar, Lwin, Chao & Au, 2013). Several researchers have investigated that food label reading, understanding and evaluating label information strongly affect dietary quality of individuals (Barreiro-Hurle, Gracia and de-Magistris, 2010). Easy to interpret food label is very effective instrument to educate consumers while keeping their freedom of choice and reducing their search cost (Capacci et al., 2012). It has also been examined in past studies that information available at food label assist consumers in selection of balanced food (Campos, Doxey, &Hammond, 2011; Wahlich, Gardner, & McGowan, 2013). Moreover, aforementioned studies have accounted that consumers' consultation of food labels at the time of purchase make better food selection (Hoefkens, Pieniak, Van Camp, & Verbeke, 2012). However, the lack of food label usage at the time of food selection is due to lack of proficiency in interpreting the nutritional information (Mejean, Macouillard, Péneau, Hercberg, & Castetbon, 2013). According to Liu et al., (2015) it is required in future studies to investigate the efficacy of easy food label for immediate and long term food purchase behavior. The easy to interpret characteristic

of food label create an urge among consumers to consult it at the time of food selection and this moment of truth simultaneously instigate sense of selection or rejection for specific product (Celhay, Boysselle, & Cohen, 2015). The Food and Drug Association USA has proposed the concept of "more user friendly food version" for food processing companies and the objective of this thoughtful review is to enhance consumers' understanding towards the information printed at food label for their healthy packaged food selection (Temple & Fraser, 2013). Therefore, user friendly food label in making attitude towards packaged food label and subsequently to create healthy packaged food consumption intention deems necessary.

Moreover, the information obtained from friends, sibling, peers and parents also develop individuals' behavioral intention towards any action (Kozup et al., 2003; Visschers, Hartmann, Leins-Hess, Dohle, & Siegrist, 2013). Some of the past studies have also explained that information received by peers, family members, doctors and physicians pertaining to health related matters have lasting effect on individuals (Yap, Azila, Noor, Marshall, & Liew, 2014). Furthermore, aforementioned studies have indicated that in purchasing food items individuals' decisions are being influenced by other such as, media, family, peers and sibling (Chung, Stoel, Xu, & Ren, 2012; Rajamma & Pelton, 2010). The influence of peers, sibling, family, media, parents and government refers to Ajzen's (1991) subjective norm. Subjective norms is actually "*the extent to which a person believes that his/her important reference groups think he/she should perform the behavior*" (Ajzen and Fishbein 1980). A few studies have exposed the fact that subjective norms have positive relation in selecting healthy food products (Chan et al., 2015). In addition to some past studies have examined that subjective norms have significant positive effect on male healthy eating behavior

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whereas in female the result is contradictory (Fila and Smith, 2006). The investigation of subjective norm in healthy packaged food consumption intention yet ignored. Therefore, researcher of the intended study has employed subjective norms in direct relation with healthy packaged food consumption intention to fill this gap.

Studies have examined that individuals' internal ability to perform any behavior or task play pivotal role (Schwarzer, 2004; Mai & Hoffmann, 2012) and for that purpose self-efficacy is the most frequently used variable. The self-efficacy is stem from the cognitive theory (Bandura, 1977, 1986) and it elaborate the ability of an individual to perform or achieve any task or goal. Owing to the popularity of self-efficacy, its existence have been noted in protection motivation theory (Rogers, 1983), Trans theoretical model (Prochaska, DiClemente, & Norcross, 1992) and health action process approach (Schwarzer, 1992). Most of the researchers have taken self-efficacy as trait-like constructs which describe an individual's competency to deal with broader level of stress and challenges (Luszczynska et al., 2005). In addition to some of the studies have accounted that self-efficacy is a domain specific construct such as smoking self-efficacy and physical activity self-efficacy (Hoffmann and Soyez, 2010). The compatibility of self-efficacy has also been examined with nutritional behavior (Schwarzer and Renner, 2006). Aforementioned studies explained that self-efficacy is also the predictor of weight loss and weight maintenance (Fisher & Kridli, 2014). Some of the researchers have concept that self-efficacy is complex because it includes individuals' ability and confidence to utilize own resources such as motivation, cognition and action to perform task (Chang et al., 2008). Moreover, past studies have suggested investigating the effectiveness of self-efficacy in reducing fat, saturated fat, salt and other calories (Cohen & Babey, 2010). Likewise, some have

their opinion that self-efficacy should be assessed in various food consumption patterns (Clum et al., 2014). A study conducted in the past have described that self-efficacy pertaining to change dietary habits has significant positive impact in consulting food label at the time of purchase (Kim et al., 2013). There is scarce literature available in the past studies where self-efficacy has been taken to investigate its influence on healthy packaged food consumption intention. Therefore, to fill this gape researcher of the intended study is taking self-efficacy as construct of theory of planned behavior by replacing perceived behavioral control. Because as it has been mentioned above that self-efficacy has also considered as domain specific therefore, in current study it will be domain specific with respect to individuals' ability towards healthy packaged food consumption intention.

Several researchers have adopted Ajzen's (1991) theory of planned behavior for the investigation of organic food selection (Chen, 2007). Besides, Kima, Njiteb & Hancer, (2013) have examined consumer behavior in the eco-friendly restaurants. Likewise, Kima, Hamb, Yangc & Choi, (2013) investigated consumers' menu reading behavior in restaurants. Several researchers have criticized the insufficiency of the constructs of theory of planned behavior and demand for the induction of new variable to increase the explanatory power towards behavioral intention (Sniehotta, Presseau, & Araújo-Soares, 2014). In addition to that critiques have favored to investigate health related behavioral intention with the assistance of theory of planned behavior and accounted that theory of planned behavior has 19.3% variability (McEachan, Conner, Taylor, & Lawton, 2011). The founder of theory of theory of planned behavior Icek Ajzen has elaborated that the use of limited items for the operationalization of each constructs of TPB for the investigation of intention also the

cause of not achieving desired results from TPB (Ajzen, 2015). To attenuate this deficiency the researcher of the intended study has involved more than 5 items for each constructs of TPB.

Furthermore, a concept of theory broadening and theory deepening were floated to enhance the life of theory of planned behavior (Perugini & Bagozzi, 2001). The concept of theory broadening is to involve an additional independent variable along with other establish constructs. Whereas taking any one of the establish constructs of TPB as moderator or mediator leads towards theory deepening. Therefore, researcher of the intended study is going to take attitude as a mediator between independent and dependent variables.

Moreover, researchers have also investigated the consumers' behavior with Goldberg's (1990) big five personality traits: neuroticism, conscientiousness, extraversion, openness to experience and agreeableness. Goldberg and Strycker (2002) have examined the diet related behavior of individuals with respect to big five personality traits. Past studies have indicated that researchers have investigated the relationship among personality traits, diet and body mass index (Mottus, McNeill, Jia, Craig, Starr & Deary, 2013). It has also been noticed that five personality traits are pivotal in selecting the reduced calories food (Carrillo, Prado-Gascó, Fiszman & Varela, 2012).

Moreover, Fishbein and Ajzen (2010) have described that researchers have proposed two additional variables with existing constructs of theory of planned behavior such as self- identity and anticipated affect. The self-Identity can be referred to as the

personality traits' constructs. Therefore, the involvement of personality traits and TPB facets, in integrated form, will give the better explanatory power towards intention. However, the integrated impact of the attitude, subjective norm and self-efficacy with all personality traits are yet to be examined.

Pakistan is an emerging market for processed packaged food. The increasing percentage of packaged food is negatively affecting consumer dietary quality. A research conducted in Karachi with mixed population and results have explained the fact that 24% female and 16% male having cholesterol, 34% men and 49% women are obese whereas 8% population of Karachi is suffering from diabetes and the cause of these diseases is poor dietary quality (Barolia, Clark, & Higginbottom, 2013; Dennis, Aziz, She, Faruqui, Davis, Manolio, & Aziz, 2006). Nishtar, Bile, Ahmed, Faruqui, Mirza, Shera, & Rajput, (2006) have described that the mortality rate due to cardiovascular diseases is higher in Pakistan as compared to the rest of the world and the cause is poor dietary quality. The statistics have explained that 6.7 million people in Pakistan are affected by diabetes and other diet related diseases (Basit, Riaz and Fawwad, 2015) and the percentage is estimated to reach 12.8 million till 2035 (International Diabetes Federation, 2013).

A few studies have investigated the diet related behavior of Pakistani consumers. Jafar, Haaland, Rahman, Razzak, Bilger and Naghavi (2013) have examined Pakistani dietary behavior with Body Mass Index (BMI). Zafar (2014) has investigated that for healthy food Pakistani consumers consult expiry date, manufacturing date and sometime ingredients rather nutritional contents of food labels. Therefore, the researcher of the intended study has designed a framework by involving front of pack

food label formats, influence of others' opinion on consumer behavioral intention, consumers' internal strength and effect of their personality traits for the consumption intention of healthy packaged food. To achieve this objective the Front of Pack (FoP) labeling schemes will utilize such as traffic lights symbols (TL), health claims (HC) and along with that user friendly food labels' (UFFL) will be the predictor of attitude towards packaged food label and subsequently attitude will mediate in explaining the relationship of TL, HC and UFFL with healthy packaged food consumption intention. Five personality traits will moderate in explaining the relationship between attitude towards food label and healthy packaged food consumption intention.

1.4 Objective of the study

The researcher of the intended study is having following objectives:

1. To examine whether traffic lights symbols, health claims and user friendly food labels influence individuals' attitude towards food label.

2. To investigate whether individuals' attitude towards food label positively affect their intention towards healthy packaged food consumption.

3. To investigate whether the attitude towards food label mediates in explaining the relationship between traffic lights symbols, health claims and user friendly food label and healthy packaged food consumption intention.

4. To investigate whether subjective norms and self-efficacy positively influence individuals' intention towards healthy packaged food consumption.

5. To postulate whether individuals' five personality traits (the agreeableness, the openness to experience, the conscientiousness, the extraversion and the

neuroticism) moderate in strengthening the relationship between their attitude towards food label and healthy packaged food consumption intention.

6. Use Structural Equation Modeling to create the model

1.5   Research Questions

After reading numerous articles pertaining to the dietary quality of consumer and its significance, following questions will be answered with the intended study:

1. Do traffic lights symbols, health claims and user friendly food labels influence individuals' attitude towards food label?

2. Do individuals' attitudes towards food label positively affect their healthy packaged food consumption intention?

3. Does attitude towards food label mediates in explaining the relationship between traffic lights symbols, health claims and user friendly food label and healthy packaged food consumption intention?

4. Do subjective norms and self-efficacy positively influence individuals' healthy packaged food consumption intention?

5. Do individuals' five personality traits (agreeableness, the openness to experience, the conscientiousness, the extraversion and the neuroticism) moderate in strengthening the relationship between their attitude towards food label and healthy packaged food consumption intention?

6. Dose Structural Equation Modeling can create the model

1.6   Significance of Study

The intended study will be contributed in upgrading government health policies, designing label regulations for consumer protection as well as results will assist food processing companies in designing easy to understand label for consumers. Along with practical contribution the researcher of the intended study has an intention to enhance the existing theoretical knowledge.

1.6.1   Practical Contribution

Pakistan is a country which is facing many problems. Government of Pakistan is trying to allocate annual budget for the development of infrastructure, education, defense, law and order etc. Very small portion of budget is left for health and welfare of the nation which is less than 1% of total annual budget (Budget 2015-2016). Therefore, the private household expenses for medical have increased for the individual. The World health statistics (2014) has disclosed that 31.39% heath facilities are provided by government of Pakistan whereas 68.61% health expenses are met by the individual's self-help. These statistical figures have disclosed that private hospitals are more active than public sector hospitals but the medical facilities of private hospitals are unaffordable for lower and middle class citizens of Pakistan. These statistics have also demonstrated that the major portion of the income of Pakistani citizens is spent on health problems.

According to the World health statistics (2014) the percentage of non-communicable diseases (NCD) in Pakistan, such as cardiovascular diseases, cancer, diabetes and other NCD, are 19%, 8%, 15% and 3% respectively. The NCD is accounted for

almost 50% of total deaths in Pakistan. The premature mortality between 30 to 70 years of age is 21% due to NCD.

The ignorance of health ministry regarding medical facilities is making poor people poorer and even rich families are facing this problem because major portion of individual income is incurred on medical expenditures. The strong intention for quality of diet can encounter with this drastic situation. The increasing percentage of processed food such as fats, sodium, saturated fats and salt by consumers are leading them towards unhealthy food selection. This unhealthy food selection behavior has indulged consumers in non-communicable diseases. However, change in intention with respect to dietary quality and healthy food is required.

Since the change in policies at national level requires a long term process and sometimes several hurdles and delays make the situation more severe, that is why the consumer is being directly targeted. Therefore, creating intention toward healthy food through food labeling and by tackling individual personality traits can make situation better.

The selection of healthy food will reduce the medical cost of an individual. This cost will later become consumer income. Pakistan is not a welfare state, therefore, every citizen has to meet all his expenditures by his own pocket. Even the welfare states like UK are struggling to reduce the medical cost with the awareness of nutritional food intake. The promotional campaigns regarding healthy diet and better lifestyle pattern in the United Kingdom (UK) at the population level has significantly subsided overall costs of diet related diseases, which were found to be £5.8 billion in 2006–2007

(Scarborough et al., 2011). In 2011, the Chinese government declared the "Healthy China 2020" system (Liu et al., 2015). Therefore, the reducing cost of medical will increase the income of Pakistani citizens. And this income will ultimately incur on family education and welfare and this strategy will lead individuals towards prosperity and healthy happy life style.

The results of the current study will reveal that which factors effect on consumers' healthy packaged food selection intention at the point of purchase. Furthermore, the study will also reveal the kind of beliefs individuals have regarding the factors of healthy food selection. Likewise, this study will be helpful for food processing companies to fill the gap between consumer and nutritional information displayed on food labels. Thus, the available information about food labels is difficult to understand even by the educated people. Therefore, the adoption of front of pack labeling, like traffic lights and health claims along with user friendly labels, will change the individual intention toward healthy packaged food selection.

The results of the current study will also be helpful for strengthening food related regulations in Pakistan. For instance in Singapore, there are some specific logo and seals are available by third party like, Singapore Heart Foundation and Islamic Religious Council of Singapore, 2012 (Vijaykumar, Lwin, Chao and Au, 2013). Food processing companies are using these logos and seals on food label for consumer satisfaction and interest. Similarly, traffic lights symbols, specific approved health claims and approved user friendly or easy to read labels can be provided by third party for the best interest of Pakistani consumers.

It has been discussed in past studies that there is no formal method of education about healthy food and nutritional guidance and food labeling is the suitable and effective technique to educate masses about healthy food (Gregori et al., 2014). This study will be helpful for health ministry of Pakistan in designing policies for food processing companies. The health ministry of Pakistan can compel food processing companies to design easy to understand food label to get label approval from health ministry.

1.6.2 Theoretical Contribution

The researcher of the intended study is rendering the service of theory of planned behavior. After reviewing the past researchers' critique pertaining to the insufficiency of the established constructs of theory of planned behavior, the researcher will involve the personality traits constructs as a moderator between attitude and intention. The reservations on the rational of theory of planned behavior is insufficient establish constructs to explain the behavioral intention and need of extended form of theory of planned behavior (Sniehotta et al., 2014).

Taylor and Todd (1995) have floated the concept of extended theory of planned behavior by decomposing the beliefs such as decompose behavioral beliefs, decompose normative beliefs and decompose control beliefs. They have implemented belief decomposition approach on IT setting which later get popularity since 1995 till to date. Perugini and Bagozzi (2001) have lifted the concept of theory broadening and theory deepening for the survival of theory of planned behavior. The researcher of the intended study will take the Perugini's and Bagozzi's concept of theory deepening and will test the mediating effect of attitude between independent variables (traffic

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lights label, health claims and user friendly food label) and dependent variable (intention). Along with that the researcher will involve Goldberg's (1990) personality traits as a moderator between attitude and intention. There are some concrete reasons to involve personality traits rather finding other suitable dimension as moderator. Lyman B. (2012) has written a book with the title "*A Psychology of Food: More Than a Matter of Taste*" and there he mentioned that personality play vital role in selection of food items. Later, a book written with the title "*Attitude, Personality and Behavior*" by Ajzen (2005) and he elaborated that attitude is a malleable thing and numerous factors become the cause of changing attitude of individuals whereas personality traits are rigged and impossible to change after certain age and that age is post teen age maturity. The critique of theory of planned behavior have suggested various extended independent variables which can be categorize into two sections, self-identity and anticipated affect (Fishbein & Ajzen, 2010). The most suitable factor that describe self-identity is personality traits.

The integration of incompatible variables with the established constructs of theory of planned behavior attenuate theory's reliability to achieve desired target (Ajzen, 2011). The most plausible aspect of personality traits is the fulfilment of four assumption given by Fishbein & Ajzen, (2010) while investigating the intention with established constructs of theory of planned behavior. To achieve the objective of current study the involvement of personality traits is justified because food selection is basically an individual's personal matters. Therefore, personality traits will investigate that which personality trait has strong, moderate and low inclination towards consumption of processed packaged food. This study will extend the traditional concept of TPB

towards Individual Difference TPB for the investigation of healthy packaged food consumption intention.

1.7   Study scope

The habit of unhealthy food selection prevails among all the citizens' of Pakistan. Therefore, it is necessary to address this issue. There are number of packaged food categories but in current study overall consumption intention of individual towards healthy packaged food was investigated. Pakistani consumers are adopting packaged food to make themselves westernize. Therefore, at an initial stage there is a need to create awareness among consumers regarding healthy package food selection among all categories of packaged food items. To target all Pakistani consumers is beyond the scope of the intended study due to time, cost and resources. Moreover, universities policies to grant permission to outsiders for any academic activities are very strict. Therefore, researcher has selected private sector universities and more specifically business department of all universities. Therefore, the researcher of the intended study has targeted MBA students who are enrolled in fourteen private universities. These fourteen universities are situated in two cities of Pakistan Lahore which is the business hub and Islamabad which is the capital city of Pakistan. Lahore is having 11.5 million populations and Islamabad is having 2.5 million populations. People living in Lahore and Islamabad are migrated from all corner of the Pakistan for seeking job, businesses and education. Therefore, the respondents of these two cities represent the whole population of Pakistan and their opinions can also be generalized.

Moreover, numerous studies have unfolded the significance of this age for making awareness towards selection of healthy food and claimed that awareness at this age prevails at rest of their life and called it emerging age sometime (Cain, Epler, Steinley, & Sher, 2012). Likewise, the word independent age has also been used for this age group (Marquis & Manceau, 2007; Lim & Kim, 2015). A few studies have investigated that students in university develop some faulty food habits and later reported to be accompanying with lower or imbalance nutrients (Khattak, Draman, Khan, & Usman, 2012). It is a fact that the educated citizens of any nation play inspirational role for the rest of the citizens and people take notice of their opinions and suggestions. Owing to the systematic random sampling technique researcher of the intended study has selected MBA students to draw the required sample size. The age of MBA students is transitional and their beliefs about anything in this particular age level have long lasting effect on the rest of their life patterns.

1.8   Key terms definitions

Following are the variables employed in the intended study to investigate the dietary intention of consumers towards packaged food consumption. Several researchers have operationalized these variables to identify their decisiveness and their definitions are as follows:

Table 1.2
Key term definitions

Key terms definitions	
Traffic Light Symbols Food Standards Agency (FSA) United Kingdom, 2007.	The proposed scheme highlights the total fat, saturated fat, sugar and salt content on the front panel of food packaged d s, with each nutrient color-coded as red, yellow or green corresponding to high, medium or low levels of that nutrient
Health Claims Food Standards New Zealand (2013) European Food Standards Commission (2010)	Health claims refer to a nutrient in a food such as 'low in fat' or 'good source of calcium' A health claim is any statement about a relationship between food and health
User Friendly Label Post (2007)	Food label which contains a wealth of information that allows average consumers for informed purchase decisions
Attitude Ajzen (1991)	The attitude toward the behavior refers to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior
Personality Traits Angelina (2015)	**Extroversion** : The tendency to be outgoing, sociable, and active **Agreeableness:** The tendency to be trusting, sympathetic, and helpful **Conscientiousness:** The tendency to be organized and disciplined **Neuroticism:** The tendency to experience negative emotions **Openness:** The tendency to be creative and open-minded
Subjective Norm Ajzen (1991)	Subjective norm refers to the perceived social pressure to perform or not to perform the behavior
Self-Efficacy Bandura (2004)	Self-efficacy refers to individuals' beliefs in their capabilities to perform a specific behavior
Intention Ajzen (2001).	Behavioral intention is the indication of an individual's readiness to perform a given behavior. It is assumed to be an immediate antecedent of behavior

1.9   Summary

The first chapter unveils some facts pertaining to consumer intention towards selection of packaged d food. The background of study has explained that over consumption of packaged food increasing medical cost of individuals and government. Academic scholars have highlighted this issue several time and recommended to design comprehensive model. Although food processing companies are contributing by providing excessive information on food labels but consumers' awareness towards consultation of food label at the time of purchase is decisive. There are several factors which are effecting on consumers to consume healthy packaged food and one of them is convenience of the packaged food. The characteristics of easy to cook and readymade are extending the market segment of packaged food. In contrary to that this convenience is dragging consumers towards chronic diseases. The irrational and impulsive buying of packaged food should be transformed into rational and planned behavior. Therefore, the solution of the problem is to create awareness among consumers towards selection of balanced packaged food.

To address the above mentioned problem the first chapter is comprised of background of the study, problem statement, objective of study, research questions, significance of study and scope of study. The researcher of the intended study has also briefly described the variables definitions which depict their significance for present study.

The complete thesis is composed of five chapters such as chapter-I was introductory basic theme and problem was designed. Chapter-II was literature review and it has explained about past studies which have already been conducted on said issue and also described the decisiveness of variables which are employed in current study to achieve intended study objective. Chapter-III was methodology where researcher of the intended study has specified about the target population, sampling technique, sample size, measurement and brief introduction about analysis tool. Chapter-IV was the analysis part where primary data was analyzed. For preliminary data cleaning SPSS and for final model analysis AMOS 21 were involved. Chapter-V was discussion and conclusion. Researcher has written the current findings and made their association with past studies. Furthermore, this final chapter has also described the contribution of study and explained the recommendations for future researchers.
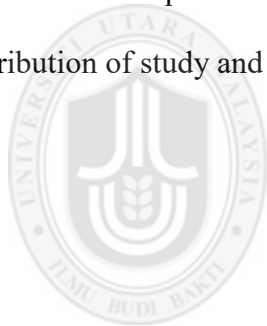
CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Chapter two comprises of the past literature's discussion about the relationship among all the variables taken by the researcher for the investigation of healthy-packaged food consumption intention. The primary goal of this study is to find the individual intention toward healthy-packaged food consumption in their daily life pattern. For the examination of this research question few variables have been taken as antecedents of healthy-packaged food consumption intention like attitude towards food label, subjective norms and self-efficacy, whereas traffic light symbols, health claims and user friendly food label are the predictor of attitude towards food label. Five personality traits were the moderator between attitude towards food label and healthy-packaged food consumption intention to examine the role of individuals' likes and dislikes in selection of healthy-packaged food items.

Furthermore, chapter two has addressed the underpinning theory for the support of current study questions. The designed model of current study is formulated on the concept of theory of planned behavior (Ajzen, 1991).

2.2 Packaged food in Pakistan

Several articles and reports published in various Newspapers which have elaborated the processed and packaged food condition in Pakistan. A report published in Express

TRIBUNE elaborated that majority of food consumed by Pakistani consumers are processed and packaged which is a bad news not only for environment but also for consumers (Moazzam, 2014). Statistics has unpacked the fact that expenditure of Pakistani consumers on packaged and processed food is growing which were Rs. 303/per person in 2004-2005 whereas Rs.1009/per person in 2013-2014 (Siddiqui, January, 2017). According to Karachi Chamber of Commerce Pakistani consumers are spending 42% of their income on food items including processed and packaged food items. Owing to the unhealthy processed and packaged food consumption Pakistani consumers are unintentionally indulged in diet related diseases (Mushtaq, Sultana, Anwar, Khan, & Ashrafuzzaman, 2012).

The most decisive information for Pakistani consumers at the point of purchase is expiry date and manufacturing date of food products (Saeed, Lodhi, Rauf, Rana, Mahmood, & Ahmed, 2013). In contrary to that Pakistani women are more conscious about label information (Nawaz, Billoo, & Lakhan, 2012). Moreover, some of the researchers have reported that for Pakistani consumers the color and shape of product labeling and packaging are influencing factors at the point of purchase (Hussain, Ibrahim, & Noreen, 2015). Packaging is a marketing tool in Pakistan which facilitates consumers with design, color and material at the point of purchase (Farooq, Habib, & Aslam, 2015). An official statement was reported in renowned Pakistani newspaper named DAWN NEWS; "Neither the provinces nor the federation has made any attempt to survey the entire food market, classify the players on different basis and develop a data baseline to periodically monitor overall growth in this sector" (Senior Bureau of Sindh Bureau of Statistics, Aazim, August 31, 2015) Researchers addressed the nutritional labels reading habits of Pakistani consumers. Food processing

companies of Pakistan are formulating strategies to sell their products with attractive label designs, colors and written material but there is need to create awareness among consumers for the selection of right amount of packaged food (Saifullah, Nawaz, Ahmed, & Khalid, 2014). Hashmi, Soomro, and Saleem, (2012) have investigated about the food label reading behavior of Pakistani consumers and explained that even educated consumers prefer only expiry date and manufacturing date at the time of purchase and product freshness and healthiness judged by expiry and manufacture date. Drichoutis, Lazaridis and Nayga (2012) have accounted that nutritional labeling assist consumers in healthy food decision making process and also inform consumers about which nutrient is suitable for them. Nutritional food label information is perceived as a highly trustworthy source of information and many consumers use it as guidance in order to make food purchase decisions and dietary quality (Campos, Doxey and Hammond, 2011).

According to the Economic survey of Pakistan (2010) the contribution of food retail sector in GDP is almost 17%. This contribution is divided into two sections: first the local food retails outlets and second international food retail chains. The contribution of local retails in GDP is 95% whereas international food retail chains' involvement in GDP is 5%. The international food retail chains are Makro, Carryfour (Hyperstar) and Matro (Saeed et al., 2013). Zafar (2014) has conducted a research in Pakistan to investigate the food label reading habit of Pakistani students. The variables taken in this research were: reading complete food label, reading expire date, reading manufacturing date and reading ingredients. The high ratio of reading habit was expiring date and manufacturing date. Data were collected from both gender and there was difference in reading habit priorities. Male were interested to read only expire

date and manufacturing date whereas female were interested in expire date, manufacturing date and ingredients.

It shows that Pakistani market is very lucrative for food retail industry. The awareness about the nutrition is essential due to the increasing percentage of processed and healthy-packaged food consumption in Pakistan. Although companies mentioned the nutrients on food label to adhere the food legislative requirements. Notwithstanding, lack of awareness towards consulting food label at the time of purchase is observed in studies.

Previous studies have accounted for the significance of food labeling to promote healthy dietary habits among consumers and considered to be indispensable tool to promote healthy-packaged food consumption among consumers (Annunziata & Vecchio, 2012; Hartmann et al. 2009). Studies have explained that sometime consumers claimed to consult food label before purchasing food but in actual they did not do so (Grunert and Wills, 2007) and there is one solution to find the actual behavior of consumers towards usage of food label that is excessive research (Gracia et al., 2007). Therefore, the researcher of the study has an intention to investigate the mediating effect of attitude towards food label in explaining the relationship of traffic lights symbols, health claims and user friendly food label with healthy-packaged food consumption intention.

2.3   Past studies on packaged food consumption and food labeling

Following is the detailed description about the packaged food consumption and food labeling:

2.3.1 Food Labeling and healthy-packaged food consumption

Studies have reported that due to trade liberalization and urbanization consumers' diet patterns are in transnational phase from home-made cooking to industrial processed packaged food (Kearney, 2010). Owning to this shift increasing trends have also been noted in obesity and diet related diseases which is associated with over consumption of fatty and salty packaged food products (Goff, Timbers, L., Style, H., Knight, 2014, Schwiebbe, Talma, Renders, Visser, Kist-van Holthe, & HiraSing, 2012). There is need to educate consumers pertaining to the selection of healthy packaged food but no formal method exists for this purpose. Aforementioned studies have suggested that food label is a good source for consumers' informed packaged food selection (Cecchini, & Warin, 2016). The intervention at point of purchase play vital role in changing consumer's intention for the selection of healthy packaged food (Roy, Beattie-Bowers, Ang, Colagiuri, & Allman-Farinelli, 2016) and food label is an effective agent to limit consumers' in wrong selection of packaged food items.

It has been observed in the past studies that consumer health related issues have remained subject to discussion among researchers. Majority of the countries in the world are facing overweight and obesity issues among adults (International Association of Obesity, 2012). Moreover, studies accounted the overweight and obesity differences among young adults and found that women are more conscious in weight loss and more intervention required to develop similar likelihood among male adults (Tsai, Lv, Xiao, & Ma, 2016). The fact has disclosed that large proportion of Australian population is not fulfilling the diet recommendation regarding fruit, vegetable and other nutrients. Therefore, the observed percentage of overweight and

obese is almost 60% (Australian Bureau of Statistics, 2011). For the selection of healthy food the most decisive role is played by nutritional labels along with front of pack labeling style (European Commission, 2008).

It is very plausible to discuss in the favor of nutritional food labels' significance for consumers to select healthy-packaged food but the availability of empirical evidences are scarce (Van Herpen & Trijp, 2011). In addition to the efficacy of front of pack food labels is more than other formats of food label due to its easy to interpretive attributes (Talati, Pettigrew, Hughes, Dixon, Kelly, Ball, & Miller, 2016). Past studies have stated that consumers' interaction with various food labels depends up their time constraints and purchase objectives (Crosetto, Muller, & Ruffieux, 2016). Van Herpen and Trijp (2011) have investigated the influence of consumers' goals and time pressure on attention and the use of nutritional food labels at the time of purchase. Their study was based on two experiments. In first experiment, the proposition was that consumers' specific goals effect on attention which subsequently impact on use of nutritional labels. In second experiment, the proposition was that time pressure influence attention which later effect on use of nutritional labels at time of purchase. Results have proved both propositions and researchers have indicated that consumers' specific goals and time constraints predict consumers' attentiveness and interest to use food labels while shopping healthy-packaged food products.

The interaction of consumer with food label information at an early stage is an indicative for automatic processing of food label information while purchasing packaged food items (Miller, Beckett, Bergman, Wilson, Applegate, & Gibson, 2017). Rawson, Janes, and Jordan (2008) have examined the attention of consumers towards

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use of nutritional label in store environment in Oxford shire by using the eye tracker technique. The purpose to involve eye-tracker technique was to investigate that how a consumer scans relevant information from the massive food label information provided by manufacturer. The statistical analysis has depicted that the consumers do consult nutritional labels but with specific goals. Otherwise, consumer put less effort to read information given on label (Rawson et, al. 2008). Therefore, the specific shopping goals make consumers attentive to search detailed information about the product which is intended to purchase.

Front-of-pack nutrition labels can improve healthy choices among consumers. Consumers who value dietary guidelines and/or for whom health is important are more likely to use nutrition labels (Nayga et al., 1998; Visschers et al., 2010). Moreover, the prime objective of food label information is to facilitate consumers to take informed packaged food choices and to achieve this objective the presentation of information on packaged food label is very decisive and effective (Tonkin, Coveney, Meyer, Wilson, & Webb, 2016). A substantial body of knowledge has debated that interpretation of nutritional information on food label is complex and demand more cognitive process (Storcksdieck genannt Bonsmann and Wills 2012). Therefore, retailers and food processing companies are designing alternative pattern of food labels with easy to understand nutritional content (Newman, Howlett, & Burton, 2014). The pattern and/or position of information at labels also have significant role. Pieters and Wedel (2004) have discussed bottom-up labels factors and top-down labels factors. In bottom-up factors the label type and position develop the likelihood of reading food label (Bialkova & Van Trijp, 2010) whereas in top-down factors food label strikes the motivational aspect of consumers mind. Visschers, Hess, & Siegrist

(2010) used top-down factors and results had indicated that these factors stimulate consumers in processing of labels' information at the time of purchase.

To facilitate an individual consumer to select healthy-packaged food and to inform consumer to select healthy food choices, nutritional labels added on food packages (Grunert & Wills, 2007). In Europe, UK has the highest dissemination of nutrition labeling with more than 60% of products featuring front of healthy-packaged nutrition information (Storcksdieck, Celemín, Larrañaga, Egger, Wills, & Hodgkins, 2010).

According to Beasley, Hackett and Maxwell (2004) students studying at university level belongs to the age group when the individuals decision power mature. Various studies have indicated that early adulthood consciousness of consumers about dietary decisions keep them away from chronic diseases in later life (Smith, Louis, & Tarrant, 2017; Steptoe, Wardle, Cui, Bellisl, Zotti, & Baranyai, 2002). Nevertheless, various researches have disclosed the fact that university, undergraduate, graduate and even post graduate, students have often been reported to adopt unhealthy and unfavorable dietary habits during their university life (Hendricks & Herbold, 1998). The age of university students is considered to be transitional age when an individual become an independent to take decision and their dietary habits and food consumption patterns also become independent (Papadaki, Hondros, Scott, & Kapsokefalou, 2007; Pelletier & Laska, 2013; Vella-Zarb & Elgar, 2009; Fernandes et al., 2015). Some studies have accounted that students although most often not consult food label but they acknowledge to display relevant information on food label with easy to understand

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method for healthy-packaged food selection (Martinez, Roberto, Kim, Schwartz, & Brownell, 2013).

Moreover, there are no effective national health promotion programs focusing on promotion of a healthy diet (Irwin, 2010; Nelson, Story, Larson, Neumark-Sztainer, & Lytle, 2008). The use of nutritional label while selecting any food item still considered to be the dominating factor for balanced diet selection. Furthermore, it is very difficult to design courses for students in school, colleges and universities for nutritional food awareness or interests program. Therefore, the most effective and easy to approach method for consumer for nutritional interest is food label reading attitude (Gomez, Werle, & Corneille, 2017).

Rasberry, Chaney, Housman, Misra and Miller (2007) have investigated the dietary quality of the USA college students. In this study, attitude and nutritional knowledge were the predictor of dietary quality. The statistical results have explained that attitude and nutritional knowledge have significant but week relation with quality of packaged food consumption. However, later research has examined the relationship of attitude and nutritional knowledge with healthy-packaged food consumption with the mediation effect of the nutritional label use (Graham & Laska, 2012). The results have observed the mediation effect of nutritional label use and found that nutritional label use has explained the relationship between attitude and nutritional knowledge better than the previous research.

Therefore, the above mentioned researchers with mixed results have directed to future researchers to explore significance of nutritional labels' information and their effect

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on reading of food label to increase the healthy-packaged food consumption intention. In few studies it has been observed that nutritional knowledge did not work in the absence of nutritional label and presence of both factors have leaded to customer toward better packaged food selection (Grunert, Wills, & Fernández-Celemín, 2010; Guthrie, Fox, Cleveland, &Welsh, 1995; Li, Miniard, & Barone, 2000; Misra, 2007; Rasberry et al., 2007). It would be better to say that both are inevitable for each other in healthy processed food selection (Drichoutis, Lazaridis, & Nayga, 2006; Guthrie et al., 1995; Kim, Nayga, & Capps, 2001; Kreuter, Brennan, Scharff, & Lukwago, 1997; Kristal, Hedderson, Patterson, & euhauser, 2001; Nayga, 1999; Neuhouser, Kristal, & Patterson, 1999; Satia, Galanko, & Neuhouser, 2005; Variyam, 2008).

Cooke and Papadaki (2014) have conducted a research to investigate the nutritional label use behavior with knowledge, attitude and nutritional label uses. The result of this study has indicated that knowledge and attitude is the positive predictor of nutritional label use and later nutritional label make consumer behavior towards healthy diet selection. Similar kind of findings have been observed in past studies where a study conducted in Malawi to investigate the decisiveness of food label for the consumption of healthy-packaged food and found positive impact (Kasapila & Shawa, 2011).

Previous studies have indicated that nutritional knowledge and healthy-packaged food consumption has weak association (Spronk, Kullen, Burdon, & O'Connor, 2014). It means that only knowledge about nutrition is not significant one. For the selection of healthy-packaged food, awareness or beliefs about how to use the information is necessary. Despite the high popularity of nutritional label use (NLU), which has

found in earlier research, the lack of understanding, the ineffective use and the rejection of label information have also noted in previous studies (Campos et al., 2011; Grunert et al., 2010; Smith, Taylor, & Stephen, 2000). Therefore, if the consumer is well aware or has realization about the significance of nutritional labels printed on packaged foods, the reading and usage of food label enhance with the passage of time and it effects on healthy-packaged food consumption.

With the increasing consumption of packaged processed food among consumers, the nutritional food labels have taken very significant place for the selection of healthy foods (Sharf, Sela, Zentner, Shoob, Shai and Stein-Zamir, 2012). Nevertheless, the significance of the nutritional food labels did not make place in consumers' sub-conscious. According to Borra (2006) the report generated by International Food Information Council (IFIC) has claimed that 83% consumers in Baltimore and Chicago have first time took note of food labeling while purchasing processed packaged food. Nevertheless, some studies have claimed that label information has taken considerable attention in literature because consumers' interest is increasing towards healthy-packaged food consumption (Annunziata & Vecchio, 2012).

Sharf, Sela, Zentner, Shoob, Shai, and Stein-Zamir (2012) suggested that since the text of food label seems to be more common than use, the motivation related to interest in healthy food is significant factor. Michie, Stralen and West (2011) have indicated that for better food related choices, consumer needs opportunity, motivation and ability. According to Carrillo, Fiszman, Lähteenmäki and Varela (2014) nutritional and diet related information on food label give a chance to consumers to make rational decisions. Customers appear to have the capacity to utilize that

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information when needed to do, yet the urgent component for attempting is their motivation. It has also been observed that difference in understanding and use of nutritional food label is country specific (Grunert, Fernandez-Celemin, Wills, Storcksdieck genannt Bonsmann, & Nureeva, 2010).

2.3.2   Cultural effects on food labeling

The increasing percentage of obesity (WHO, 2011) has compelled to European Union to make legislation for the provision of nutritional information on all processed food items (Regulation EU No 1169/2011). Carrillo et al. (2014) has conducted a survey in Denmark and Spain to investigate the understanding level of health claims on food labels. They have pasted four symbols such as olive, active person, heart with stethoscope and gears which represents three health claims. Researchers have analyzed the cultural effect of these symbols in interpreting the meaning of health symbols. For instance, Spaniards have positive association with the olive symbols and represents the health and energy. However, Danes have negative association with the olive symbols and represents sad, boring and rotten. There are some studies, in the past, which have unfolded the fact that while interpreting any message written on food labels consumers' culture paly its role (Ares et al., 2011; Crilly, Moultrie & Clarkson, 2004).

The above mentioned studies have indicated that how different countries developing sense of interest or beliefs about food nutrition among their citizens. Companies are using best possible way to provide required, precise and necessary nutritional information by using food labels (Storcksdieck, Bonsmann, Fernández Celemín, &

Grunert, 2010). Therefore, the food label is the most suitable and accessible source to communicate message to end consumers and also play a very pivotal role in attracting them (Ares, Besio, Giménez, & Deliza, 2010; Shepherd, Sparks, & Raats, 1991; Underwood, 2002).

Another aspect of the above mentioned studies is that how countries in the world are anxious to develop healthy food intake habit among their nation. For this objective country legislations and companies are working together and to some extent they are successful in it.

2.3.3 Demographical aspect for healthy-packaged food

Studies have witnessed that demographical factor such as age, gender and education effect on consumption of healthy packaged food (Grunert, Hieke, & Wills, 2014). The demographical aspects have also been taken in to consideration for the investigation of nutritional label use to select healthy-packaged food items. But there were no gender differences found but age did make some noticeable changes in behavior (Grunert et al ., 2010).

A European study covering six nations demonstrates that distinctive demographic variables are connected to nourishment learning and enthusiasm for adhering to a good diet regarding processed food selection (Grunert et al., 2012). Nourishment learning does not contrast between sexual orientations, however information diminishes with age, and wellbeing investment is plainly higher among ladies and increments with age (Grunert et al ., 2012). Sustenance learning is prone to enhance

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purchasers' capacity of preparing nourishment related item data and in this way advance more expand and efficient handling. There is, then again, an acceptable crevice in the research in the matter of whether essential sustenance information is connected with comprehension of wellbeing cases, both in the feeling of comprehension the benefit as guaranteed by the case furthermore understanding it's close to home significance.

2.3.4 Socioeconomic dimension for consumer healthy-packaged food consumption

Crockett et al. (2014) have conducted a research by taking the socioeconomic status as moderator in relation between use of nutritional label and healthy-packaged food consumption. After analyzing the data the results have indicated that people belong to high socioeconomic status were more conscientious about the fats while selecting snacks. The cost of healthy diet is also the cause of inequalities among consumers and lower income consumer prefer to select food having high saturated fat and fat for the satisfaction of their hunger but among high income consumers the percentage consumption of fruit and vegetable is high (Darmon, & Drewnowski, 2015). However, low socioeconomic respondents are less preventive in consumption of fat and more interested in sufficient foods. Crockett et al., (2014) have referred such behavior of respondent towards two theories: theory of self-regulation (Zimmerman, 1989) and theory of ego depletion (Baumeister et al., 1998).

Self-regulation model of behavior portray the ways in which people use physical, mental and social resources to adjust in the environment (Zimmerman, 1989; Baumeister & Vohs, 2007). The theory of ego depletion recommends that people have

restricted resources to empower the activity of self-regulation (Baumeister et al., 1998; Spears, 2010). The exhaustion of these assets is connected with diminished restraint when confronted with troublesome choices (Baumeister, 2002). Late confirmation recommends that neediness is connected with more prominent sense of self consumption (Spears, 2010). Neediness offers climb to more prominent quantities of troublesome choices.

The researcher of the intended study agrees with the theory of self-regulatory and theory of ego depletion. But as far as the nutritional food intake is concern, it is not expensive that socioeconomic status involved in it. It is the matter of belief or interest that in daily routine life the basic food must be nutritious. The quantity of nutrition that an individual take on daily bases can be varies according to socioeconomic status. Therefore, if we develop intention among consumers irrespective of socioeconomic status then everyone will intend to read nutritional label at point of purchase and this will change their behavior in taking nutritional food in daily life and individual quality of diet will also increase with consumption of healthy-packaged food items.

2.4   Variables adopted in current study

The researcher has adopted twelve variables for the investigation of healthy-packaged food consumption intention such as traffic light symbols, health claims, user friendly label, attitude towards food label, subjective norms, self-efficacy and big five personality traits. In these constructs attitude towards food label was mediator in explaining the relationship of traffic lights symbols, health claims and user friendly label with healthy-packaged food consumption intention whereas subjective norms

and self-efficacy was independently predicted the healthy-packaged food consumption intention. The five facets of personality traits was moderator between attitude towards food label and healthy-packaged food consumption intention.

2.4.1 Traffic light symbols

Feunekes, Gortemaker, Willems, Lion, and Kommer (2008) have conducted research in four European countries to examine the front of pack labeling by using different labeling pattern including traffic light symbols. In this research respondents have to rate the pattern with respect to their liking, comprehension, credibility and perceived healthiness. The result has found that traffic light symbols have taken very favorable response for healthiness. Consumers not spend much time in grocery shopping and selection of food (Sacks et al., 2011). Therefore, the traffic lights symbols are considered to be effective scheme of front of pack labeling for the selection of healthy healthy-packaged food items due to their familiarity and easy to interpretative quality (Pettigrew et al., 2011). Traffic lights symbols are designed to ascertain the healthiness of food products because the interpretive power of traffic lights labeling scheme is very effective for average educated consumers and sometimes illiterate consumer also get benefits (White, Lillico, Vanderlee, & Hammond, 2016).

Role of traffic light symbols, in promoting nutritional awareness among consumers, is inevitable. Balcombe et al., (2010) has noted that several food retail store like Sainsbury's and Waitrose, have adopted the traffic light symbols on their nutritional food labeling and observed noticeable positive response among their customers and retail sale. Studies have explained that due to the efficiency of traffic lights symbols

and their positive effect on consumers' healthy healthy-packaged food selection governments around the world are interested to implement such front of pack labeling scheme in retail sector (Arrúa, Machín, Curutchet, Martínez, Antúnez, Alcaire, & Ares, 2017; Kelly et al., 2009; White et al., 2010; Signal et al., 2008). It has been widely identified that traffic light symbols, on nutritional food label, are potential tool for improving nutritional awareness among consumers (Emrich, Qi, Lou, & L'Abbe, 2017; Lobstein, Davies, 2009; Cowburn, Stockley, 2005).

There have been widespread studies on which format of nutrition information was the most useful to consumers when assessing the nutritional quality of a product. Some studies suggest that the traffic light system is more effective than guideline daily amount (GDA) in helping consumers to assess which product is more healthy (Borgmeier and Westenhoefer, 2009; Kelly et al., 2009), but others have found no difference between the labeling systems and results are country-dependent (Grunert et al ., 2010). Nutritional labeling for healthy packaged food addresses knowledge pertaining to the nutrients and caloric contents in food items and traditional back of pack labeling required expertise to interpret that information (Thorndike et al., 2012) whereas traffic lights symbols is a solution of this problem with brief description of complicated nutritional information (Hawley et al., 2013).

The acquaintance with the labeling systems has an impact on how well the different labeling schemes are recognized and how easy it is to use them to make judgments between products (Grunert et al., 2010; van Herpen et al., 2012). The supporters of multiple traffic lights symbols see the strong guidance element as a positive factor in the labeling system, especially for those consumers whose nutrition knowledge is low

(Thorndike et al., 2014; Levy et al., 2012). The colors used in traffic lights label schemes are familiar with literate and illiterate consumers and also easy to understand (Rosentreter et al., 2013).

It has been observed in previous studies conducted in Europe that consumer is more familiar with health symbols as compare to other detail information given on food labels (Scarborough et al., 2015). The "Choices" logo was familiar to 62% of Dutch supermarket customers (Vyth et al., 2010). The Scandinavian "Keyhole" is recognized by 90% of Danish consumers, and 74% link it to a healthier choice, based on a report available in the Danish Food Safety Researcher ties webpages (YouGov, 2012). When consumers are aware of the logos, they are enabled to assess the healthiness of the products (Roberto et al., 2012; Vyth et al., 2009).

Yet, there is very little evidence found that the symbols would be directly used as guidance when making food choices (Roberto et al., 2012; Steenhuis et al., 2010). The reason behind these scarce evidences is awareness and recognition regarding these symbols among consumers. Former research studies notice inconsistent association between traffic lights symbols and healthy-packaged food selection. The inconsistent results of the past studies have been listed down in table 2.1.

Table 2.1
Association of traffic lights symbols and healthy healthy-packaged food selection

Author	Year	Effect level
Campos et al.	2011	Highly effective
Hawley et al.	2013	Highly effective
Emrich et al.	2014	Small Effect
Goodman et al.	2013	Small Effect
Levy et al.	2012	Very effective
Sonnenberg et al.	2013	Very effective
Thorndike et al.	2014	Effective
Hammond et al.	2013	No effect
Dodds et al.	2013	No effect
Olstad et al	2015	Cannot be generalized

Source: Author's compilation

Therefore, if consumer is well aware and belief about the nutritional information given on food label then it will obviously develop an attitude to read food label at point of purchase. Finally attitude to read nutritional label will increase the dietary quality of a consumer with the selection of healthy-packaged food items. According to Edward (2009) interest is the most powerful motivator. It means that a person is interested to do anything he/she will be found a good reason to do it. Therefore, motivation describes a reason to perform any behavior (Edward, 2009). According to Orquin and Mueller Loose (2013) the most persistent factor persuading consumers' attention when looking at packaging is based on goal orientation. Therefore, the health sign needs to reply to consumers' intention. If consumers find health and good nutrition to be something they are intended in any health-related symbol is likely to get more attention.

2.4.2 Health Claims

Health claims is another method to communicate to consumers regarding nutritional benefits of food product and the products which contained health claims considered to be healthy (Aschemann-Witzel & Hamm, 2010; Kozup, Creyer, & Burton, 2003; van Trijp & van der Lans, 2007). For promoting health and reducing the risk related to unhealthy packaged food products companies and regulatory authorities are facilitating consumers with food label information to take rational decisions at the time of purchase (Santé Canada, 2010; U.S. Food and Drug Administration, 2011). Some researchers have found that companies adopt natural symbols for the demonstration of health claims on food labeling such as decision trees and animal (Ohama, Ikedaa & Moriyamab, 2006). In addition, some researchers have realized that companies also write elaborative statements for the demonstration of health claims messages such as, healthy diet for diabetic people, best energy for growing adolescents and makes your bone strong (Glickstein, Nucci, Hooker & Hallman, 2014). Such kind of health claims statements elicit consumers to take instant decision while purchasing food. It is for the convenience of consumer to take less time in processing information about food at the time of purchase. In contrary some past studies have accounted that the presence of health claims at food label has increased healthy-packaged food products' sale but their effect on healthy food consumption yet not clear (Nestle & Ludwig, 2010). There is a dire need to investigate the relationship between health claims and healthy-packaged food consumption for the generalization of health claims' positive results on healthy-packaged food consumption (Richardson, 2012).

Cross-cultural studies direct that opinions about health claims vary among countries (Saba et al., 2010; van Trijp and van der Lans, 2007). Cultural factors play a vital role, for instance in the UK the most attractive health claims for respondents are those which precise, however, Finnish consumers liked a risk-reduction claims (Saba et al ., 2010). The appropriate use of health claims guide consumers in making their dietary quality better with the selection of healthy and balance packaged food (Nocella & Kennedy, 2012). This statement explains the fact that health claims are user friendly with easy to understand language. Therefore, these claims can also be used as nutritional belief among consumers. Although, health claims look very easy going and easy to understand but these also related to consumer awareness and familiarity (Mason and Scammon, 2011; Dean et al., 2012). In the EU such kind of claims are not allowed, whereas in the USA and Japan they are part of the market (Lalor and Wall, 2011).

Cavaliere, Ricci and Banterle (2015) have mentioned that health claims are a simple instrument which can guide consumer to make healthy food choices. There are some studies which have exposed the fact that health claims protect consumer rights regarding food products and compel to food processing companies to disclose correct and complete information in front of consumers (Beales, Craswell and Salop, 1981).

According to (EC, 2013a) regulation, food label must follow four rules while using health claims pattern:

1- The statement indicates the importance of a varied and balanced diet and a healthy lifestyle.

2- The quantity and pattern of consumption required to obtain the claimed beneficial effect.

3- Where appropriate, a statement addressed to persons who should avoid using such food.

4- An appropriate warning for products that is likely to present a health risk if consumed in excess.

Now these above mentioned conditions direct that by using these statements on food label along with health claim, can possibly make belief among consumers for reading food label and to increase dietary quality with the consumption of healthy-packaged food. Consumer is not being educated about his/her dietary intake and even educated people are not well aware about which food is healthy, which nutrients are necessary, how much quantity required per person (Lalor et al., 2011), which nutrients target which disease or risk (Hailu, Boecker, Henson, & Cranfield, 2009) and which food is beneficial for health (Verhagen et al., 2010). Therefore, these health claims make consumers' decisions rational towards selecting healthy food. Some of the past researchers have indicated that health claims on food labels perform as a critical factor in consumers' decision making when consumers are not familiar with products displayed at store shelf (Silayoi & Speece, 2007). Health claims have been found very decisive for the selection of healthy food. Notwithstanding, the inconsistency exists between health claims and healthy food selection and some evidences have been mentioned in table 2.2

Table 2.2
Association between health claims and healthy food selection

Authors	Year	Effect level
Van Wezemael et al.	2014	Very effective
Baldwin	2014	Effective but vary country to country
Cavaliere et al.	2014	Effective but vary between male and female acceptance
Bialkova et al.	2016	More investigation required for establish relation
Miklavec et al.	2015	Some groups of population avoid using health claims
Carrillo et al.	2014	Not effective
Schermel et al.	2016	Not effective

Source: Author's compilation

2.4.3 User friendly food label

The traditional scheme of food labeling such as back of pack table or grid method has been replaced with simplified front of pack labeling schemes for the convenience of consumers (Grunert et al., 2010). However, limitations noted in aforementioned literature regarding the user friendly food labels and their effect on consumers' attitude to read food label for the selection of healthy-packaged food (Malam et al., 2009). Whereas a few researchers have conducted research and investigated the impact of simplified food labeling towards reading food label and found that consumers take interest in consulting food label at the point of purchase if the information is understandable (Draper et al., 2011).

Some studies have noted that consumers are facing problem in label understanding like E-numbers represented for additive (Wandel, 1997). However, literature has also disclosed the fact that food label information is a valuable tool to assist consumers for informed decision at the point of purchase (Storcksdieck et al., 2010). The frequent

use of food labels develop understanding ability among consumers (Drichoutis, Lazaridis, Nayga et al., 2008; Jordan Lin, Lee and Yen, 2004; Goldberg, Probart & Zak,1999). Texeira and Badrie (2005) have noted that 24% of Trinidad use food label without understanding whereas (Mannell, Brevard, Nayga et al., 2006; Peters-Texeira and Badrie, 2005; Shine, O'Reilly and O'Sullivan, 1997; Block and Peracchio, 2006) have reported this lack of understanding and difficulty lead towards non-usage of food label reading. Several studies have suggested making food label easy to use and user friendly by using symbols, less numerical data and graphics (Marino and Mahan, 2005; Geiger, Wyse, Parent et al., 1991; Levy, Fein and Schucker, 1996; Abbott, 1997; Hieke & Taylor, 2012).

But the question is what does understanding of label means? Understanding means the information provided on the label implies that the consumers recognize and know about the measurement units which are printed on food label (Louie, Flood, Ranagan, Hector, & Gill, 2008; Magnusson, 2010) and they understand the relationships between different nutrients and the role of each nutrient in the body and in terms of healthy eating (Andrews et al., 2011; Feunekes et al., 2008). By taking food label information in to consideration, suggests that consumers can find the information and able to interpret it in order to make a variety of decisions about a foods purchase (Hodgkins et al., 2012). It has long been recognized that the European labeling formats do not meet consumer needs, perhaps because their content and format have primarily been consequences of legislative requirements rather than being designed specifically as an aid to consumers (Cheftel, 2005). Thus there have been calls for changes to be made to labeling in Europe to make it comprehensive, clear and easier to use (Food and Drink Federation, 1993 and Food Standards Agency, 2001). Some of

the aforementioned studies have advocated that difficulties in understanding food label effect on the efficacy of food labeling (Campos et al., 2011) and the purpose of food labeling being left unachieved. In addition to it, food labeling amplify the intention of consumers towards better food selection but the association between easy food labeling and healthy food selection yet inconsistent (Campos, Doxey, & Hammond, 2011; Lioutas, 2014). Table 2.3 has some evidences pertaining to the relationship between consumer food label understanding and healthy food selection.

Table 2.3
Association between food label understanding and healthy food selection

Authors	Years	Label information difficult	Label Format difficult
Samant et al.	2016	Need more effort for user friendly information	
Miller et al.	2015	Information is difficult without proper knowledge	
Watson et al.	2014		Format of label misleading
Sütterlin et al.	2015		Label format is effect for healthy food selection
Fernandes et al.	2015	Insufficient information is misleading	
Liu et al.	2015	Over all food label not contribute in healthy food intake	
Vasiljevic et al.	2015	Limited effect of label information	Small effect of label format
Cioffi et al.	2015	Small but significant influence of label on healthy food selection	
Fenko et al.	2016	Food label is effective for healthy food selection	

Source: Author's compilation

Food label has potential to inform consumers about the quality of food and interpretive food label information can change consumer behavior towards selection of healthy food (Kerins, Cunningham, Finucane, Gibson, Jones, & Kelly, 2017). It has also been reported in past studies that food label information improves consumer dietary quality (Traill, Mazzocchi, & Niedz´wiedzka, 2013). Nevertheless, an ongoing debate has been observed in literature pertaining to the decisiveness and effectiveness

of food label for the selection of healthy packaged food (Afshin, Penalvo, & Del Gobbo, 2015). The transition of acute diseases to chronic diseases in Europe and worldwide is demanding to promote healthier behavior among consumers at point of purchase (Euroaspire, 2015). The cause of chronic diseases is poor dietary quality and selection of unhealthy packaged food (Perk, De Backer & Gohlke, 2012). Therefore, there is a need to investigate the efficacy of user friendly label in increasing the attitude towards food label ratio among consumer and subsequently lead towards intention of healthy-packaged food consumption.

2.4.4   Attitude, subjective norm and self-efficacy

Ajzen (1991) Theory of planned behavior consists of three variables such as attitude, subjective norm and perceived behavioral control which explain individual intention towards any object. Self-efficacy can be taken by replacing perceived behavioral control according to the argument of Ajzen (Ajzen, 1991). In few studies construct of self-efficacy of (Bandura, 1982) has been considered to be similar to the perceived behavioral control which is the constructs of Ajzen's (1991) theory of planned behavior (Ajzen, 1998; Conner & Abraham, 2001). Moreover, some of the studies have investigated the effect of perceived behavioral control and self-efficacy separately and reported different results (Armitage and Conner 1999; Terry and O' Leary 1995). Past empirical results have indicated that the impact of perceived behavioral control (PBC) and self-efficacy on fat consumption is different (Armitage and Conner 1999). Whereas some studies finding have described that PBC and self-efficacy are synonyms of each other (Chan et al., 2015). By the definition self-efficacy is the individual's own ability and confidence to accomplish any behavior

(Bandura 1986). Past studies have advocated the assertiveness of self-efficacy for the investigation of health or food related matters in replace of perceived behavioral control (Chan et al., 2015). Therefore, researcher has taken subjective norm and self-efficacy as an independent variable for the direct investigation of their impact on healthy-packaged food consumption intention. These variables are the predictor of behavioral intention. Ajzen (1991) TPB is derived from theory of reason action (Fisbien and Ajzen, 1975). The variable which creates distinction between TRA and TPB is perceived behavioral control. The objective of three variables such as subjective norm, self-efficacy and attitude are, (1) the degree of evaluation in favor or against behavior is reflected by attitude, (2) subjective norm refer to the social pressure perception whereas (3) self-efficacy refers to the individuals' confidence to perform specific behavior intention (Wong & Mullan, 2009).

Several researchers have adopted subjective norm and self-efficacy for behavioral intention prediction. Armitage and Conner (2001) have conducted a meta-analysis of 161 studies and found that 39% variances in intention are accounted by attitude, subjective norm and self-efficacy. Along with that it has also been observed that 2% out of 39% belong to self-efficacy. It is small but significant. Wong and Mullan (2009) have deployed three facets of theory of planned behavior for the investigation of breakfast intention among adolescents. Results have exposed the fact that 53.1% variance in intention accounted by attitude and self-efficacy whereas subjective norm was insignificant. The dimensions of theory of planned behavior have been used in addressing several health related issues like intake of fat reduction (Paisley & Sparks,1998) and eating behavior with respect to health (Povey, Conner, Sparks, James & Shepherd, 1999). Conner, Norman and Bell (2002) have investigated the

healthy eating intention with the assistance of theory of planned behavior. The results have demonstrated that 43% variance in healthy eating behavior has been accounted by attitude, subjective norm and self-efficacy. McEachan, Conner, Taylor and Lawton (2011) have investigated the effect of TPB on physical activity and healthy eating of individual. Table 2.4 will describe briefly about the adoption of theory of planned behavior for the investigation of health related issues.

Table 2.4
Past health issues addressed by TPB

Author	Issue addressed	Success rate
Shapiro, Poricella, Jiang & Gravani (2011)	Safe home food handling practice (hand wash and food thermometer use)	TPB has explained 42% of variance in hand wash intention whereas 43% in food thermometer use.
Seaman & Eves (2010)	Food safety practice in small business	TPB model successfully explain the food safety intention
Mullan & Wong (2009)	Food handling practice	TPB facets have explained 66% variance in intention and 21% variance in actual behavior
Clayton & Griffith (2008)	Safe hand washing before food	TPB almost appropriate model
Clayton et. al. (2003)	Hand hygiene malpractice at work place	TPB has explained 34% of variance in intention

Source: Mullan, Wong & Kothe (2013)

The assumption of theory of planned behavior is that more favorable attitude and subjective norm along with greater self-efficacy lead toward better intention development (Gracia & Magistris, 2007). Verbeke and Vackier (2005) have postulated that theory of planned behavior explain the fish eating intention of individual. Results have disclosed that 30.5% fish eating intention explained by attitude, subjective norm and self-efficacy.

Owing to the popularity of theory of planned behavior (TPB), several researchers have adopted the constructs of TPB to investigate individual behavior. Table 2.5 has some evidences pertaining to the inconsistencies:

Table 2.5
Past results of TPB constructs and behavioral intention

Author	Year	IV	DV	Attitude	SN	SE
McDermott et al.	2015	TPB	Intention	61%	46%	32%
Prapavessis et al.	2015	TPB	Behavior/ Intention	Significant	Significant	Insignificant
Yazdanpanah et al.	2015	TPB	Intention	Significant	Insignificant	Insignificant

Source: Author's compilation
DV: Dependent Variable, **IV:** Independent variable, **SN:** Subjective Norm, **SE:** Self-Efficacy, **TPB:** Theory of planned behavior

The aforementioned studies have suggested to future researchers to examine the effect of TPB constructs on intention with the involvement of moderator (McDermott et al., 2015).

2.4.5 Attitude towards food label

Food labeling is a source of nutritional information discrimination by printing nutritional facts, which are sometime called nutritional fact panel, to end consumers (Jennifer et al., 2010). Increasing interest in using food label and consulting available information on food label at point of purchase may develop habit among consumers to improve dietary quality (Barreiro-Hurlé et al., 2009). According to Grunert and Wills, 2007 nutritional food label paly vital role in changing and influencing consumer's dietary habit and behavior and ultimately increase the dietary quality with the

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consumption of healthy-packaged food. Empirical studies have conferred that changing lifestyle and dietary habits better benefits than medical care (Wansink, 2006). Variyam (2008) has concluded that use of food label increases the balance consumption of healthy-packaged food of an individual and counter the increasing percentage of obesity and health expenses (Downs et al., 2009; Just and Payne, 2009; Kiesel et al., 2011).

Judy, Driskell, Schake and Detter (2008) have indicated that nutritional food label is a tool which enable consumer to make educated decision. The purpose of this printed nutritional information is to enable consumer regarding fundamental nutritional knowledge, increase consumer interest and develop confidence in making healthy healthy-packaged food intake choices (Capacci et al., 2012). Even after realizing the effectiveness of food label for the selection of healthy-packaged food some of the studies evidence for weak or poor relationship between food label consultation and healthy-packaged food (Kiesel et al., 2011). A mixed kind of results to the benefits of food label usage in purchasing healthy-packaged food provoke future researchers to investigate the efficacy of label information (Grabenhorst et al., 2013).

However, researchers have also unfolded the fact that food label reading is a motivational tool for consumers in improving their dietary quality intention (Ollberding, Wolf, & Contento, 2010). According to (Crockett, Hollands, Jebb & Marteau, 2011) numerous researches have examined the role of various nutritional labeling patterns on a variety of intended and behavioral consequences across different populations. Moreover, aforementioned studies have accounted the consumers have expressed positive attitude towards the usage of food label for the

selection of healthy-packaged food (Feunekes, Gortemaker, Willems, Lion, & van den Kommer, 2008; Van Herpen & van Trijp, 2011). However, it has been observed that both effect of nutritional labeling and pattern of labeling have failed to establish sense of healthy food intake among general public. Therefore, consumers' interest to get assistance from food label at the time of purchase for selection of packaged food is based on their belief and trust towards label information (Grunert, Wills, & Fernández Celemín, 2010; Malam, Clegg, Kirwan, & McGinigal, 2009; Wasowicz-Kirylo & Stysko-Kunkowska, 2011).

Moreover, the adherence of consumers' food label usage for one product did not evidence to similar positive response to all packaged food purchase items (Grunert, Fernández Celemín, Storcksdieck genannt Bonsmann, & Wills, 2012). The exposure of nutritional label information pertaining to packaged   food consumption is having inconsistent results such as sometimes favorable (Roberto, Larsen, Agnew, Baik, & Brownell, 2010; Temple, Johnson, Recupero, & Suders, 2010) and sometimes unfavorable (Aaron, Evans, &Mela, 1995; McCann et al., 2013; Wansink & Chandon, 2006). However, there are numerous factors which influence on consumers' inclination towards food label usage such as design of package   (Visschers, Hess, & Siegrist, 2010), placement of information at food label (Hersey, Wohlgenant, Arsenault, Kosa, & Muth, 2013) and most often the motivation of individual consumer (Bialkova & van Trijp, 2011; Visschers et al., 2010). There are some un-standardized food label in the market which are difficult to understand for consumer and these complicated food labels also create hindrance to evaluate and compare them with other nutritional label (Hawley et al., 2013).

The review of the past studies have expounded that most of the time researchers have targeted universities for the investigation of their opinion towards efficacy of food label. The intention of students towards consultation of food label information found to be very strong (Rasberry, Chaney, Housman, Misra, & Miller, 2007). However, some finds pertaining to the inquiry of students' interest for the usage of food label at the point of purchase are not having favorable outcome (Irwin, 2010; Nelson, Story, Larson, Neumark-Sztainer, & Lytle, 2008). In addition to universities' students are comparatively believe in reading nutritional food label at the point of purchase (Grunert, Wills, & Fernández-Celemín, 2010; Guthrie, Fox, Cleveland, &Welsh, 1995; Li, Miniard, & Barone, 2000; Misra, 2007; Rasberry et al., 2007). The effects of food labels have been found across a range of labeling formats including labeling of absolute amounts of energy and nutrients contained in the product (Aaron et al., 1995; McCann et al., 2013), labeling indication whether a product is high or low in nutrients such as fat (Wansink & Chandon, 2006) and labeling demonstrating that the food is more or less healthy (Temple et al., 2011).

Klaus, Grunert, Scholderer and Rogeaux (2010) have investigated the effect of nutritional label use and understanding of nutritional information on nutritional label by involving consumers' of six countries such as UK, Sweden, Poland, Germany, Hungary and France. The result has unveiled highest food nutritional label usage and understanding was observed in UK (40.5%), France (39.1%) and Germany (38.6%). Whereas nutritional grid source is concern, the highest ratio observed in Sweden (43.9%), Germany (38.6%), Poland (53.8%) and Hungary (50.8%). The most concern nutrients among all the nation's respondents were three such as calories (39.6%), fat (38%) and sugar (33.8%). The results of the Klaus et al. supported by the theory of

cultural differences (Saba et al., 2010) that consumers are being interested or having beliefs on nutritional food label by using various sources according to their convenience. Food label enclosed diverse information for the attraction of consumer (Siegrist et al., 2014). However, the most focal point of discussion for various researchers were the utilization of label information and its effectiveness for the selection of healthy and balanced packaged food (Cowburn & Stockley, 2005; Grunert & Wills, 2007; Hawley et al., 2013; Hieke & Taylor, 2012).

2.4.5.1   Food labeling at global level

According to the International Monetary Fund; Regional Report on Asia and Pacific, 2010 it has been observed in last two decades that countries in Asia-Pacific have experienced noticeable economic growth and Singapore is one of them. This economic growth has changed the consumer's living style. This economic prosperity of Singapore has provoked the desire of convenience and openness to experience new things (Vijaykumar, Lwin, Chao and Au, 2013). Moreover, the convenience seeking behavior among Singapore consumers has made their life sedentary.

The rise in per capita income in Singapore has shifted consumers towards processed to packaged food (Pingali, 2006). The results of various studies have exposed the fact that the Asia-Pacific region is facing weight and diet related issues (Hossain , Kawar & El, 2007). Researchers have noted that the economic growth in Singapore has elicited consumers to consume imported packaged foods which are being imported from different countries (Santosh et al., 2013). To restrain consumers to select the unhealthy foods, Singapore food regulations authorities have compelled food

processing companies to abide by the specific local conditions for food labeling (Agri-Food & Veterinary, Authority of Singapore, 2012). To resolve the unfamiliarity issue, Singapore food authorities have eschewed the European front of pack labeling patterns such as guideline daily amount, traffic lights symbols and health claims (Health Promotion Board, 2012). They have devised logos/seals, such as Singapore health foundation logs, Superbrands logos and the logos of *Halal,* which are being issued by food authorities (Singapore Heart Foundation, 2012; Superbrands Singapore, 2012; Islamic Religious Council of Singapore, 2012). It is essential to print these logos and seals on food labels.

The attempt of Singapore food authorities in designing customized food logos for food labeling has indicated the significance of food labeling to promote healthy food concept among consumers. Few researchers have derived this conclusion that food label influence diet and health related attitudes and choices (Wansink and Chandon, 2006; Borgmeire and Westenhoefter, 2009) whereas some of the researchers are still uncertain regarding this association (Variyam, 2008; IMF Regional Economic Outlook, Asia-Pacafic, 2010). The growing intensity of busy lifestyle in the world and decreasing ratio of attention toward things especially in food products, the most decisive method to get aware about food nutrient is nutritional food label. These food labels help marketers to share information instantly with consumers (Caswell and Padberg, 1992).

It has been considered that food labels are actually bridge between food producers and consumers and help consumers to select healthy diet (IMF. REO, Asia-Pacific 2010). European researchers have found the increasing interest of European

consumers in using food labels. This consistency is surprising for European researchers (Grunert and Wills, 2007). Western researchers are putting maximum efforts to investigate the usage of food labels and trying to find that either food label could be the source of nutritional awareness among consumers or not(Drichoutis, Lazaridis & Nayga, 2006) whereas evidences about the usage of food labels among Eastern consumers are scant (Santosh et al., 2013).

After analyzing the results, it has been noted that the overall food label usage among Singapore consumers are positive and high. Singapore nation is a blend of three nations like Chinese, Malays and Indians, therefore, the high ratio of belief has been observed among Malays as compare to Chinese and Indians. The beliefs regarding the symbols and seals are concern, seals are more popular source for beliefs as compare to other symbols. Consumer's belief on seals is almost 90% (Santosh et al., 2013)

In demographical analysis of Singapore consumers' food related behaviors, there were no noticeable difference found in gender. However, age of the consumers is influential factor such as people who are above 40 were more concern and have beliefs about nutrient and consult food labels at the time of purchase (Santosh et al., 2013). The demographical findings are contrary to European study which provided no evidence, to the best knowledge of intended researcher, regarding the impact of age on food reading habits. Previous studies have validated the concept of cultural difference which play vital role for the beliefs and attitude to use food label at the time of purchase (Saba et al., 2010; van Trijp & van der Lans, 2007).

China has made first Chinese Food Nutrition Labeling Regulation in 2008 (Ministry Of Health, 2008). China's Ministry of Health (2011) discharged the National Food Safety Standard for Nutrition Labeling of foods. The standard nutritional labeling has made it possible that food processing companies will label the information regarding fat, saturated fat, sodium and salt with percentage.

Liu, Hoefkens and Verbeke (2015) have conduct research in China to investigate the understanding and usage of nutritional food labels among Chinese consumers. They have employed seven independent variables such as age, education, subjective knowledge, objective knowledge, body mass index (BMI), diet status and familiarity with nutritional label. In addition, there were three dependent variables such as subjective understanding, objective understanding and nutritional label use. The result has indicated that subjective understanding is influenced by age, familiarity with nutritional label, subjective and objective knowledge. But objective understanding is affected by age, diet status, education and familiarity with nutritional label, subjective and objective knowledge and BMI. However, no relation has been found with nutritional label use. The analysis has explained that 50% respondents responded with "rarely" and 16% responded with "never" regarding consultation of food label while purchasing any food item.

Moreover, the understanding of consumers about nutrients depends on motivation (Cownburn & Stockley, 2005; Miller, Gibson, & Applegate, 2010). Furthermore, for the understanding and use of nutritional labels the most important role played by familiarity with nutrient. Familiarity could increase the perceived validity of information (Park et al., 1994). It was 2008 when nutritional labels were introduced in

China on voluntary basis. Most of the Chinese consumers have indicated that they have noticed nutritional information on packaged food and they trust on it (Ye, Feng and Wu, 2010; Zhao, Xia, Yu, & Wu, 2009). However, Chinese consumers are not used to read nutrition labels (Chen and Niu, 2009; Ye et al., 2010; Zhang, 2012).

Park, Mothersbaugh and Feick (1994) have elaborated two types of knowledge objective knowledge such as the accurate information about the product stored in the consumer's memory for a long time period and subjective knowledge such as consumers' perception of the nature and extent of their own knowledge of a product. Several researchers have found that subjective knowledge is a strong driver of nutritional consumer behavior than objective knowledge (House, Lusk & Traill, 2004; Pieniak, Verbeke, Brunso & Olsen, 2006). Previous results showed that participants' subjective nutrition knowledge was also an important and positive determinant of label use. However, objective nutrition knowledge did not determine label use (Nayga, 1999). Nayga (1999) have suggested that consumers with more objective nutrition knowledge not necessarily use nutrition labels. The reason is that for objective knowledge consumer must get intensive study for each nutrient and as it has been observed in previous studies that time pressure is also the barrier for consumer to use nutritional label. Consumer put less effort during shopping for reading nutritional label. Subjective knowledge relates to motivational factors such as self-confidence (Brucks, 1985). Therefore through interest and belief consumer can get basic knowledge and ability to read information which will later direct consumers toward food label reading attitude and subsequently increase dietary quality intention.

Saha, Vemula, Mendu and Gavaravarapu (2013) have conducted research in Indian's adolescent to find out the usage of nutritional food labels and the beliefs about nutrients among adolescent. The independent variables of the research were complete food label, manufacturing date, expiry date, read ingredients and nutritional information whereas attitude to read nutritional label was dependent variable. Saha et al., (2013) have unfolded the fact that 88% adolescent read food labels, almost 79% read manufacturing date and 74% read expiry dates. However, the lowest percentage observed about nutritional information and it was 20%. Saha et al., (2013) have commented that parents paly an inspirational role for adolescents but unfortunately parents were also unaware about the nutrients. Therefore, in results lowest involvement of nutrients was being observed among adolescents. In continuation, Saha et al., (2013) have elaborated the reason of high percentage of manufacturing date and expire date and it has been noted that parents consult manufacturing date and expiry dates at the time of purchase and children observe it. However, the nutritional food label is a best source to create interest among adults and adolescents and it develop sense of healthy food intake in daily routine (Cowburn & Stockely, 2005; SubbaRao, Vijayapushpum, Venkaiah & Pavarala, 2012).

Furthermore, the 20 years studies have accounted for the 300% rise in the consumption of packaged food in developing countries and India is one of them (Proctor, 2007; St-Onge, Keller and Heymsfield, 2003). In addition, the rise in the consumption of packaged food has made food labels significant for consumers in making decision (Jessie, 2005; Goldberg 1992). Indian food legislations authorities have made it compulsory to display nutritional information on food labels with

manufacturing date, expiry date and ingredients (Food Safety and Standard Regulation, 2011; Laxmaiah, Sudershan, Suba and Brahmam, 2009).

Rao, Vijayapushpam, Subba Rao, Antony and Sarma (2007) have investigated the diet habits and the knowledge about nutrients among the adolescent girls' of Hyderabad, Indian. It was experimental study funded by National Institute of Nutrition India. Rao et al., (2007) have employed two methods to create awareness among adolescents about nutritional food intake. In the first experiment traditional classroom charts were used by teachers to aware students about nutritional food. In second experiment, the efficacy of computer technology was test to achieve the objective. Researchers have found that adolescents were more comfortable with traditional teaching methods as compare to computer technology for nutritional information. However, the results of the study contradict with past studies where computer technology was the most preferred method to aware adolescents about nutrients (Turnin et al., 2001).

Studies have noticed that adolescent, who are one-fifth of the total world population and about 84% of the population lived in developing countries, are intended more toward unhealthy food intake like; fast food, bakery items and carbonated drinks (Rao et al., 2007) . According to National Monitoring Bureau report (2003) frequency of anemia among girls are 69%. The cause of this high level is lack of nutrients in their daily life and increasing quantity of junk food (Bhaskaram, 2001).

2.4.6   Personality traits facets

It has been observed in research that personality, which is often considered as inherited, has significant strong relation in selecting healthy food choices (Bouchard and McGue, 2003). Such association has been occurred among children between the age of 6-12 with the mediating role of parents (Vollrath, Hampson, and Julliusson, 2012). Jokela, Hintsanen, Batty, Nabi, Singh and Kivimaki (2012) have noted that a meta-analysis of 78, 931 men and women in 2012 have indicated the inverse dose relationship between conscientiousness and obesity. According to analysis, high conscientiousness person has low risk of obesity. Therefore, the analysis has unlocked another dimension of research towards the link between personality traits and dietary intake behavior (Lunn et al., 2014).

The research is in the debt of Goldberg's (1990) big five personality traits theory. Goldberg (1990) has introduced a comprehensive five personality traits of an individual like openness to experience, agreeableness, conscientiousness, extravert and neuroticism. Angelina et al., (2015) have briefly explained the five personality traits of an individual such as:

1- Conscientiousness: the tendency to be organized and disciplined.

2- Neuroticism: the tendency to experience negative emotions.

3- Extraversion: the tendency to be outgoing, sociable, and active.

4- Openness to experience: the tendency to be creative and open-minded.

5- Agreeableness: the tendency to be trusting, sympathetic, and helpful.

Researchers have used these personality traits for the investigation of relationship between personality traits and purchase behavior of consumers. Sutin et el., (2015) have reported that personality traits are involved in designing individuals dietary habit either increase poor dietary intake or increase the quality of diet. Gohary and Heidarzadeh (2014) have noted that human personality paly vital role in his/her decision making.

Kakizaki et al., (2008) have indicated that extraversion personality trait is associated with the overweight, however, neuroticism has positive significant relation with underweight. The personality trait levels of an individual are associated with several common health outcomes such as cardiovascular diseases, diabetes, metabolic syndrome, or inflammation (Deary, Weiss, & Batty, 2010; Goodwin & Friedman, 2006; Sutin et al., 2010a, 2010b). Several studies have examined the relationship between personality and dietary habits and found different results. Chapman, Fiscella, Kawachi et al., (2010) have described that the relationship between personality and healthy out comes are well documents. Packard et al., (2012) have noted that personality traits are having consistent association with dietary habits of consumers.

Furthermore, researchers have conducted studies with the facets of big five personality traits and tried to investigate the relation between consumers' healthy and unhealthy habits. Neuroticism associated with smoking (Terracciano and Costa, 2004). However, the high level of conscientiousness is linked with exercise and consumption of fruits and vegetables (Raynor and Levine, 2009). The high score in neuroticism restrained the healthy diet (Provencher, Be´gin and Gagnon-Girouard et al., 2008). Packard et al. (2012) has documented that personality influenced the

healthy behavior of an individual. Although, personality traits of an individuals are pivotal but past studies have described the inconsistent association of some personality traits with behavioral intention and actual behavior. Table 2.6 has contained some evidences:

Table 2.6
Personality traits effect on healthy food selection

Author	Year	Ope	Agr	Cons	Ext	Neu
Čukić et al.	2015	Significant	Significant	Significant	Not relation	No relation
Keller et al.	2015	Significant	No relation	Significant	Significant	Significant
Lunn et al.	2013	Significant	No relation	Significant	No relation	No relation
Provencher et al.	2008	No relation	Significant	Significant	No relation	Significant

Source: Author's compilation
Ope: Openness to experience, **Agr:** Agreeableness, **Cons:** Conscientiousness, **Ext:** Extraversion and **Neu:** Neuroticism

The dietary behavior investigators of past studies have advocated that individual personality traits play decisive role in selection of healthy-packaged food and can be utilize to attenuate the overweight and obesity problems (Keller et al., 2015). In addition to it, previous studies have unfolded the fact that personality traits dimensions can contribute as an awareness factor for overweight and obese consumers (Provencher et al. 2008). Provencher et al., (2008) have also suggested to examine individuals' behavior towards eating and weight understanding by developing direct or indirection relation of personality traits with other psychological factors.

Past studies have indicated that the discussion regarding the relationship between individual personality and healthy behavior is not a new but still this relationship

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remained riddled with some conceptual misunderstanding, methodological objects and misleading conclusion (Friedman & Kern, 2014). Notwithstanding, many researchers have established the positive and significant relation between personality traits and healthy behaviors (Yasunaga & Yaguchi, 2014). For this purpose the most comprehensive personality traits model is (McCrae & Costa, 1987; McCrae & John, 1992; Goldberg, 1991) big five personality traits which includes, neuroticism, extraversion, openness, agreeableness, and conscientiousness. Therefore, the researcher of the study has employed the facets of the big five personality traits as moderator to examine their effect on the relationship between attitude towards food labels and healthy-packaged food consumption intention. It was hypothesized that after making attitude of an individual to read food label to what extent the individuals' personality traits would play their role.

2.4.7 Healthy-packaged food consumption intention

The cause of several chronic diseases is related to poor dietary intake. The rise in obesity and its related diseases are associated with the high consumption of fat, saturated fat, salt and sodium and low intake of nutritional foods such as fruits, vegetables and fiber (Guenther, Dodd, Reedy and Krebs, 2006). Wansink (2005) has noted that change in life pattern and dietary habit may advise better than any medical care. There is no proper source to educate consumers in taking nutritional and healthy-packaged food except nutritional food labeling (Post, Mainous, Diaz, Matheson & Everett, 2010).

Furthermore, several studies' results have exposed the fact that the cause of low saturated fat consumption among consumers is due to the frequent consultation of food labels at the time of purchase (Driskell et al., 2008). In addition, the studies conducted on consumer behavior have realized that the conscious consumers demand nutritional information even placing order at fast food restaurants (Center for Science for Public Interest, 2010). Consumers who read nutritional labels follow healthy diet and consume less fat in their diet. Chu, Frongillo, Jones and Kaye (2009) have claimed that nutritional food labels have positive impact on consumption of healthy-packaged food. Furthermore, noticeable trends have been seen in past studies pertaining to convenient food consumption due to the growing interest of consumers' towards processed food (Boekhoorn, 2015). The food processing companies' strategies and marketing tactics such as products' convenient and easy to handle characteristics are stimulating consumers towards consumption of packaged food (Scott, Nowlis, Mandel & Morales, 2008). Although packaged food have label with required information such as contents of fat, saturated fat, sodium and salt but consumers usually not prefer to read label to find the compatibility of products with their health (Wartella et al., 2011).

The dominating characteristic of packaged foods is their convenience and sometime economical prices make to consumers ignorant from products' unhealthy aspects and indulged consumers into their excessive usage in daily life which later leads consumers towards chronic diseases (Lynam et al. 2011; Möser et al. 2010). The changing food consumption patterns of individuals such as homemade cooking to imbalance packaged food consumption have transformed the diseases patterns from infection diseases to chronic diseases (Muller-Riemenschneider et al., 2008).

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Therefore, to educate consumers about nutrients food processing companies have utilized back of pack labeling with nutritional fact table (Kozup et al., 2003). Later for the efficacy of consumer's front of pack labeling introduced for simple, brief and straight forwards nutritional information (World Health Organization, 2004). The core objective of front of pack labeling scheme is to help consumers in healthy-packaged food consumption (Dagevos and Van Kleef, 2009; Lytton, 2010; Williams et al., 2010). According to Food Standard Agency (2006) the summarized form of information with front of pack labeling is useful for consumers having various background such as education and age. Therefore, the researcher of the intended study has an intention to investigate the healthy-packaged food consumption intention of Pakistani consumers by involving front of pack labeling contents such as traffic lights symbols and health claims along with user friendly food label, personality traits, subjective norms, attitude and self-efficacy.

2.4.8 Packaged food dietary quality in Pakistan

Fazal, Valdettaro, Friedman, Basquin and Pietzsch (2013) have conducted a research in countryside of Sindh Pakistan. The objective of this research was to investigate the dietary quality of women and children and the availability of nutritional food. Fazal et al., (2013) results have unfolded the fact that villagers are unacquainted with healthy-packaged food nutrients and their effect on health. In addition, Fazal et al., (2013) have added few more facts that the source of income of respondents was livestock such as goats, sheep and poultry products such as chicken meat and eggs. But when the questions asked about nutritional intake fewer people were familiar with this word and have mentioned that it is unaffordable. It means that they are unaware about this

fact that few basic nutrients they can get from the livestock which are their source of income. Fazal et al., (2013) have accounted the detail of nutrients available through livestock such as fresh milk nutrients, fresh meat nutrients and from poultry products such as fresh chicken meat nutrients and egg nutrients. The National Nutrition Survey of Pakistan (2011) has indicated that the highest rate of under-nutrition, in comparison of the rest of the world is being observed in Pakistani women and children and the percentage is 43.7%.

Black, Allen, Bhutta (2008) has indicated that the infant mortality and maternal mortality in southern and northern Sindh province are associated with under-nutritional food intake. The Sindh Multiple cluster Survey (2009-2010) has reported that infant mortality rate in Sindh province was 87 deaths per 1000 births whereas the maternal mortality death is 314 per 100000 births. These statistics have exposed a very bitter truth that lack of nutritional awareness and deprivation of nutrient are becoming the cause of death in some of the areas of Pakistan. Therefore, sometime socioeconomic factors are not the hindrance towards taking few basic nutrients but the primary factor is the lack of awareness. The goat meat contains unsaturated fat which is good for health and goat milk can easily digest. Clinically doctors suggest goat milk to pregnant women before or after taking birth for quick recovery (Alabama Cooperative Extension System Survey, 2013). Egg is also full of protein and balanced calories like 5.5 gram protein as well as 68 calories. Egg is comprises of two parts White and Yolk. Yolk contains around 55 calories, 4.5 grams of total fat and 1.6 grams of saturated fat, 210 mg of cholesterol, 8 mg of sodium, and 2.7 grams of protein. However, the whole White contains 4 grams of protein, 55 mg of sodium and only 17 calories. A single egg white also offers 1.3 micrograms of foliate, 6.6 mcg of

selenium, 2.3 mg of calcium, 3.6 mg of magnesium, 4.9 mg of phosphorus and 53.8 mg of potassium (Derocha, 2011). Therefore, goat meat and eggs are easily available in any area of Pakistan but the consumption in daily life is very low and the cause of low consumption is unawareness among consumers.

The low usage of nutrients leads consumers towards unhealthy diet and increase the cost of medical for low and middle class Pakistani residents. Moreover, the poor medical facilitations of the health ministry of Pakistan have compelled citizens to avail private medication which is unaffordable for lower income or average income citizens.

Ramzan, Ali and Khan (2008) have conducted a research in Dera Ismail Khan (NWFP) Pakistan regarding the health status of school going children. The objective of the study was to investigate the percentage of overweight, underweight, normal weight and obese children in NWFP Pakistan. Another goal of this research was to examine the gender difference in Body Mass Index (BMI). The age bracket was 6-11 years. It means if children and adolescents are active, healthy and aware about the nutritional facts then at the age of adultery they will able to guide others. Ramazan et al., (2008) results were surprising about underweight which was observed that female children were more underweight as compare to male children. It was noted that the percentage of female children's underweight varies at different age level such as 37.50% at 6 years old, 19.72% at 7 years old, 18.73% at 9 years old and most reduced (15.24%) at the age of 11 years old.

Lhussier, Bangash, Dykes, Zaman and Lowe (2012) have conducted a research in North West Frontier (NWF) of Pakistan. The method adopted in this study was first to guide and trained the respondents regarding the healthy-packaged food nutrients and after achieving the proficiency level of knowledge the data would be collected. This was the collaborative research between Pakistani and UK researchers. The objective of this research was to develop sense of nutrients among mothers and infants. The reason to select this sample was the growing ratio of infant and maternal mortality which was the cause of poor health treatment and intake of poor diet. Lhussier et al., (2012) have involved lady health visitors for the nutritional data collection from pregnant women and women who are having infants. Researchers have collected data in three months.

According to the data the protein vitality ailing health in youthful kids was a major issue with 36% of the kids being underweight and 33% of short stature. In view of body mass list 28% of the mothers were discovered to be malnourished and the lack of iron and vitamin A were observed among mothers and children. Calorie utilization among female is 40% which is not exactly according to the recommended daily allowance. Lhussier et al., (2012) have given various suggestions for the improvement of health condition in infant and women and one of them was to develop the awareness among women regarding healthy-packaged food nutrition. Lhussier et al., (2012) have said that although women are illiterate but the lady health visitors are the best source to educate these remote area resident's women.

Ejaz, Khan, & Azid (2014) have conducted research on children packaged food nutritional diet behavior in Bahawalpure Pakistan. The objective of this research was

to investigate the daily diet behavior of children from that age 6-11 and another purpose of the research was to investigate that to what extent the mother education and awareness towards nutritional diet play its role for developing children nutritional intake behavior. Ejaz et al. (2014) have indicated that mothers are less educated in nutritional information which is the cause of poor diet intake among their children. Ejaz et al. (2014) have commented that in parents the interaction with children is most decisive one. The reason is that most of the educated and uneducated women are house wives. They are taking care of household matters and children's wellbeing is their primary objective. Therefore, the awareness among mothers leads toward children's nutritional diet plan.

Various studies upheld the proof that wellbeing and nutrition impact children's achievement in school (Alderman et al., 2001; Maluccio et al., 2006). Ailing health has huge negative impact on the cognitive capacity in both preschool and school-age kids on participation and accomplishments (Leslie and Jamison, 1990). Moock and Leslie (1986) portrayed that endeavors to enhance youngster's dietary status may have instructive profits and in addition survival and medical advantages. Therefore, researcher of the intended study has employed healthy-packaged food consumption intention as dependent variable and the target population is students of various Pakistani universities.

2.4.9 Healthy packaged food consumption at global level

Non-communicable diseases (NCDs), for example, corpulence, diabetes, cardiovascular sicknesses, hypertension and stroke have turned into the significant

reasons for death in China (Chen & Zhao, 2012; NCCD, 2013; Xu et al., 2013; Yang, Yang, Zhu, & Qiu, 2011). Exploratory proof unequivocally bolsters the connection between diet and diseases (Buckland et al., 2013; Yamamoto, 2013). In China the predominance of NCDs has connected with the consumption of unhealthy-packaged food contained high fat and salt (e.g., Kang, Guan, Ning, Wu, & Guan, 2012; NCCD, 2013). However, studies have also accounted that Chinese consumers have understand the significance of nutritional food and its relation with various diseases (Cheng, Cao, & Xu, 2007; Sakamaki, Toyama, Amanoto, Liu and Shinfuku, 2005; Zhang, 2012). In continuation, Chinese consumers are also concern about their diet related behaviors (Liu, Pieniak, & Verbeke, 2013, 2014).

Chinese government, in 2011, has declared the program namely "Healthy China 2020" (Liu et al., 2015). The program's essential objective was to reduce the percentage of Non-Communicable Diseases (NCDs) by promoting healthy diet awareness (Hu, Liu, & Willett, 2011). Therefore, nutritional information was displayed on food labels in Chinese language (Capacci et al., 2012; Grunert & Wills, 2007). Studies have claimed that nutritional information on food labels with nutrients name and recommended percentage not only grabs consumers' attention at the time of purchase but also educate about nutrients (Campos, Doxey, &Hammond, 2011; Wahlich, Gardner and McGowan, 2013).

India is having the second biggest youthful population in the world and is the home of more than 20% of the world's teenagers which constitute 243 million out of 1.2 billion (UNICEF, 2011). The percentage of overweight among urban teenagers is 10% to 15% (Misra and Khurana, 2009; Laxmaih, Balakrishna, Kumar, Ravindranath,

Brahmam and Sesikeran, 2007). Studies have noted that the percentage of overweight and obesity among school going Indian teenagers is 17.6% and 5%, respectively (Bose et al, 2007). Although, there are numerous reasons determined by research for the rise in overweight and obesity but the utilization of unhealthy, imbalance and non-nutritional packaged foods are the primary cause of this issue (Wasir and Misra, 2004; Misra and Khurana, 2008).

Rise in urbanization, globalization and economic prosperity have changed the consumer life style and dietary behaviors. According to (Pekcan, 2008) nutritional intake changes are the causes of high energy contents, low physical activities and sedentary life style. Previous researches have addressed that there are several factors which affected on nutritional habits of an individual like age (Oakes et al., 2003), gender (Oakes and Slotterback, 2001), living place and family structure (Lynam et al., 2011). But the most significant factor which develop attitude to read nutritional label is interest or beliefs about consumption of healthy-packaged food.

Colby et al., (2010) has claimed that the belief is the most decisive factor in gaining healthy and nutritional life in the presence of globalization concept. The rise in import and export of the processed and the packaged food in developing, under developing and developed countries have provoked to companies and country's legislations to design programs for the awareness of nutritional food among nation (Eldesouky & Mesias, 2014). Tepper, Choi and Nayga (1997) have indicated that nutritional beliefs have positive impact on nutritional intake and dietary quality.

There are several factors that contribute to non-nutritional food selection such as the low socioeconomic status, the low health and nutritional awareness, the inadequate access to health services, the availability of a limited variety of foods, the food insecurity in rural areas, the recurrent diarrhea and the respiratory infections (Ministry of Health and Medical Education, 1998).

Monir , Koura , Erfan, Abd El-Aziz , Mansour , (2004) conducted research in Egypt and uncovered the fact that the percentage of overweight among male and female is 10.8 % and 8.48%, respectively. Several studies have claimed that the consumption of packaged food in developed and oil delivering Middle Eastern countries are due to rapid monetary and mechanical development (Freedman, Kettel, Serdula, Pgden & Dietz, 2006; Ogden, Caroll, Curtin, McDowell, Tabak & Flegal, 2004; Al-Isa & Thalib, 2004). Tee (2002) has determined few factors related to overweight and obesity such as poor nutritional diet, lack of physical movement and stationary life, playing of PC games and watching television.

2.5   Theoretical Gap

Theory of planned behavior (TPB) has been criticized by several researchers (Sheeran, Gollwitzer & Bargh, 2013; Conner, Gaston, Sheeran, & Germain, 2013; McEachan et al., 2011). The objection is that the three constructs of theory such as attitude, subjective norms and perceived behavioral control are not sufficient to predict intention as well as actual behavior and it has been observed that there are other factors which predict intention and actual behavior while controlling TPB constructs (Sniehotta et al., 2013). Icek Ajzen has indicated that the door has already

been left open for the rest of the future researchers to add more constructs for the better investigation of human intention and behavior (Ajzen, 2011). Therefore, the possibility of additional variable's inclusion with attitude, subjective norm and perceived behavioral control, for the explanation of intention and actual behavior, does exist (Mullan et al., 2013). Fishbein and Ajzen (2010) have given some assumption for the addition of new dimensions towards intention and behavior. There are four assumptions which must be fulfilled:

1- New variables should be behavioral specific and compatible with existing variables.

2- Proposed variables must have causal factor while investigating intention and behavior.

3- The effect of additional variables must be independent.

4- Proposed variables must have potential to investigate wide range of behaviors.

These assumptions have opened new avenues for the future researchers to examine human behavior with the combination of different variables along with theory of planned behavior constructs. Critiques have suggested, although, the constructs of theory of planned behavior predict health related intentions and behaviors but the extended form of TPB model will add value in the existing TPB constructs (Sniehotta, Presseau & Soares, 2014). Goldberg's (1990) big five personality traits constructs have been integrated with Ajzen's TPB constructs for the investigation of children health intention and behavior (Rivis, Sheeran and Armitage, 2011). One of the objectives of Rivis's et al., (2011) study was to examine how individual personality differences intervene in developing children health behavior.

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Rivis et al., (2011) did not use the complete TPB constructs, attitude, subjective norm and perceived behavioral control, but investigated the prediction of intention and behavior by adopting other variables such as prototype differences and individual differences. Prototype differences mean that to what extent some statements like "Fun Loving" and "Cool", used in different health related advertisement influence on developing adolescent consumers' intention and action towards health. The second hypothesis was the involvement of individual differences, the personality traits pertaining to consumer intention and actual behavior. In this study only one personality trait has found significant value which was agreeableness.

Ajzen (2011) has commented on (Rivis et al.,'s 2011) article that although the effect of big five personality traits in TPB, for the investigation of intention and behavior is very small and at initial stage but in future research more stable personality traits like adults may make some noticeable differences between traditional TPB and TPB with Big Five Personality traits (BFPT). Rivis et al., (2011) have demonstrated that future researchers should change the measurement scale and use multi-items for one variable as compared to single item measurement question. Future researchers should use big sample size of adult respondents for reliability and validity of results.

Another study found in previous literature where (Rhodes et al., 2002) has examined the role of personality traits constructs on complete TPB model. They have investigated the exercise behavior of an individual by using TPB and personality traits facets. In the study under discussion, the researchers have analyzed the impact of individual differences on all constructs of TPB. Results have indicated that subjective norms have received insignificant effect of individual differences, whereas the two

constructs namely; attitude and perceived behavioral control are having partial week effect.

Rhodes et al., (2002) have mentioned the limitation of the results that involvement of individual difference with every construct of TPB has made the model more complex and increased the measurement errors. The constructs of theory of planned behavior attitude, subjective norms and perceived behavioral control independently predict the intention and actual behavior. Therefore, the fourth variable should predict intention and/or actual behavior independently in conjunction with traditional TPB constructs.

Therefore, the researcher of the intended study has decided to fill this gap by using the integrated form of TPB and BFPT to investigate the adult consumers' healthy-packaged food consumption intention. Fishbein and Ajzen (2010) have described that researchers have proposed two additional variables, self- identity and anticipated affect. The self-Identity can be referred to as the personality traits' constructs. Therefore, the involvement of personality traits and TPB facets, in integrated form, may give the better results for investigation of individuals' intention towards selection of healthy packaged food.

The researcher has used multi-itemed measurement scale for each construct of TPB. The population of the current research is MBA students. Studies have exposed the fact that TPB is very expedient for health related intentions and behaviors, especially, when target population is young adults and investigated behavior is self-reported (MCEachen et al., 2011; Sniehotta et al., 2013). Students will be taken from the private universities. In the current research, the researcher has investigated the

moderating effect of personality traits facets between attitude and intention. The reason to examine intention rather actual behavior is that, according to (Ajzen, 1991) the stronger the intention of consumers, the stronger the behavior is and it has demonstrated that for actual action the intention plays a vital role.

Therefore, the researcher has examined the moderated effect of the personality traits between attitude and intention whereas subjective norm and self-efficacy in replace of perceived behavioral control worked independently. Another cause to investigate the intention of consumers rather than the actual behavior is demographical differences between current study and the previous studies. In one of the studies conducted in Canada (Rhodes et al., 2002) and the second one in UK (Rivis et al, 2011) which was entirely different in demographical sector as compared to Pakistan. The food decisions of Pakistani consumers are taste oriented rather health oriented (Hussain et al., 2014). Therefore, the change of intention is required which will later predict the actual behavior. The intention towards healthy-packaged food consumption is decisive for this demographical sector.

The current study has given another dimension to future researchers for the comparison of integrated TPB and BFPT between children intention and adult intention investigation towards healthy packaged food intention. Another uniqueness of the current study is Rivis et al., (2011) have taken personality traits of an individual as belief predictor which later led intention and final behavior. However, the researcher has employed personality traits as moderator between attitude and intention. The reason to make this combination is the population of the current research. In Rivis et. al., (2011) the population were children and their beliefs are

interrupted by parents as adolescent is an age when personality traits are at developing stage and parents play vital role in it.

2.5.1 Country specific Gap- Pakistan

Owing to several reasons to answer the food related behavioral issues of Pakistani consumers is necessary. According to the World Health Organization report (2013) the rising trends of non-communicable diseases like, cardiovascular, diabetes, cancer and mental disorder have been observed in Pakistani community.

The WHO (2013) statistics have unfolded the fact that 24.3% of people are suffering from hypertensive and they are above the age of 18 years, 25% of people are having coronary heart diseases and they are over the age of 40 years, 10% of adults suffering from diabetes, 34% from depressive disorders and this percentage is double among Pakistani women and 2.5% are disabled.

The cause of these diseases is poor percentage of nutrients in daily food items. There are two divisions of Pakistani consumers regarding nutritional food selection. One type of consumers are those who are poor and do not have access to quality diet and the second ones are those who are unaware of the nutritious food. To educate both these types is the responsibility of the government of Pakistan and the food processing companies working in the land.

Karen, Richard and Aland (2008) have indicated that the consumption of high saturated fat, sugar and low nutritional value food causes the diabetes, cancer and

cardiovascular. It is increasing in developing countries and the ratio is 80% deaths are caused by non-infection diseases in the developing countries. Pakistan is included in those countries where the obesity prevails and the ratio is almost 15% boys and 20% girls (Pappas, Akhtar, Gergen, Hadden and Khan, 2001).

Hashmi, Soomro and Saleem (2013) have indicated that the percentage of obesity and overweight is increasing among Pakistani youth and it is the cause of sedentary life, junk and mal-nutritional foods, growing ratio of urbanization, changing life style and changing in food pattern. An individual invests almost 42% of his/her income on food. The high ratio of income not spent on quality diet rather on the poor food intake. Therefore, organized controlled and comprehensive research is required in Pakistan not only to investigate the dietary quality of individuals but also to determine the factors which can be used to create awareness among Pakistani consumers with respect to nutritional and healthy dietary quality.

After reading several articles, the researcher has tried to design a comprehensive research to investigate the healthy-packaged food consumption intention of Pakistani consumers with a view to identifying the most influential factors in predicting Pakistani consumer's dietary intentions. The researcher has examined healthy-packaged food consumption intention of Pakistani consumers with traffic light symbols, health claims, user friendly labels, facets of theory of planned behavior and the personality traits.

2.6 Underpinning theory

Following is the underpinning theory adopted to support the current study:

2.6.1   Theory of Planned Behavior by Ajzen (1991)

To predict behavioral intention and actual behavior theory of planned behavior play pivotal role but its performance to predict health related behavioral intention and actual behavior is well documents (McEachan, Conner, Taylor, & Lawton, 2011). Behavioral intention is the strongest predictor of actual behavior (Shareef, Kumar, Kumar, & Hasin, 2009). Likewise, studies witnessed that strong behavioral intention determine actual behavior (McDermott, Oliver, Simnadis, Beck, Coltman, Iverson, & Sharma, 2015). In addition, studies have reported that intention is the potential reflector of actual behavior (Ajzen and Fishbein, 1980). The theory of planned behavior is the extension of theory of reasoned action. These theories are called behavioral theories. The evolution of theory of planned behavior is based on four concepts, cognitive, affective, conative and behavior. Cognitive, affective and conative are the three parts of brain. In cognitive individual acquire some knowledge based on their knowledge develop an affective or attitude towards any object. Cognitive is believes of individuals. Later the affective or attitude makes consumer conative or intention towards an object. The strong conative or intention provoke consumer for actual behavior. It has also been reported that strong behavioral intention make consumer actual behavior strong. But the nature of object depends on intention and behavior relation for instance in convenience goods such as food items there is no big distance between intention and behavior. Making consumer's intention at point of purchase is in reality making consumer able to purchase the product. Current study has investigated intention for the consumption of healthy packaged food. The other two constructs of theory of planned behavior are subjective norm and perceived behavioral control/self-Efficacy. Individuals' intention influenced by the people whose opinions are very effective for them therefore subjective norms directly

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effect on intention. Theory of planned behavior added the concept of perceived behavioral control. Perceived behavioral control is the ability of individuals' towards behavioral intention.

For the validation of any research idea the theoretical support is necessary. For the validation of current research the researcher has employed theory of planned behavior (TPB). Actually, TPB is designed by Ajzen (1991) for the investigation of human intention and behavioral outcome. Generally speaking Ajzen's (1991) theory of planned behavior is based on the correlation between beliefs, attitudes, intentions and behaviors whereas specifically three constructs of theory of planned behavior such as attitudes, subjective norms and perceived behavioral controls predict the behavioral intention and behavior independently. Behavioral intention are predicted by the combination of attitudes and subjective norms whereas perceived behavioral controls are sometimes directly and sometimes indirectly affect the behavioral outcome with the combination of intention. The addition of perceived behavioral control is the extension of previous theory named theory of reason action (Fishbein and Ajzen, 1975).

The objective of this study is to investigate the relationship between nutritional beliefs, food label reading attitudes and healthy-packaged food consumption intentions. For this purpose Ajzen's (1991) theory of planned behavior has developed a conceptual model as illustrated in figure 2.1.
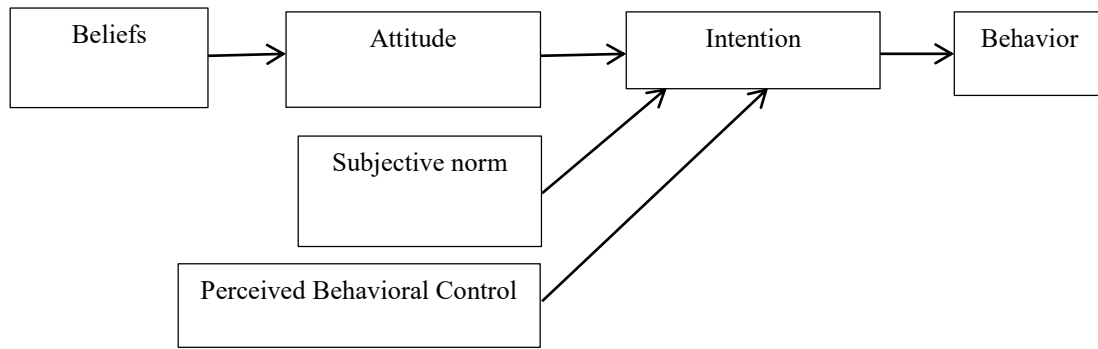
Figure 2.1
Conceptual relationship of beliefs, attitude, intention and behavior (Ajzen, 1991)

The above mentioned Figure 2.1 is the foundation of any behavioral beliefs which leads individuals towards behavioral intentions and the actual behavior in different environments and situations.

Infect beliefs are considered to be the motivational and cognitive factors. Individual belief on anything develops an attitude. The product of beliefs and attitudes leads towards intention. Finally, strong intention makes strong behavior towards any general or specific action. These beliefs are information based elements which are formed in consumers' minds in terms of collection of information. For instance, when an individual wants to participate in any game and needs fitness, he/she has a belief that only professional training centers have specific resources which can develop winning skills and fitness among individuals. In this example the intention is match winning fitness and the behavior is to be fit for the match. The belief is joining professional training center which is having professional trainer, equipment, doctor to examine the individual candidates' fitness on regular bases. Now these beliefs would affect the development of individual's attitude and these attitudes would develop intention and ultimately the individual would exhibit a specific behavior.

According to the Ajzen's (1991) theory of planned behavior, the individual's intention to behavior is predicted by three constructs attitudes, subjective norms and perceived behavioral controls. But all these constructs predict independently. It means that individual intention to behavior can be investigated with one element or by using all the constructs of theory of planned behavior. The assumption of theory of planned behavior is that more favorable attitude of an individual towards an object, the more favorable subjective norms and the strong perceived behavioral controls will take a person towards more favorable intention to exhibit positive behavior.

2.7   Theoretical Framework

After reviewing the literature regarding the variable used to answer the question of the current study the figure 2.2 has elaborated the theoretical framework of this study. The more positive belief on traffic lights symbols, health claims and user friendly label would create more favorable attitude towards food label. Greater the attitude towards food label would make favorable intention of the consumer for healthy-healthy-packaged food consumption intention.   Attitude towards food label was mediator in explaining the relationship between beliefs and healthy-packaged food consumption intention. The mediation effect was tested with all the mediation assumption and conditions given by Baron and Kenny (1986).

The mediating variable accounted for the relationship between predictor and criterion (Baron and Kenny, 1986). It has been hypothesized that the relationship between traffic light symbols, health claims, user friendly food label and healthy-packaged food consumption intention is interpreted with attitude towards food label. The

subjective norms factor was influencing people who effect on individuals' decision to purchase healthy-packaged food products. Media is the strongest factor of subjective norms because the target population of the current study is highly influenced by media. The self-efficacy was the individuals' internal control towards healthy-packaged food consumption intention such as easy to use and difficult to use label information (Lim, Kim and Kim, 2015).

It has also been discussed in previous studies that for the investigation of human behavior the role of attitude and personality traits are pivotal (Ajzen, 1988; Campbell, 1963; Sherman, 1980). Therefore, the researcher has employed big five personality traits as a moderator between attitude towards food label and healthy-packaged food consumption intention with Baron and Kenny (1986) moderations explanation. In contrary to mediator, moderator is a variable which affect in strengthening or weakening of relationship between predictor and criterion (Baron and Kenny, 1986). Therefore, it has been hypothesized that the involvement of personality traits between the attitude towards food label and healthy-packaged food consumption intention will make the relation strengthen or weaken.
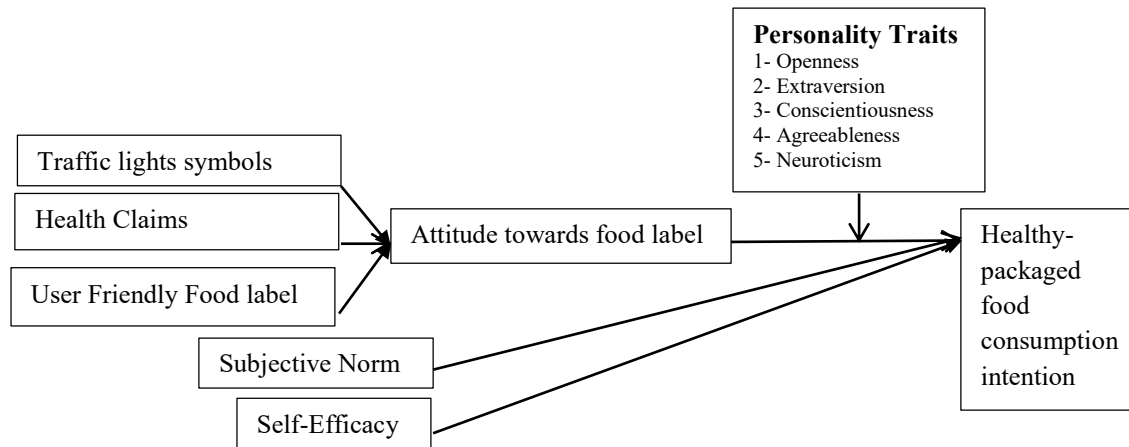
Figure 2.2
The proposed theoretical framework of Individual Differences TPB

2.8   Hypothesis

Hypotheses of the current study were designed with the assistance of past studies. The aforementioned studies' inconsistence findings have motivated to researcher to investigate consumer's intention towards healthy-packaged food selection. There need to involve factors which educated consumers' at point of purchase and develop strong intention to select healthy-packaged food by consulting food label information.

2.8.1   Association of Traffic light symbols and attitude towards food label

A color-coded system of traffic light symbols which translates nutritional values for consumers prompt individuals who are less health-conscious to look at and effectively utilize food labels. The color coded label increases the attitude for food label reading (Brownell & Koplan, 2011). Interpreting nutrition labeling is a health barrier as it requires both high literacy and numeracy skills (Rothman, Housam, Weiss, Davis, Gregory, Gebretsadik, & Elasy, 2006). Balcombe, Fraser and Falco (2010) have noted that these traffic light symbols are easy to understand food nutritional labeling

scheme. Three colors used to express the nutrients like red, amber and green for high, medium and low nutrients respectively. It is important that food labeling systems can be easily understood by all consumers (Carbone and Zoellner, 2012; Nielsen-Bohlman, Panzer, & Kindig, 2004).

Drichoutis, Lazaridis, and Nayga, (2006) has noted that traffic lights symbols are actually a response to answer the question to consumer when he/she complained about difficulties in nutritional food label reading. These color coded traffic light symbols explained about usage of calories per serving. Lang (2006) investigation regarding consumer response to traffic light symbols has exposed the fact that consumer found easy to read and understand the food label pertaining to traffic light symbol for nutrients.

Children's Food Campaign (2007) conducted in UK has indicated that these traffic light symbols are equally popular among children as compare to other food labeling pattern. Children' Food Campaign (2007) has also reported that these symbols must be at front of healthy-packaged rather back of healthy-packaged food. The reason is that consumer's first sight observed the front of any healthy-packaged food items and take instant decision. The displaying of these traffic symbols on nutritional food label is the best source to communicate nutritional information to end consumers without taking much time.

Packaged food is convenient good that's why consumer does not have much time to read the text written on it. Therefore, there is need to formulate a food label which can easily demonstrate the quality of packaged food and for this purpose color coded

signs such as traffic lights symbols are the most conveniently readable method to educate consumers. These traffic lights colors like red, yellow and green can guide consumers at the point of purchase instantly because the prominent color out of three traffic lights color will represents level of saturated fat, fat, sodium and slat. Therefore, the hypothesis 1 was:

H1:   Traffic lights symbols have positive effect in making consumer's attitude towards food labels

2.8.2   Association of health claims with attitude towards food label

Health Claims on food label were first time introduced in Japan in 20th century (Verhagen, Vos, Francl, Heinonen and van Loveren, 2010). Health claims on food label demonstrate the desirable composition of nutrients. There are some set of rules for health claims to be displayed on food labels related to easy to understand by consumers. The use of health claims on food labels are allowed with the condition that the average consumer can easily understand the usefulness as expressed in the claim regulations (Regulation EC, 1924/2006). Miklavec, Pravst, Grunert, Klopcic and Pohar (2015) have noted that health claims must be precise, according to the scientific information and understood by average consumers.

Stubbs (2013) has noted that health claims are a mechanism for communicating food related information to consumers and for that purpose food labels are the best source. Health claims have become a strong and established method to communicate about nutritional information to end consumers (Sabbe et al., 2009). In addition, health claims provide relevant information regarding nutrients to consumers and develop

interest to read food label at the time of purchase (van Trijp & van der Lans, 2007; Williams, 2005). Sabbe et al. (2009) have noted that interest in healthy eating with specific health claims increased the consumers purchase attitude towards even for unfamiliar foods.

The traditional back of pack label comprised of technical information in table which need extra proficiency to read and understand it. Studies have reported that even literate consumer is unable to read it at point of purchase. Health claims with precise statement relevant to food nutrients make consumer able easy to understand. Furthermore, health claims statements are written at front of pack label where consumer at first sight read it at point of purchase. The statements such as "low fat", "sodium free", "high fiber" guide consumers about the nutrients of packaged food. Therefore, hypothesis 2 was:

H2:   Health claims have positive effect in making consumer's attitude
         towards food labels

2.8.3   Association of user friendly label and attitude towards food label

It has been reported several time in literature that consumer faced difficulty in understanding information displayed on food labels (Cowburn & Stockley, 2005; Baltas, 2001; Drichoutis, 2006; Mhurchu & Gorton, 2007). Previous studies have accounted that consumers most often find food labels very useful (Klopp & MacDonald, 1981; Hawthorne, Moreland & Griffin, 2006; Marietta, Welshimer & Long, 1999 and Misra, 2007) however, it has also been observed that consumers also demand for simpler food labels for their understanding (Crawford & Baghurst, 1990;

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Heimbach & Orwin, 1984; Heimbach & Stokes, 1982; Bialkova & Van Trijp, 2010). Furthermore, some evidences have indicated that consumers sometime asked for more detail information on food labels (Crawford and Baghurst, 1990; Borgmeier & Westenhoefer, 2009).

Moreover, studies identified mixed types of results regarding ease and difficulties of food label reading (Satia, Galanko & Neuhouser, 2005; Canadian Council of Food and Nutrition, 2008; Shine, O'Reilly and O'Sullivan, 1997; Crawford and Baghurst, 1990; Silayoi and Speece, 2004; Heimbach and Stokes, 1982). Some studies have unfolded the fact that the younger consumers, the high education, the high income and the high numeracy skills affected on food label reading and understanding abilities (Kreuter, Brennan, Scharff et al., 1997; Rothman, Housam, Weiss H et al., 2006). The language used on food labels is technical and scientific which is not easily understandable to common illiterate consumers (Kasapila, 2011). This can be the cause of lack of interest in consulting food labels for the selection of healthy-packaged food.

There are customers in the market who demand that the information written on food label must be precise. Because even the signposts and the statements describe nutritional effect on health do not make consumers' attitude to read food label. They demand that food label information must be attractive and easy going. The understanding of food label varies from culture to culture. Some cultures in the world take food label information in serious notes but due to technicality of information unintentionally avoid at point of purchase. Therefore, there is a need design user friendly food label for these target customers. Therefore, the hypothesis 3 was:

H3:   User friendly food labels have positive effect in making consumer's attitude to read food labels

2.8.4   Association of attitude towards food label and healthy-packaged food consumption intention

Individuals who reported about the usage of food labels are tend to have healthier food consumption compared with those who did not utilize nutrition labels (Ollberding et al., 2010). Besler, Buyuktuncer and Uyar (2012) have noted that nutritional food labeling assist consumers at the time of purchase to make healthy dietary decision and it considered as a medium of education about dietary quality intention. . Food labeling is mandatory in most of the countries with two conditions such as one is food label must facilitate consumers in improving dietary quality and second is to protect consumers' healthy dietary rights (Cowburn and Stockley, 2005; Ree, Riediger and Moghadasian, 2008).

Furthermore, several studies have mentioned the fact that food label reading and healthy-packaged food consumption are strongly correlated (Neuhouser, Kristal, Patterson, 1999; Weaver and Finke, 2003; Jasti and Kovacs, 2010). Nevertheless, the uncertainty exists about the effectiveness of nutritional label use for taking healthy food intake among consumers (Cowburn & Stockley, 2005). Graham and Laska (2012) have reported that nutritional label reading is actually a mechanism which is normally used to get nutritional information and ultimately it helps to improve the dietary quality.

There is no formal method to educated consumers pertaining to healthy package food except food label itself. The design of food label influence consumers to read at point

of purchase. The reading of food label change consumers' intention at point of purchase. Therefore, the hypothesis 4 was:

H4:   The attitude towards food label has positive effect on consumer's intention towards healthy-packaged food consumption intention

2.8.5   Association of traffic lights symbols, health claims and user friendly food label with healthy-packaged food consumption intention

Food labeling is a potential source to facilitate consumer for the selection of healthy food and for that purpose Front of Pack (FoP) labeling scheme is getting popularity due to its simplicity (Kelly et al., 2009). Front of pack labeling comprises of health claims, traffic lights symbols and some specific logs which can easily interpret by consumers at the time of purchase (Sacks et al., 2011). Studies have examined that for the selection of healthy-packaged food traditional food labels demand expert cognitive process to interpret the information whereas traffic lights symbols assist consumers with red, yellow and green lights to understand fat, saturated fat, sodium and salt (Pettigrew et al., 2011). The effectiveness of traffic lights symbols has been realized when researchers have found that these symbols are educating less educated people for the selection of healthy-healthy-packaged d food (Signal et al., 2008). Aforementioned studies have accounted that reading food label make consumer healthy and traffic lights symbols make consumer able to understand required information at food label (Temple & Fraser, 2014). The Front of Pack (FoP) labeling scheme such as traffic lights symbols is not only a cost-effective strategy for the prevention of obesity but also effective tool to promote healthy-healthy-packaged d food under time constraints (Scarborough, Matthews, Eyles, Kaur, Hodgkins, Raats, & Rayner, 2015).

Past studies have realized the efficacy of health claims at food label (Lähteenmäki, 2012) and indicated that it is a source of information disclosure (Lalor, 2011). Organizations are designing health claims to provide useful information to consumers pertaining to select healthy-packaged food (Brookes, 2010). The objective of health claims is to restrain consumer from technical nutritional information and provide health benefits related to specific product with easy to understand statements (Nocella & Kennedy, 2012). Past studies have investigated the influence of food label information on consumer food purchase decision and they categorized it into two selections; one is the influence of information and second is the process and evaluation of information and health claims have been found very effective for both categories (Dean, Lampila, Shepherd, Arvola, Saba, Vassallo, & Lähteenmäki, 2011). It has also been highlighted in the past studies that although health claims and healthy-packaged food selection have very strong and positive relation but it varies from country to country (Hwang, Lee, & Lin, 2016).

Several past studies have lifted the issue that consumer is facing problem in understanding the overall food label information and due to that consumers avoid to consult label information at the point of sale (Xie, Davis, State, & Hall, 2015). Food and Drug Association has proposed numerous food label designs to facilitate consumers at the point of sale (FDA, 2014) and the main focus of the labeling design is to locate required information at the suitable place where consumers can easily read it. The review of the past studies have disclosed the fact that several researchers have taken easy to understand food label as a subject of discussion with various dimensions such as healthy-packaged d shape(e.g. Clement, Kristensen & Gronhaug, 2013; Garber Jr., Hyatt & Boya, 2009; Westerman et al., 2012), colour (e.g. Kauppinen-

Raisanen & Luomala, 2010; Labrecque & Milne, 2012; Gordon, Finlay & Watts, 1994), imagery (e.g. Ampuero and Vila, 2006; Underwood, Klein & Burke, 2001), typography (Baik et al., 2011; Celhay, Boysselle & Cohen 2015), and graphics (Bone and France, 2001). The conclusion of every discussion was to design a food label which not only attract consumer but also help to select healthy-packaged food at the point of sale (Jackey, Cotugna, & Orsega-Smith, 2017). Consumers consider food label a source of information for healthy-packaged food selection. However, due to consumers' lack of understanding and complexity of label information reading food label is inconvenient (Kozup Creyer and, Burton, 2003, Chandon, 2013).

Various front of pack food label save consumers' time at point of purchase. The precise and easy to understand information at food label make consumer able to instantly create intention to select healthy packaged food and restrict consumers to put unhealthy packaged food in shopping cart. Therefore, hypothesis was as follows;

H5: Traffic lights symbols have positive relation with healthy-packaged food consumption intention.

H6: Health claims have positive relation with healthy-packaged food consumption intention.

H7: User friendly food label have positive relation with healthy-packaged food consumption intention.

2.8.6 Relationship among traffic light symbols, attitude towards food label and the healthy-packaged food consumption intention

Traffic light symbols on food labels assist individuals in making healthier choices when selecting foods (James, Adams-Huet, & Shah, 2015; Morley et al., 2013; Roberto et al., 2012; Thorndike et al., 2012). Studies have demonstrated that consumers are more likely to identify healthier items with traffic light labels than with other monochromatic labeling systems such as the percentage and the healthy choice labels (Borgmeier and Westenhoefer, 2009; Hawley et al., 2012; Kelly et al., 2009). The demonstration of a traffic light labeling system increased sales of healthy items and decreased sales of unhealthy items in a large hospital cafeteria (Thorndike et al., 2012) and the increase has been observed among less educated employees (Tarabella and Burchi et al., 2012). To assess the influence of labeling on customers' awareness of health and healthy purchases researchers have surveyed cafeteria before and after implementation of the traffic lights labeling. It has been hypothesized that customers who noticed the traffic lights labels would purchase a higher proportion of healthy items compared to customers who did not notice the labels. Results have acknowledged the significance of traffic lights color coded signs on food label. Majority of the customers have shown their interests in noticing new color coded traffic light labels while selecting food (Tarabella and Burchi et al., 2012). These traffic light symbols on food label assist consumers in taking overall balance diet.

There are some food related agencies which have been reported that traffic light symbols are getting popularity among consumers and improving consumer attitude toward food label reading and developing intention to consume healthy-packaged food (Food Standards Agency, 2010 and Kelly, Hughes, Chapman, Louie, Dixon and

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King, 2010). These colors highlight the total fat, saturated fat, sugar and salt content (FSA, 2010). Acton, Vanderlee, White, & Hammond (2016) examined that intervention of traffic lights symbols have positive effect on consumer weight control and selection of healthy-packaged food items.

Food label make bridge between consumer and packaged food item. The information given at food label is facilitator to bring change in consumer' intention towards selection of healthy packaged food. Furthermore, the consumers' belief at traffic lights symbols grab their attention to consult food label information and finally play vital role in selection of healthy packaged food items. Therefore, the hypothesis 8 was:

H8:   The attitude towards food label mediates between traffic lights symbols and the healthy-packaged food consumption intention.
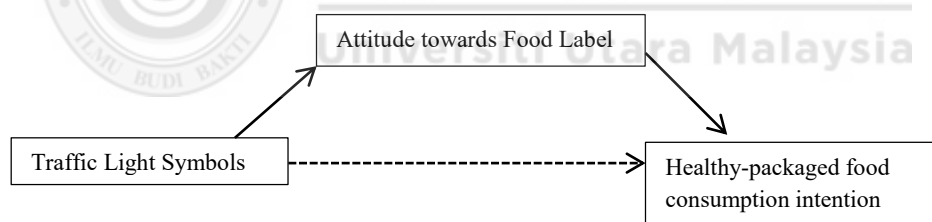
Figure 2.3
Mediation effect of attitude between traffic lights symbols and healthy-packaged food consumption intention

2.8.7   Relationship among health claims, attitude towards food label and the healthy-packaged food consumption intention

European Union Regulations (1924/2006) have explained that health claims actually indicate the relationship between food label and health. The association of health claims and food may have an influence on taking quality of healthy-packaged food (Verhagen, Vos, Francl, Heinonen, & van Loveren, 2010; Verhagen, & van Loveren,

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2016). According to European Commission (2006) there are three types of health claims are normally used on food labels for healthy diet awareness. First one is general function health claims: these claims state the role of nutrients in the growth and development of body. Second one is children health claims: these claims are used specifically for wellbeing of children and third one is risk reduction claims: these claims explain the fact that by using these nutrients consumer can be protected by specific diseases. European Commission (2013) has made some amendments in nutritional food labeling regarding health claims. If a food processing organizations have intention to use health claim on food label it is obligation to add four more information on labels with health claim. These four obligations are as follows:

1- Health claim statement must indicate balance diet and healthy life style.
2- To get the maximum benefits from health claims the quantity and the patterns of consumption must be written.
3- It must be written on label that who cannot use this food
4- It is also explicitly stated on label that which risk is associated in excessive use of this product.

The aim of these health claims is to guide consumer in making informed and healthy food choices (Drichoutis, Lazaridis, Nayga, Kapsokefalou, & Chryssochoidus, 2008; Williams & Ghosh, 2008). Moreover, food processing companies are taking financial advantages by using these health claims. It has been noticed that these health claims have strong significant association with food label reading and healthy-healthy-packaged d food consumption (Hailu, Boecker, Henson, & Cranfield, 2009; Lampila, van Lieshout, Gremmen, & La¨hteenma¨ ki, 2009; Leathwood, Richardson, Stra¨ ter,

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Todd, & van Trijp, 2007; Siegrist, Stampfli, & Kastenkolz, 2008). Health claims positively influenced nutritional and health perceptions (Bech-Larsen & Grunert, 2003; Hooker & Teratanavat, 2008; Mialon et al., 2002; Williams, 2005). Studies have reported that health claims considered being very supportive to inform consumers pertaining the selection of healthy healthy-packaged d food (Hieke, Kuljanic, Pravst, Miklavec, Kaur, Brown, & Rayner, 2016) furthermore, aforementioned studies have unfolded the fact that format of health claims and their understanding varies from country to country therefore a standardized format is still it's evolutionary period (Hung, Grunert, Hoefkens, Hieke, & Verbeke, 2017; Hieke, Cascanette, Pravst, Kaur, Van Trijp, Verbeke, & Grunert, 2016).   Therefore, the hypothesis 9 was:

H9:   The attitude towards food label mediates between health claims and the healthy-packaged food consumption quality intention
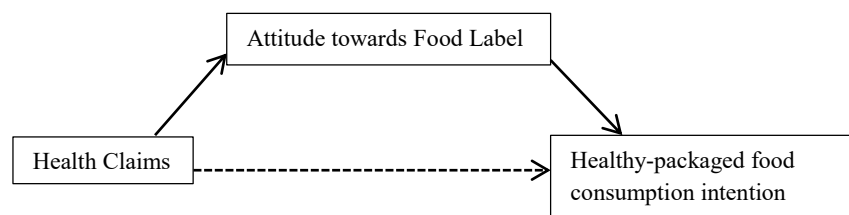
Figure 2.4
Mediation effect of attitude between health claims and healthy-packaged food consumption intention

2.8.8   Relationship among user friendly food label, attitude towards food label and the healthy-packaged food consumption intention

Singla (2010) has noted that there is a positive association among ease of label, interest in label reading and recommended dietary allowances. It has also been

noticed that education is also part of label reading skills and abilities (Mhurchu, Volkova, Jiang, Eyles, Michie, Neal, & Rayner, 2017). Cowburn and Stockley (2005) have explained that nutritional labeling is emerged as prominent policy tool for promoting health. Quantitative information provided on food label is a big barrier for some consumers. Researchers have found it hard to understand among average consumers (Abdul, Rezai, Mohamed, & Amizi Ayob, 2016). These hurdles are commonly observed in understanding of recommended daily amount, serving size and percentage of daily value (Klopp and MacDonald, 1981; Dooley, Novotny and Britten, 1998; Shine, O'Reilly and O'Sullivan, 1997; Rothman, Housam, Weiss et al., 2006; Hawthorne, Moreland, Griffin et al., 2006; Daly, 1976; Misra, 2007; Levy and Fein, 1998 and The Strategic Counsel, 2010). Signal, Lanumata and Robinson et al. (2008) have noted that information accompanied with graphical representation could increase food label usage and help consumers in increasing healthy food selection. Cowburn and Stockley (2004) have demonstrated that the nutrition labeling must enhanced other nutrition education schemes. Studies have described that yet researchers and food processing companies could not find the user friendly food label format (Wahlich et al., 2012). Whereas a study conducted in USA has elaborated that consumer who consult food label consume less calories as compare to consumer who avoid reading it at the time of purchase (Ollberding, Wolf, & Contento, 2010). Furthermore, it is in practice that the nutrition information provided on the label may be the only source of information available to the consumer at the time of purchase (Savoie et al., 2013). Therefore, the hypothesis 10 was:

H10: The attitude towards food label mediates between the user friendly food label and the healthy-packaged food consumption intention

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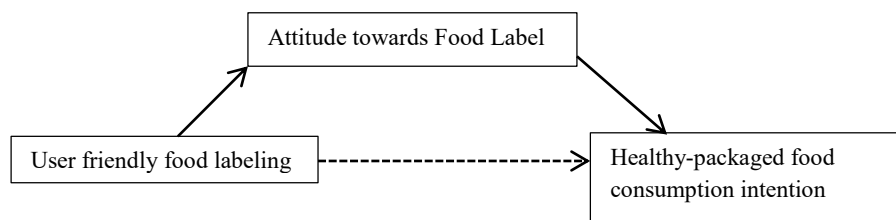
Figure 2.5
Mediation effects of attitude between user friendly food label and healthy--packaged food consumption intention

2.8.9 Association between subjective norm and healthy-packaged food consumption intention

The normative norms create subjective norms. Subjective norms are comprises of the influence of parents, sibling, friends, media, government agencies and environmental factors on individual intentions to do something (Golnaz, 2011). Some of the researchers have indicated that subjective norms are the reflection of consumer perceived social pressure (Chan et al., 2014). Most of the time consumer's decisions are guided by some influential personalities (Kim and Chung, 2011). The normative beliefs of the intended study are selected owing to the target population. Studies have demonstrated that subjective norms have significant effect on intention.

Although the design and written information of food label is effective but consumers ask from the people whose opinions effect on their decision or intention to make actual decisions. Therefore, hypothesis 11 was:

H11: Subjective norm have positive effect in developing consumer's intention towards healthy-packaged food consumption intention

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2.8.10 Association between self-efficacy and healthy-packaged food consumption intention

Control beliefs create perceived behavioral control. Self-efficacy is actually the degree of confidence that to what extent an individual perceive to perform any behavior (Chen, 2007; Kang et al., 2006). According to (Ajzen, 1991) stronger the self-efficacy leads towards greater intention and behavior. It has also been observed that when consumer think that he/she has more time, money and skills his/her control on performing any behavior has increased (Kim and Chung, 2011). The researcher of the study believes that when consumer has strong confidence to take healthy food it will direct him/her towards healthy healthy-packaged food consumptin intention.

There are many factors which effect on consumers' intention towards selection of healthy food and consumers' internal strength and weaknesses are one of them. Most of the time external factors motivate consumers towards selection of any product but consumers' internal lack of confidence hinder. It means that if food label is effective and consumer takes favorable opinion from others nevertheless he/she would not able to take action for the selection of healthy packaged food. Therefore, hypothesis 12 was:

> H12: Self-Efficacy has positive effect in developing consumer's intention towards dietary quality intention

2.8.11 Association of attitude towards food label, five personality facets and healthy-packaged food consumption intention

Researchers are using the facets' of the big five personality traits theory to investigate human behaviors. Big Five personality traits are also shedding lit on individuals' dietary quality and food label reading habits (Friedman, 2008; Goodwin & Friedman,

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2006; Ozer & Benet-Martinez, 2006). Some researchers have explained the effect of the conscientiousness on body mass index (BMI) and described that high level of the conscientious person observed in consulting food label and found less obese (Lahti et al., 2013; Sutin, Ferrucci, Zonderman, & Terracciano, 2011). In addition, a few studies have tested the effect of the neuroticism on the dietary quality and the obesity. It has been observed that individuals having negative emotions are more obese and poor in consulting food label at the time of purchase (Magee & Heaven, 2011; Sutin et al., 2011; Terracciano et al., 2009). However, some of the studies did not find any relation between the neuroticism and the dietary intake (Mottus, McNeil, Jai, Craig, Starr and Deary, 2013).

Moreover, the relationship between the neuroticism and obesity of dietary intake is still emerging and results are in mixed from. Rest of the three traits is also having mixed results. Sutin et al. (2011) noted that the extraversion has positive relation with body mass index and dietary intake. However, Kakizaki et al., (2008) accounted negative relation between extraversion and body mass index. In continuation, Magee and Heaven (2011) did not find any relationship between them. Chapman, Fiscella, Duberstein, Coletta, and Kawachi, (2010) have indicated that there is no relationship among the openness (to experience), the dietary intake, healthy-packaged food consumption and the food label reading. However, Brummett et al., (2006) have found their relation with few exceptions. Furthermore, the agreeableness has significant positive results with BMI (Magee and Heaven, 2011). However, Armon, Melamed, Shirom, Shapira, & Berliner (2013) have noted insignificant relation between them. Packard et al., (2012) have noted that the association among

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personality trait, food label reading and dietary quality intention explain the fact that why some consumer in the population take better or worse dietary intake than other.

Likes and dislikes of consumers play significant role in purchasing goods and services. Food items depend on consumers' taste and preferences. Individuals' personality divided into five categories with respect to their traits and characteristics. The dominating traits influence individual at the point of purchase. Therefore, when external factors stimulate individual and opinion leaders influence individual in making their intention towards any object these personality traits intervene. The interference of personality trait between attitude and intention can enhance the relationship or can weaken the relationship. In selection of healthy packaged food it is necessary to investigate that to what extent personality traits effect as a moderator between attitude towards food label and intention to consumer healthy packaged food. Therefore, the hypothesis 13 was:

H13: The big five personality traits moderates between the attitude towards food label and the healthy-packaged food consumption intention

H13a: The conscientiousness moderates between the attitude towards food label and the healthy-packaged food consumption intention

H13b: The extraversion moderates between the attitude towards food label and the healthy-packaged food consumption intention

H13c: The agreeableness moderates between the attitude towards food label and the healthy-packaged food consumption intention

H13d: The openness to experience moderates between the attitude towards food label and the healthy-packaged food consumption intention

H13e: The neuroticism moderates between the attitude towards food label and the healthy-packaged food consumption intention

2.9   Summary of hypothesis

The summary of all hypotheses is given in table 2.7. The researcher has designed these hypotheses for the investigation of healthy-packaged food consumption intention with the assistance of theory of planned behavior and big five personality traits.

Table 2.7
Stated hypothesis

|	
HI	Traffic lights symbols have positive effect in making consumer's attitude towards food labels
H2	Health claims have positive effect in making consumer's attitude towards food labels
H3	User friendly food labels have positive effect in making consumer's attitude towards food labels
H4	The attitude towards food label have positive effect on consumer's intentions towards healthy-packaged food consumption intention
H5	Traffic lights symbols have positive relation with healthy-packaged food consumption intention
H6	Health Claims have positive relation with healthy-packaged food consumption intention
H7	User friendly food label have positive relation with healthy-packaged food consumption intention
H8	The attitude towards food label mediates between traffic lights symbols and the healthy-packaged food consumption intention
H9	The attitude towards food label mediates between health claims and the healthy-packaged food consumption intention
H10	The attitude towards food label mediates between the user friendly food label and the healthy-packaged food consumption intention
H11	Subjective norm have positive effect in developing consumer's intention towards healthy-packaged food consumption intention

Table 2.7 (Continue)

H12	Self-Efficacy have positive effect in developing consumer's intention towards healthy-packaged food consumption intention
H13a	The conscientiousness moderates between the attitude towards food label and the healthy-packaged food consumption intention
H13b	The extraversion moderates between the attitude towards food label and the healthy-packaged food consumption intention
H13c	The agreeableness moderates between the attitude towards food label and the healthy-packaged food consumption intention
H13d	The openness to experience moderates between the attitude towards food label and the healthy-packaged food consumption intention
H13e	The neuroticism moderates between the attitude towards food label and the healthy-packaged food consumption intention

2.10 Operational Definitions

Table 2.8 is having comprehensive and concise operational definitions of variables being employed to achieve the objective of current study. Table 2.8 is also having all the instruments to investigate the latent variables.

Table 2.8
Operational definition and measurement items

Operational Definition	Measurement Items
Traffic Light Symbols Sonnenberg et al., (2013) The proposed scheme highlights the total fat, saturated fat, sugar and salt content on the front panel of food healthy-healthy-packaged d, with each nutrient color-coded as red, yellow or green corresponding to high, medium or low levels of that nutrient (Food Standards Agency (FSA) United Kingdom, 2007)	Food Nutrients with red, yellow and green traffic lights is effective for healthy-packaged food selection Familiarity of traffic lights symbols on healthy-packaged food label take consumer's attention Traffic lights symbols easily demonstrate high, medium and low (fat, sodium, salt, saturated fat and fiber) information Traffic lights symbols benefit consumer to consider the food label for healthy-packaged food selection. Traffic light colors' labels influence consumer to select healthy-packaged food.

Table 2.8 (Continue)

Health Claims Cavaliere et al., (2015) Health claims refer to a nutrient in a food such as 'low in fat' or 'good source of calcium' (Food Standards New Zealand, 2013) A health claim is any statement about a relationship between food and health (European Food Standards Commission, 2010)	Energy claims such as "Low Energy", "Energy-Reduced" and "Energy Free" at food label help consumer to select healthy-packaged food. Fat claims such as "Low Fat", "Fat-Free", "Low Saturated Fat" and "Saturated Fat-Free" at food label help consumer to select healthy-packaged food. Sugar claims such as "Low Sugar", "Sugars-Free" and "With no Added Sugars" at food label help consumer to select healthy-packaged food. Vitamin claims on food labels help consumers to select healthy-packaged food. Fiber claims such as "Source of Fiber" and "High Fiber" at food label help consumer to select healthy-packaged food. Sodium/salt claims such as "Low Sodium/Low Salt", "Very Low Sodium/ Very Low Salt"," Sodium-Free/Salt Free" at food label help consumer to select healthy-packaged food.
User Friendly Label Byrd-Bredbenner (1994) Food label which contains a wealth of information that allows average consumers for informed purchase decisions (Post, 2007)	Availability of required information on food label benefit consumer. Clear and easy to understand food label information benefit consumer. Simple and straightforward food label information benefit consumer. Quick facts on food label with easy to read language benefit consumer. Avoiding too much category of information at food label benefit consumer. Brief information on food label benefit consumer. Detailed with simple words' information on food label benefit consumer.
Attitude (Towards food label) Van der Merwe et al. (2014) The attitude toward the behavior refers to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior (Ajzen, 1991)	A food label is a good source of information for healthy-packaged food selection Easy to understand information on food labels is supportive of healthy-packaged food selection Food labels provide good quality information. Food labels contain sufficient information for healthy-packaged food selection. Symbols on food labels are a useful source of information for healthy-packaged food selection

Table 2.8 (Continue)

Goldberg (1991)	
	Extroversion
The tendency to be outgoing, sociable, and active (Angelina, 2015)	Extroverted
	Energetic
	Talkative
	Bold
	Active
	Assertive
	Adventurous
	Agreeableness
The tendency to be trusting, sympathetic, and helpful (Angelina, 2015)	Warm
	Kind
	Cooperative
	Unselfish
	Agreeable
	Trustful
	Generous
	Conscientiousness
	Organized
The tendency to be organized and disciplined (Angelina, 2015)	Responsible
	Conscientious
	Practical
	Thorough
	Hardworking
	Thrifty
	Neuroticism
The tendency to experience negative emotions (Angelina, 2015)	Calm
	Relax
	At ease
	Not envious
	Stable
	Contented
	Unemotional
	Openness
The tendency to be creative and open-minded (Angelina, 2015)	Intelligent
	Analytical
	Reflective
	Inquisitive
	Imaginative
	Creative
	Sophisticated

Table 2.8 (Continue)

Subjective Norm Watanabe et al., (2015) Subjective norm refers to the perceived social pressure to perform or not to perform the behavior (Ajzen, 1991).	People important to me think I should eat healthy-packaged food People important to me approve to eat healthy-packaged food People important to me want me to eat healthy-packaged food Many people important to me eat healthy-packaged food The mass media suggest that I should use healthy-packaged food products The mass media urge me to use healthy-packaged food products The mass media and advertising consistently recommended that I should use healthy-packaged food products
Self-Efficacy (Bandura, 2004) Self-efficacy refers to individuals' beliefs in their capabilities to perform a specific behavior	For me it is difficult to select healthy-packaged food due to small font size at a food label. For me it is difficult to select healthy-packaged food due to lack of knowledge about nutrients. My nature to eat quickly hinders me to select healthy-packaged food. It is entirely up to me to select healthy-packaged food Shopping foods with others (e.g., friends) make difficult for me to select healthy-packaged food For me it is difficult to select healthy-packaged food because nutritional information is placed at the back of the pack food label It is easy to select healthy-packaged food if I can understand the nutrients on the label (e.g., Calorie, fat, etc.). It is easy to select healthy-packaged food if I can understand the nutrient content per serving size on the label (e.g., Calorie 400kcal, fat 10g, etc.) It is easy to select healthy-packaged food if I can understand the percentage daily values of nutrients on the label
Intention (healthy-healthy-packaged d food consumption) Chung et al., (2010) Behavioral intention is the indication of an individual's readiness to perform a given behavior. It is assumed to be an immediate antecedent of behavior (Ajzen, 2001).	I give importance to nutrients in the purchasing of healthy-packaged food items I mostly prefer to eat healthy-packaged food I frequently purchase healthy-packaged d food I am willing to pay extra for healthy-packaged food I intend to take healthy-packaged food I plan to take healthy-packaged food I want to take healthy-packaged food

2.11 Summary

Chapter-II has explained that how various past scholars have addressed the imbalanced consumption of healthy-packaged food. Aforementioned studies have also shed light that increasing number of healthy-packaged food items in consumers shopping cart is changing disease pattern among consumers from acute to chronic diseases. Furthermore, the impulsive and irrational behavior of consumers towards

healthy-packaged food consumption is not confined to developed countries but developing and under developing countries is also facing this issue.

Researcher of the intended study has explained each variable. Moreover, the hypotheses were designed with the assistance of past studies to achieve study objective. The supporting theory was theory of planned behavior which best explains consumers' intention towards any object. The gap of the study was also mentioned in this chapter.

CHAPTER THREE

METHODOLOGY

3.1   Introduction

The objective of this chapter is to explain the theoretical framework, hypothesis and methodology which were employed to achieve current research goal. This chapter comprised of some subdivided sections such as research design, data collection, measurement scale, population, sampling techniques and suitable statistical tools.

3.2   Research Design

The purpose of the study was to investigate healthy-packaged food consumption intention of an individual consumer. The framework of the study was based on Ajzen's theory of planned behavior. Individuals' likes and dislikes play pivotal role in developing their intention and behavior. Therefore, five personality traits were taken as moderator between attitude and intention. It was examined that when strong behavioral believes make consumers attitude strong and these strong attitude develop strong intention how individuals' own personality effect on this relationship.

To answer the current research questions there were three behavioral beliefs; first traffic lights symbols and the purpose of traffic light symbols was to highlight the total fat, saturated fat, sodium and sugar. It is the composed scheme of front of pack labeling system with color coded such as, green, amber and red for low, medium and high respectively (Sacks et al., 2011). Second, health claims a trust worthy and provides relevant information to consumers regarding food content and health benefits

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(Van Trijp and van der, 2007). It has also been observed that food label reading among consumers has increased with the presence of health claims (Barreiro-Hurlé et al., 2010). Health claims expressed some nutritional content of food and these expressed claims might be in the best interest of some consumers who make direct link with food and health (Cavaliere et al., 2015). Third, user friendly food labels which increase the consumer interest as well as motivate to read the labels first before selecting food. There is no formal method to educate consumers regarding the selection of healthy packaged food except food labels (Cecchini & Warin, 2016). Therefore, attitude towards food labels was mediator in current study. Moreover, in healthy packaged food selection consumers take others' opinions that are influential for them. Therefore, for this purpose the effect of subjective norm was tested on healthy package food selection. Consumers' ease and difficulty is also very decisive in making their intention towards any object and for this purpose self-efficacy was examined in current model.

3.3 Data source

There are four provinces in Pakistan comprising of Punjab, Sindh, Balochistan and Khayber Pakhtunkhwa (KPK). The total population of Pakistan is 222 million. Data collections from all provinces are impossible. Therefore, the researcher has selected the province which is having highest population named Punjab. The total population of Punjab is 116 million. Owing to the highly populated province, Punjab is having highest number of universities as compare to other three provinces of Pakistan. Furthermore, there are two big cities of Punjab which possessed highest number of public and private universities name Lahore and Islamabad. Therefore, researcher has

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selected these two cities for data collection. Moreover, it was very difficult to involve all the universities of Punjab, because it is costly, time consuming and demands resources. Secondly, Pakistan is facing terrorism issue and universities are also its victim. In last few years several terrorist cases were reported in which terrorist targeted general public, army officials, government officials, markets, schools and university students. Likewise, in terrorist attack on Army Public School dated December 16, 2014 the death toll was 141 (Ismail Khan, 2014) and in Bacha Khan University Peshawer dated January 20, 2016 the death toll was 21 (Ali Akbar, 2016). Owing to that people avoid to involve in any surveys and data collection procedures where they have to take their opinions in the form of questionnaires and opinions. Such incidents have created very unstable situation in all four provinces of Pakistan. Therefore, to conduct any research survey in universities a special permission is required from university authorities. Owning to security threats public sector universities denied granting permission to any outsider to get access to classes for any purpose. In addition to private sector universities are also very much concern about granting permission to any outsider even for academic data collection but they are granting permission for academic surveys after verifications. Therefore, researcher has selected fourteen private sector universities situated in two big cities of Punjab namely Islamabad and Lahore. In these fourteen universities the data was collected only from MBA students. The unit of analysis for the current study was an individual. The cross sectional data was collected at the same point of time through adapted questionnaire.

3.4 Data source selection method

The data was collected from MBA students of fourteen private sector universities of Pakistan situated in two big cities named Lahore and Islamabad. Moreover, majority of big private universities are also established in these two cities. Islamabad is the capital of Pakistan with population 2.5 million and people living in this capital city represents all provinces of Pakistan. Lahore is the metropolitan city of Pakistan with population 11.5 million. This city is the hub of business and industry. Therefore, citizen of Pakistan migrated to Lahore for job seeking and studies from all provinces. Owing to the diversity of students diverse opinion was received by target population pertaining to the selection of healthy packaged food consumption intention. Table 3.1 is having the information pertaining to the name of 14 private universities situated in Lahore and Islamabad.

Table 3.1
Name of selected universities for sample

No	University Name
	Islamabad
1	Shifa Tameer-e-Millat University, Islamabad
2	Muhammad Ali Jinnah University, Islamabad
3	Foundation University, Islamabad
4	Ripha University, Islamabad
	Lahore
5	University of Lahore, Lahore Campus
6	University of South Asia, Lahore
7	University of Management & Technology, Lahore
8	Imperial College of Business Studies, Lahore
9	Institute of Management Sciences, Lahore
10	Qarshi University, Lahore
11	Lahore University of Management Sciences (LUMS), Lahore
12	Lahore Garrison University, Lahore
13	National College of Business Administration & Economics, Lahore
14	University of Central Punjab, Lahore

The reason to select Lahore and Islamabad cities is that MBA students living in these metropolitan cities have purchasing power, have good shopping behavior and strong

beliefs especially in food related behavior towards healthy-packaged food selection. The major food retail brands' branches like Matro, Macro, Cash & Carry (Hyperstar) and famous Pakistani big food retail brand Al-Fatah exist in Lahore and Islamabad. It means that people are familiar with packaged food.

3.5 Sample and population

The population of the current study was MBA students of fourteen private sector universities. The population was known therefore, to derive sample size from known population Krejcie and Morgan (1970) mathematical formula was utalized.

For finite population (Krejcie and Morgan, 1970)

$$\left. X^2 NP(1-P) \middle/ d^2(N-1) + X^2 P(1-p) \right.$$

All the selected fourteen universities have different population in their MBA program. Table 3.2 is having detail information.

Table 3.2
Total population and sample

No	University Name	Students	% sample	Sample
	Islamabad			
1	Shifa Tameer-e-Millat University, Islamabad	334	6.67	22
2	Muhammad Ali Jinnah University, Islamabad	478	9.54	46
3	Ripha University, Islamabad	313	6.25	20
4	Foundation University, Islamabad	297	5.93	18
	Lahore			
5	University of Central Punjab, Lahore	357	7.13	25
6	University of Management & Technology, Lahore	412	8.23	34
7	University of South Asia, Lahore	387	7.73	30
8	University of Lahore, Lahore Campus	442	8.83	39
9	Imperial College of Business Studies, Lahore	341	6.81	23
10	Institute of Management Sciences, Lahore	348	6.95	24
11	Qarshi University	297	5.93	17
12	Lahore University of Management Sciences (LUMS), Lahore	354	7.07	25
13	Lahore Garrison University, Lahore	339	6.77	23
14	National College of Business Administration & Economics, Lahore	309	6.17	19
	Total	**5008**	**100**	**365**

Therefore, the minimum sample size for the current study with known population was 365. Previous studies have reported that response rate on paper based questionnaires is 56% and sometime less (Nulty, 2008). Therefore, to achieve the minimum sample size researcher has distributed more than doubled of the minimum sample size. The sample frame was systematic random sampling. The researcher has collected the complete list of each university MBA students with the permission of the university administration. After that with the coordination of the university program managers the researcher has systematically select the required sample.

3.6   Data collection and Measurement Scales

Cross sectional data was collected with adapted questionnaire. The researcher has adapted questions from previous researches for each variable. The validity and reliability of the questions was test prior to the formal distribution of questionnaire

among target population. All the questions were on five point-Likert scale. The researcher has divided the questionnaire into nine sections. Section one comprised of demographical questions such as age, gender and previous education of respondents.

Section two was based on five items regarding Traffic light symbols and questions are mentioned in table 3.3. These questions were adapted Sonnenberg et al., 2013. All the questions were asked on Five point Likert scale. The range of scale was "1" strongly disagree, "2" disagree, "3" neutral, "4" agree and "5" strongly agree.

Table 3.3
Traffic Light Symbols Measurement scale

No	Questions
1	Food Nutrients with red, yellow and green traffic lights is effective for healthy-packaged food selection
2	Familiarity of traffic lights symbols on packaged food label take consumer's attention
3	Traffic lights symbols easily demonstrate high, medium and low (fat, sodium, salt, saturated fat and fiber) information
4	Traffic lights symbols benefit consumer for healthy-packaged food selection.
5	Traffic light colors' labels influence consumer to select healthy-packaged food.

Source: Sonnenberg et al., (2013)

Section three was comprised of six questions regarding health claims. Questions are mentioned in table 3.4. These questions are adapted from Cavaliere et al., (2015). All the questions were on five point Likert scale. The range of scale was "1" strongly disagree, "2" disagree, "3" neutral, "4" agree and "5" strongly agree.

Table 3.4
Health Claim Measurement scale

No	Questions
1	Energy claims such as "Low Energy", "Energy-Reduced" and "Energy Free" at food label help consumer to select healthy-packaged food.
2	Fat claims such as "Low Fat", "Fat-Free", "Low Saturated Fat" and "Saturated Fat-Free" at food label help consumer to select healthy-packaged food.
3	Sugar claims such as "Low Sugar", "Sugars-Free" and "With no Added Sugars" at food label help consumer to select healthy-packaged food.
4	Vitamin claims on food labels help consumers to select healthy-packaged food.
5	Fiber claims such as "Source of Fiber" and "High Fiber" at food label help consumer to select healthy-packaged food.
6	Sodium/salt claims such as "Low Sodium/Low Salt", "Very Low Sodium/ Very Low Salt"," Sodium-Free/Salt Free" at food label help consumer to select healthy-packaged food.

Source: Cavaliere et al., (2015)

Section four was based on seven questions to take respondents' opining regarding user friendly food label. Questions are mentioned in table 3.5. All questions are adapted from Byrd-Bredbenner (1994). All questions were asked on five point Likert scale. The range of scale was "1" strongly disagree, "2" disagree, "3" neutral, "4" agree and "5" strongly agree.

Table 3.5
User friendly food label Measurement scale

No	Questions
1	Availability of required information on food label benefit consumer.
2	Clear and easy to understand food label information benefit consumer.
3	Simple and straightforward food label information benefit consumer.
4	Quick facts on food label with easy to read language benefit consumer.
5	Avoiding too much category of information at food label benefit consumer.
6	Brief information on food label benefit consumer.
7	Detailed with simple words' information on food label benefit consumer.

Source: Byrd-Bredbenner (1994)

Section five was comprised of five questions related to attitude towards food labels and the questions are mentioned in table 3.6. These five questions are adapted from Van der Merwe et al, 2014. Questions were asked on five point Likert scale. The

range of scale was "1" strongly disagree, "2" disagree, "3" neutral, "4" agree and "5" strongly agree.

Table 3.6
Attitude towards food label Measurement scale

No	Questions
1	A food label is a good source of information for healthy-packaged food selection
2	Easy to understand information on food labels is supportive for healthy-packaged food selection
3	Food labels provide good quality information.
4	Food labels contain sufficient information for healthy-packaged food selection.
5	Symbols on food labels are a useful source of information for healthy-packaged food selection

Source: Van der Merwe et al. (2014)

Section six comprised of 35 items of Big Five Personality Traits and the questions are mentioned in table 3.7. These questions were adopted from Big Five Personality traits inventory (Goldberg, 1992). The personality traits were asked on five point Likert scale. The range of scale was "1" strongly disagree, "2" disagree, "3" neutral, "4" agree and "5" strongly agree.

Table 3.7
Big five Personality Traits

Extroversion	Conscientiousness	Openness
Extroverted	Organized	Intelligent
Energetic	Responsible	Analytical
Talkative	Conscientious	Reflective
Bold	Practical	Inquisitive
Active	Thorough	Imaginative
Assertive	Hardworking	Creative
Adventurous	Thrifty	Sophisticated

Agreeableness	Neuroticism
Warm	Calm
Kind	Relax
Cooperative	At ease
Unselfish	Not envious
Agreeable	Stable
Trustful	Contented
Generous	Unemotional

Source: Goldberg et al. (1992)

Section seven comprises of the seven questions related to subjective norms and the questions are mentioned in table 3.8. The questions were adapted from Watanabe et al., (2015). All questions were asked on five point Likert scale. The range of scale was "1" strongly disagree, "2" disagree, "3" neutral, "4" agree and "5" strongly agree.

Table 3.8
Subjective Norm measurement scale

No	Items
1	People important to me think I should eat healthy-packaged food
2	People important to me approve to eat healthy-packaged food
3	People important to me want me to eat healthy-packaged food
4	Many people important to me eat healthy-packaged food
5	The mass media suggest that I should use healthy-packaged food products
6	The mass media urge me to use healthy-packaged food products
7	The mass media and advertising consistently recommended that I should use healthy-packaged food products

Source: Watanabe et al., (2015)

Section eight comprises of nine questions related to self-efficacy and the questions are mentioned in table 3.9. The 9 questions were adapted from Lim et al., (2015). The data was collected on five point Likert Scale. The range of scale was "1" strongly disagree, "2" disagree, "3" neutral, "4" agree and "5" strongly agree.

Table 3.9
Self-Efficacy measurement scale

No	Questions
1	For me it is difficult to select healthy-packaged food due to small font size at a food label.
2	For me it is difficult to select healthy-packaged food due to lack of knowledge about nutrients.
3	My nature to eat quickly hinders me to select healthy-packaged food.
4	It is entirely up to me to select healthy-packaged food
5	Shopping foods with others (e.g., friends) make difficult for me to select healthy-packaged food
6	For me it is difficult to select healthy-packaged food because nutritional information is placed at the back of the pack food label
7	It is easy to select healthy-packaged food if I can understand the nutrients on the label (e.g., Calorie, fat, etc.).
8	It is easy to select healthy-packaged food if I can understand the nutrient content per serving size on the label (e.g., Calorie 400kcal, fat 10g, etc.)
9	It is easy to select healthy-packaged food if I can understand the percentage daily values of nutrients on the label

Source: Lim et al. (2015)

The last section was comprised of seven questions related to healthy-packaged food consumption intention and questions are mentioned in table 3.10. These seven questions are adapted from Chung et al., 2010. The range of scale was "1" strongly disagree, "2" disagree, "3" neutral, "4" agree and "5" strongly agree.

Table 3.10
Healthy-packaged food consumption intention Measurement scale

No	Questions
1	I give importance to nutrients in the purchasing of healthy-packaged food items
2	I mostly prefer to eat healthy-packaged food
3	I frequently purchase healthy-packaged food
4	I am willing to pay extra for healthy-packaged food
5	I intend to take healthy-packaged food
6	I plan to take healthy-packaged food
7	I want to take healthy-packaged food

Source: Chung et al. (2010)

3.7   Content Validity and Pre-Testing

Data was collected with adaptive questionnaire. Therefore, the content validity and pre-testing was required. Therefore, for pre-testing researcher of the study has involved six associate professors having doctorate degrees specialization in marketing and four marketing experts from food processing companies of Pakistan. Because according to Cavana et al. (2001) and Krejcie & Morgan (1970), for the validation of any questionnaire ten experts are required. A complete questionnaire of the current study was reviewed by each expert to test the face validity, unambiguousness, understanding, and measurement reliability. Furthermore, all experts have suggested some modification to researcher. The suggestions were related to wordings of some questions and to rearrange few questions. The incorporation of these medications has enhanced the flow and order of questionnaire.

3.8   Pilot study

There are several reasons to conduct the pilot study and one of them is to measure the reliability of questionnaire for formal data collection (Teijlingen, Rennie, Hundley & Graham, 2001). Pilot study develop the adequacy of research instruments, outcome unpredictability for sample size, confirm the effectiveness of sample frame and sampling method and above all guide researchers to gather initial data. To ensure the accuracy of results in pilot study researcher of the intended study has collected data from university's MBA students. The sample size for pilot study was 100 students.

The pilot study has ensured the reliability and viability of the research instrument and to estimate the time frame required for main study. Research experts have opinions that there is a need to further test the internal consistency of the adapted instrument by conducting Cronbach Alpha (Hair et al. 2010; Byrne, 2010). The pilot study results have highlighted some issues in questionnaire. The main issue was the lengthy questionnaire and it takes much time. The researcher of the study has decided to demonstrate the main objective of the study and its relationship with questionnaire and then distribute it while collecting data. The Cronbach alpha of the pilot was from 0.897 to 0.748. The acceptable value of Cronbach alpha is 0.60 (Hair et al., 2006) and all the values of table 3.11 are above the minimum value.

Table 3.11
Cronbach Alpha of Pilot study and Past study

Variable name	Items	Pilot Study α	Past Study α
Traffic Lights Symbols	5	0.827	Not Given
Health Claims	6	0.820	Not Given
User friendly food label	7	0.848	Not Given
Attitude towards food label	5	0.869	0.75
Subjective Norm	7	0.892	0.84
Self-Efficacy	9	0.799	0.82
Intention to purchase healthy-packaged food	7	0.897	0.80
Extraversion	7	0.783	Not Given
Agreeableness	7	0.809	Not Given
Conscientiousness	7	0.878	Not Given
Neuroticism	7	0.748	Not Given
Openness to experience	7	0.864	Not Given

3.9   Data Collection Procedure

The pilot study has guided researcher to collect formal data. Researcher of the study has distributed questionnaire among fourteen universities situated in Lahore and Islamabad. Formal request was forwarded to universities' concern authorities to get permission for data collection. Detail description of study objective was written in letter forwarded to head of departments of fourteen universities. This method was also very beneficial for questionnaire distribution as well as recollection of filled questionnaires. Head of departments have assigned few faculty members who help researcher to interact with MBA students in the class.

3.10 Overall Response rate

To achieve minimum sample size researcher of the current study has distributed 900 questionnaires among fourteen universities. Out of 900 questionnaires 787 were received. After screening of data and deleting outliers the useful questionnaires were

537 for final analysis. Therefore, the sample size of the current study after data collection is 537.

Table 3.12
Questionnaire response summary

Description	Total
Questionnaires Distributed	900
Received	787
Not returned	113
Outlier and deleted questionnaires	250
Usable questionnaire for final analysis	537

3.11 Data Analysis procedure

Data analysis procedure consists of multiple activities such as screening of data, entering data in SPSS and to select suitable data for analysis (Churchill & Lacobucci, 2004; Sekaran, 2003). To identify the errors in data entry researcher of the current study has conducted some basic statistical tests like, missing data analysis, validity test and descriptive test. The updated version of SPSS software version 20 adopted for statistical test. Owing to the complexity of the model AMOS version 21 used for structural equation modeling and for hypothesis testing.

3.11.1 Data entry

The data collected from target population need to be managed systematically with specific coding (Zikmund-William, 2003). Therefore, researcher has entered all the data into SPSS with coding. Appropriate coding has been given to each question to differentiate it from other questions. Research has employed twelve variables with

independent, mediating, moderating and dependent status to achieve the objective of the current study. All the questions were on five point Likert scale.

3.11.2 Data Screening

Before conducting the formal test for final analysis, data screening is required to ensure that all the data is entered systematically without any ambiguous entry. Owing to the large sample size and exhausted data entry some time chances of data entry errors occur.

3.11.3 Missing data

Missing data in research survey is quite normal. Questionnaires are divided into two sections; the demographic information and topic related information. Respondents sometimes not interested in providing some specific demographic information. Sometimes left few questions unanswered. These missing data create problems in final data analysis. Therefore, SPSS assists researchers' in handling missing data. There are different methods and one them is replacing missing values with mean value if the missing data is less than 5% (Hair et al., 2010). Furthermore, researcher of the study has adapted multiple imputed method to handle missing values. Multiple imputation method generated five iterations which facilitate researchers to observe multiple values in one missing value box. The multiple imputation method created five data sets with respect to missing values. Researchers can utilize each of these data sets in final data analysis differently. This technique helps researchers to analyze the impact of different sets in final results.

3.11.4 Outlier detection

After removing the missing data issue the following step is to detect the outliers. Actually the values selected by respondents in questionnaire are based on some combinations and if the combination exceed from a standardized limits it creates outlier issues (Hair et al., 2010). For the detection of outlier researchers run the Mahalanobis distance test. AMOS and SPSS both facilitate to run the Mahalanobis distance test for outliers.

The outlier values evaluated through chi-square values. The relationship of chi-square standardize value with number of items used in questionnaire decide that which respondent has violated the limitation and become the outlier. For instance, researcher of the intended study has 83 items. According to the chi-square values more than 128.37 is an outlier and need to be deleted to normalize the data.

3.11.5 Normality

In Likert scale questionnaire researchers confined respondents into four, five or seven points but notwithstanding respondents respond differently to each question. Such kind of differentiation not only exists within one questionnaire by an individual respondent but also among the respondents. However, respondents' behavior towards each question makes a metric which define his/her overall tendency in filling the questionnaire.

The normality of the data expresses the shape of over data distribution (Hair et al., 2006). There are several methods to detect the non-normality of the data. The suggested method to remove the univariate non-normality was by z-skewness and z-kurtosis. According to Tabachnick & Fidell, (2001) when the skewness and kurtosis is zero it indicates the normality of the data. Several researchers have provided various skewness and kurtosis range brackets. Hair et al., (2006) have said that if the value lies between -1 to +1 it is considered to be substantially skewed. However, some of the researchers have added that if the value of z-skewness is between – 3 to +3 and value of z-kurtosis lie between -7 to +7 such data is substantially normal (Chou & Bentler 1995; Hu, Bentler & Kano, 1992; Ghozali , Fuad & Seti, 2005).

The values in data are large then the skewness values ended up at right side and such skewness is said to be positively skewed whereas small values in data take the skewness towards negative left hand side and said to be negatively skewed (Hair et al., 2006). As far as the z-kurtosis is concern, it test the flatness of data. If the distribution of the data is peaked it is considered to be positive kurtosis but if the distribution is flat it is negative kurtosis (Hair et al., 2006).

3.11.6 Structural equation modeling assumptions

The statistical analysis in research is contingent that the variables in use are actual for data analysis. To make the research findings accurate and trustworthy researchers and statisticians meet these criteria (Leslie, 2010; Byrne, 2010; Hair et al., 2006). The trustworthy findings avoid the type I and type II errors. The existence of such errors

leads research findings towards under or over estimations. The understanding and knowledge about Type-I and Type-II errors make researchers able to determine the biasness in study outcome which is a serious matter (Hau & Marsh, 2004). The fundamental assumptions of SEM are homoscedasticity, linearity and normality (Hair et al., 2010). To test the present study model researcher of the study employed SEM two step methods (Anderson & Gerbing, 1988). For confirmatory factor analysis conducted measurement model, while the seconded step has investigated the hypothesized linkages buy using structural equation modeling. Likewise, to test the mediation of the current model various recommended and contemporary prescript alternative steps were taken (Bagozzi & Burnkrant, 1979; Mayer & Gavin, 2005).

3.11.7 Multi-collinearity

The multi-collinearity is actually the amount by which one variable is explained by other variable. According to Hair et al. (2006) if the correlation values do not exceed from the recommended value which is 0.80 then there is not multicollinearity, otherwise the exceeding value in correlation create multicollinearity problem.

3.11.8 Homoscedasticity, Linearity and univariate outliers

Linearity and homoscedasticity is also very decisive test to conduct. The linearity test explains that the relation between two variables is on straight line. The Pearson's *r* correlation test describes the linear relation between variables but ignore the non-linear impact (Hair et al., 2006). The scatter plot actually presents the every possible combination of two groups between two metric variables. Therefore, the aim of

scatter plot is to present the linear dotted line. Homoscedasticity refers when the variance error term is constant in entire predictor variables (Ghozali et al., 2005). Homoscedasticity is the assumption of normality. Actually when the multivariate assumption achieved the relationship between all variables' items become homoscedastic (Tabachnik and Fidell, 2007).

The univariate outlier can be tested by checking the z scores. If the z score is less than 3.29 it is considered that there is not univariate outlier (Tabachnik and Fidell, 2007).

3.11.9 Descriptive statistics

Descriptive statistics is the abstract of statistics in terms of variables and the combination of variables used in study. In descriptive statistics the raw data is transformed into new data to explain the intention of an individual towards healthy-packaged food products. The abstract of descriptive statistics comprises of total variables used in the study, items used by each variable, the mean and standard deviation of variables and the minimum and maximum value of each variable. Descriptive statistics describe set of factors which explain to dependent variable in understandable and interpretable situation (Kassim, 2001; Sekaran, 2003).

3.11.10 Reliability and composite reliability

In the current study researcher study has conducted two types of reliabilities such as Cronbach Alpha and composite reliability. For the Cronbach alpha the value should

be above 0.60 to confirm the internal consistency of the items (Sekaran, 2003; Hair et al., 2006).

Although the Cronbach alpha is commonly employed test for reliability but sometimes it has been reported that it is underestimated (Bollen, 1989; Raykov, 1997a and 1997b; and Chin, 1998a). In reality the issue of Cronbach alpha is stem with its basic assumptions. The assumption of Cronbach alpha is that all the items have equal weight and if the values fail such assumption Cronbach alpha underestimate the reliability. Therefore, the alternative test for internal reliability has been introduced (Werts et al. 1974) with the name composite reliability. Researchers have claimed that composite reliability is superior to the Cronbach alpha in measurements (Fornell & Larcker, 1981) and the results are more accurate (Chin, 1998a). The cutoff value for composite reliability is above 0.60 (Bagozzi & Yi, 1991; Holme-Smith, 2001). The composite reliability formula is as follows (Fornell & Larcker 1981; Kearns & Lederer, 2003):

$$\text{Composite reliability} = \frac{(\text{Standardized loading (Li)})\,2}{(\text{Standardized loading (Li)})\,2 + \sum \dot{\varepsilon}j}$$

3.11.11   Validity test

In social sciences research the most decisive part is to quantify the human behavior and for that purpose researchers employ various measurements instruments. The validity and reliability of the measurements influence the outcome of the study. The instruments most often adapted from past studies and the setting of these instruments

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designed according to the specific environment and respondents. Therefore, to test the validity of the instrument various researchers adapt that instrument in different setting and different respondents but relevant aim and objective. Researchers have indicated that validity is the ability to explain the concept by using measurement (Hair et al., 2006).

The validity consisted of two types such as construct validity and face (Content) validity. Furthermore, construct validity is further sub-divided into two validities like convergent validity and discriminant validity.

3.11.12 Construct Validity

According to the formal definition of construct validity "'*Construct validity refers to the degree to which inferences can legitimately be made from the operationalization in your study to the theoretical constructs on which those operationalization were based"* (Trochim, 2006). For researchers it is most decisive to verify the construct validity and to link it with theorize concept (Malhotra & Stanton, 2004). Researcher of the study has an intention to investigate the intention of an individual towards healthy-packaged food consumption and for that purpose employed some predictors which is linked with theory. The validation of these predictors is necessary for better outcome of the study. To achieve the results by using measure fit which is linked with theories the construct validity is inevitable (Malhotra & Grover 1998). There are two types of construct validity 1) Convergent validity and 2) Discriminant validity.

3.11.12.1   Convergent Validity

In convergent validity the researcher measure the construct which is measured by independent measurement technique and such kind of measurement elaborate the high level of relationship among the measure. More specifically researchers measure two or more construct which are theoretically related and by conducting convergent validity test ensure the relationship between two or more constructs.

3.11.12.2   Discriminant Validity

The discriminant validity explains that a measure is distinct from other measures of a particular construct (Nunnally, 1970). When the correlations among the variables are low it is said to be discriminant validity. The method of average variance extracted is used to estimate the discriminant validity (Fornell & Larcker, 1981). Researchers estimate the AVE of each constructs and the value of AVE should be greater than 0.50 (Hatcher, 1994). When the square root value of AVE exceed from the correlation value of the two constructs it fulfils the assumption of discriminant validity (Bagozzi & Yi, 1991; Holme-Smith, 2001).

3.11.12.3   Content (Face) Validity

The face validity is the trustworthiness of the items used to investigate the specific variable. For instance, researcher of the study has adapted six items to investigate the traffic lights symbols. Each of the six items need to be analyze with respect to face validity that either the item measure the intended variable or not. For that

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confirmation researcher has involved ten experts who have critically analyze all the items of each construct and ensure their face validity.

3.12 Structure equation modeling

According to Hair et al., (2010) structure equation modeling investigate the relationship among various latent variables. The researcher of the study has employed the SEM in main analysis. The reason to take the services of SEM for current study is the complexity of the model which consisted of mediation and moderation.

SEM is in practice when researchers have an intention to analyze the causal relationship between latent variables such as impact of exogenous variables (independent variables) on endogenous variables (dependent variables). Furthermore, the utilization of SEM has been observed in various fields and disciplines. The aforementioned studies have disclosed the fact that structural equation modeling is a second-generation effective multivariate method. It is appropriate in analyzing the results which have multiple variables. The uniqueness of SEM is that it has an ability to assess the measurement properties and theoretical relation with multiple relations at the same time (Byrne, 2010; Hair et al., 2010; Hau & Marsh, 2004).

Moreover, researchers consider SEM while designing methodology and this technique is useful in addressing social and behavioral related issues. SEM is having two functions: measurement and causal relation among the variables (Hair et al., 2010).

3.13 Factor analysis

The main purpose of the factor analysis is to summarize the correlation pattern among observed variables to reduce the large observe variables into small factors (Tachnick and Fidell, 2007). In factor analysis factors are fewer than the observed variables. Therefore, researchers normally consider factor analysis. Factor analysis is further divided into two categories: Exploratory Factor Analysis and Confirmatory Factor Analysis.

3.13.1 Exploratory factor analysis

The aforementioned studies have disclosed the fact that factor analysis which is the statistical modeling technique developed by Charles Spearman when he was studying on unobservable hypothetically variable (Raykov & Marcoulides, 2006). Past studies have also indicated that the history of factor analysis for path analysis is very rich (Hair et al., 2010; and Hau & Marsh, 2004). The increasing trends of researchers towards factor analysis adaption in their research have expanded the theory of factor analysis which encompasses numerous factors and corresponding analytics methods.

Furthermore, for the investigation of any hypothetical constructs which can be indicated or observed directly the factor analysis method is most appropriate (Byrne, 2010; Hair et al., 2010; Raykov & Marcoulides, 2006). If the objective of the study is to identify the number of factors or latent variables required to clarify the relationship among the set of observe variables for that purpose exploratory factor analysis is required (Hair et al., 2010; and Hu & Bentler, 1995).

3.13.2 Confirmatory factor analysis

Confirmatory factor analysis conducted when number of factors or indicators is given prior to the analysis. The researcher of the intended study has conducted the confirmatory factor analysis to confirm the relationship among the variables which has been hypothesized to achieve the objective of the current study. For this purpose three CFA phases are recommended: to review the related theory, the conceptualized hypothesized model and internal and external consistency of the model.

To validate the measurement model the convergent and discriminant validity of each construct is necessary and it can be done through Confirmatory factor analysis. The factor loading value of the each item of the constructs should be 0.50 or above (Hair et al., 2010; Newkirk & Lederer, 2006). Furthermore, if the number of respondents exceed from 350 the value of 0.30 is also acceptable (Hair, 2006, p. 128). Otherwise, the goodness of the fit indices will be test and it should be satisfactory (Anderson & Gerbing, 1988). The goodness of fit indices (absolute, incremental and parsimonious) consisted of Comparative Fit Index (CFI), Incremental Fit Index (IFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), Adjusted Goodness of fit Index (AGFI), Normed Fit Index (NFI) and Goodness of Fit Index (GFI).

The researcher of the intended study has employed CFA to measure the fitness of measurement model with the data collected by survey. For the examination of endogenous and exogenous measurement model researcher of the current study has

taken the services of AMOS 21. The CFA is considered to be an effective instrument because it takes interactions of the modeling, correlated independents, nonlinearities, correlated error terms, measurement errors, multiple latent independents measured with the consideration of multiple indicators, and along with that CFA provide better coefficient estimates and variance analysis with the incorporation of the error variance in the study model.

3.14 Need of structural equation modeling

To investigate the complex interrelationship between numerous variables structural equation modeling is very useful. SEM minimize measurement errors with several indicators for individual latent variable, it allows the use of multiple indicators to measure constructs and it is proficient of estimating causal relations between multiple constructs concurrently (Joreskog & Sorbom, 1981).

SEM is labeled as a statistical methodology which uses a confirmatory method to examine a structural theory, bringing to consideration the presence of a specific phenomenon. Bentler (1988) has indicated that a theory is comprises of some causal processes which make observation on several variables. Moreover, the purpose of SEM is similar to multiple regression. But SEM is more effective in analysis than multiple regression. The dealing of SEM with non-linearity issues, independent correlation, the measurement errors, correlated error terms, the multiple latent independents (measured through multiple indicators), and the latent dependents with multiple indicators is far better than multiple regression. The hypothesis testing with multivariate procedures is very challenging (Byrne, 2001).

SEM is highly recommended when the researchers have an objective to gain the insight of the impact between construct variables and to investigate the impact of test variables on each other along with the level of impact (Judge & Ferris, 1993). SEM has an ability to incorporate the unobserved and observed variables while analyzing the data whereas multivariate analysis only involve observed variables (Byrne, 2001).

SEM is consisted of subdivided models such as measurement model and structural model. In previous studies researchers investigate the relationship between observed and unobserved variables whereas in latter studies researchers not only define the relationship between observed and unobserved but also examine the direct and indirect impact of latent variables on other latent variables which exist in the model (Byrne, 2001). There are two components in SEM procedure, one is to measurement model validation and second is structural model fitness. For SEM analysis LISREL (Linear Structural Relationships) and AMOS (Analysis of Moment Structures) are in use. AMOS is user friendly, graphical interface and convenient to operate in presenting the hypothesized model relationship. Therefore, researcher of the intended study has used SEM to achieve the objective of the current study.

3.15 Procedure of SEM

There are several steps involved in SEM procedures. The first step is to conceptualize the model and the purpose behind this conceptualization is to tackle the constructed hypothesis on the basis of theory. In this step model development takes place and researchers present the latent variables of the model through measured indicators. The

later stage of this step is the development of path diagram and the objective of path diagram is to achieve the uncompleted visualize hypothesis by using conceptualized model.

To tackle the development of measurement and structural model design pertaining to the research problem model specification step has to be followed. In this stage researchers discuss the causal relationship which is obtained between the variables. Model identification is the stage where researchers test the quality of data. The objective is to validate the model specification regarding it's under-identify or just-identify or over-Identify.

After model identification the next step is estimation of parameters. In this step researchers evaluate every parameters of the specified model to gain the model-based covariance matrix. The significance test was conducted to determine the significance of the final parameters. According to past studies the recommended estimation of the existing model is Maximum likelihood by Weighted Lasted (WLS) which is in common practice.

Testing of model fit is the next step in SEM. The objective of this stage is to examine the appropriateness of goodness of fit between the model and collected data. In goodness of fit researcher investigate that whether the model based covariance matrix is similar with the observed covariance matrix or not. For the validity of the

measurement model, GOF is most decisive one because it is significant component of SEM procedure (Hair et al., 2006).

For better goodness of fit the model modification step followed by researchers. The re-specification of the model fundamentally rely on the given model strategy. The re-specification of model is an outstanding feature of SEM which examine the research model with the collected data for better model development for intended research study. Joreskog and Sorborn (1993) have indicated that there are three frameworks to test the SEM, hypothesized model (HM), alternative model (AM) and generated model (GM).

3.16 Goodness of fit

Hair et al., (2006) have indicated that Goodness of fit is the "the degree to which the actual or observed input matrix (covariance or correlations) is predicted by the estimated model". Following the past studies for goodness of fit there are three types of indicators such as absolute fit measure, incremental fit measure, and parsimonious fit measures.

The first step is chi-square determination. To make the actual covariance matrix chi-square degree of freedom and root mean square residual is necessary and it represents the absolute indices. According to the studies recommendation the more minimal significant value such as 0.05, 0.01 or 0.001 the better will be the model fit between the proposed model and covariance and correlation for the validation of the null

hypothesis of the covariance matrix equality (Hair et al., 2006). Kline, (1998) has said that for better model fit the ratio should be three or less than three. Whereas in previous studies, the recommended value is between two and five (James, Mulaik & Brett, 1982) and should not be exceed from five (Hair et al., 2006). To measure the average difference between sample and hypothesized covariance matrix the root mean square residual is necessary and the value of (RMSR) should be less than 0.10 (Segars & Grover, 1993).

To test the incremental indices researchers consider the value of Incremental Fit Index (IFI), Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI). For the best fit of model Comparative fit index compares the hypothesized model and the results closer to above level of 1 represents the best model fit. The suggested values should be between above 0.90. Moreover, according to Bentler & Bonett (1980) the value from 0.80 to 0.90 is moderate and the leads towards model acceptance.

Third, for parsimonious fit measures utilization the examination of the model fit in relation to the number of estimated coefficients is required to achieve the level of fitness. The Root Mean Square Error of Approximation (RAMSEA) offers the measurement of the difference for every degree of freedom. This value of RAMSEA for goodness of fit for model should be from 0.01 to 0.08 (Hair et al., 2006). To determine the validation the lower the value the better is the model fit (Browne & Cudeck, 1993).

3.17 Hypothesis testing

The researcher of the intended study has test various hypotheses designed in this study. There are direct, indirect and moderating hypotheses in the study. To test these hypotheses researcher has used SEM.

3.17.1 Direct Hypotheses

When the two constructs have one path it is said to be direct relationship (Hair et al., 2010). In the present study there are two direct hypotheses where the effect of subjective norm was tested directing on intention to consume healthy-packaged food products and self-efficacy's effect was also postulated on healthy-packaged food consumption intention with direct relation. The path having more than or equal to 1.96 value of critical ratio has led towards the acceptance of relation whereas the CR value less than the cut off value has determine the rejection of hypotheses (Davies & Crombie, 2009).

3.17.2 Indirect relation

When there is an involvement of intervening variable between to constructs such kind of relations considered to be indirect relations (Baron & Kenny, 1986). In current study researcher has investigated the mediating effect of attitude towards food label in making relationship between traffic lights symbols, health claims and user friendly food label with healthy-packaged food consumption intention. Current study has also investigated the moderating effect of personality traits in strengthening the

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relationship between attitude towards food label and intention to consume healthy-packaged food.

3.18 Summary

The formation of this chapter was based on the target population of the study; how the sample was derived from large population and which sampling technique was adapt to gain the required sample size. The measurements of various variables were also discussed. Moreover, researcher of the study has mentioned the data collection procedure and statistical tools used for data cleaning as well as for final model analysis. The operational definition of each variable was also included in this chapter. The proposed software for data screening was SPSS and for final analysis AMOS 21. The statistical threshold for model fitness was also described.
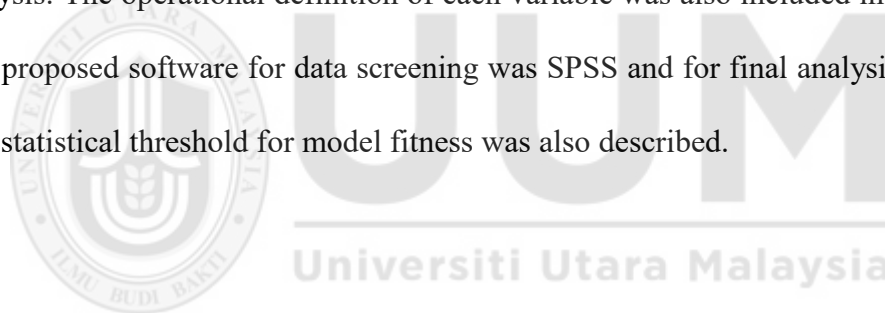
CHAPTER FOUR

ANALYSIS

This chapter comprises of the tests results which were discussed in previous chapters. These tests results have been presented in a flow such as response rate, profile of the respondents, descriptive statistics, normality, linearity and homoscedasticity, reliability and validity of exogenous and endogenous variables, measurement model and structure equation model, hypothesized model and taste results summary.

4.1   Response rate

To achieve the required minimum sample size of the study researcher has distributed 900 questionnaires. Out of the distributed questionnaires 787 were returned. 113 questions were not returned. The response rate is 87%. The reason of high response rate is the self-administration of the questionnaire by the researcher in maximum universities. But few of the universities did not allow researcher to personally contact respondents for data collection. In these universities personal contacts were utilized to involve responsible faculty members for the collection of data. First researcher has elaborated the objective of the study and the relationship of the questions and variables with the research objective then questionnaires were handed over to them.

Later all the data were entered in SPSS 21 for further analysis such as treatment of missing data and other screening test. According to Hair et al., (2010) when

respondent's response at questionnaire is less than 50% and there is no sample size issue then such questionnaires should deleted. There were on questionnaires which were fall under the deleted recommendation of Hair et al., therefore total received 787 questions which were used for further data screening test. The table 4.1 is having data related to response rate;

Table 4.1
Response rate summary

Descriptive	Total
Questionnaires Distributed	900
Questionnaires not returned	113
Total received questionnaires	787

4.2 Missing data

Several past studies have described the significance of missing data in data collection and recommended to treat them properly (Cavana et al., 2001) because it creates problems in data analysis. Replacement of missing data is one of the assumptions of AMOS 21 and AMOS does not run the model if a single missing values exist in data (Hair et al., 2010). There as various methods to treatment missing values such as some recommend that missing values should be replaced with mean or median of nearby point. Moreover, for the current study researcher has conducted multiple imputation method for the treatment of missing data because the missing values were at random pattern (Hair et al., 2006; Pallant, 2007).

4.3   Outlier checking

The numerically distant observation by comparing with rest of the data set is considered to be outlier (Bryne.2010). There are different methods to detect the outliers but the most preferred one is (Mahalanobis) distance (Hair et al., 2010; Hau & Marsh. 2004). The researchers who argue in favor to run Mahalanobis test for outlier detection have explained that it is most effective technique which is based on some predetermined establish threshold for the assistance of determining whether the point could be categorized in outlier or not (Gerrit et al., 2002). The researcher has consulted chi-square table method for the detection of optimum values in empirical data. Hair et al. (2010) have indicated that it is better to create numbers with each respondents such as 1,2,3………up till the last respondents. Therefore, researcher of the current study has followed Hair et al., suggestion and maintained data in SPSS with numbers.
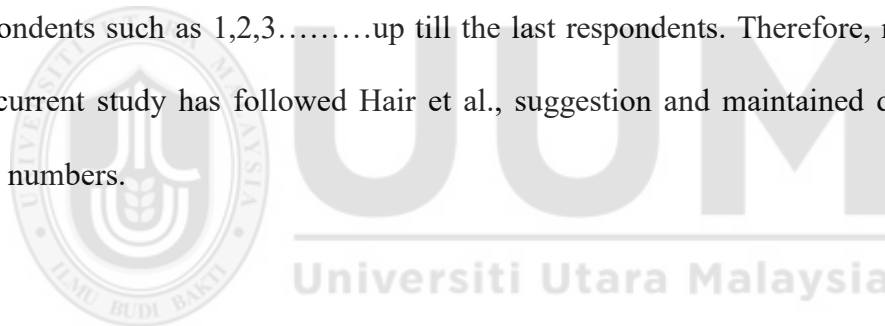
The number column will be considered as separate variables namely "ID". For Mahalanobis distance test this ID variable was used as a dependent variable. The Mahalanobis distance test conducted as simple linear regression technique. To run this test ID places in dependent variable box whereas rest of the measurement items except demographic variables put in independent variables. The Mahalanobis test option is available under the main dialog box "SAVE" option. Just select that option and click "OK". The SPSS created a separate column for Mahalanobies results. For the current study the chi-square table values 128.57 should be deleted and considered to be outlier (Hair et al., 1998, 2006; Tabachnick & Fidell, 2001). For the detection of all outliers in the data sets Mahalanobis distance test was conducted several times.

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Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	71.27	692.86	399.28	101.678	678
Std. Predicted Value	-3.226	2.887	.000	1.000	678
Standard Error of Predicted Value	24.559	105.540	75.786	15.101	678
Adjusted Predicted Value	21.18	732.11	399.26	106.689	678
Residual	-507.339	537.543	.000	200.235	678
Std. Residual	-2.365	2.506	.000	.934	678
Stud. Residual	-2.520	2.675	.000	1.002	678
Deleted Residual	-575.633	612.602	.018	230.793	678
Stud. Deleted Residual	-2.531	2.689	.000	1.003	678
Mahal. Distance	7.877	162.911	86.872	32.898	678
Cook's Distance	.000	.014	.002	.002	678
Centered Leverage Value	.012	.241	.128	.049	678

a. Dependent Variable: ID

b. Mahalanobis Distance > 133.57 (109 cases deleted)

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	133.03	673.36	400.88	96.845	619
Std. Predicted Value	-2.766	2.813	.000	1.000	619
Standard Error of Predicted Value	27.790	114.240	80.554	14.979	619
Adjusted Predicted Value	55.71	720.55	400.74	104.058	619
Residual	-514.008	502.260	.000	201.425	619
Std. Residual	-2.365	2.311	.000	.927	619
Stud. Residual	-2.532	2.505	.000	1.003	619
Deleted Residual	-594.796	589.763	.142	236.391	619
Stud. Deleted Residual	-2.545	2.517	.000	1.005	619
Mahal. Distance	9.109	169.809	86.859	30.477	619
Cook's Distance	.000	.018	.002	.003	619
Centered Leverage Value	.015	.275	.141	.049	619

a. Dependent Variable: ID

b. Mahalanobies Distance > 133.57 (59 cases deleted)

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Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	121.93	723.60	400.82	96.067	586
Std. Predicted Value	-2.903	3.360	.000	1.000	586
Standard Error of Predicted Value	29.005	112.075	82.688	14.771	586
Adjusted Predicted Value	47.92	769.07	400.54	104.313	586
Residual	-522.863	547.318	.000	199.984	586
Std. Residual	-2.412	2.525	.000	.923	586
Stud. Residual	-2.623	2.771	.001	1.004	586
Deleted Residual	-618.290	659.057	.281	237.039	586
Stud. Deleted Residual	-2.639	2.790	.001	1.005	586
Mahal. Distance	9.477	155.408	86.852	29.094	586
Cook's Distance	.000	.020	.002	.003	586
Centered Leverage Value	.016	.266	.148	.050	586

a. Dependent Variable: ID

b. Mahalanobies Distance >133.57 (33 cases deleted)

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	106.65	735.57	397.89	98.459	563
Std. Predicted Value	-2.958	3.430	.000	1.000	563
Standard Error of Predicted Value	30.426	108.548	84.247	14.621	563
Adjusted Predicted Value	66.27	761.48	397.88	107.369	563
Residual	-499.173	542.384	.000	198.828	563
Std. Residual	-2.308	2.508	.000	.919	563
Stud. Residual	-2.520	2.763	.000	1.004	563
Deleted Residual	-594.807	658.267	.005	237.519	563
Stud. Deleted Residual	-2.534	2.782	.000	1.005	563
Mahal. Distance	10.125	140.576	86.845	28.203	563
Cook's Distance	.000	.020	.002	.003	563
Centered Leverage Value	.018	.250	.155	.050	563

a. Dependent Variable: ID

b. Mahalanobies Distance > 133.57 (23 cases deleted)

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	94.86	774.95	395.56	102.376	545
Std. Predicted Value	-2.937	3.706	.000	1.000	545
Standard Error of Predicted Value	31.198	108.584	85.090	14.519	545
Adjusted Predicted Value	46.23	790.12	395.99	111.179	545
Residual	-469.717	560.931	.000	196.885	545
Std. Residual	-2.187	2.611	.000	.917	545
Stud. Residual	-2.399	2.897	-.001	1.004	545
Deleted Residual	-565.148	690.461	-.432	236.441	545
Stud. Deleted Residual	-2.411	2.921	-.001	1.005	545
Mahal. Distance	10.477	138.006	86.840	27.709	545
Cook's Distance	.000	.022	.002	.003	545
Centered Leverage Value	.019	.254	.160	.051	545

a. Dependent Variable: ID

b. Mahalanobies Distance > 133.57 (18 cases deleted)

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	79.28	760.35	394.75	103.783	537
Std. Predicted Value	-3.040	3.523	.000	1.000	537
Standard Error of Predicted Value	31.984	109.917	86.258	14.547	537
Adjusted Predicted Value	-6.91	771.15	395.21	112.922	537
Residual	-450.750	556.552	.000	197.553	537
Std. Residual	-2.088	2.578	.000	.915	537
Stud. Residual	-2.267	2.864	-.001	1.004	537
Deleted Residual	-538.768	686.691	-.464	238.416	537
Stud. Deleted Residual	-2.277	2.887	-.001	1.006	537
Mahal. Distance	10.745	137.689	86.838	27.351	537
Cook's Distance	.000	.022	.002	.003	537
Centered Leverage Value	.020	.257	.162	.051	537

a. Dependent Variable: ID

b. Mahalanobies Distance > 133.57 (8 cases deleted)

After deleting 250 outliers there were 537 usable data for final analysis. Table 4.2 has a summary of usable respondents;

Table 4.2
Usable Data

Description	Total
Total Questionnaires received	787
Deleted respondents	250
Total Usable data after outliers	537

4.4   Normality Assumption and Homoscedasticity

The normality of each items were tested with skewness and kurtosis. The value of skewness should not exceed from 3 whereas for kurtosis the value should be less than 10 (Kline, 2005). In case the z-score value greater than the cutoff value of kurtosis and skewness transformation method is suggested. There were some items in the current study which were transformed to achieve the normality assumption. Manning and Munro (2007) and Pallant (2007) have indicated that transformation of items conducted on the level of non-normality using reflect, square root and reflect and log 10.

Researcher of the intended study has run the normality test on SPSS 21 using analyze, description statistics, descriptive and taking z-score of all the items. Furthermore, items' transform in SPSS 21 by using transform, compute and cdfnorm. It was found that after cdfnorm the values of all the items fulfilled the kurtosis and skewness condition of normality.

Homoscedasticity is also related to the normality of data. When the multivariate assumption of normality accomplished then the relationship among all items is considered to be homoscedastic (Tabachanick and Fidell, 2007).

4.5   Multi-Collinearity and Correlation of Constructs

To identify the multi-collinearity issue research of the current study has conducted Pearson correlation test. Table 4.3 is having the correlational results of all latent endogenous (dependent) and exogenous (Independent) variables. When the correlation value increased from 0.80 it creates multi-collinearity issues (Cooper & Schindler, 2003; Sekaran, 2003). According to the following table there is not a single value of correlation has violated the assumption of multi-collinearity. Attitude towards food label is exhibiting correlation coefficient 0.639 with user friendly food label which is at acceptable level in comparison with cutoff value.

Table 4.3
Correlation results

	1	2	3	4	5	6	7	8	9	10	11	12
Traffic Light	1											
Health Claim	.517**	1										
User Friendly	.412**	.580**	1									
Attitude Labels	.430**	.524**	.639**	1								
Subjective Norm	.306**	.350**	.443**	.481**	1							
Self Efficacy	.352**	.289**	.396**	.403**	.416**	1						
Intention	.336**	.392**	.432**	.466**	.524**	.442**	1					
Traits A	.128**	.131**	.203**	.155**	.159**	.182**	.239**	1				
Traits B	.173**	.166**	.226**	.157**	.167**	.156**	.287**	.552**	1			
Traits C	.190**	.168**	.214**	.211**	.178**	.204**	.287**	.582**	.651**	1		
Traits D	.188**	.099*	.191**	.167**	.102*	.193**	.246**	.506**	.593**	.637**	1	
Traits E	.187**	.157**	.223**	.165**	.147**	.204**	.257**	.573**	.566**	.679**	.616**	1

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Researcher of the intended study has also involved the big five personality traits as moderator and with correlation coefficient test the multi-collinearity issue. Table 4.4 is explaining correlational results.

Table 4.4
Correlation Coefficient Personality Traits

	TraitsA	TraitsB	TraitsC	TraitsD	TraitsE
TraitsA	1				
TraitsB	.552**	1			
TraitsC	.582**	.651**	1		
TraitsD	.506**	.593**	.637**	1	
TraitsE	.573**	.566**	.679**	.616**	1

**. Correlation is significant at the 0.01 level (2-tailed).

4.6   Descriptive Statistics

The descriptive statistics is actually the succinct method to depict the data utilize in any study. Table 4.5 is describing the statistical information pertaining to the latent variables employed in current study. The mean value is from 4.19 to 4.71 whereas the standard deviation is from 0.940 to 0.702 which is reasonable and acceptable for data set variability. Respondents answered each questions at five point Likert scale.

Table 4.5
Descriptive data

	Codes	Items	Sample size	Mini	Maxi	Mean	Std. Deviation
Traffic Light Symbols	TLS	5	537	1	5.00	4.1920	0.70245
Health Claim	HC	6	537	1	5.00	4.4044	0.82043
User friendly Food Label	UFFL	7	537	1	5.00	4.6375	0.83709
Attitude towards Labels	ATL	5	537	1	5.00	4.6298	0.91043

Table 4.5 (Continue)

Subjective Norm	SN	7	537	1	5.00	4.6094	0.94898
Self- Efficacy	SE	9	537	1	5.00	4.2882	0.90077
Healthy-packaged food Consumption Intention	PFCI	7	537	1	5.00	4.6804	0.92509
TraitsA	TA	7	537	1	5.00	4.4784	0.78795
TraitsB	TB	7	537	1	5.00	4.7826	0.75559
TraitsC	TC	7	537	1	5.00	4.7071	0.80411
TraitsD	TD	7	537	1	5.00	4.4510	0.86001
TraitsE	TE	7	537	1	5.00	4.7144	0.77851

4.7   Respondents profile

Table 4.6 is having the information pertaining to the respondents who have participated in the current study. Their valuable views were decisive for the analysis of the present study. The demographical information of the respondents depicts their personal information which portrays their overall social image in the society. For demographical information of the respondents the researcher of the intended study was included; age, gender and highest education in pursuing MBA program.

There were 253 (47%) male and 284 (53%) female. Moreover, the age of the respondents were investigated on four categories but most of the respondents fall at the age from 18 to 23.

Table 4.6
Respondents' profile

Variables	Categories	Frequency	Percentage
Gender	Male	253	47.0
	Female	284	53.0
Age	18 to 23	449	83.8
	24 to 29	75	14.0
	30 to 35	7	1.3
	36 and above	6	.9
Previous Education	Bachelor	342	63.8
	Master	195	36.3

4.8   Construct Validity

The validity of the constructs was examined with convergent validity and discriminant validity in current study. Researcher of the intended study was tested the convergent validity with SEM and SPSS. For the confirmation of convergent validity of the constructs it was investigated that all the indicators of the scale were loaded in single construct. Moreover, various items were developed to measure different constructs and when these different items evaluate different constructs it ensure the discriminant validity of the constructs.

4.8.1   Convergent Validity and Discriminant Validity

Fornell and Larcker, (1981) and Hair et al., (2006) have suggested that convergent validity can be measured with Cronbach alpha and composite reliability. The cutoff value for Cronbach Alpha and composite reliability is 0.60 (Hair et al., 2006). Researchers argue that value exceeds or equal to cut off value is acceptable for convergent validity.

Current study has run the content reliability test such as Cronbach alpha and composite reliability to determine whether the items which were involved to measure the constructs were actually measuring the constructs or not. For that purpose researcher has critically asses all the items by examining the factor loading. In aforementioned studies there are some authors who have argued in favor of that 0.70 cut off value for better reliability (Nunnally Bernstein, 1994). Their arguments were based on the fact that internal consistency of the constructs primarily represents the extent of items which were hypothesized for measuring the variables.

According to rule of thumb for the reliability of the internal consistency of the constructs when the value of alpha is greater than 90 it indicates excellent, the value greater than 0.80 categorized as good whereas the value greater than 0.70 considered to be acceptable. The alpha value greater than 0.60 is the minimum cut off whereas as value greater than 0.50 is taken as poor reliability of the construct. The value less than 0.50 are not acceptable (John & Reve, 1982).

When a study achieves the above suggested level of all the alpha values which are acceptable for internal consistency it indicates that the employed constructs and items are well composed with theoretical support.

The discriminant validity was examined with average variance extraction (AVE). According to the rule of thumb established by past researchers to fulfill the assumption of discriminant validity the square value of correlation of two measured

constructs should be less than square root of AVE (Kearns & Lederer, 2003).

Furthermore, if the square root of average variance extracted (AVE) is greater than

the square of standardized correlation value of two constructs also indicates the

discriminant validity. The range of AVE is from 0 to 1, and for an adequate

discriminant validity the value AVE value should be greater than 0.50 (Bagozzi & Yi,

1991; Fornell & Larcker, 1981).

The statistical figure of Table 4.7 is indicating that all the variables fulfill the

minimum cut off value for composite reliability. Moreover, to achieve the composite

reliability explained that items adapted to measure each latent variable are internally

consistent.

Table 4.7
Composite Reliability

Variables	CR
Traffic Lights Symbols	0.765
Health Claims	0.755
Subjective Norm	0.871
Self-Efficacy	0.773
Intention to consume Healthy-packaged food	0.813
User friendly food Labels	0.744
Attitude towards food labels	0.831
Extroversion	0.766
Agreeableness	0.763
Conscientiousness	0.744
Neuroticism	0.818
Openness to experience	0.714

The statistics of Table 4.8 is representing discriminant validity value. The minimum

cut off value for discriminant validity is 0.5 or greater. According to the values

mentioned in table 4.8 all variables did not violated the bottom line.

Table 4.8
Average Variance Extracted (AVE)

Variables	AVE
Openness to Experience	0.556
Traffic Lights Symbols	0.521
Health Claims	0.510
Subjective Norm	0.633
Self-Efficacy	0.534
Intention to Purchase healthy-packaged food	0.525
Extraversion	0.525
Agreeableness	0.518
Conscientiousness	0.592
Neuroticism	0.600
User friendly food labels	0.592
Attitude towards food labels	0.621

Moreover, table 4.9 is indicating the standardized correlation values along with discriminant validity. The vertical values of the correlation table are the square root value of the AVE for ensuring the discriminant validity. The square root value of average variance extraction is greater than the square of correction values of all latent variables. There is no single latent variable which has violated the rule of thumb. Table 4.9 indicated that the items used to investigate latent variables are different from each other.

Table 4.9
Discriminant Validity

Variables	1	2	3	4	5	6	7	8	9	10	11	12
Openness	**0.74**											
Traffic Lights Symbols	0.18	**0.72**										
Health Claims	0.12	0.51	**0.71**									
Subjective Norm	0.26	0.31	0.31	**0.79**								
Self-efficacy	0.17	0.30	0.30	0.34	**0.73**							
Intention to consume Healthy-packaged food	0.29	0.34	0.40	0.55	0.46	**0.72**						
Extraversion	0.65	0.15	0.16	0.23	0.19	0.34	**0.72**					
Agreeableness	0.53	0.13	0.11	0.18	0.12	0.32	0.55	**0.71**				
Conscientiousness	0.69	0.18	0.12	0.21	0.11	0.27	0.62	0.70	**0.77**			
Neuroticism	0.57	0.15	0.04	0.16	0.18	0.24	0.50	0.51	0.60	**0.77**		
User Friendly Food labels	0.24	0.42	0.58	0.44	0.31	0.43	0.27	0.20	0.23	0.23	**0.77**	
Attitude towards Labels	0.16	0.39	0.50	0.51	0.39	0.50	0.20	0.17	0.17	0.19	0.71	**0.78**

4.9   Factor analysis

Two types of factor analysis exist in the research; exploratory factor analysis and Confirmatory factor analysis. Exploratory factors analysis performed by researcher when the intention of the study is to establish grouping among variables and these variables are not build intentionally. In exploratory factor analysis the researcher identify that which observed variables have high correlation and they load under one factor and made a latent variable. According to Tabachnick and Fidell (2007) the exploratory factor analysis run at early stage of the research for variables consolidation and generating hypothesis.

The concept of confirmatory factor analysis is different and considered to be more sophisticated which is performed at advance stage in research. The researchers having intention to test the theory they run the confirmatory factor analysis. The researcher of the intended study has built model on theory namely theory of planned behavior and for the confirmation of the constructs run the confirmatory factor analysis. For that purpose researcher has run the factor analysis on SPSS and AMOS. The table 4.10 is having factor analysis results before model fit. According to rule of thumb when the sample size is more than 350 the factor loading of items more than 0.30 is also acceptable (Hair, 2006). In contrary to that researcher has reported the strong factor loading which are having values above 0.60. Initially, the current study model items of constructs were 81 but after running dimension reduction method (CFA) the updated number of model constructs are 60. The modified constructs are used in final analysis. In confirmatory factor analysis some of the items were deleted due to weak loading. Table 4.10 is representing value before model fit.
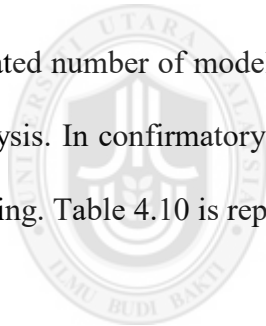
Table 4.10
Factor analysis without model fit

	1	2	3	4	5	6	7	8	9	10	11	12
TLS2	.745											
TLS3	.823											
TLS4	.756											
TLS5	.701											
HC2		.709										
HC3		.772										
HC4		.703										
UFFL1			.500									
UFFL3			.657									
UFFL4			.738									
UFFL5			.504									
ATFL2				.677								
ATFL3				.774								
ATFL4				.700								
ATFL5				.683								
SN1					.926							
SN2					.934							
SN3					.815							
SN6					.802							
SN7					.773							
SE1						.796						
SE2						.923						
SE7						.852						
SE8						.934						
SE9						.706						
HPFCI4							.816					
HPFCI5							.806					
HPFCI6							.880					
HPFCI7							.768					
PTraitA2								.726				
PTraitA3								.764				
PTraitA4								.686				
PTraitA5								.606				
PTraitB4									.690			
PTraitB5									.743			
PTraitB6									.701			
PTraitC2										.675		
PTraitC3										.711		
PTraitC4										.651		
PTraitC5										.747		
PTraitC6										.793		
PTraitD1											.785	

Table 4.10 (Continue)

PTraitD2	.882	
PTraitD3	.736	
PTraitD7	.737	
PTraitE3		.601
PTraitE4		.760
PTraitE5		.750
PTraitE6		.650
PTraitE7		.678

4.10 Measurement Model

The purpose of measurement model is to explain the confirmatory factor analysis of endogenous and exogenous variables, simultaneously. The model ensures that each constructs pertaining to exogenous and endogenous is having correct observation. Furthermore, measurement model confirm that items of constructs theoretically close each other pertaining to factor loading and goodness of fit (Hair et al., 2010).
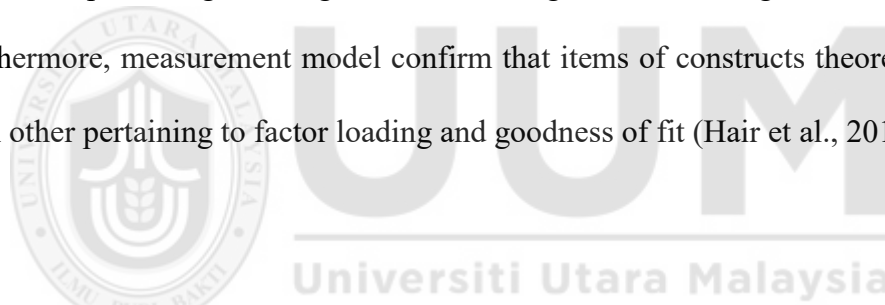
4.10.1 Exogenous variables' confirmatory factor analysis

The researcher of the intended study was conducted confirmatory factor analysis to test the exogenous variables. CFA was conducted on each exogenous variable. There were eleven independent variables and for model fitness items were reduced from each exogenous variable.

Traffic lights symbols was the first factor having five items but for model fitness two items were deleted, health claims was the second factor with six items but after model fitness three items left for variable measurement. A user friendly food label was the third factor with six items and remaining items after initial measurement were two.

Attitude towards food labels was fourth factor and it was comprises of five items but after CFA only three items remained. Fifth factor was subjective norm. For subjective norm measurement there was seven items but after CFA only four items were left. Sixth factor was self-efficacy with nine items. But CFA has confirmed only three. Intention to consume healthy-packaged food was the endogenous variable and researcher has reported it CFA results with the title endogenous variable. It was comprises of seven items but only four items were remaining after CFA. Researcher of the current study has employed big five personality traits as moderator. For the measurement of big five personality traits researcher has adopted 35 items. Each trait was having seven items/traits at initial level. After CFA the remaining items were, for extraversion three items, for agreeableness three items, for conscientiousness two items, for neuroticism three items and for openness to experience two items were left for final analysis. Table 4.11 is having all the results discussed above.

Table 4.11
Confirmatory Factor analysis of all measurement and Goodness of fit

Code	Items	R- Items	Chi-S	CMIN	CFI	GFI	AGFI	NFI	RMSEA	P-V
TLS	5	3	3.522	1.761	.997	.997	.980	.990	.038	.172
HC	6	3	8.404	1.681	.996	.994	.981	.990	.038	.135
UFFL	7	2	12.769	2.554	.997	.997	.984	.993	.038	.172
ATI	5	3	2.216	1.108	.998	.999	.990	.995	.014	.330
SN	7	4	4.019	2.010	.998	.996	.981	.996	.043	.134
SE	9	3	8.478	1.696	.994	.990	.982	.976	.036	.132
Extra	7	3	3.687	0.737	.999	1.00	.992	.992	.000	.595
Agree	7	3	4.000	2.000	.996	.996	.982	.993	.043	.135
Cons	7	2	2.462	1.231	.998	.999	.988	.997	.021	.292
Nuro	7	3	3.453	1.727	.997	.998	.984	.994	.037	.178
Opne	7	2	4.150	2.075	.996	.996	.981	.992	.045	.126
ENDO	7	4	2.817	1.408	.997	.999	.987	.995	.028	.245
EXO	74	31	315.00	1.068	.990	.960	.945	.940	.011	.202
EXO/END	81	35	365.98	1.080	.995	.957	.941	.936	.012	.150

Furthermore, the table 4.11 is depicting the AMOS measurement results after model fit. To achieve the model fit researcher has used the modification indices method. After carefully deleting items attain the model fit. There were 50 observed variables

in the current study after confirmatory factor analysis and these 50 items have measured 12 latent variables. To achieve the model fitness further items were deleted in running measurement model in AMOS. The final constructs of the model are given in table 4.12.

Table 4.12
Measurement model factor loading after fit

Code	Items	Loading
TLS3	Traffic lights symbols easily demonstrate high, medium and low (fat, sodium, salt, saturated fat and fiber) information	0.674
TLS4	Traffic lights symbols benefit consumer for healthy-packaged food selection.	0.754
TLS5	Traffic light colors' labels influence consumer to select healthy-packaged food.	0.736
HC2	Fat claims such as "Low Fat", "Fat-Free", "Low Saturated Fat" and "Saturated Fat-Free" at food label help consumer to select healthy-packaged food.	0.762
HC3	Sugar claims such as "Low Sugar", "Sugars-Free" and "With no Added Sugars" at food label help consumer to select healthy-packaged food.	0.766
HC4	Vitamin claims on food labels help consumers to select healthy-packaged food.	0.601
SN1	People important to me think I should eat healthy-packaged food	0.844
SN2	People important to me approve to eat healthy-packaged food	0.902
SN3	People important to me want me to eat healthy-packaged food	0.805
SN4	Many people who are important to me eat healthy-packaged food	0.599
SE7	It is easy to select healthy-packaged food if I can understand the nutrients on the label (e.g., Calorie, fat, etc.).	0.666
SE8	It is easy to select healthy-packaged food if I can understand the nutrient content per serving size on the label (e.g., Calorie 400kcal, fat 10g, etc.)	0.837
SE9	It is easy to select healthy-packaged food if I can understand the percentage daily values of nutrients on the label	0.677
PFCI1	I give importance to nutrients in the purchasing of healthy-packaged d food items	0.722
PFCI2	I mostly prefer to eat healthy-packaged food	0.804
PFCI3	I frequently purchase healthy-packaged food	0.767
PFCI6	I plan to take healthy-packaged food	0.586
PTraitA1	Fluent	0.639
PTraitA2	Energetic	0.818
PTraitA5	Active	0.705
PTraitB5	Agreeable	0.714
PTraitB6	Trustful	0.737
PTraitB7	Generous	0.707
PTraitC1	Organized	0.775

Table 4.12 (Continue)

PTraitC2	Responsible	0.764
PTraitD1	Calm	0.745
PTraitD2	Relax	0.839
PTraitD3	At ease	0.736
PTraitE6	Creative	0.69
PTraitE3	Thoughtful	0.798
ATFL1	The information on food labels is more useful for healthy-packaged food selection and it is important for me.	0.818
ATFL2	The written information on food labels is most relevant to healthy-packaged food selection and it is important for me.	0.799
ATFL3	A food label is a good source of information for healthy-packaged food selection and it is important for me.	0.745
UFFL4	Simple and straightforward food label information benefit consumer at the time of purchase.	0.770
UFFL3	Clear and easy to understand food label information benefit consumer at the time of purchase	0.769

Most of the variables have achieved the recommended value for goodness of model fit (Hair et al., 2010) as mentioned in earlier. The resulting statistical estimates of all exogenous variables are shown in figure 4.1. Furthermore, the Ratio/CMIN/DF is 1.068 and p-value 0.202. Other values has also indicated the goodness of fit such as CFI=0.990, GFI=0.960, AGFI=0.945, NFI=0.940 and RMSEA=0.011.
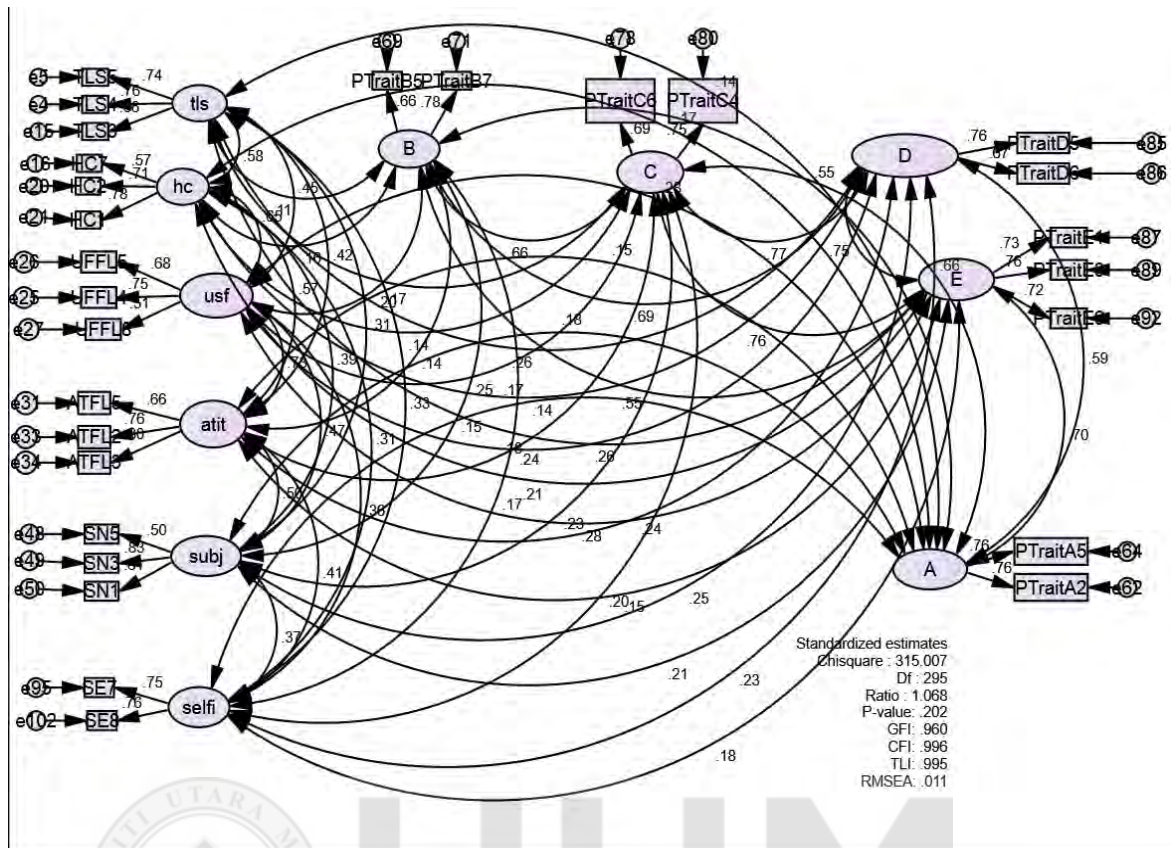
Figure 4.1
Exogenous CFA

Moreover, the researcher of the intended study has run the model by combining exogenous and endogenous variables. The purpose to run the model was to measure the compatibility and correlation of all variables with each other. The statistical figures of model have indicated that involvement of endogenous variable did not violate the goodness of fit cut off values. The Ratio/CMIN/DF is 1.060 and p-value 0.15. Other values has also indicated the goodness of fit such as CFI=0.996, GFI=0.957, AGFI=0.945, NFI=0.940 and RMSEA=0.012
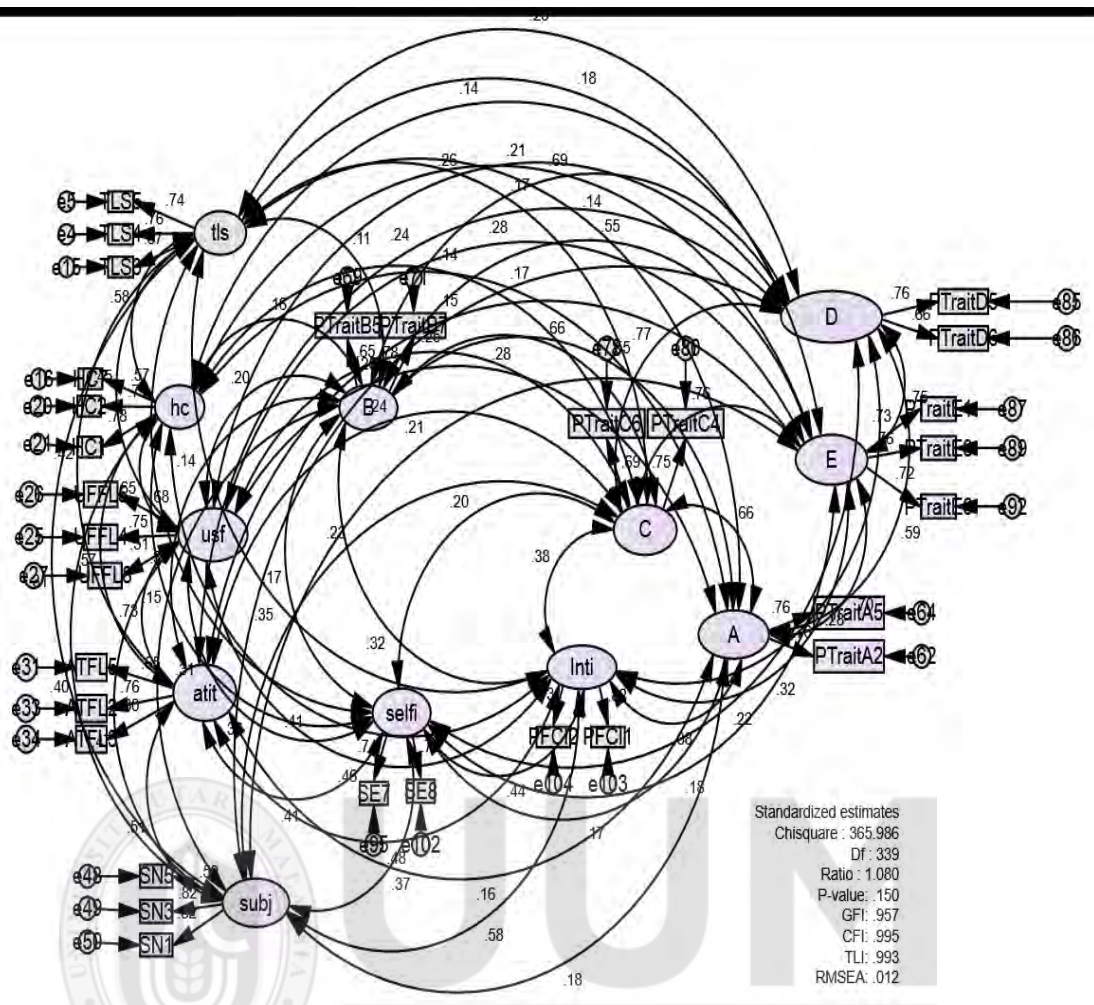
Figure 4.2
CFA of Exogenous and Endogenous

4.10.2 Confirmatory factor analysis of Endogenous

In current study there was a single endogenous variable namely healthy-packaged food consumption intention. Figure 4.2 is the display of estimated statistical results of endogenous variable for its goodness of fit. CFA of endogenous variable has achieve the cut off values pertaining to GOFI such as Ratio/CMIN/DF=1.408, p-value=0.245, GFI=0.992, CFI=0.999, RMSEA= 0.028.

Standardized estimates
Chisquare : 2.817
Df : 2
Ratio : 1.408
P-value: .245
GFI: .997
CFI: .999
TLI: .996
RMSEA: .028
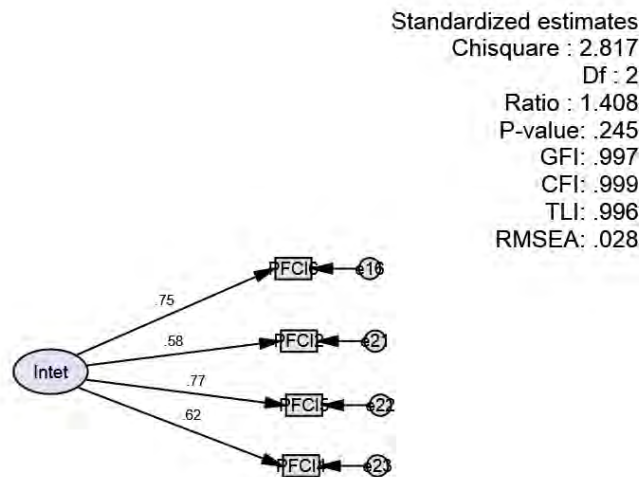
Figure 4.3
Endogenous CFA

4.11 Hypothesized model

In current study there were various hypotheses pertaining to direct and indirect relation. The model of the present study were designed with five independent variables such as traffic lights symbols, health claims, user friendly food labels, subjective norms and self- efficacy. Five personality traits were taken as moderator and one variable was dependent namely intention to consume healthy-packaged food. According to hypotheses the effect of traffic lights symbols, health claims and user friendly food labels were investigated on intention to consume healthy-packaged food with the mediation of attitude towards food labels. Moreover, the impact of subjective norm and self-Efficacy on intention to consume healthy-packaged   food were examined directly. Furthermore, five personality traits such as extraversion,

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agreeableness, and openness to experience, conscientiousness and neuroticism were taken as moderator in strengthening or weakening the relationship between attitude towards food label and intention to consume healthy-packaged food.

Initially, researcher of the intended study has tested the model fitness pertaining to absolute, incremental and parsimonious. The goodness of model fit is assessed by NFI ratio, IFI, TLI, CFI, RMSEA, AGFI, TLI, CFI, NFI and GFI. Table 4.13 is having the required values which have indicated the model goodness of fit

Table 4.13
Hypothesized model goodness of fit

Indicators	Hypothesized Model (A)	Hypothesized Model (B)	TPB-Model	Threshold Values (Hair et al., 2010)
Absolute				
Chi-Square	162.676	61.642	25.296	Less than 2
DF	136	61	29	
Ratio/CMIN	1.196	1.011	0.872	
Incremental				
CFI	0.992	1.000	1.000	Greater Than 0.90
GFI	0.969	0.984	0.991	Greater Than 0.90
AGFI	0.956	0.973	0.982	Greater Than 0.90
NFI	0.952	0.978	0.985	Greater Than 0.90
Parsimonious				
RMSEA	0.019	0.004	0.000	Less than 0.080 (Lesser is better)
P-value	0.059	0.453	0.663	Greater Than 0.05 (Bigger is better)

AMOS is a covariance based model therefore the effect of traffic lights symbols (TLS), health claims (HC) and user friendly food labels (UFFL) on intention to consume healthy-packaged were examined with the mediation of TPB's attitude towards food labels. Moreover, subjective norm and self-efficacy were having direct relation with intention to consume healthy-packaged   food. The goodness of fit indices of hypothesized model is presented in table 4.13. As it was mentioned earlier that current model is based on Ajzen's (1991) theory of planned behavior, therefore,

researcher of the study have run the complete TPB model to test the goodness of fit indices and the results are presented in table 4.13. The last column of table 4.13 is containing the threshold values required for the goodness of fit indices regarding absolute, incremental and parsimonious. The initial hypothesized model were comprised of 81 items of twelve latent variables but to achieve the minimum requirement for goodness of fit indices 46 items were deleted.
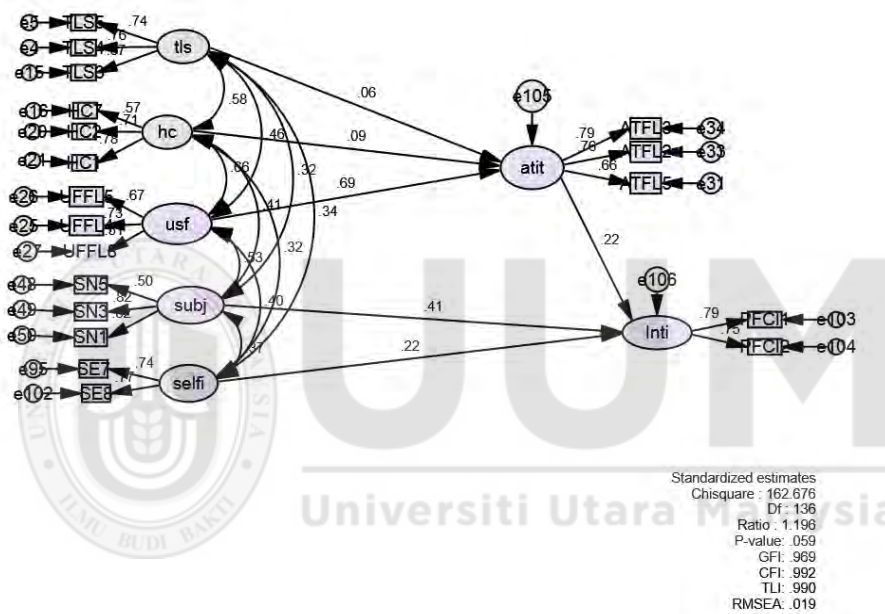
Figure 4.4
Hypothesized model (A)

Figure 4.4 is having the hypothesized model after fit excluding the moderation latent variables which are personality traits. There were 46 items in figure 4.4 but to achieve the goodness of fit indices 19 items left and 27 items were deleted. The p-value of hypothesized model is greater than 0.05 but researcher of the intended study have deleted more items. After deleting more items the p-value of the hypothesized model

became better. The figure 4.5 is having hypothesized model after deleting few more items.
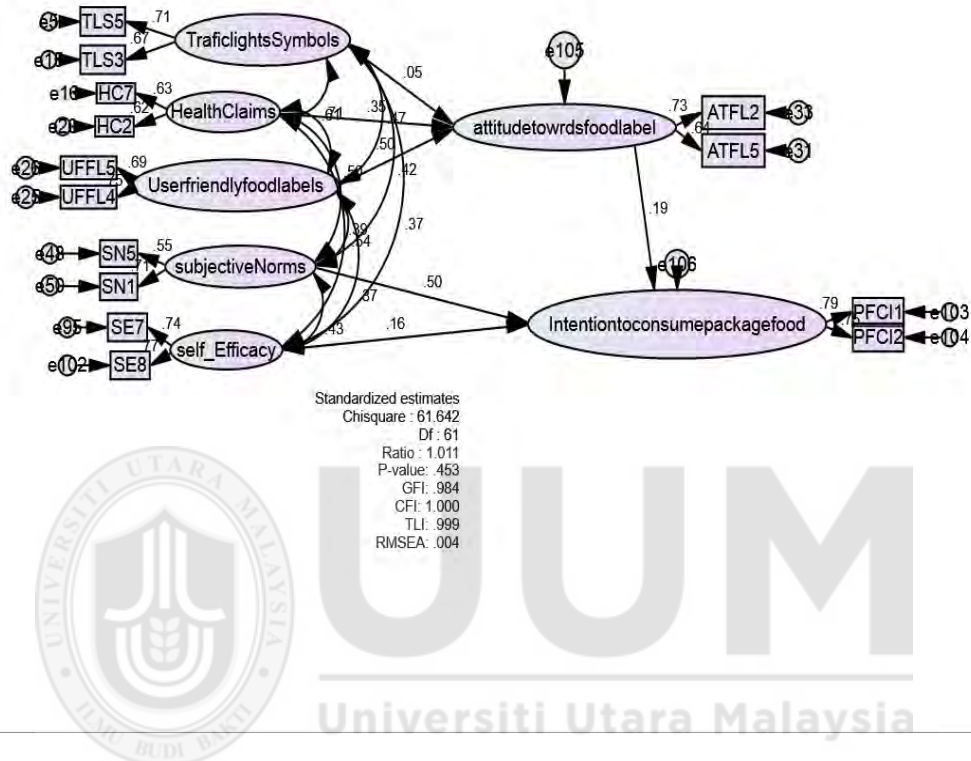
Figure 4.5
Hypothesized Model (B)

After achieving the goodness of fit indices for hypothesized model the second stage is to examine the effect of each exogenous variable on endogenous variable. Table 4.14 is having the standardized effect of all hypotheses. Exogenous variables mentioned with codes such as User friendly food label (UFFL), traffic lights symbols (TLS), Health Claims (HC), Subjective norms (SN) and self-efficacy (SE).

Table 4.14
Hypotheses standardized results

| End0		Exoge	Estimate	S.E.	C.R.	P	Status
Attitude	<---	UFFL	0.502	0.094	4.302	***	Signi
Attitude	<---	HC	0.347	0.123	2.385	0.017	Signi
Attitude	<---	TLS	0.051	0.065	0.576	0.565	Insigni
Intention	<---	SN	0.502	0.17	5.39	***	Signi
Intention	<---	SE	0.156	0.077	2.413	0.016	Signi
Intention	<---	ATFL	0.191	0.115	2.701	0.007	Signi
Intention	<---	TLS	-0.027	0.106	-0.253	0.80	Insigni
Intention	<---	HC	0.121	0.197	0.613	0.54	Insigni
Intention	<---	UFFL	-0.101	0.183	-0.554	0.58	Insigni

The figure 4.6 is demonstrating the significant and insignificant relationships among exogenous and endogenous variables. Likewise, the straight line having positive significant relation and the dotted lines depict insignificant effect of predictor variables on criterion variables. The target population of the intended study has rejected the effect of traffic lights symbols in developing their attitude towards food label as well as in creating intention towards healthy-packaged food. Furthermore, health claims and user friendly food label influence consumer intention towards healthy-packaged food indirectly by involving attitude towards food label. Moreover, human intention most often influenced by some influential people and sometime by individuals' own usefulness. This concept was examined with subjective norm and self-efficacy. Figure 4.6 unveiled the fact that both significantly effect on consumer intention to consume healthy-packaged food.

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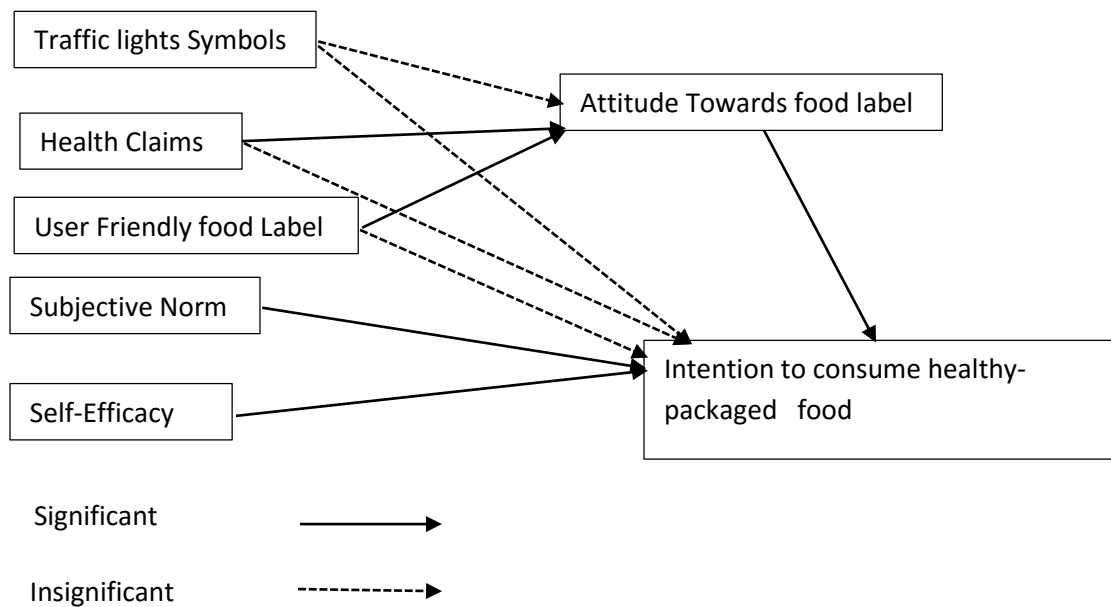
Figure 4.6
Significant and Insignificant relations in Hypothesized model

4.11.1 Direct Effect results

Researcher of the study has taken subjective norm and self-efficacy with direct effect on intention to consume healthy-packaged food. Results have indicated that intention to consume healthy-packaged food is 50% explained by subjective norm and self-efficacy. Furthermore, attitude towards food label is the criterion and its predictors are health claims, user friendly food label and traffic lights symbols. According to the Square Multiple Correlation (SMC) results traffic lights symbols, health claims and user friendly food label 67% explain to attitude towards food label. Table 4.15 is having the square multiple correlation results.

Table 4.15
Square Multiple Correlation

Endogenous Variable	SMC (R-Square)
Attitude towards food Label	67%
Intention to consume healthy-packaged food	50%

4.11.1.1 Direct effect of Underpinning theory (Theory of Planned behavior)

The hypothesized model is based on theory of planned behavior and researcher of the intended study has taken all the constructs of theory of planned behavior such as attitude, subjective norm but taken self-efficacy instead of perceived behavioral control as third construct of TPB. Initially the model was tested whether data support the theory or not and for that purpose goodness of fit indices was achieved. Figure 4.7 is the model goodness of fir indices.
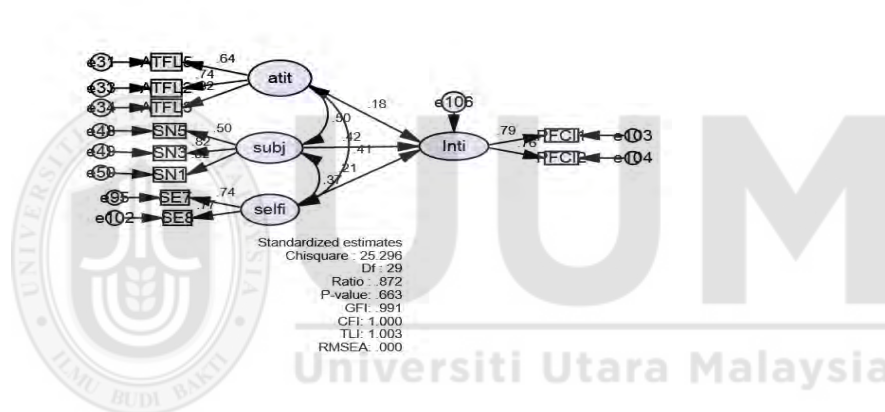
Figure 4.7
Underpinning theory (Theory of planned behavior)

The researcher has examined the theory of planned behavior model by separately running the model with its original constructs. The objective to take this step was to test the supportiveness of primary data with model. Results are reported in Table 4.16. The results have indicated that subjective norm, self-efficacy and attitude have explained the intention significantly. The unique change is observed in current results that subjective norm is the having highest explanatory power as compare to attitude.

Table 4.16
Underpinning theory (TPB) results

			Estimate	S.E.	C.R.	P
Intention	<---	Subjective Norm	0.416	0.140	5.936	***
Intention	<---	Self-Efficacy	0.213	0.072	3.505	***
Intention	<---	Attitude	0.183	0.103	2.899	0.004

Table 4.17 is depicting the result of square multiple correlation (SMC). According to

SMC three constructs of TPB have explained intention 43%.

Table 4.17
Square Multiple Correlation

Endogenous Variable	SMC (R-Square)
Intention to consume healthy-packaged food	43%

4.11.2 Indirect Effect results (Mediation)

There were three independent variables which were mediated with attitude towards

food label for the explanation of their effect on intention to consume healthy-

packaged   food foods. These three variables were traffic lights symbols, health claims

and user friendly food label. The results have indicated that attitude towards food

label fully mediate with user friendly food label and health claims whereas there was

no mediation effect found with traffic lights symbols. The results are presented in

table 4.18.

Table 4.18
Mediation effect of Attitude towards food label

Endo	Mediator	Exoge	Estimate	S.E.	C.R.	P	Status
Intention	Attitude	UFFL	0.502	0.094	4.302	***	Full Mediation
Intention	Attitude	HC	0.347	0.123	2.385	0.017	Full Mediation
Intention	Attitude	TLS	0.051	0.065	0.576	0.565	No Mediation

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4.11.3 Indirect Effect results (Moderation)

The researcher has employed five personality traits of Goldberg (1991) namely Conscientiousness, Agreeableness, Openness to experience, Neuroticism and Extraversion. The current study has investigated the moderation effect of individual personality traits in strengthening or weakening the relationship between attitude towards food label and intention to consume healthy-packaged food. It was hypothesized in model that there are many factors which effect on developing individual's attitude to read food label before purchasing any healthy-packaged food item. The food label reading attitude provokes rational decision making among consumers to consume balanced healthy-packaged food. Furthermore, the intended study has added another dimension that to examine the moderating affect of individual personality traits between attitude and intention. The moderating effect of five personality traits were tested one by one and resulting model is presented in figure 4.8.
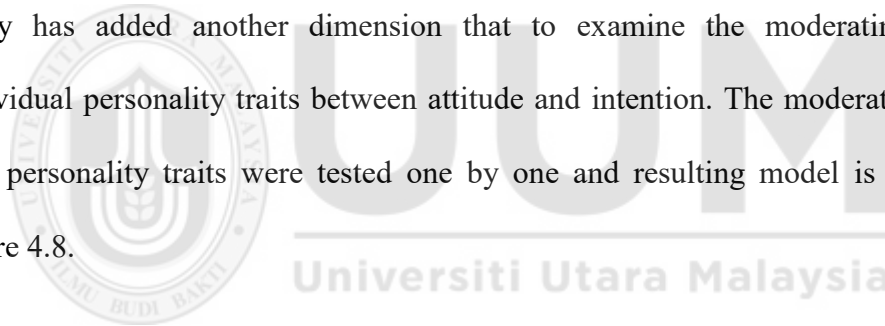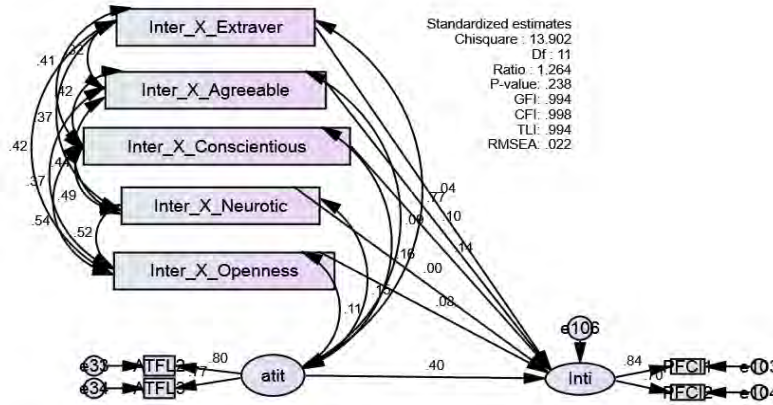
Figure 4.8
Moderation effect of Personality Traits

Table 4.19 is comprises of moderation results of each personality traits. It was observed that two personality traits such as conscientiousness and agreeableness moderates between attitude towards food label and intention to consume healthy-packaged food. Whereas remaining traits such as extraversion, openness to experience and neuroticism having not moderation effect. The moderation effect of conscientiousness and agreeableness has weakened the relationship between exogenous variable and endogenous variable instead of strengthening it.

Table 4.19
Moderation effect of five personality traits

Endo	Moderator	Predictor	Estimate	S.E.	C.R.	P	Status
Inti	<---	Attitude	0.397	0.152	3.586	***	Signi
Inti	Extraversion	Attitude	0.045	0.019	0.399	0.69	No Moderation
Inti	Agreeableness	Attitude	0.104	0.014	1.982	0.048	Moderation
Inti	Conscientiousness	Attitude	0.137	0.015	2.406	0.016	Moderation
Inti	Neuroticism	Attitude	0.003	0.015	0.052	0.959	No Moderation
Inti	Openness	Attitude	0.084	0.017	1.379	0.168	No Moderation

4.12 Summary of hypotheses results

There were thirteen hypotheses in current study. These hypotheses were based on direct, indirect mediation and indirect moderation relationship between exogenous and endogenous variables. Table 4.20 is having the summery of hypotheses rejection and acceptance.

Table 4.20
Summary of Hypotheses results

Hypotheses	Outcome
H1: Traffic lights symbols have positive effect in making consumer's attitude towards food labels	Rejected
H2: Health claims have positive effect in making consumer's attitude towards food labels	Accepted
H3: User friendly food labels have positive effect in making consumer's attitude towards food labels	Accepted
H4: The attitude towards food label have positive effect on consumer's intentions towards healthy-packaged food consumption	Accepted
H5: Traffic lights symbols have positive relation with healthy-packaged food consumption intention	Rejected
H6: Health Claims have positive relation with healthy-packaged food consumption Intention	Rejected
H7: User friendly food label have positive relation with healthy-packaged food consumption intention	Rejected
H8: The attitude towards food label mediates between traffic lights symbols and the healthy-packaged food consumption intention	No Mediation
H9: The attitude towards food label mediates between health claims and the Healthy-packaged food consumption intention	Full Mediation
H10: The attitude towards food label mediates between the user friendly food label and the healthy-packaged food consumption intention	Full Mediation

Table 4.20 (Continue)

H11: Subjective norm have positive effect in developing consumer's intention towards healthy-packaged food consumption intention	Accepted
H12: Self-Efficacy have positive effect in developing consumer's intention towards healthy-packaged food consumption intention	Accepted
H13a: The conscientiousness moderates between the attitude towards food label and the healthy-packaged food consumption intention	Moderation
H13b: The extraversion moderates between the attitude towards food label and the healthy-packaged food consumption intention	No Moderation
H13c: The agreeableness moderates between the attitude towards food label and the healthy-packaged food consumption intention	Moderation
H13d: The openness to experience moderates between the attitude towards food label and the healthy-packaged food consumption intention	No Moderation
H13e: The neuroticism moderates between the attitude towards food label and the healthy-packaged food consumption intention	No Moderation

4.13 Summary

The designed model of the study was based on aforementioned studies and the supported theory was theory of planned behavior. The hypotheses were built on the assumption of positive relationship among all the variables. The moderating and mediating variables were employed with the perception of their significance effect. The primary data has influence on all the hypotheses of the intended study. The target population of the study was Pakistani. Primary data has disclosed their opinion and intention towards consumption of healthy-packaged food items. The most influencing factors were employed to examine the intention of individuals towards consumption of healthy-packaged food items. The finding has expressed that traffic lights symbol having no effect on building intention of Pakistani consumers to consume healthy-packaged food. Moreover, health claims and user friendly food labels have influenced indirectly. The influence of these two variables was observed with the mediation of attitude towards food label. This finding unfolded that health claims and user friendly food label make consumer attitude to read food label and later this attitude make consumer mind to take informed decision towards consumption of healthy-packaged food.

The hypotheses of subjective norm and self-efficacy were significant. The significance of these two variables has explained that in collectivist society people influenced by the people whose suggestions and opinions are significance for them. Therefore, their reference towards any object play decisive role. As far as the self-efficacy is concern, consumers' internal satisfaction and favorable opinions direct individuals to take positive decisions towards any object. Therefore, the results of the study have indicated that consumers' internal satisfaction create positive intention to consume healthy-packaged food.

The researcher of the study has involved personality traits variables. In food selection individuals' like and dislike according to their personality traits are very important. It was hypothesized that personality traits would strengthen or weaken the relationship between attitude towards food label and intention to consume healthy-packaged food. There were five personality traits and two of them moderated namely conscientiousness and agreeableness. These two personality traits have weakened the established relationship. It indicated that people who are having high level of rational attributes in their personality consume healthy-packaged food.

CHAPTER FIVE

DISCUSSION AND CONCLUSION

The last chapter commence with discussion pertaining to the hypotheses developed for current study. There were thirteen hypotheses with five subdivided hypotheses in present study. Three variables such as traffic lights symbols, health claims and user friendly food labels were the indirect predictors of intention to consume healthy-packaged food. The relationship was built with the mediation of attitude towards food label. The model of current study was based on theory of planned behavior and researcher has involved all constructs of TPB such as attitude, subjective norm and self-efficacy instead of perceived behavioral control. To achieve the objective of the current study subjective norm and self-efficacy were the direct predictor of intention to consume healthy-packaged food. For the consumption of food items individuals' liks and disliks play most decisive role. To test this assumption services of big five personality traits have been taken. Five personality traits have played moderating role to strengthen or weaken the relationship between attitude towards food label and intention to consume healthy-packaged food.

Furthermore, in this chapter researcher has described the theoretical and practical contribution of the current study. Moreover, there were limitations in present study which were also explained in this section and researcher has suggested some suggestions for future researchers while investigating the food related intention of individuals.

5.1   Research Objective discussion

The researcher of the study has tried to achieve following objective in current study by adopting quantitative technique and employing universities'students enrolled in MBA.

1. To examine whether traffic lights symbols, health claims and user friendly food labels influence individuals' attitude towards food label.

2. To investigate whether individuals' attitude towards food label positively affect their intention towards healthy-packaged   food consumption.

3. To investigate whether the attitude towards food label mediates in explaining the relationship between traffic lights symbols, health claims and user friendly food label and intentions of healthy-packaged   food consumption.

4. To investigate whether subjective norms and self-efficacy positively influence individuals' intention towards healthy-packaged   food consumption.

5. To postulate whether individuals' five personality traits (the agreeableness, the openness to experience, the conscientiousness, the extraversion and the neuroticism) moderate in strengthening the relationship between their attitude towards food label and healthy-packaged   food consumption intention.

6. Use Structural Equation Modeling to create model

The researcher of the intended study has designed a framework based on theory of planned behavior to investigate the healthy-packaged   food consumption intention of

Pakistani consumers. The purpose to involve university MBA students were that healthy-packaged food is very attractive for youth as compare to other mature adults. The growing trends towards excessive consumption of healthy-packaged food and increasing inclination of researchers of various countries have provoked researcher to examine the intention of Pakistani consumers for the usage of healthy-packaged food local or imported. Pakistan is an emerging market for food retail sector and large retailers such as Metro, Mackro and Hyperstars along with local known brands like Al-Fatah having good market share and playing vital role in changing eating and cooking trends in Pakistan.

It was not enough to articulate the context and to achieve the purpose of the project. The researcher of the intended study was aware pertaining to the rigor of his inquiry. Therefore, inquiry rigorousness was demonstrated by the critically analysis of collected data and the support of conclusion with concrete knowledge. For that purpose theoretical framework was required and built accordingly. By developing theoretical framework researcher could easily make findings reliable and valid. To adapt the theoretical framework and large sample size help to generalize the findings. After collecting data and running required statistical tests researcher has found some mixed findings. There were thirteen hypotheses and out of them some were accepted and some rejected according to the cut off value of statistical values. In the further session researcher has discussed the significant and insignificant hypotheses.

5.2　Significant and insignificant results discussion

The general analysis was presented in previous chapter pertaining to the hypotheses designed for current study. Moreover, since the findings have supported some hypotheses as the quantitative analysis have evidence, some further arguments were needed. The current section has discussed the factors which have positive significant effect on Pakistani consumers' intentions towards the consumption of healthy-packaged food. The antecedents of intention to consume healthy-packaged food were traffic lights symbols, health claims, user friendly food labels, subjective norms and self-efficacy. Out of these five antecedents four have positive significant effect. In these four significant positive hypotheses two have direct and two have indirect positive significant effect such as subjective norms and self-efficacy and health claims and user friendly food label respectively.

There were five moderators in the framework. Researcher of the intended study has taken big five personality traits namely conscientiousness, extraversion, openness to experience, agreeableness and neuroticism as moderator between attitude towards food label and intention to consume healthy-packaged food. Analysis has indicated that only two personality traits have moderated significantly namely conscientiousness and agreeableness whereas rest of the personality traits has insignificant effect.

It was also analyzed in the current study that how fit the TPB model is for investigating the consumers' intentions towards consumption of healthy-packaged

food items in Pakistan. Therefore, the Sraucural Eeuation Modelling's path models of TPB have exposed the fact that all TPB constructs namely attitude, subjective norm and self-Efficacy have positive and significant effect on intention. The most interesting and worth sharing results is that in current study even in the presence of attitude the subjective norm is having highest explanatory power towards intention. And the attitude is at a third stage in explaining the intention in the current model.

The outcome of the current model have revealed that attitude towards food label has full mediating effect between health claims and user friendly food labels and intention to consume healthy-packaged food items in Pakistan whereas traffic lights symbols have no direct or indirect effect.

5.2.1 The relationship between traffic lights symbols and attitude towards food labels

The proposal to launch traffic lights symbols was first time initiated in early 1990's by UK Coronary Prevention which is Non-Governmental Organization (Coronary Prevention Group 1992). However, formally in 2006 UK Food Standard Agency has decided that traffic lights symbols could be the best source to overcome the difficulties faced by consumers while reading the nutritional information written at food label (Stockley, 2008). The current results have indicated that traffic lights symbols have insignificant effect on building Pakistani individuals' attitude to read food label before purchasing healthy-packaged food products. Although traffic lights symbols facilitate consumers in reading the technical nutritional information but some of the studies have also reported that traffic lights symbols create confusion for

consumers (Savoie et al. 2013). Since 2006 the concept was test by several authors and inconsistent results have been reported in literature (Wartella et al. 2011). Some of them have positive opinions pertaining to the demonstration of food related information with traffic lights symbols (TLS) and some have observed ineffective outcomes of TLS on individuals' decision making process for healthy-packaged food products (Tarabella & Burchi, 2016).

The traffic lights symbol's concept was based on the familiarity of individuals' consumers with colors of TLS such as red, green and yellow or amber as per country specification (Sacks et al. 2009). The information related to calories, fibers, saturated fats, fats, sodium and salt could easily be described with these colors as compare to any other methods (Malam et al., 2009; Scarborough et al., 2015). The past studies have evidences that some countries' empirical data supported TLS concept and found very helpful for common low literate consumers for purchasing healthy-packaged food (World Cancer Research Fund, 2015; European Food Information Council, 2015; The Island. Health ministry, 2015). Whereas literature is not empty with these results which expressed that TLS has no meaning for some consumers living in other part of the world (Smyth, 2013).

The results of the present study have disclosed the fact that traffic lights symbols do not play any significant and decisive role in making Pakistani consumers' attitude to read food label. Similar results have been found in some past studies where TLS have insignificant effect in making attitude to read food labels (Swinburn & Wood, 2013).

Although in Pakistan packaged food labels are colorful. Most of the time food companies demonstrate the quality of food with colors but consumer's understanding towards these colors is limited. The presence of traffic lights colors at front of pacl label does not make any difference in consumer's attitude towards food label and consumer instantly purchse packaged food items.

5.2.2   The relationship between Health claims and attitude towards food labels

It was hypothesized that health claims have positive significant relation with attitude towards food label which was theoretically approved by the current results. Pakistani consumers have taken the effect of health claims on food label positive and effect in making attitude towards food label and consult label while purchasing healthy-packaged food products. In current theoretical framework health claims were the second predictor of attitude towards food label. The objective of the health claims' display on food label was to provide easily understandable food label information such as calories, saturated fat, fat, sodium along with the benefits of these ingredients on consumer health.

Consumers are unaware about the usefulness of calories, saturated fat, fat, sodium and salt in their daily routine meal. It is very difficult for common consumers to identify the balance amount of these nutrients in packaged food (Draper et al., 2011). Therefore, food organizations have the responsibility to demonstrate the nutrients' effect on consumers' health (Lalor et al., 2011). Health claims is considered to be the best source (Leathwood, Richardson, Strater, Todd, & Van Trijp, 2007).

Similar positive significant results have been observed in past studies where empirically it was examined that health claims play a pivotal role to understand the information printed on food labels (Hailu, Boecker, Henson, & Cranfield, 2009) and make consumer attitude to read label before taking final decision for packaged food items (Wills et al., 2012). Because studies have unfolded the fact that even literate consumer is unable to read and interpret the nutritional information on food label (van der Merwe et al., 2011).

There are two kinds of claims such as nutritional and health claims (Verhagen et al., 2010). Nutritional claims belong to back of pack labeling which is traditionally been in use since many years (Saba et al. (2010) whereas health claims is the part of front of pack labeling. Practitioners have suggested and researchers have empirically investigated the decisiveness of health claims in disseminating the food related information among common consumers (Carrillo, Varela, & Fiszman, 2012; Dean et al., 2012; Drichoutis, Lazaridis, & Nayga, 2005). The empirical endurances of researchers have concluded that health claims positively change consumers' behavior in selection of healthy-packaged food (Carrillo et al., 2014). The empirical data collected by Pakistani consumers have also exposed the fact that health claims which are in the form of statement perform better in making consumers' attitude to read food labels.

5.2.3 The relationship between user friendly food label and attitude towards food labels

The findings of the present study have explained the fact that Pakistani consumers were interested in user friendly food label which leads towards making their attitude to read food label while purchasing healthy-packaged food items. Owing to the technical information pertaining to the nutrients printed on healthy-packaged food consumers are found to be interested in unequivocal and user friendly food labels (Annunziata & Vecchio, 2012). The empirical past studies have disclosed that due to growing trend of chronic diseases which are the cause of food there is a need to create awareness among consumers pertaining to the consumption of healthy food (Astrup, 2001; FAO/WHO 2003; Kromhout, Menotti, Kesteloot, & Sans, 2002). For the prevention and mitigation of prevalence of such diseases food label information is the best source (Gracia et al., 2007). Food labels make consumers able to take decision about which food item to purchase and how much quantity should be consumed.

Aforementioned studies have also disclosed that the demand for easy to understand food labels not confined to under developing and developing countries but similar demand prevail among developed countries' citizens for the selection of balanced and healthy-packaged food (Storcksdieck, genannt Bonsmann, Fernández Celemín, & Grunert, 2010). However, the decisiveness of food label could not solve the problem regarding developing a generalized food label for whole world (Van Herpen, Seiss & Trijp, 2012). The studies conducted in Sweden have more focus on Green Keyhole logos whereas UK studies have pointed out the significance of traffic lights symbols as an easy to understand method of food labeling (Balcombe, Fraser, & Di Falco, 2010). Moreover, past studies have suggested that there is no harm to design country

oriented food labels for packaged food but it must be uniform for the whole country (Sacks, Rayner, & Swinburn, 2009; Vyth et al., 2009) because when different countries design various food labels to get competitive edge it creates confusion among consumers.

Food processing companies are in quest to figure out the best possible user friendly food label for common low literate consumers who have desire to read the food label before final food decision (Cacciolatti et al., 2012). Owing to the technical language adopted in describing the nutrients majority of consumers are unable to understand and sometimes to read the nutrients (Teisl et al., 2001; Kim et al., 2000; Nayga, 1999; Weaver and Finke, 2003; Variyam and Cawley, 2006; Kasapila & Shawa, 2011). The concept of easy to understandable or user friendly food label is vary from country to country (Herpen, Seiss & Trijp, 2012) but it exists as it was observed in current study that Pakistani consumers also demand that food processing companies to design easy to understand food labels which can be understood by average consumers.

Food labels are not just the printed paper which used to wrap the process food but have meaning beyond it (Mahdavi, Abdolahi & Mahdavi, 2012). The concept of user friendly is different from traffic lights symbols and health claims or other methods such as guideline daily amount, nutritional claims which were adopted by other researcher to examine their effect on consumers in making attitude to read food label before final selection. The notion behind user friendly food label is to make the overall food label easy to understand with concise and required information by avoiding unnecessary detail which make food label crowed and difficult to locate required information by average consumers (Cowburn & Stockley, 2004). According

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to Satia et al., (2005) almost 46% consumers often consult food label at the time of food purchase. It was also be noticed in previous studies that students reported 44% interest in reading food label while purchasing food label (Marietta et al., 1999). But the idea is not as simple and straight forward as it seems. Because some researchers have indicated that detailed information is considered to be friendly whereas in some of them have reported in their studies that precise information on food label has taken as easy and friendly (Food Standards Agency, 2010; Hodgkins et al., 2012).

Whether it is detailed information or concise information the prime objective of the food label is to create awareness among consumers to select not only healthy but balanced packaged food. Because due to its convenience excessive consumption of processed food have been observed in the world which is increasing medical cost of individuals as well as country expenses (Reid, 2004; Aschemann-Witzel et al., 2013). Aforementioned studies have pointed out that poor dietary quality and sedentary life style is the consequence of chronic diseases and food label information is the appropriate source to tackle this problem (Nayga, 1996; Drichoutis et al., 2006; Grunert & Wills, 2007; Mhurchu & Gorton, 2007; Feunekes et al., 2008; Nørgaard & Brunsø, 2009). The present results of the study have also indicated that Pakistani consumers also interested in user friendly food label.

Theoretically, three variables have been taken as the predictor of attitude to towards food label and user friendly is one of them. The results have explained that in comparison with rest of the two predictors such as traffic lights symbols and health claims the highest explanatory power has been observed by user friendly food labels. This finding disclosed the fact that Pakistani consumers are not interested in specific

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part of the food label to be easy to understand but in overall food label should be easy to interpret by them.

5.2.4 The relationship of traffic lights symbols, health claims and user friendly food labels with intention to consumer healthy-packaged   food products

The researcher of the intended study have hypothesized that traffic lights symbols, health claims and user friendly food labels have potential to develop intention among Pakistani consumers to consume healthy-packaged food items. Whereas results are contrary to the expectation and all the hypotheses pertaining to these direct relation have been rejected.

These hypotheses were developed with the support of aforementioned studies. Although mixed results have been observed in previous studies where some of the researchers have reported results that these variables play vital role in making consumers' intention towards the purchase and consumption of healthy-packaged food items (Lynam et al. 2011; Möser et al. 2010; Kelly et al. 2009). On the other hand some of the researchers have claimed with empirical findings that traffic lights symbols, health claims and user friendly food label have no unequivocally direct effect or explanatory power for intention to consume healthy-packaged food items (Grunert et al. 2011; Drichoutis et al. 2006; Holdsworth et al., 2010). Past studies witnessed that it is still not clear that to what extent front of pack labeling system effective specifically pertaining to the traffic lights symbols (Scarborough et al., 2015) for assisting consumers in selection of healthy-packaged food items.

Past studies have examined the effect of traffic lights symbols, health claims and user friendly food labels on consumer purchase decision for packaged food products by taking them individually. The researcher of the intended study was the objective to employ all of them in one model and then investigate that which one have to what extant effect or no effect. Food retail sector is an emerging market in Pakistan (Business Recorder, 2012). Traditionally consumers are involved in homemade fresh food for breakfast, lunch and dinner. Whereas since few years all packaged food items are making place in Pakistani meals (Punjab Board of investment and trading, 2016). These emerging trends in food related matters have provoked researcher to design a comprehensive model for the investigation of Pakistani consumers' intention towards healthy-packaged food consumption.

The reality is contrary to the hypotheses in present study. After critically analyzing the empirical data the findings have exposed that although making the food label interpretable with front of pack labels. Nevertheless the acceptance of traffic lights symbols, health claims and user friendly food labels vary from country to country. Because according to present study Pakistani consumers did not give weightage to traffic lights symbols directly or indirectly. However, in some areas of this world traffic lights symbols has been exercised with effective on consumers and most preferable front of pack labeling scheme in most of the countries such as Ecuador, South Korea and Sri Lanka (World Cancer Research Fund, 2015; European Food Information Council, 2015; The Island. Health ministry, 2015). Whereas, health claims and user friendly food label have indirect effect on Pakistani consumers' intention towards healthy-packaged food consumption which is developed with attitude towards food label.

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5.2.5 The relationship between attitude (towards food label) and intention (to consume healthy-packaged food)

Attitude is one of the construct of theory of planned behavior and theory of reason action. The decisiveness of the relationship between attitude and intention can be judged with this evidence that it is having highest explanatory power for intention as compare to subjective norm and perceived behavioral control. Several authors have hypothesized the relationship between attitude and intention for the investigation of various individuals' attitudes and intentions (Povey et al., 2001) such as consumer intention towards organic food (Chen, 2007) intention of individual towards vegetarian products (Kothe et al., 2012). Therefore, researcher of the intended study has hypothesized that attitude (towards food label) has positive and significant effect on intention (to consume healthy-packaged food). The findings of current study have supported past results that when consumer make an attitude to consult food labels before taking final decision it leads them towards the intention to consume healthy-packaged food items.

The variation in percentage for the explanation of intention by attitude has been observed in aforementioned studies (McEachan et al., 2010). Whereas not a single empirical finding has been reported in favor that attitude has no relation or negative significant relation with intention. In the current study it was hypothesized that due to the convenient nature of packaged food a growing trends towards the huge consume of packaged has been observed in Pakistan. Therefore, to what extent the food label play its role in making balance and aware selection of correct and healthy-packaged food intention. The positive significant result of the current finding between attitude

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towards food label and intention to consumer healthy-packaged food items is witnessed that food labels make consumer attitude and has significant effect on consumption intention of packaged food which later leads towards balanced and healthy-packaged food selection. Because according to the TPB higher the intention make strong positive actual purchase (Ajzen, 2007).

5.2.6 The mediation effects of attitude towards food label in building relationship of traffic lights symbols, health claims and user friendly food label with intention to consumer healthy-packaged   food.

Theoretically the current model was designed by taking attitude towards food label as mediator for making relationship of traffic lights symbols, health claims and user friendly food labels with intention to consume healthy-packaged food items. The target population of current study was students enrolled in MBA degree. The analysis shed light on the fact that attitude towards food label did not mediate with traffic lights symbols whereas full mediation of attitude towards food labels were find with health claims and user friendly food labels. The researcher of the intended study has hypothesized with the support of past studies that food label reading makes consumers' liking and disliking towards healthy-packaged food consumption (Gonzalez-Zapata et al., 2009; Organisation for Economic Cooperation and Development, 2008). It was empirically examined that consumer consume packaged food items but by consulting food label before final purchase make sense among consumers to select healthy and balance processed food (Vyth et al., 2010; Ducrot et al., 2015). Aforementioned studies have witnessed that consumers' neglecting behavior towards food label is the cause of unhealthy food selection (Balasubramanian & Cole, 2002; Folkes & Matta, 2004). Several researchers have

examined various formats of food labels which can facilitate consumers in reading and interpreting the food label information for informed food choices (Xie et al., 2015).

Several past studies have involved various antecedents for making consumers' attitude towards food labels (Health Council of the Netherlands, 2008; Dagevos and Van Kleef, 2009; Lytton, 2010; Williams et al., 2010) such as some of them have employed the effect of nutritional food label on consumer intention for healthy-packaged food with mediation of food label attitude (Kleef & Dagvos, 2015). Aforementioned studies have witnessed that consumers' attitude towards food label play vital role while selecting healthy food choices (Juhl and Poulsen, 2000; Baltas, 2001; Cheftel, 2005; Van Trijp and Van der Lans, 2007; Grunert et al., 2010; Hall et al., 2012). Therefore, decisiveness of food labeling and consumers' food label information search behavior emerge (Drichoutis et al., 2006). Yet no study found to the best knowledge of researcher which simultaneously investigated the effect of three various food label categories on intention to consume healthy-packaged food item with the mediation of individuals' attitude towards food label. Furthermore, so far back of pack labeling was very famous among researchers and practitioners to investigate its influence on consumers for healthy-packaged food selection (Draper et al., 2011). Whereas front of pack labeling was just utilized to mention the name of the product but later the popularity of front of pack labeling have open new era of food labeling (Grunert et al., 2010; Koenigstorfer & Groeppel-Klein, 2010; Borgmeier & Westenhoefer, 2009). Organizations have started to utilize it as formal part of label. The traffic lights symbols and health claims are the part of front of pack labeling (Clegg & Lawless, 2008).

Findings of the current research have explained the fact that Pakistani young consumers are not interested in traffic lights symbols and there is no effect of TLS if printed on food label for consumers' assistance to take healthy-packaged food. Whereas health claims which disclose the benefits of various nutrients on human body has more popularity and acceptance among young Pakistani consumers therefore such hypothesis was accepted with full mediation. The familiarity of symbols with respect to its context is necessary for the understanding of target population. Pakistani consumers' are not familiar with the concept of traffic lights symbols used for the presentation of packaged food nutrients.

Although health claims have significant positive full mediation and with mediation the explanatory power is 34% whereas the user friendly food label has higher mediation effect and the percentage is 50%. Pakistani consumers although realize the decisiveness of health claims which explain the processed food nutrients in best possible way but the overall user friendliness is much more preferable than rest of the food label techniques. Health claims works with rest of the crowded information printed on front of pack label and back of pack label. It get confusing for Pakistani consumers to differentiate therefore their high inclination have been observed towards overall user friendliness of food label during the analysis of current data. In user friendly food label the precise and relevant information demanded by Pakistani consumers as compare to detailed information. Such kind of similar results have also been observed in past studies where consumers were interested in limited and easy to understand overall food label (Hodgkins et al., 2011) instead of detailed printed food labels. The pat researchers have investigated the direct effect of easy to understand food labels' information (Annunziata & Vecchio, 2012; Banterle et al., 2013) whereas

current researchers have hypothesized this relation with the mediation of attitude towards food label and the finding have accepted the full mediation with health claims and user friendly food labels.

5.2.7 The relationship of subjective norms and self-efficacy with intention to consume healthy-packaged food

Theory of planned behavior is comprises of three constructs such as attitude, subjective norm and perceived behavioral control as an antecedents or predictors of intention (Ajzen, 1991). These constructs play their role in predicting behavioral intention of consumers towards anything (Seo et al., 2012). Several past researchers have conducted behavioral studies with the support of TPB such as dairy food consumption items (Kim & Shin, 2003), fast food consumption (Kim et al., 2004) and consumption of healthy food products (Oygard & Rise, 1996; Shepherd et al., 2006; Hewitt & Stephens, 2007). In current study to examine the individuals' intention towards consumption of healthy-packaged food researcher has involved subjective norm but instead of perceived behavioral control has taken self-efficacy. According to the cultural dimensions of Hofstede Pakistani culture belong to collectivism society (Hofstede, 2011). People are connected with each other and their purchase decision also influence by others such as family members, friends, peers etc. Food related matter especially healthy-packaged food items which are not only consumed by individuals at home but collective family members also involved in favor or against the purchasing of processed food items. For the investigation of consumers intention to consume healthy-packaged food the involvement of subjective norms was most suitable to achieve the current study objective. Current findings have also approved

the positive and significant effect of subjective norm on Pakistani consumers' intention for the consumption of healthy-packaged food items. In past studies several authors who were intend to examine the intention of consumers have taken the services of TBP complete model and found that subjective norm has positive significant effect on intention (Seo et al., 2012; Fila and Smith, 2006). Chen ., (2009) were also reported that for healthy eating subjective norm has positive influence.

In aforementioned studies it was found that influence of attitude to explain consumer intention was most often higher than rest of the TPB constructs (Chan & Tsang, 2011). Whereas rest of the two constructs such as subjective norm and perceived behavioral control were having different percentages in various studies (Al-Swidi et al., 2014; Chen, 2007; Dean et al., 2008; Thøgersen, 2009b). The uniqueness of the current finding is that subjective norm is having the highest percentage for predicting the consumers' intention towards healthy-packaged food consumption. One argument for the support of such change is that although attitude towards food label create awareness among consumers for the selection of healthy-packaged food but the influence of subjective norm in collectivism society is comparatively more than other factors. Consumers prefer to consult others and take their opinions while purchasing wrapped processed food.

As far the self-efficacy is concern present study has accepted the hypothesis. The notion to involve the self-efficacy in the current study was to examine that to what extent the internal willingness is decisive for making intention of individual consumer for the consumption of healthy-packaged food items. Because in the previous studies

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researchers have postulated that individual self-efficacy play vital role in selection of healthy and nutritional food items (Mai & Hoffmann, 2012). The history of self-efficacy is stem with social cognitive theory (Bandura, 1977, 1986). The self-efficacy is actually the degree of individuals' convincing ability to achieve specific goal. There are several success stories of self-efficacy pertaining to the investigation of health related matters such as protection motivation theory (Rogers, 1983), the trans theoretical model (Prochaska et al., 1992) and the health action process approach (Schwarzer, 1992). Studies which have promoted health related behavior have indicated that self-efficacy strongly predict the health behavior (Holden, 1991). Some of the researches have explained that self-efficacy is also a domain specific such as physical self-efficacy, smoking self-efficacy and nutrients self-efficacy (Schwarzer, 2004; Hoffmann and Soyez, 2010).

The results of current study have also depicted that self-efficacy strongly predicted the consumption intention of consumers towards healthy-packaged food items. Similar results have been observed in past studies where researchers have involved self-efficacy for the investigation of consumers' intentions towards healthy eating (Martens et al., 2005) and positive relation has been found. Moreover, the role of self-efficacy for weight loss and health maintenance is also very appreciating (Vanderharr & Campbell, 2005; Schelling et al., 2009; Blacksher, 2008; O'Dougherty et al., 2010; Hankonen et al., 2010). According to Teixiera et al., (2010) self-efficacy is the strongest predictor of healthy life style.

It was noticed in the current study that Pakistani consumers were reluctant to consult food labels because of technical language displayed at food labels. But if food

processing companies of Pakistan provide easy to understand food labels then the consultation of food label at the time of purchase would increase. And this barrier hinders them in selection of healthy food. Similar findings were noticed in the study conducted in America where respondents have opinions that difficult language of food label affects their self- efficacy of healthy packaged food selection (Acheampong & Haldeman, 2013).

5.2.8   The moderating effect of big five personality traits between attitude (towards food label) and intention (to consume healthy-packaged food)

Several authors have involved variables linked with individual differences such as age, gender, education and social status for the investigation of food items purchase decisions (Stran & Knol, 2013). But the personality traits have more significant value than any other individual differences facets for the investigation of individual differences towards various behaviors (Steptoe et al., 1994; Löckenhoff et al., 2008). Owning to the characteristically differences among population different people behave differently in various situations (Lunn et al., 2014). Studies have explained that personality traits which are inherited (Goldberg & Stycker, 2002) are more prone towards the selection of healthy food (Bouchard & McGue, 2003). Each personality trait has different impact on consumers' healthy behavior and findings have suggested that personality traits have probable link with healthy food choice (Jokela et al., 2012). Researcher of the intended study has employed all personality traits as moderator between attitude towards food label and intention to consume healthy-packaged food. Results have indicated that only two personality traits have positive significant moderation affect namely agreeableness and conscientiousness. On the

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other hand rest of the three such as neuroticism, openness to experience and extraversion has no significant moderation.

In past studies it was observed that conscientiousness and agreeableness have positive significant direct or indirect effect while examining individuals' behavior towards healthy food selection (Chapman et al., 2009; Friedman, 2008; Goodwin & Friedman, 2006; Ozer & Benet-Martinez, 2006). The objective of the study was to explore that how five personality traits behave in healthy-packaged food consumption intention of individuals. For that purpose personality traits have been interacted with attitude which is having the highest explanatory power towards intention. In present finding two significant personality traits have weaken the relationship between attitude and intention. The reason behind this change is while purchasing healthy-packaged food items in Pakistani environment several factors involved such as food labeling, food label design, nutritional information, subjective norm etc but individual own internal personality traits also play pivotal role. The external factors stimulate consumers to consume excessive amount of packaged food. The each personality trait has various impact on consumers' healthy behaviors such as conscientiousness is most often reported to have positive association with healthy food choices (Brummett et al., 2015; Chapman etal., 2009; Roehling et al., 2008; Sullivan, Cloninger, Przybeck, & Klein, 2007; Terracciano et al., 2009), neuroticism has negative link with health conscious behavior (Kakizaki et al., 2008; Terracciano et al., 2009), extraversion is having positive insignificant link with overweight consumers (Faith, Flint, Fairburn, Goodwin, & Allison, 2001), agreeableness is related with healthy food (Chapman et al., 2009) and openness to experience was examined to find its association with healthy food choices and results have indicated no effect (Brummett et al., 2006).

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The conscientiousness traits represents the personality having very conscious decision making style and people are more inclined towards rational decision in all walks of life especially health related (Mo˜ttus et al., 2013a; Bogg & Roberts, 2004; Lahey, 2009). Packaged food has brought convenience among human life but along with that increased the unhealthy food items in consumers' shopping basket (Roseman et al., 2013). Even with convenient characteristics of packaged food items conscious consumers try to avoid excessive use of processed food by replacing them with fresh food. Therefore, when various food label facets make consumers' attitude towards food label the involvement of their personality traits especially conscientiousness traits make them more rational to consume healthy-packaged food.

Individuals possess agreeableness nature consult others' opinion in making decision in their life. In current hypothetical model agreeableness also effect significantly but weaken the relationship between attitude and intention. These personality traits are the combination of individuals' nature and nurture. Individuals build their personality with family environment and social environment. The effect of their personality on various social and personal decisions is long lasting.

The present findings have exposed the fact that personality traits which have weakened the relationship between attitude and intention have significant participation in healthy-packaged food consumption intention. These significant results of two personality traits have also achieve the objective that young consumers' personality traits have effect in their food related purchase decisions.

5.3   Study contribution

It is the requirement of every new study to contribute in existing study and bring some updated and worth reading results for future researchers. To accomplish such demand the contribution potion of every study brings novelty. Researchers take keen interest in reading and contributor pay much attention in writing that major part of his/her research. It would not wrong to state that current study model itself a contribution which has not been designed yet for the investigation of any intention in any context. But some unique contributions of the current study which need to be highlighted are as follows:

1- Yet there is no study found in aforementioned literature which has simultaneously employed all the front of pack labeling formats such as traffic lights symbols, health claims and user friendly food label for the investigation of intention to consume healthy-packaged food items. The individual effect of each food label whether front of pack labeling formats or back of pack labeling formats have several time examined on consumer purchase decision. Whereas the simultaneous examination of front of pack labeling formats provide the detailed analysis of each formats as well as deliver the awareness that which is most effect for making consumer attitude to consult food label while purchasing or creating intention to consume healthy-packaged food items. In individual investigation positive significant effects were reported. In contrary to that the intensity of each front of labeling format with combined effect has been first time judged in current study. Furthermore, results have indicated that in the presence of traffic lights symbols, health claims and user friendly food label the most preferred choice for consumers to understand food

label is overall user friendliness of food labels. This finding unfolded the nature of consumer of specific culture. People living in Pakistan are at a stage where they are using packaged food as status symbol and convenience. Therefore, their intention is far from the concept of harmfulness of the excessive use of packaged food. To educate them the best source is food label and it should be precise and brief. Although the traffic lights symbols are more effective in most part of the world but the past studies conducted in developed countries.

Furthermore, most of the studies have indicated that symbols are convenient and effective tool to present the nutritional information to consumers. In contrary to that the meaning of symbols varies from country to country. The information presented at food label with traffic lights symbols for the consumers who cannot understand the philosophy of red, yellow and green for food nutrients is meaningless for them. So, the symbols cannot be generalized for every consumer. Demographical factors effect on their understanding. Moreover, user friendly food label is having more explanatory power than health claims. The reason of this effect reflects the nature of consumers. When food processing companies present the nutritional information with health claims along with back of pack label traditional information format consumer would get confused. Although there would be effect but if the overall food label have limited, precise and relevant information which can be easily interpretable for consumer then this would affect more in making consumers' intention towards selection of healthy packaged food.

2- For the investigation of any individual's behavioral intention the most suitable and preferred theory is Theory of Planned Behavior by Icek Ajzen (1991). It was first time investigated in the current study where researcher of the intended study has taken three front of pack labeling (FoP) facets consecutively as an antecedent of attitude towards food label and examined the mediation effect of each FoP with attitude towards food label on intention to consume healthy-packaged food. Past studies have also witnessed that weak behavioral believes did not significantly influence consumers' attitude and context specific behavioral believes should be adopted while explaining attitude. Therefore, in current study traffic lights symbols, health claims and user friendly food labels were the strong behavioral beliefs to effect attitude towards food label. In this mediation it was investigated that which FoP facet has indirect effect on creating individual intention to consume healthy-packaged food items. This contribution has practical application which would be discussed separately under the heading practical contribution.

3- Theory of planned behavior has served many industries and several societies but TPB model with all FoP facets in Pakistani environment has not yet been tested. Another uniqueness of the current model is that no study has been found so far which have employed FoP all facets with TPB model for the investigation of Pakistani consumers' intention to consume healthy-packaged food items. Pakistani authors have involved expire dates, manufacturing dates, ingredients and nutritional information to examine the Pakistani respondents' purchase decisions for food items. There was no comprehensive model designed for Pakistani respondents to investigate their intention towards

healthy-packaged food consumption. The effect of traffic lights symbols and health claims have also been investigated in numerous countries whereas in Pakistani environment with quantitative analysis has been first time discussed.

4- Goldberg big five personality traits have got the popularity among many researches. Researchers have employed sometime all and sometime few of personality traits to examine their effect on various endogenous variables. Big five personality traits have been involved with many other variables and play pivotal role as an exogenous variable. Sometime researchers have taken the sole service of personality traits for the judgment of their effect on any dependent variable. But so far no study has been taken the moderating effect of personality traits with the construct of theory of planned behavior. Researcher of the intended study has hypothesized that whenever some external factors involved in making consumers' attitude towards food label reading and this attitude develop intention among consumers to consume healthy-packaged food the inner characteristics of individuals participate positively or negatively. Such inner characteristics best represented by big five personality traits. Therefore, in present study the analysis of data unveiled that two personality traits moderated between attitude and intention. In this moderation personality traits involvement have weaken the relationship. It indicated that although attitude and intention have always positive relation and have highest explanatory power but there are some factors which can play pivotal role in weakening this relationship. This moderation effect has also approved the title of the current model which was assigned by the present

researcher namely "Individual differences Theory of Planned behavior model".

5.4   Methodological Contribution

Researcher of the current study has adapted questions from previous studies for data collection. All questions were modified to achieve the current study objective. The adapted questions were used to target advanced countries population but these questions were made adjustable for developing countries population. To test the content and face validity and reliability researcher conducted reliability and validity test. All questions have fulfilled the cut off values. Now the modified questions are usable to target developing countries population for similar objective. Researcher of the study did not found any measurement which was developed to target developing or under developing countries' low literate population. Therefore, the current study's modified instrument will be helpful for future researchers.

Current study has formulated a comprehensive model for the investigation of consumers' intention to consumer healthy packaged food. A complete model was tested on structural equation modeling (SEM) technique. Structural equations modeling technique support researcher to test the hypothesized model with goodness of fit indices. The goodness of fit of current study model has achieved the cut off values which indicated that for the investigation of consumers' intention to consume healthy packaged food the formulated model is supportive.

The analysis of current model with structural equation modeling is also a methodological contribution. SEM provides very comprehensive analysis of designed models with latent, observed, endogenous and exogenous variables. The assessment of mediation effect of attitude towards food label is very plausible by involving SEM. Numerous researchers have supported the fact that SEM is powerful multivariate analytical methods. Because the SEM is designed specifically to analyze the theoretical linkage of latent variables which are represented by various items (Bollen & Long, 1993; Cheng 2001; Hair et al, 2006). Furthermore, some of the researchers have opinion that SEM is the preferred technique for mediation analysis. This opinion is based on strong logical reasoning that SEM has the characteristic to control measurement errors, provide overall model fit indices and is flexible than regression analysis (Frazier et al., 2004; Holmback, 1997; Joreskog, 1993; Tabachnick & Fiddell, 2007). Therefore, researcher of the intended study has chosen SEM due to its robustness quality. The effect of traffic lights symbols, health claims and user friendly food label have so far been examined with simple SPSS regression test or most of the time with qualitative study. In contrary to that researcher of the current study has investigated the complete model with SEM AMOS version 21 for detailed analysis of designed model. There are several characteristics of SEM and one of them is to encourage better quality of research in multivariate relationship modeling. So far no witnessed found in aforementioned studies conducted in Pakistani environment for the investigation of Pakistani consumers' intention towards healthy-packaged food consumption with mediation, moderation and direct relationship has not been done with the services of SEM AMOS.

For any designed theoretical framework the construct validity of all instruments adapted in model is most decisive one. SEM has another feature to test the confirmatory factor analysis with measurement model. The researcher of the intended study has successfully achieved the construct validity with convergent and discriminant validity.

5.5   Practical contribution

Food processing companies spent millions of dollars on designing and printing food labels. Their aim and objective is to deliver maximum information to consumers and make them aware pertaining to the selection of healthy and nutritious food items. Furthermore, the increasing growth in packaged food products due to their convenient characteristics food related diseases have also sprout out and increased the medical expenses not only on state but also on individual's private pocket. Companies policies are still enduring to educate consumers pertaining to the nutrients of package food. Therefore, designing effective and efficient food label is now the core concern of food processing companies because such kind of issues are not confined to under developing or developing countries but developed countries also overwhelmed by this disaster. Owing to the social and economic setup in developing countries this issue has reached at an alarming stage. The current model was tested in Pakistani environment and results have indicated that majority of consumers interested in reading food label but due to its technical language unable to read but due to convenience prefer packaged food. This convenience and economical food shopping increasing their medical expenses and increasing obesity and food related diseases. If organizations make food label user friendly and provide information with easy to

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understand language people would get aware and take rational decision while purchasing healthy-packaged food.

Food processing organizations should also pay attention to the individual personality traits of consumers which make them differ from each other. Personality differences make consumers able to perceive and conceive differently which affect their behavioral intention towards anything. The food related items are most of the time based on individual likes and dislikes therefore targeting consumers' traits with external factors such as designing easy to understand labels and promoting health related benefits attached with healthy-packaged food will have more positive significant effect on consumers.

5.6   Study limitations

Although the present model was designed comprehensively for the investigation of Pakistani consumers' intention to consume healthy-packaged food and all the suitable variables have been employed as an antecedents of intention. Notwithstanding, the improvement is required due to the limitation of the current study. Owing to the time, resource and effort the intended study was confined to university MBA students but later findings have unveiled that sample is the first limitation for the generalization of study results. The systematic random sampling technique needs known population to achieve the required sample size. Almost all the Pakistani nation is utilizing packaged food therefore in sample the representation of employees, mature age people, housewives and working women, other university students from private and public should also be involved. Their intention towards consumption of healthy-packaged

food will also provide more dynamic results and more generalizability. Therefore, there is a need to replicate current model by involving above mentioned population.

In present study researcher did not mention any specific packaged food such as cooked food, semi-cooked food, canned food, boiled food, imported processed food or imported packaged food, frozen food or normal routine snacks. Because the packaged food is available in market with diverse form and the consumption of various processed food have different effect on consumers' health. The diversity of packaged food also linked with the population because young consumers mostly linked with snacks which are excessively consume on daily basis. On the other hand the consumption of semi-cooked food, preserved food such as pulses and vegetables and canned food mostly allure to adult members of family who run family kitchen. These various types of packaged food have different amount of calories, saturated fat, fat, sodium, salt and nutrients. The current study has just provided the general intention of a specific group of whole nation towards consumption of healthy-packaged food items but which type of packaged food yet need to be investigated. Therefore, there is need to replicate current model with the categories of packaged food for better results generalization.

The researcher of the intended study has examined the intention of the Pakistani consumers but there is need to involve actual purchase behavior of Pakistani consumers' with existing antecedents. The actual purchase behavior of consumers will provide another aspect of the current model that whether the traffic lights symbols, health claims and user friendly food labels make consumers' intention

directly or indirectly and finally what effect observed among Pakistani consumers pertaining to actual purchase of healthy-packaged food.

In present study data were cross-sectional. In cross-sectional data respondents express their opinion on five point Likert scale with present state of mind. Owing to self-administered technique which is although better for better responses but also create biasness among responses. Respondents' opinions overwhelm by researchers' explanation about each section of the questionnaire. Therefore, longitudinal method is much better for the generalization of results. In longitudinal method people will involve in research for extended period of time.

5.7   Future direction

There were several limitations in the study which have indicated that there is still a gap for future researchers for the investigation of consumers' consumption pertaining to healthy-packaged food items. Furthermore, the present model was comprehensively designed to cover the maximum intentions of consumers towards healthy-packaged food consumption. Notwithstanding, researcher of the intended study has suggested some advices to increase the robustness of the current model.

In current study there was a single questionnaire survey method adopted. All the opinions were taken on five point Likert scale. The Likert scale is very convenient for respondents to express his/her opinions as well as for researchers to analyze data. But qualitative method provides in-depth interview facility which provokes respondents to

express his/her point of view with any limitation. The opinions about consumption of healthy-packaged food can better be expressed with open ended questions instead of close ended. Therefore, future researchers should adopt mixed methods for better results.

For the application of complete theory of planned behavior the involvement of actual purchase behavior is necessary. How effectively various exogenous variables create intention towards healthy-packaged food and later how effectively the strong intention converted into firm actual purchase behavior is required to be investigated in next phase of the current model. Therefore, it is suggested for the researchers who have intention to replicate the current model in Pakistani environment better to include actual purchase behavior.

The theoretical framework of the intended was designed for developing countries respondents and the results were very effective and fruitful. It is better to involve other developing countries and to investigate their consumers' intentions with the help of current model. And compare the results with current study. This method will assist future researchers that current model can better explain the developing countries' consumers intentions towards consumption of healthy-packaged food items. This will also provide the cross cultural analysis of consumers' intention towards the consumption of healthy-packaged food items.

For the robustness of current model the target population should be change. Although university MBA students in future become the opinion leaders of their families but their opinions influence by other adult family members. Therefore, it is better to target the population which is directly involved in purchasing and consumption of healthy-packaged food items.

5.8 Conclusion

To sum up the complete agenda of current study it is better to provide quick glance of the complete findings. The aim of the study was to provide a comprehensive model for the investigation of respondents' intention towards healthy-packaged food consumption. To achieve that target researcher of the study has involved Pakistani consumers because Pakistani market is an emerging market regarding packaged food items. In aforementioned studies the antecedents of packaged purchase decisions were expire dates, manufacturing dates, ingredients and general nutrients information which are the part of back of pack labeling. In contrary to that the uniqueness of the current study is that to examine the effect of front of pack labeling formats such as traffic lights symbols and health claims on Pakistani consumers' intention towards healthy-packaged food items.

The outcome of the study has unveiled that the combination of traffic lights symbols, health claims and user friendly food label with theory of planned behavior have better explained the behavioral intention of consumers towards healthy-packaged food consumption. Furthermore, results have answered a question that how the food related

information should be printed on food label for the convenience of consumers. Unnecessary detail on packaged food label should be avoided by food processing companies. The avoidance of overcrowded label information make consumers confused and this confusion lead them to shun the consultation of food labels while purchasing packaged foods and finally direct individuals towards unbalance consumption of packaged food. The unbalance and over consumption of packaged food increase the health related issues. These health related diseases not only increasing the medical cost of under developing and developing countries but developed countries also its victim. Therefore, the current model is an opportunity to investigate it with more dynamic respondents to ensure its robustness for other developing countries.

As far as the significance of path built in current study with direct and indirect status majority of them accepted. Attitude towards food label fully mediated with health claims and user friendly food label. In contrary to that traffic lights symbols which is considered to be the easiest method for nutritional information understanding did not having direct or indirect effect on Pakistani consumers. The understanding of Pakistani consumers pertaining to the disclosure of nutritional information with traffic lights symbols is not effective. Therefore, Pakistani consumer considers traffic lights symbols a confusing format to inform individuals regarding food label information. The aforementioned studies have indicated that in TPB attitude is having the highest and always significant positive effect on intention. In contrary to that in current study subjective norm is having that status. But attitude remains significant positive effect on intention. The effect of subjective norm is due to cultural effect of Pakistan. In Pakistani societies families take opinions from others especially purchasing healthy-

packaged food items. Even food processing companies depict such notions in their advertisements. Therefore, although the antecedents of attitude towards food label were very strong and effect but the influence of subjective norm has taken the superiority for creating intention towards healthy-packaged food consumption. Self-efficacy was the third construct of TPB also having positive significant effect on intention.

Moreover, present study has involved the big five personality traits as moderator. In this moderation there were only two personality traits which have influenced the relationship of attitude and intention namely conscientiousness and agreeableness. They have weaken the relationship which indicated that people who are conscientious and take opinions from others take rational decisions towards consumption of even healthy-packaged food products and do not purchase them blindly. The relational decisions towards consumption of packaged food replaced healthy-packaged food items with fresh food in shopping cart.

The overall model suggests that various factors involved in developing consumer's intention towards selection of healthy packaged food. There are some external and internal factors which develop sense of healthy diet among consumers. These conscious and informed decisions keep individuals away from diet related diseases.

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Vasiljevic, M., Pechey, R., & Marteau, T. M. (2015). Making food labels social: The impact of colour of nutritional labels and injunctive norms on perceptions and choice of snack foods. *Appetite*, *91*, 56–63.

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APPENDIX A - QUESTIONNAIRE

Research Instrument

SCHOOL OF BUSINESS MANAGEMENT

UNIVERSITI UTARA MALAYSIA

FACTORS AFFECTING CONSUMER'S HEALTHY PACKAGE FOOD CONSUMPTION INTENTION

For further information, please contact zzafarmirza@gmail.com

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE

School of Business Management

Universiti Utara Malaysia

06010 UUM Sintok, Kedah Darul Aman Malaysia

Tel : (604) 928 4000, Fax : (604) 928 3053

Dear Participant,

My name is Muhammad Zeeshan Zafar and doing PhD from University Utara Malaysia, Malaysia. My PhD specialization is marketing. The intended topic is "FACTORS AFFECTING CONSUMER'S HEALTHY PACKAGE FOOD CONSUMPTION INTENTION ". For the accomplishment of my PhD research your valuable opinion is necessary and you are the most suitable candidate for this survey. Therefore I am inviting you to complete the attached questionnaire.

The attached questionnaire has been designed according to your convenience. In all questions you have multiple options and you have to choose appropriate one. For your comfort the questionnaire is divided into nine sections including demographical part. The questionnaire is comprised of 84 questions.

Due to the multiple options it will take approximately 20 minutes for the completion. If you find that my work and/ or finding can assist you in your academic work I can provide copy of my complete results on your request. You can send me request at my email address which is mentioned below.

I need your volunteer participation. Your honest opinion is most decisive one. If you are interested to participate in this survey kindly complete the attached questionnaire and send me back as soon as possible at my postal address.

Regards

_____

Muhammad Zeeshan Zafar
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University Utara Malaysia
Malaysia
zzafarmirza@gmail.com

_____

Dr. Noor Azmi Hashim
Supervisor
University Utara Malaysia
Malaysia

_____

Dr. Fairol bin Halim
Co-Supervisor
University Utara Malaysia

Food processing companies are demonstrating the nutritional information with health claims and traffic lights symbols. The following images will guide respondents pertaining to the health claim statements and traffic lights symbols. Companies are designing methods for easy to understand food label information for informed decisions at point of purchase.

<u>Health Claims Formats</u>

<u>Traffic lights Symbols Formats</u>

Criteria for Traffic Light Labelling for Food per 100 Grams (g)			
Ingredient	Green (low content)	Amber (medium content)	Red (high content)
Fat	less than 3.0 g	between 3.0 g and 20 g	more than 20 g
Saturated fats	less than 1.5 g	between 1.5 g and 0.5 g	more than 5.0 g
Sugar	less than 0.5 g	between 0.5 g and 12.5 g	more than 12.5 g
Salt	less than 3.0 g	between 3.0 g and 1.5 g	more than 1.5 g

Criteria for Traffic Light Labelling for Drinks per 100 ml			
Ingredient	Green (low content)	Amber (medium content)	Red (high content)
Fat	less than 1.5 g	between 1.5 g and 10 g	more than 10 g
Saturated fats	less than 0.75 g	between 0.75 g and 2.5 g	more than 2.5 g
Sugar	less than 2.5 g	between 2.5 g and 6.3 g	more than 6.3 g
Salt	less than 0.3 g	between 0.3 g and 1.5 g	more than 1.5 g

Green: Eat often – desirable   Amber: Eat occasionally – neutral   Red: Eat sparingly – undesirable

The following questionnaire has been designed to investigate the healthy packaged food intention of an individual. Questionnaire comprises of nine sections. Each section has multiple questions.

SECTION A
TRAFFIC LIGHT SYMBOLS

Listed below are a series of statements that represents your opinion towards traffic light symbols (TLS) that are used to demonstrate the high, medium and low fat. Please indicate the degree of your agreement or disagreement with each statement by circling **ONE** of the five alternatives after each statement.

Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Traffic light symbols (TLS) are used to demonstrate the high, medium and low fat. Your opinion are required for the significance of Traffic light symbols on Food label

No.	Statements					
1.	Food Nutrients with red, yellow and green traffic lights is effective for healthy-packaged food selection	1	2	3	4	5
2.	Familiarity of traffic lights symbols on packaged food label take consumer's attention	1	2	3	4	5
3.	Traffic lights symbols easily demonstrate high, medium and low (fat, sodium, salt, saturated fat and fiber) information	1	2	3	4	5
4.	Traffic lights symbols benefit consumer for healthy-packaged food selection.	1	2	3	4	5
5.	Traffic light colors' labels influence consumer to select healthy-packaged food.	1	2	3	4	5

SECTION B
HEALTH CLAIMS

Listed below are a series of statements that represents your opinion towards regarding product's positive effect on health. Please indicate the degree of your agreement or disagreement with each statement by circling **ONE** of the five alternatives after each statement.

Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Health claims are used to disclose the information on food label regarding product's positive effect on health

No.	Statements					
6.	Energy claims such as "Low Energy", "Energy-Reduced" and "Energy Free" at food label help consumer to select healthy-packaged food.	1	2	3	4	5
7.	Fat claims such as "Low Fat", "Fat-Free", "Low Saturated Fat" and "Saturated Fat-Free" at food label help consumer to select healthy-packaged food.	1	2	3	4	5
8.	Sugar claims such as "Low Sugar", "Sugars-Free" and "With no Added Sugars" at food label help consumer to select healthy-packaged food.	1	2	3	4	5
9.	Vitamin claims on food labels help consumers to select healthy-packaged food.	1	2	3	4	5
10.	Fiber claims such as "Source of Fiber" and "High Fiber" at food label help consumer to select healthy-packaged food.	1	2	3	4	5
11.	Sodium/salt claims such as "Low Sodium/Low Salt", "Very Low Sodium/ Very Low Salt"," Sodium-Free/Salt Free" at food label help consumer to select healthy-packaged food.	1	2	3	4	5

SECTION C
USER FRIENDLY FOOD LABEL

Listed below are a series of statements that represents your opinion towards regarding information displayed on food label. Please indicate the degree of your agreement or disagreement with each statement by circling **ONE** of the five alternatives after each statement.

Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Food processing companies design food label user friendly regarding information displayed on food label for easy to understand overall food label

No.	Statements					
12.	Availability of required information on food label benefit consumer.	1	2	3	4	5
13	Clear and easy to understand food label information benefit consumer.	1	2	3	4	5
14.	Simple and straightforward food label information benefit consumer.	1	2	3	4	5
15.	Quick facts on food label with easy to read language benefit consumer.	1	2	3	4	5
16.	Avoiding too much category of information at food label benefit consumer.	1	2	3	4	5
17.	Brief information on food label benefit consumer.	1	2	3	4	5
18.	Detailed with simple words' information on food label benefit consumer.	1	2	3	4	5

SECTION D
ATTITUDE TO READ FOOD LABEL

Listed below are a series of statements that represents your opinion towards reading food label. Please indicate the degree of your agreement or disagreement with each statement by circling **ONE** of the five alternatives after each statement.

Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Individual sometime take interest or sometime ignore reading food label while purchasing food items.

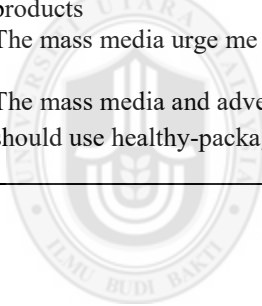| No.	Statements					
19.	A food label is a good source of information for healthy-packaged food selection	1	2	3	4	5
20.	Easy to understand information on food labels is supportive for healthy-packaged food selection	1	2	3	4	5
21.	Food labels provide good quality information.	1	2	3	4	5
22.	Food labels contain sufficient information for healthy-packaged food selection.	1	2	3	4	5
23.	Symbols on food labels are a useful source of information for healthy-packaged food selection	1	2	3	4	5

SECTION E
SUBJECTIVE NORM

Listed below are a series of statements that represents your opinion towards individual decision making. Please indicate the degree of your agreement or disagreement with each statement by circling **ONE** of the five alternatives after each statement.

Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

While purchasing any food item individual decision making influenced by some significant people

No.	Statements					
24.	People important to me think I should eat healthy-packaged food	1	2	3	4	5
25.	People important to me approve to eat healthy-packaged food	1	2	3	4	5
26.	People important to me want me to eat healthy-packaged food	1	2	3	4	5
27.	Many people important to me eat healthy-packaged food	1	2	3	4	5
28.	The mass media suggest that I should use healthy-packaged food products	1	2	3	4	5
29.	The mass media urge me to use healthy-packaged food products	1	2	3	4	5
30.	The mass media and advertising consistently recommended that I should use healthy-packaged food products	1	2	3	4	5

SECTION F
SELF-EFFICACY

Listed below are a series of statements that represents your opinion towards individual decision making. Please indicate the degree of your agreement or disagreement with each statement by circling **ONE** of the five alternatives after each statement.

Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

While purchasing food items individual most of the time feels comfortable to take decision and sometime found him/her difficult to take decision.

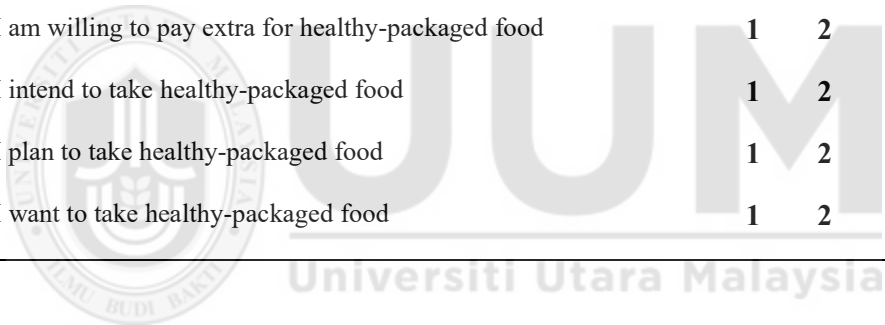| No.	Statements					
31.	For me it is difficult to select healthy-packaged food due to small font size at a food label.	1	2	3	4	5
32.	For me it is difficult to select healthy-packaged food due to lack of knowledge about nutrients.	1	2	3	4	5
33.	My nature to eat quickly hinders me to select healthy-packaged food.	1	2	3	4	5
34.	It is entirely up to me to select healthy-packaged food	1	2	3	4	5
35.	Shopping foods with others (e.g., friends) make difficult for me to select healthy-packaged food	1	2	3	4	5
36.	For me it is difficult to select healthy-packaged food because nutritional information is placed at the back of the pack food label	1	2	3	4	5
37.	It is easy to select healthy-packaged food if I can understand the nutrients on the label (e.g., Calorie, fat, etc.).	1	2	3	4	5
38.	It is easy to select healthy-packaged food if I can understand the nutrient content per serving size on the label (e.g., Calorie 400kcal, fat 10g, etc.)	1	2	3	4	5
39.	It is easy to select healthy-packaged food if I can understand the percentage daily values of nutrients on the label	1	2	3	4	5

SECTION G
HEALTHY PACKAGE FOOD CONSUMPTION INTENTION

Listed below are a series of statements that represents your opinion towards purchasing food item. Please indicate the degree of your agreement or disagreement with each statement by circling **ONE** of the five alternatives after each statement.

Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

In your daily routine, while purchasing food item, quality of food for your better health is most significant

No.	Statements					
40.	I give importance to nutrients in the purchasing of healthy-packaged food items	1	2	3	4	5
41.	I mostly prefer to eat healthy-packaged food	1	2	3	4	5
42.	I frequently purchase healthy-packaged food	1	2	3	4	5
43.	I am willing to pay extra for healthy-packaged food	1	2	3	4	5
44.	I intend to take healthy-packaged food	1	2	3	4	5
45.	I plan to take healthy-packaged food	1	2	3	4	5
46.	I want to take healthy-packaged food	1	2	3	4	5

SECTION H
PERSONALITY TRAITS

Listed below are a series of statements that represents your opinion towards five personalities on the bases of their distinguish attributes. Please indicate the degree of your agreement or disagreement with each statement by circling **ONE** of the five alternatives after each statement.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Disagree
1	2	3	4	5

Psychology researchers have categorize individual into five personalities on the bases of their distinguish attributes.

No.	Extroversion					
47.	Extroverted	1	2	3	4	5
48.	Energetic	1	2	3	4	5
49.	Talkative	1	2	3	4	5
50.	Bold	1	2	3	4	5
51.	Active	1	2	3	4	5
52.	Assertive	1	2	3	4	5
53.	Adventurous	1	2	3	4	5

	Agreeableness					
54.	Warm	1	2	3	4	5
55.	Kind	1	2	3	4	5
56.	Cooperative	1	2	3	4	5
57.	Unselfish	1	2	3	4	5
58.	Agreeable	1	2	3	4	5
59.	Trustful	1	2	3	4	5
60.	Generous	1	2	3	4	5

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

No.	Conscientiousness					
61.	Organized	1	2	3	4	5
62.	Responsible	1	2	3	4	5
63.	Conscientious	1	2	3	4	5
64.	Practical	1	2	3	4	5
65.	Thorough	1	2	3	4	5
66.	Hardworking	1	2	3	4	5
67.	Thrifty	1	2	3	4	5

	Neuroticism					
68.	Calm	1	2	3	4	5
69.	Relax	1	2	3	4	5
70.	At ease	1	2	3	4	5
71.	Not envious	1	2	3	4	5
72.	Stable	1	2	3	4	5
73.	Contented	1	2	3	4	5
74.	Unemotional	1	2	3	4	5

	Openness					
75.	Intelligent	1	2	3	4	5
76.	Analytical	1	2	3	4	5
77.	Reflective	1	2	3	4	5
78.	Inquisitive	1	2	3	4	5
79.	Imaginative	1	2	3	4	5
80.	Creative	1	2	3	4	5
81.	Sophisticated	1	2	3	4	5

SECTION I
DEMOGRAPHIC QUESTIONS

Listed below are a series of statements that represents your demographic profile. Please give your personal data by ticking 'X' in the appropriate box.

82. **Your age?**

18 to 23

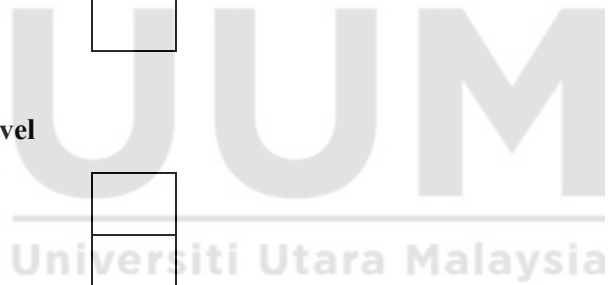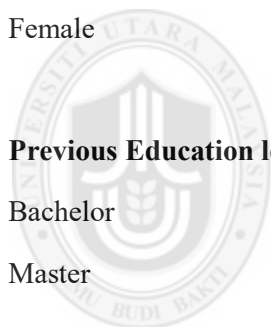24 to 29

30 to 35

36 and above

83. **Gender**

Male

Female
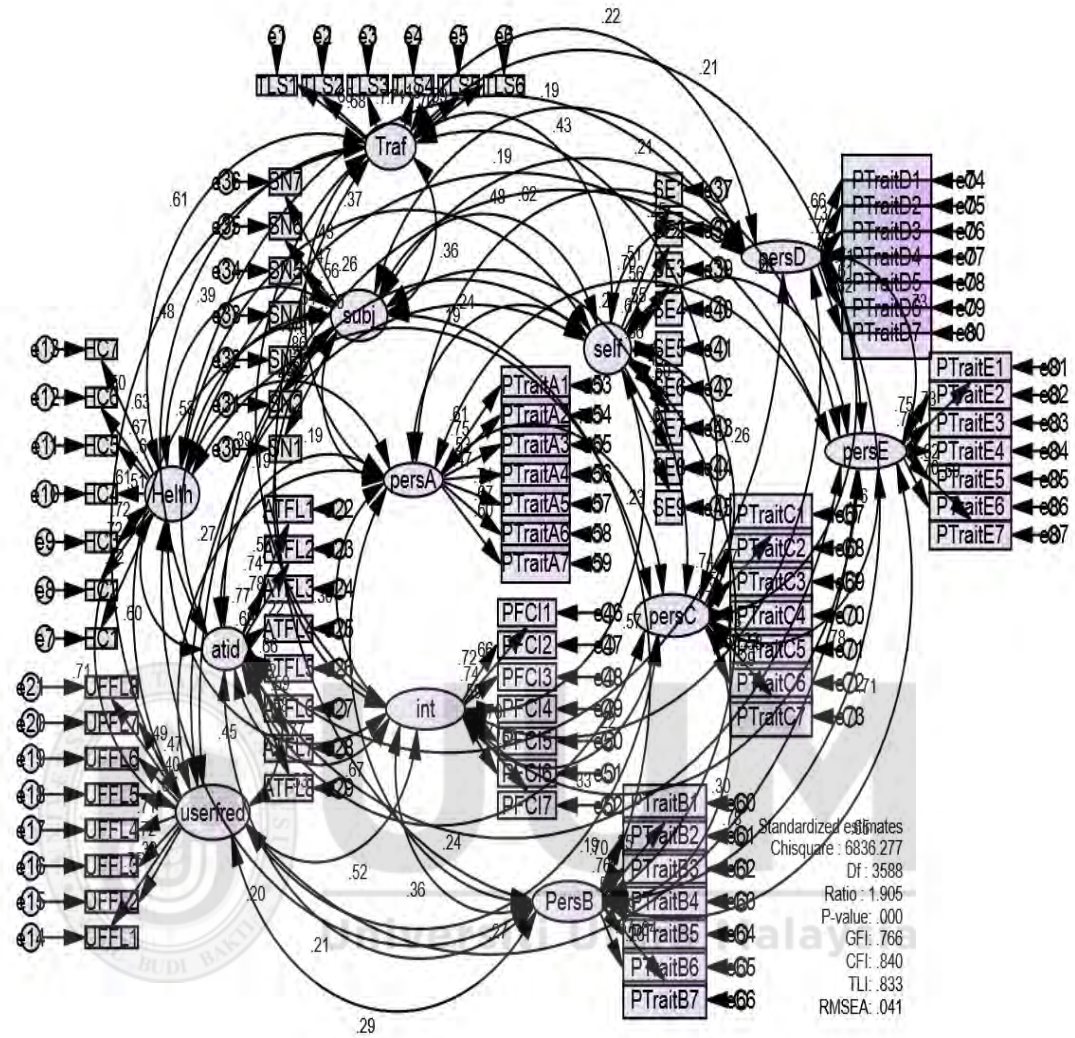
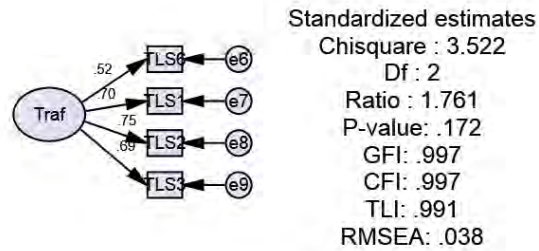84. **Previous Education level**

Bachelor

Master

THANK YOU

Appendix B – SUPPLEMENTARY MODELS

Measurement model (without fit)

Standardized estimates
Chisquare : 6836.277
Df : 3588
Ratio : 1.905
P-value: .000
GFI: .766
CFI: .840
TLI: .833
RMSEA: .041

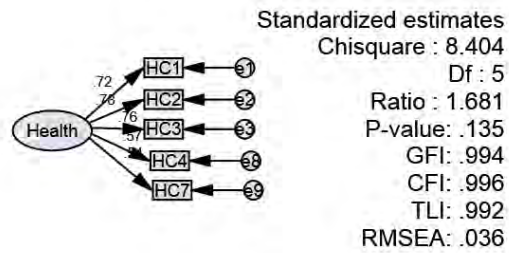**Traffic lights symbols model after fit**

User friendly food label model after fit
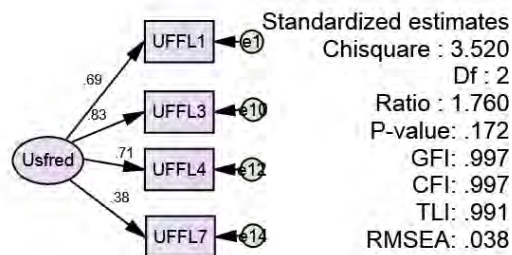
Health Claims model after fit

Standardized estimates
Chisquare : 8.404
Df : 5
Ratio : 1.681
P-value: .135
GFI: .994
CFI: .996
TLI: .992
RMSEA: .036

Subjective Norm model after fit

Standardized estimates
Chisquare : 4.019
Df : 2
Ratio : 2.010
P-value: .134
GFI: .996
CFI: .998
TLI: .994
RMSEA: .043
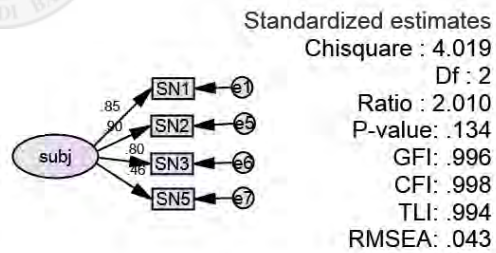
Self-Efficacy model after fit

Standardized estimates
Chisquare : 8.478
Df : 5
Ratio : 1.696
P-value: .132
GFI: .994
CFI: .990
TLI: .980
RMSEA: .036

Attitude towards food label model after fit

Standardized estimates
Chisquare : 2.216
Df : 2
Ratio : 1.108
P-value: .330
GFI: .998
CFI: 1.000
TLI: .999
RMSEA: .014
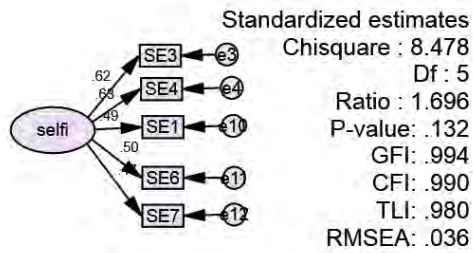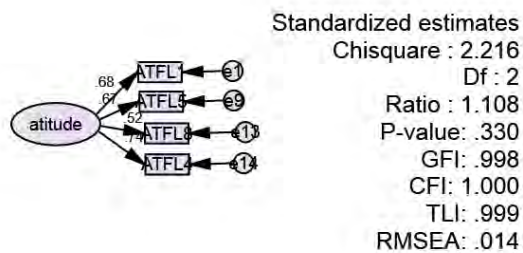
Intent ion to consume package food model after fit

Standardized estimates
Chisquare : 2.817
Df : 2
Ratio : 1.408
P-value: .245
GFI: .997
CFI: .999
TLI: .996
RMSEA: .028