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Modeling Attitude Components Affecting the Acceptance of Functional Dairy Foods among Iranian Urban Consumers

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Abstract

Since conventional foods can have different negative effects on human health and cause a variety of diseases, including cancer, the use of functional foods is highly recommended. In this study, the attitudinal factors affecting the acceptance of functional dairy foods (FDF) by urban consumers in Rasht (Guilan province, northern Iran) were investigated. Data were obtained from 223 households in Rasht City. Structural Equation Modeling (SEM) was used to investigate the effects of the general purchasing component as well as those of benefits of FDF, need of functional dairy foods, confidence in functional dairy foods, safety of functional dairy foods, health consciousness and healthy lifestyle, and willingness to buy FDF. The results show that the components of attitude towards healthy lifestyle and the general component of purchasing were the most effective factors in determining the acceptance of FDF by the households of Rasht City. The designed model explains 79.5 percent of the variation in willingness to use FDF. Given the benefits of consuming these products in preventing diseases and reducing health costs, public investments in awareness raising campaigns are needed to promote healthy lifestyle among urban consumers and increase the acceptance of FDF in Iran.

Keywords:
Functional dairy foods; general component of purchasing; healthy lifestyle; Iran; structural equation modeling

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INTRODUCTION

Health is one of the most frequently mentioned motivations when consumers make their food choices (Lappalainen et al., 1998; Steptoe et al., 1995). The term 'functional foods' was first coined in Japan in 1994 and they were considered as "*food products fortified with special constituents that possess advantageous physiological effects*" (Kubomara, 1998). Diplock et al. (2000) gave a widely adopted working definition, which describes a functional food as a food that "*affect[s] beneficially one or more target functions of the body, beyond adequate nutritional effects, in a way that is relevant to either an improved state of health and wellbeing and/or reduction of risk of disease*." According to the International Life Sciences Institute (Ashwell, 2004), functional foods are those that include a variety of relevant components to improve health status or reduce the risk of diseases. When fortified with special constituents, some of the functional foods can not only enhance physiological functions but also reduce disease risks, resulting in improved physical and mental well-being of men and women (Kwak & Jukes, 2001; Stanton et al., 2005; Menrad, 2003; Roberfroid, 2000a). Functional foods thus represent an important growth category for the agri-food sector in many countries around the world (Sibbel, 2007).

The steady increase in life expectancy, the desire of older people for improved quality of their later lives, and the increasing cost of healthcare are the main reasons that explain why there is an increasing demand for functional foods designed to confer health benefits (Roberfroid, 2000a, 2000b). Bimbo et al. (2017) estimate the market value for food with health claims at $168 billion in 2013, with an annual average growth rate of 8.5 percent, and it is forecasted to exceed $300 billion by 2020. Nearly 90 percent of American adults acknowledge the benefits of functional food. Food companies attracted by this potential have been investing in the development of new nutritionally modified and functional products (Khan et al., 2014). In Iran, the demand of FDF and the opportunities of their development on the market seem to be quite favorable and the awareness of the consumers is relatively high (Mahmoudi et al., 2015).

In addition to the commercial agri-food sector, the academic and governmental sectors have also focused on functional food development over the past decade. Numerous studies indicate that consumers are increasingly reflective in matters of health and willingness to adopt health-oriented changes in their eating habits (Niva, 2007; Prättälä, 2003; Saba, 2001). There are more and more consumers believing that foods contribute directly to their health (Mollet & Rowland, 2002; Young, 2000). However, the absence of a universally accepted definition of functional foods is one of the major difficulties encountered in assessing the potential health benefits from such foods (Blades, 2000; Lucchina, 2003; Heasman & Mellentin, 2001; Roberfroid, 2002).

Human food choice is a function of a multitude of factors. Such a complex food choice process influences food production systems and consumers' nutrient intake as it determines what foods consumers buy and eat (Furst et al., 1996). Several factors influence the choice of specific types of goods by consumers. Knowing more about these factors and their impact on purchasing choices will help policymakers move towards maximizing consumer satisfaction and boosting the market. The mechanisms of functional food choice are similar to the choice of the so-called conventional food products, but there might be differences in the perceptions of the benefits of using functional foods (Urala & Lähteenmäki, 2003, 2004). With recent advancements in modern food science and technology, the food industry can now provide increasingly sophisticated methods for controlling and altering the physical structure and the chemical composition of a food product.

Functional foods promise improved health, better well-being, or enhanced functioning of physiological processes. The importance

placed on one's health is correlated with the intention to purchase functional foods (Tudoran et al., 2009). Consumers' beliefs in the health benefits of functional foods constitute an important factor affecting acceptance of these products (Verbeke, 2005). Therefore, people concerned about their health should be more interested in functional foods (Goetzke et al., 2014).

Increasingly affluent and ageing populations have become more concerned with protecting their health through diet. Consumers' acceptance of the concept of functional foods and a better understanding of its determinants are widely recognized as key factors in successfully negotiating market opportunities and consumer-led market orientation (Ares & Ga´mbaro, 2007; Gilbert, 1998, 2000; Grunert et al., 2000; Verbeke, 2005, 2006; Weststrate et al., 2002). As a consequence, there is a growing number of studies addressing cognitive, motivational, and attitudinal determinants of consumers' acceptance of functional foods and/or their willingness to use them in different countries (Bech-Larsen & Grunert, 2003; Bhaskaran & Hardley, 2002; Cox et al., 2004; Gilbert, 2000; Huotilainen et al., 2006; Jonas & Beckmann, 1998; Korzen-Bohr & O'Doherty, 2006; Poulsen, 1999; Urala and Lähteenmäki, 2003, 2004; Verbeke, 2005).

However, none of these studies examined all the attitude components simultaneously. Moreover, there is a research gap regarding the context of Iran as all these studies were carried out in other countries (e.g. Hungary, Italy, Germany). This research analyses the impact of different attitude components on the consumption and acceptance of FDF in Iran, taking into account all the known components in previous studies and using the structural equation approach. Despite much research into functional foods, not all people in a community are prepared to accept these foods. Therefore, it is important to investigate whether or not local consumers, with varying levels of health consciousness and contradictory healthy lifestyles, will have diverse attitudes toward functional foods and will differ in their willingness to use functional dairy products. The findings are hoped to provide some recommendations to the marketing agents in the FDF industry to develop marketing strategies and facilitate the consumption of these products. Therefore, this study investigated the prominent attitude components affecting the consumption of FDF among urban Iranian consumers. The FDF used in this study were:

a. Milk enriched with vitamin D. Vitamin D is a fat-soluble bioactive vitamin, which is sensitive to light, heat and oxygen (Ballard et al., 2007).

b. Probiotic yogurt. Probiotic yogurt is among the most popular probiotic products (Korbekandi et al., 2011; Tamime et al., 2005). Nowadays, probiotics are included in many products in order to promote their consumption. Therefore, the incorporation of probiotics into fermented milks such as yogurt, especially those containing probiotic bacteria, would potentially lead to a healthier product. It is argued that prebiotics may aid survival of probiotics in fermented milks during processing and storage (Capela et al., 2006).

c. Probiotic cheese (Cheddar cheese). Cheddar cheese may offer certain advantages over yogurt-type products in terms of delivery of viable probiotics, such as the reduced acidity of the cheese compared to yogurt, and the high fat content and texture of Cheddar cheese may offer protection to the microorganisms during passage through the gastrointestinal tract (GIT) (Stanton et al., 1998).

In the field of factors affecting the adoption of FDF, a comprehensive and expanded model was not available. Therefore, we reviewed all previous studies in the field of functional dairy food and used their variables in our study, and created a new framework for predicting consumer behavior. In this study, we used seven attitude components in our conceptual model; the definition of each component and the derived hypotheses are described hereafter.

General purchasing component

This indicator shows the level of informed purchasing and compliance with public standards when consumers buy functional foods. Within the purchasing situation, the recommendation of a product by health professionals and the familiarity with a brand seem to play an important role. Especially within the food sector, brand management is highly relevant (Staack, 2005). Different distribution channels imply distinct associated professionals with unlike knowledge about ingredients and their health effects. Three main ways of distribution are important for functional foods: pharmacy, drugstore and supermarket (Bröring, 2010). These show a descending amount of knowledge and therefore advice. The familiarity with a brand entails the trustworthiness as functional foods are credence goods whose utility impact is difficult or impossible to ascertain – even after the purchase (Roe & Sheldon, 2007). Thus, the first hypothesis of this research is as follows:

H1. General purchasing component has a positive effect on the acceptance of FDF.

Benefits of Functional dairy foods

The definition of probiotics has been changed several times since the first time it was proposed. For example, Fuller (1989), in order to elaborate the microbial nature of probiotics, had defined the word as "a live microbial feed supplement which beneficially affects the host animal by improving its intestinal balance." Recently, a widely accepted definition of probiotics has been proposed as "live microorganisms, which when consumed in adequate amounts, confer a health effect on the host" (Guarner & Schaafsma, 1998). In general, probiotics are believed to promote many health benefits in both human and animals upon ingestion in sufficient amounts (Salminen, 2001). The next hypothesis is as follows:

H2. The benefits of FDF have a positive effect on their acceptance.

Need of functional dairy foods

An unhealthy diet and some eating behaviors such as snacking/eating frequency, binge-eating patterns and eating out-of-home have been linked to high risk of obesity and finally to type 2 diabetes (WHO & FAO, 2003). Obesity is a chronic disease characterized by the expansion of adipose tissue and inflammatory component (de Heredia et al., 2012). Several epidemiologic studies reveal a parallel increase of the twin epidemics of obesity and diabetes, which is a chronic disease characterized by derangement in glucose metabolism and abnormalities in fat and protein metabolism (Mentreddy, 2007). The latter is a progressive condition in which the body becomes resistant to the normal effects of insulin and/or gradually loses the capacity to produce enough insulin in pancreas (Al-Goblan et al., 2014). Therefore, the third hypothesis of this research is as follows:

H3. Need of the FDF has a positive effect on their acceptance.

Confidence in functional dairy foods

The next factor is confidence in functional foods and it contains items that describe consumers' attitude towards the claims and information about functional foods or their health effects. In other words, this factor describes how individuals trust the information and how strongly they believe in the scientific basis of promised health effects (Urala & Lähteenmäki, 2004). Therefore, if consumers think a functional food can bring them a healthy body and a cheerful mood or they have greater confidence in it, then their willingness to use functional foods is more likely to be higher than the conventional ones. The next hypothesis of the study is as follow:

H4. Confidence in FDF has a positive effect on their acceptance.

Safety of functional dairy foods

Attitudes, which are relatively permanent and stable evaluative summaries about an item, are an important psychological construct because they influence and predict many behaviors (Kraus, 1995). Consumer attitudes towards food safety can be differenti-

ated based on the type of food safety issues of concern. Brewer et al. (1994) proposed that six factors dominated respondents' attitudes towards the safety of their food. They include chemical issues (e.g. hormones in milk and food additives), health issues (e.g. cholesterol contents and nutritional imbalances), spoilage issues (e.g. microbial contamination), regulatory issues (e.g. food inspection and labelling), deceptive practices (e.g. weight-reduction diets), and ideal situations (e.g. length of time for pesticide safety assessment). The next hypothesis that is proposed in this research is as follows:

H5. Safety of FDF has a positive effect on their acceptance.

Health consciousness

Health consciousness is the extent to which individuals are aware of and concerned about their wellness, and are motivated to improve or maintain their health as well as to prevent its deterioration (Mai & Hoffmann, 2015). Health-consciousness significantly influences consumers' decisions to purchase (un)healthy food (Chen, 2011; Goetzke et al., 2014). Previous research shows that a higher degree of health consciousness is related to a more positive attitude and a higher willingness to buy functional foods (Chen, 2011; Urala & Lähteenmäki, 2004). Verbeke (2005) found that Belgian consumers' beliefs about the health-related benefits of functional food are the main determinant of its acceptance. The next hypothesis tested in this research is as follows:

H6. Health consciousness has a positive effect on the acceptance of FDF.

Healthy lifestyle

The idea that one's lifestyle will affect longevity has become firmly ingrained in the Western belief system. It is well known that if a person lives a life characterized by high fat consumption, high stress levels, a lack of exercise, and a poor social support network, he/she will easily suffer from high blood pressure and might be further afflicted with vascular dementia (Whitlock et al., 1997). In recent years, lifestyle factors have become more and more important and are applied widely in describing how consumers make food decisions (Senauer et al., 1991). The lifestyle construct has a longstanding history in marketing research, which describes how people seek to express their identity in many areas such as activities, interests, and opinions (Wells & Tigert, 1971). It has been argued that a person's lifestyle does not need to be consistent across different life domains and should be restricted to certain life domains (Van Raaij & Verhallen, 1994). Hence, the last hypothesis that is proposed in this research is as follows:

H7. Healthy lifestyle has a positive effect on the acceptance of FDF.

According to the definitions that were presented in this section of the attitude components, the conceptual model used in this study is shown in Figure 1.

METHODOLOGY

In order to achieve the study goals, a questionnaire was used as the research tool. For data collection, face-to-face interviews were performed with 223 local residents in Rasht City during July 2016. The target population of this study is consumers living in Rasht, the capital of Guilan province in northern Iran. Stratified random sampling was used. Rasht has 204,054 households (Guilan Management and Planning Organization, 2020). Due to the use of structural equation modeling, we utilized an online calculator to calculate the sample size (Soper, 2019) that resulted 223 people.

In the first part of the questionnaire, individual characteristics such as gender, level of education, occupation, number of family members, income, and age were included. In the second part, the items of different attitude components (i.e. general purchasing component, benefits of FDF, necessity of FDF, confidence in FDF, safety of FDF, health consciousness and healthy lifestyle) were addressed using Likert spectrum.

Participants' socio-demographic character-

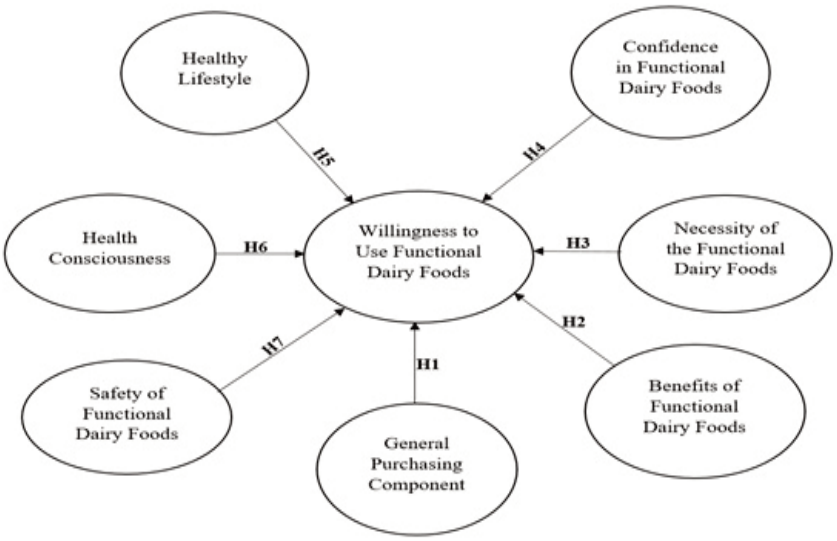

Figure 1. Conceptual Model for Investigating the Effect of Attitude Components.

Table 1

Socio-demographics of the respondents (n=223)

Variable	Definition	Frequency (%)	Mean	S.D.
Gender	Male	71.4	-	-
	Female	28.6	-	-
Level of education	Illiterate	0.89	-	-
	Lower than diploma	13	-	-
	Diploma	39.4	-	-
	Associate degree	12.1	-	-
	Bachelor	26.4	-	-
	MA	7.17	-	-
	PhD	0.89	-	-
Occupation	Expert	12.1	-	-
	Self-employed	42.15	-	-
	Employee	15.6	-	-
	Housewife	9.8	-	-
	Manual worker	6.72	-	-
	Unemployed	13.4	-	-
Family size	Number of family members	-	3.65	1.078
Age	In years	-	36.39	33.904

istics are shown in Table 1.

To assess the reliability of the questionnaire, 30 pretest questionnaires were completed. Moreover, 10 experts were consulted and their views were applied in the questionnaire. The duration of the interviews was 15-30 minutes, and questions were provided in Persian language. Before interviewing respondents, the purpose of the research was explained to them and their agreement was received.

Using Structural Equation Model (SEM) technique provides more advantage for parameter estimation and model testing than first generation techniques such as factor analysis, principal component analysis and regression analysis as it has a "holistic fashion" (Chin, 2000; Hair et al., 2011). In this

study, Smart-PLS was used as software. Since the research is an early stage assessment of FDF acceptance and all items in the data are not normally distributed (p<0.01 based on Kolmogorov–Smirnov's test), the partial least squares (PLS) is the most appropriate method for this study (Hair et al., 2012; Hair et al., 2011). It is also suggested to use PLS-SEM when predicting key target constructs, or identifying key driver constructs (Hair et al., 2011).

SEM is mostly considered as synonymous with covariance-based SEM (CB-SEM), which is well known and commonly preferred. However, it falls short for small data sets, which cannot satisfy its assumptions. PLS-SEM does not have strict assumptions such as distribution, sample size and measurement scale. Therefore, it enables research with small data sets (Sarstedt, 2008; Vinzi et al., 2010).

Especially for the indicators which are formative in nature, CB-SEM appears to be more problematic than PLS-SEM (Chin, 2010). The PLS-SEM modeling algorithm presents the outer and inner estimation stages. Thus, PLS-SEM analysis is completed in two consecutive steps. In the first step, the assessment of measurement model is performed. A number of non-parametric assessment criteria such as construct reliability (>0.6), outer loadings (>0.7), indicator reliability (0.5), and average variance extracted (0.5) must be satisfied to prove that the measurement model can be used in the structural model (Bagozzi et al., 1991). In the second step, results of the structural model are evaluated. With this purpose, bootstrapping and blindfolding procedures are advised. These procedures provide R^2 measures, and the level and the significance of path coefficients (Chin, 2000; Hair et al., 2011).

The indicators of goodness of fit used in this research are as follows: the was used to measure the observed frequency difference and the expected frequency of the classes of variables to determine whether the existing difference was significant or due to error or randomness (Ullman, 2001). Another major indicator of goodness fit in SEM is RMSEA. This indicator is used in most confirmatory factor analyzes and structural equation modeling (Nevit and Hancock, 2000). The NFI was first proposed by Bentler and Bonett (1980) in an article entitled Significance and Goodness-Fit Tests in the Analysis of Covariance Structures. The most important disadvantage is the lack of sensitivity to add a parameter to the template, so that the more parameters are added to the template, the value of this index increases. The CFI compares the model with some other options, such as the raw model or the standalone model. This index compares the research model with the model in which the variables are independent of each other (Bentler, 1990).

RESULTS AND DISCUSSION

Assessment of the measurement model

Outer loadings, composite reliability (CR), average variance extracted (AVE), and discriminant validity were assessed. In table 2, results of CR, AVE and discriminant validity assessment criteria for each construct are shown. CR is above 0.7 (minimum CR is 0.717) indicating that the scales have internal consistency. AVE was used to test convergent validity. AVE should be higher than 0.50 so that the latent variables explain more than half of the variance of its indicators (Fornell & Larcker, 1981; Hair et al., 2012; Henseler, et al., 2009). As seen in table 2, all constructs meet these criteria. The AVE, CR, and Alpha values are higher than the recommended thresholds of 0.5, 0.7, and 0.7, respectively (Bagozzi & Yi, 1988; Gefen et al., 2000; Nunnally, 1978). Based on these results, it can be stated that the structural model has an acceptable validity. In order to check the indicators mentioned in this section, we used Smart-PLS3 software and analysis results are displayed in detail in the Table 2.

In order to assess the goodness of fit criteria

Table 2
Item loadings, AVE, CR and alpha

Factor	Item	Loading	t-value	AVE	CR	Alpha
General purchasing component (GPC)	GPC1	0.740	15.375***	0.628	0.871	0.803
	GPC2	0.836	27.873***			
	GPC3	0.822	26.347***			
	GPC4	0.768	17.809***			
Benefits of Functional dairy foods (BF)	BF1	0.781	18.032***	0.621	0.867	0.796
	BF2	0.843	31.293***			
	BF3	0.805	21.864***			
	BF4	0.719	13.980***			
Necessity of Functional dairy foods (NF)	NF1	0.859	21.205***	0.663	0.797	0.796
	NF2	0.767	13.734***			
Confidence in Functional dairy foods (CF)	CF1	0.831	30.855***	0.654	0.850	0.736
	CF2	0.830	30.324***			
	CF3	0.763	18.458***			
Safety of Functional dairy foods (SF)	SF1	0.751	16.649***	0.638	0.841	0.764
	SF2	0.805	23.256***			
	SF3	0.760	19.565***			
Health consciousness (HC)	HC1	0.753	15.102***	0.729	0.843	0.719
	HC2	0.809	21.914***			
	HC3	0.833	29.593***			
Healthy lifestyle (HL)	HL1	0.843	21.474***	0.596	0.816	0.730
	HL2	0.873	30.378***			

*p<0.1, **p<0.05, *** p<0.01.

Table 3
Fit Indices of Conceptual Model

Index	Model value	Recommended value	Acceptance
ℵ2/df	3.29	<3 good fit <5 reasonable fit	Good
RMSEA	0.1	<0.05 good fit <0.10 reasonable fit	Reasonable
NFI	1	Above 0.9	Reasonable
CFI	1	Above 0.9	Reasonable

for structural model, the data were analyzed by Amos software version 21 and the results in Table 3 show that our model has a good fit.

The result of the estimation of path coefficients in the structural model and the outer weights in the measurement model performed by the Smart-PLS software are shown in Figure 2.

In the last step, we evaluated the discriminant validity of the measurement model. In order to do this, we used two criteria: 1- The numerical value of the outer loadings related to each item must be more than its cross loadings. 2- The numeric value of the second root of the AVE index for each item must be greater than the correlation of that item with the others (Boudreau et al., 2001; Fornell & Larcker, 1981). The results of this evaluation can be seen in Table 4.

In conclusion, in this section we have

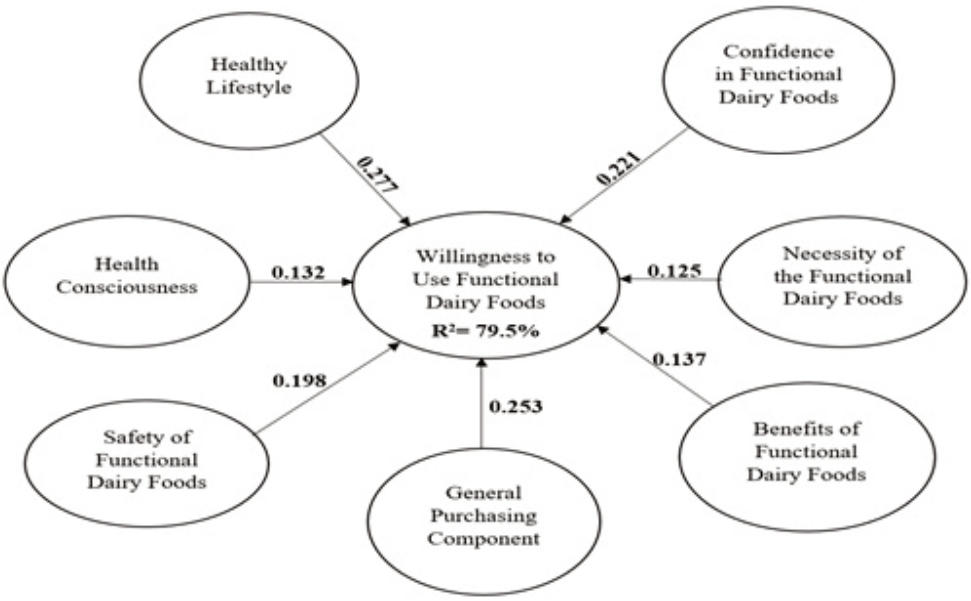

Figure 2. Estimated Model for Attitude Factors Affecting the Acceptance of FDF

Table 4
Correlations and AVEs (square root, shown in bold at diagonal)

	GPC	BF	NF	CF	SF	HC	HL	WF
GPC	**0.793**							
BF	0.504	**0.788**						
NF	0.226	0.223	**0.814**					
CF	0.350	0.417	0.378	**0.809**				
SF	0.372	0.450	0.224	0.403	**0.799**			
HC	0.318	0.344	0.102	0.296	0.430	**0.854**		
HL	0.250	0.308	0.390	0.475	0.282	0.176	**0.772**	
Acceptance	0.612	0.604	0.462	0.664	0.605	0.472	0.615	**1.000**

Legend - General purchasing component (GPC); Benefits of FDF (BF); Necessity of FDF (NF); Confidence in FDF (CF); Safety of FDF (SF); Health consciousness (HC); Healthy lifestyle (HL).

clearly and with reasoned results proved that our model has internal stability, convergent validity and reasonable reliability and is statistically significant.

Use of the structural model

The path significance levels were estimated using a bootstrap with 500 resamples. The R^2 criteria was used to assess the predictive capacity of the structural model (Chin, 1998). General purchasing component ($\beta\hat{}$= 0.253, p<0.01), benefits of FDF ($\beta\hat{}$= 0.137, p<0.01), necessity of FDF ($\beta\hat{}$= 0.125, p<0.01), confidence in FDF ($\beta\hat{}$= 0.221, p<0.01), safety of FDF ($\beta\hat{}$= 0.198, p<0.01), health consciousness ($\beta\hat{}$= 0.132, p<0.01) and healthy lifestyle ($\beta\hat{}$=0.277, p<0.01) had positive and significant effect on dependent variable. Thus, all hypotheses designed in this study were confirmed. Table 5 shows the results of the hypotheses used in this study in detail. The results indicated that healthy lifestyle was the most important component in explaining the willingness to use FDF (Y) given that when this component increases one standardized unit, Y increases 0.277 standardized

Table 5
Structural model results

Independent variables	Hypothesis	Beta	t-value	R^2
General purchasing component (GPC)	H1	0.253	0.000***	
Benefits of FDF (BF)	H2	0.137	0.000***	
Necessity of FDF (NF)	H3	0.125	0.000***	79.5%
Confidence in FDF (CF)	H4	0.221	0.000***	
Safety of FDF (SF)	H5	0.198	0.000***	
Health consciousness (HC)	H6	0.132	0.000***	
Healthy lifestyle (HL)	H7	0.277	0.000***	

*p<0.1, ** p<0.05, ***p<0.01

units, ceteris paribus. As R^2 showed, the model explains 79.5 percent of the variation in willingness to use FDF.

The results of the study showed that healthy lifestyle had the highest impact on the acceptance of FDF in Iran. This finding is in line with the results of Chen (2011), Plasek et al. (2020), Kraus (2015), Bimbo et al. (2017), Singh (2019) and can be important for those involved in the production and marketing of FDF.

The next important factor in acceptance of FDF is the general purchase component. The results suggest that the price of FDF was very important for consumers. Proper packaging is also important for consumers. This finding is in line with Hunter et al. (2019) and Zhu et al. (2015) and contradicts the results of Huang et al. (2019).

The component of health consciousness was another component that proved its positive and significant effect on the acceptance of functional dairy food. Similar results can be seen in the studies of Rifnaz et al. (2016), Hoque et al. (2018), Tudoran et al. (2009), Hung et al. (2016), Naylor et al. (2009), Marina et al. (2014), Chen (2011), Huang et al. (2019), and Landström et al. (2007).

The component of benefits of FDF was a further component that showed a positive and significant effect on the acceptance of FDF. This is in line with the studies of Chammas et al. (2019), Urala (2005), Kraus (2015), Siegrist et al. (2015), Cranfield et al. (2011), Lu (2015), Cazacu (2015), Bornkessel et al. (2014), Marina et al. (2014), Annunziata and Vecchio (2013), Tu et al. (2012), Naylor et al. (2009), Verbeke (2006), Van Kleef et al. (2005) and Singh (2019).

Confidence in FDF also had a positive effect on the acceptance of FDF, which is in line with the study of Huang et al. (2019).

CONCLUSION

In this study, seven attitudinal factors affecting the acceptance of FDF were studied and their importance was prioritized. The most effective component in the acceptance of FDF was that of healthy lifestyle. The general purchasing component, confidence in FDF, safety of FDF, benefits of FDF, health consciousness, and necessity for FDF were the next important components, respectively.

Healthy lifestyle was identified as the most important factor affecting the use of functional foods. This means that people who have higher life expectancy and care for a healthy lifestyle are potential consumers of FDF. In other words, producers in this area can try to better understand the lifestyle of consumers, thus planning and investing with higher returns. Given the benefits of consuming these products in preventing diseases and reducing health costs at the society level, it is suggested that government subsidies be put on the agenda to reduce the prices of these

products and increase their consumption.

The next effective component was confidence in FDF. This means that consumers' confidence should increase toward these foods. Raising public awareness toward the benefits of using these products and widespread advertisements in this area can increase public confidence in functional foods.

The safety of FDF was another component influencing the acceptance of such foods. Experts should ensure the safety of these products to prevent negative rumors. Providing documentaries from the place of production and displaying their production process can help the consumers to admit and verify the safety of these products.

Most people do not have enough information about the various benefits of FDF. Therefore, actions should be taken to better inform consumers about their benefits. Organizing conferences to explain the benefits of functional foods and their impact on the health can be very helpful. It is also important to organize temporary exhibitions for manufacturers of these products, where people can directly view, taste, and ultimately purchase them. Providing brochures containing information on the benefits of FDF and producers will be very useful. Another factor affecting the use of FDF is health consciousness. So, it can be concluded that the greater is a person's concern for their health, the more likely they are to buy FDF. In this context, it is essential to raise public awareness of the importance of protecting health by eating healthy foods.

Factors that can be mentioned as limitations of this study were: lack of familiarity of respondents with functional dairy food, lack of sufficient time to fill out the questionnaire, inability to sample from income deciles and different social classes, lack of financial and human resources to increase the scale of research.

Moreover, it is vital to strengthen research in Iran on functional foods in general and FDF in particular. Future studies should consider the attitudes of consumers and their willingness to use a variety of FDF that maintain their health and prevent various diseases. In the present study, the main focus was only on the attitudes affecting the acceptance of FDF.

Due to the limitations mentioned earlier, we had to focus on only one type of functional foods viz. dairy foods. It is suggested that the conceptual framework presented in this research be used to examine the attitude of consumers in accepting other types of functional foods to reduce and save research time and cost. It is also suggested that in addition to using the attitude variables identified in this study, more effective attitude variables should be used by researchers in this field.

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