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# The role of subjective norms in theory of planned behavior in the context of organic food consumption

The role of subjective norms in TPB

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## Abstract

**Purpose** – The purpose of this paper is to investigate the applicability of theory of planned behavior (TPB) with special emphasis on measuring the direct and moderating effects of subjective norms on attitude, perceived behavioral control and buying intention in context of buying organic food.

**Design/methodology/approach** – Structured questionnaires were randomly distributed among academic staffs and students of two universities in southern Punjab, Pakistan. Structural equation modeling was employed to test the proposed model fit.

**Findings** – Results of the study showed that subjective norms significantly moderate the relationship between attitudes and buying intention as well as between perceived behavior control and buying intention. Furthermore, subjective norms significantly influence attitude toward buying intention.

**Practical implications** – The paper provides useful insights for the academics and marketers. Academics may further explore the role of subjective norms in order to have a better understanding of their effects on TPB components. Whereas, marketers can target the opinion leaders and reference groups to increase the demand of organic food.

**Originality/value** – Majority of previous studies overlooked the role of subjective norms in determining the buying intentions with respect to organic food. The striking feature of this study is an in-depth emphasis on exploring the direct and moderating effects of subjective norms on the elements of TPB. Moreover, to the best of authors' knowledge, this is a pioneer study that comprehensively examines the linkage of components of TPB with organic food purchasing in Pakistan.

**Keywords** Pakistan, Organic food, Structural equation modelling, Consumer behaviour, Subjective norms, Buying intention

**Paper type** Research paper

## 1. Introduction

Over the past few years, many studies have investigated the linkage between diet and life threatening diseases (Ulbricht and Southgate, 1991; Doll and Peto, 1981). As a result, those studies generated awareness among people and helped them to comprehend the term “healthy” or “unhealthy” eating (Povey *et al.*, 1998) and also unveiled the social cognitive factors such as peoples' attitudes, beliefs and intentions toward eating a healthy diet. The role of social and cognitive factors has also drawn special interest of psychologists. The theory of planned behavior (TPB) model developed by Ajzen (1991) is used as one of the most recognized testing instruments for measuring the cognitive factors of the consumers. TPB proposes that behavior is determined by combination of



an individual's intentions to engage in a certain behavior. The intentions in turn are held responsible by attitude, subjective norms (perceived social influence/pressure) and perceived behavioral control (the degree to which behavior is perceived to be under the control of the individual). The TPB has been used to examine a wide variety of behaviors, several of which are food related. Some of the studies emphasized on reduction of fat intake in food (Paisley *et al.*, 1995; Paisley and Sparks, 1998), organic vegetable consumption (Sparks and Shepherd, 1992) and health-related eating behavior (Ajzen and Timko, 1986; Conner and Sparks, 1996). Consumers in the current world are becoming more concerned and conscious about eating healthy and environment friendly food. Past researchers have claimed that organically produced food is healthier, nutritious and has better taste (Perrini *et al.*, 2010; Krystallis and Chryssohoidis, 2005). Consequently, the consumers have developed positive attitude toward organic food consumption. Organic food buying concept, in the early years of its emergence, was solely in the mindset of the consumers belonging to developed countries. Contrarily, in recent times, the popularity of organic food farming and buying has grown rapidly in developing countries as well.

The global market of organic products has grown by more than 20 percent since 2005. According to latest available statistics, i.e. by year 2010, Australia (32 percent), Argentina (11 percent), USA (5 percent) and China (5 percent) have occupied the top positions with respect to land utilization for organic farming (Willer and Kilcher, 2012). Likewise, the size of organic food market got a tremendous growth in South Asian countries in recent years. It reflects that the consumers in the developing countries are also becoming quite concerned about organic products due to the improvement of quality of life and perceptual shift from traditional foods toward health conscious foods. In terms of number of organic farmers, India leads the list with 400,551, representing 25 percent of total organic producers in the world. The sales of organic products in India have increased by 138 percent in short span of five years; the sales figure of 39 million euros in 2005 rose to 93 million euros in 2010 (Willer and Kilcher, 2012). This scenario depicts that consumer choice has shifted somewhat toward organic products. This shift in demand has encouraged the organic producers to allocate and utilize more land for cultivation of organic products. In India, it reached to 1.03 million hectares cultivation in 2007, of which, 455,568 hectares are fully converted to organic farming (Menon, 2009). In Sri Lanka and Pakistan, area under organic farming reached to 43,664 and 22,103 hectares cultivation, respectively. The number of producers increased significantly in Pakistan from 28 to 1,045 in just five years from 2005 to 2010 (Willer and Kilcher, 2012). The aforementioned figures signify the wide spread acceptance of organic farming approach to accommodate the potential demand for organic food.

However, despite the increasing popularity and acceptance of organic food in the world market, the number of consumers who buy organic food on a frequent basis is quite low as reported in the previous research (Roddy *et al.*, 1996; Wandel and Bugge, 1997; Magnusson *et al.*, 2001; Tarkiainen and Sundqvist, 2005). It was stated that affordability and availability were among the major obstacles in buying organic food (Krystallis and Chryssohoidis, 2005). With reference to Pakistan, it was found that price of organic products were 10-30 percent higher than generic products. High price takes organic food purchase somewhat beyond the reach of lower to middle income group, the major consumer market in Pakistan. Moreover, a recent report stated that organic products are sold only at exclusive organic stores, and such exclusive distribution is hindering the potential growth opportunities of organic products (Stream Organic, 2013).

Thus it is reflected that possessing positive attitude toward purchasing organic food is not the sole determinant that can lead the consumers toward purchasing organic food. Hence, this study emphasizes on the role of subjective norms in driving organic food buying intentions. Surprisingly, in the past studies concerning organic food buying behavior, the role of subjective norms in shaping buying intentions has been ignored. More astonishingly, Magnusson *et al.* (2001) absolutely excluded subjective norms from the proposed model in their study on organic foods in Sweden. Sparks and Shepherd (1992) emphasized on subjective norms in their study, but explanatory power of subjective norm was relatively weak, even though significant. In order to enhance the predictive power of TPB model, this study examines the moderating effects of subjective norms on components of TPB within the context of organic food buying. There is a special emphasis on effects of subjective norms on other behavioral drivers like attitude and perceived behavior control which in turn have an impact on buying intention. In this regard, this paper aims to modify TPB by focussing on moderating effects of subjective norms on the relationship between perceived behavioral control and buying intention, and the relationship between attitude and buying intention.

As a contextual contribution, present paper focusses on the organic food buying in Pakistan in perspective of TPB. In case of Pakistan, which is gradually becoming a thriving organic market as reflected by the aforementioned statistics, there is hardly any quantitative research that has studied the elements of (TPB) in connection with organic food buying.

## 2. Literature review and hypotheses development

This section of the paper discusses in detail about the relevant past literature with respect to topic under study. Furthermore, the development of hypotheses is elaborated based on previous literature.

### 2.1 TPB

The origin of TPB can be traced back to the theory of reasoned action (TRA) (Fishbein, 1967; Fishbein and Ajzen, 1975). TRA emphasized on foreseeing human behavior by proposing that the behavior of a person is affected by behavioral intentions, which are primarily affected by attitudes toward the act and by subjective norms. Thus, TRA has two components; first, the attitude toward the act which is the function of perceived consequences, the consumer may link with the behavior. Second, subjective norms (the prime focus of this paper), are a function of beliefs about the significance of referents and motivation to act in accordance with those referents. These associations were supported by numerous articles related to consumer behavior and social psychology (Ryan, 1982; Sheppard *et al.*, 1988). An extension of the TRA is TPB, proposed by Ajzen (1991). TPB entails three concepts such as attitude formation, perceived behavioral control and subjective norms. The theory postulates that individuals' intention to perform a certain behavior is influenced by individuals' attitude (i.e. attitude toward buying organic food in the context of present study), perceived behavioral control (i.e. the extent to which consumers perceive that they can control their behavior toward a certain action) and subjective norms (i.e. importance of others' opinions).

### 2.2 Behavioral intention

The focal point of TPB is the individuals' intention to engage in a certain behavior. TPB is regarded as quite useful in envisaging a large variety of behavior (Sheppard *et al.*, 1988). TPB has frequently been applied in the domain of food choice.

Several past studies have applied TPB to study the behavioral intentions of consumers related with organic products (Kalafatis *et al.*, 1999; Saba and Messina, 2003; Tarkiainen and Sundqvist, 2005; Chen, 2007; Gracia and de Magistris, 2007; Thøgersen, 2009a; Dean *et al.*, 2008; Aertsens *et al.*, 2009; Voon *et al.*, 2011).

### 2.3 Attitude

Attitude is a psychological construct (Jung, 1971), which is shaped by cognition (thought), values (beliefs) and affection (emotions) toward a particular object (Hoyer and MacInnis, 2004; Dossey and Keegan, 2008). Thøgersen (2009a) and Michaelidou and Hassan (2008) revealed that “belief” about the consequences (better taste, healthier, environmentally friendly) is instrumental in leading consumers toward organic food consumption. Roitner-Schobesberger *et al.* (2008) further stressed that health consciousness factor was one of the main driving forces in selecting organic food in Thailand. Moreover, while forming cognition process in buying products, environment friendliness was considered as a major element in opting for organic food in Norway (Honkanen *et al.*, 2006). Furthermore, positive attitude related to product labeling, believability of advertising and certification from opinion leaders builds trust and confidence while choosing products. Trustworthiness was considered as major emotional variable for Italian buyers (Perrini *et al.*, 2010). In the light of aforementioned literature, it is hypothesized that attitude has a positive effect on organic food buying intention:

H1. Attitude has a positive effect on organic food buying intention.

### 2.4 Perceived behavioral control

Perceived behavioral control concerns with individuals' own judgment about their capabilities to engage in a particular behavior (Ajzen, 1991). It refers to the perception of the people about available resources such as buying power as organic food is comparatively expensive than non-organic food; and availability of time is also quite crucial as people need to find specialty shops to buy organic food in many countries like Italy, Germany, Spain, the Netherlands (Tarkiainen and Sundqvist, 2005). Similarly, organic food is sold at premium prices and its availability is limited to exclusive food outlets in Pakistan (Stream Organic, 2013).

Thøgersen (2009a) opined that perceived behavioral control shaped by perceived barriers and perceived ability influences organic food buying behavior. Perceived barriers such as price and availability are significant obstacles that hinder organic food consumption (Magnusson *et al.*, 2001; Hill and Lynchehaun, 2002; Vindigni *et al.*, 2002; McEachern and Willock, 2004; Padel and Foster, 2005; Krystallis and Chryssohoidis, 2005; Hughner *et al.*, 2007; Rodríguez *et al.*, 2008). In case of perceived abilities, majority of past studies have attributed income or financial resources as essential determinants of willingness to purchase organic food (Jager, 2000; Torjusen *et al.*, 2004; Kuhar and Juvancic, 2005; Ajzen, 2006; Gracia and de Magistris, 2007; Zepeda and Li, 2007; Riefer and Hamm, 2008). Hence, it is hypothesized that:

H2. Perceived behavioral control has a significant positive effect on the organic food buying intention.

### 2.5 Subjective norms

Subjective norms relate to the perceived social influences/pressures to indulge or not to indulge in a given behavior (Ajzen, 1991; O'Neal, 2007). Subjective norms reveal the

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beliefs of individuals about how they would be viewed by their reference groups if they perform a certain behavior.

Past studies have indicated that attitude is significantly related with subjective norms. Chang (1998), Shimp and Kavas (1984), Vallerand *et al.* (1992) and Tarkiainen and Sundqvist (2005) have found in their studies that there exists a significant causal path between subjective norms and attitude leading toward behavior (buying intention). Chang (1998) proposed that the impact of social environment on shaping attitude of the individuals should be thoroughly studied. Tarkiainen and Sundqvist (2005) took note of Chang's suggestion. In their study in Finland, they found a significant path from subjective norms to attitude toward purchasing organic food. Therefore, to study this causal path in further depth, it is hypothesized that:

*H3.* Subjective norms have a positive effect on attitude toward buying organic food.

Theory of needs proposed by McClelland (1987) suggested that individuals have a propensity to exhibit a behavior that is admired by their reference groups, as they seek relationships and group associations. Applied to organic food consumption, Chen (2007), Dean *et al.* (2008) and Thøgersen (2009b) found significant positive relationship between subjective norms and consumers' intention to purchase organic food. Thus, this study hypothesizes that:

*H4.* Subjective norms have a positive effect on the organic food buying intention.

In addition to direct effects the direct effect of subjective norms on TPB elements, we anticipated that subjective norms may also moderate the relationships between variables in the TPB. Such moderation effects are of significant interest as they may reveal the functional importance of various social processes which can enlighten us to further understand the relationship between variables in models such as the TPB (Povey *et al.*, 2000). While hoping to explore all potential moderation effects, we anticipated attitudes and perceived behavioral control to be more predictive of intentions when the social environment is conducive and favorable with respect to organic food consumption.

Past studies have also discussed about the indirect and the moderating effects of social influence variables on TPB components in the context of healthy eating (Povey *et al.*, 2000). He found that perceived social support significantly influences the relationship between attitude and buying intention, and perceived behavioral control and buying intention. Thus, in order to test the moderation effects of subjective norms in the context of organic food purchasing, it is hypothesized that:

*H5.* Subjective norms significantly moderate the effect of the attitude on the organic food buying intention.

*H6.* Subjective norms significantly moderate the effect of the perceived behavioral control on the organic food buying intention.

### *2.6 Research framework*

The theoretical base of this paper is founded by thoroughly reviewing the literature relevant to TPB. In this study, the TPB model (Ajzen, 1991) is further extended and modified by investigating the direct and indirect causal effects of subjective norms on

TPB components with reference to organic food purchasing in Pakistan. Figure 1 elaborates the proposed model in a sequential manner.

**3. Research methodology**

This section entails the discussion of data collection and sampling procedures. It also elaborates about the measurement of constructs and description of data analysis techniques.

*3.1 Sample and procedures*

The sample comprised of students and faculty members of two universities in the Southern-Punjab part of Pakistan. The rationale for selecting students and faculty members of universities was based on the belief that respondents with higher levels of education would be well aware of and familiar with the concept of organic food (Özfer and Ucar, 2008). Respondents belonged to varied set of demographics in terms of age, gender, income, education and marital status. Self-administered questionnaires were distributed among the respondents using simple random sampling technique. Totally, 184 useable questionnaires were obtained during three-week data collection period in December 2012.

*3.2 Measurement*

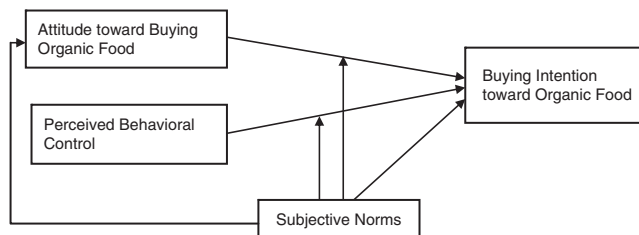
To measure attitude, perceived behavioral control, subjective norms and buying Intention, a structured questionnaire comprising of 22 items was adapted and modified based on previous studies (Ajzen and Fishbein, 1980; Misra *et al.*, 1991; Grunert and Juhl, 1995; Zotos *et al.*, 1999; Lockie *et al.*, 2004). Seven-point Likert scale was used for measurement of all the items ranging from “Total Disagreement (1)” to “Total Agreement (7).” Questionnaire items are given in Table I.

*3.3 Statistical analysis techniques*

The hypothesized model of this study was tested using the structural equation modeling (SEM) approach supported by AMOS 20 employing the maximum likelihood estimation method. This study followed the two-step approach suggested by Anderson and Gerbing (1988). The measurement model was evaluated before examining the structural model. Confirmatory factor analysis (CFA) was performed to establish the construct validity in the measurement model stage. After verifying construct validity, structural model was examined to test the hypotheses and model fit.

**4. Analysis and results**

This section entails descriptive and inferential analysis of data. Moreover, it includes the interpretation of results and findings.



**Figure 1.**  
Integrated framework on the effects of subjective norms on TPB components

Constructs	Items	Cronbach $\alpha$
Attitude toward buying organic food (ATTD)	(ATTD1) I prefer organic food because it is processed without any chemicals (ATTD2) I prefer organic food because it tastes better than non-organic food (ATTD3) I prefer organic food because it is more nutritious than conventional non-organic food (ATTD4) I prefer organic food as it causes less diseases than conventional food (ATTD5) I prefer organic food because it is environment friendly (ATTD6) I prefer organic food as no preservatives are used to enhance its shelf life (ATTD7) I believe that price of organic food is quite justified (ATTD8) It is exciting for me to buy organic food	0.786
Perceived behavioral control (PBC)	(PBC1) I can take the decision independently to buy organic food (PBC2) I have the financial capability to buy organic food (PBC3) I have the time to go for buying organic food (PBC4) I have complete information and awareness regarding where to buy organic food (PBC5) Organic food is readily available in the location where I reside (PBC6) I can handle any (money, time, information related) difficulties associated with my buying decision	0.746
Subjective norms (SN)	(SN1) The trend of buying organic food among people around me is increasing (SN2) People around me generally believe that it is better for health to use organic food (SN3) My close friends and family members would appreciate if I buy organic food (SN4) I would get all the required support (money, time, information related) from friends and family to	0.689
Intention to buy organic food (BI)	(BI1) I would look for specialty shops to buy organic food (BI2) I am willing to buy organic food in future (BI3) I am willing to buy organic food on regular basis (BI4) I would also recommend others to buy organic food	0.792

**Table I.**  
Measurement of  
constructs

#### 4.1 Demographic characteristics of respondents

Demographic characteristics of the respondents are presented in Table II, which shows diversity in terms of age, gender, income, education, marital status and residential area. Respondents' age ranged from 18 to 60 years. Majority of respondents (77.2 percent) were between 21 and 39 years old. Male respondents accounted for almost 75 percent of total sample. In total, 70 percent of the respondents belonged to lower to middle income social class. 26.6 percent of the respondents represented affluent social class. Education level of almost 90 percent of the respondents ranged from graduate to post graduate level. 64.2 percent of the respondents were unmarried. Totally, 82 percent of the respondents were residing in urban areas.



Demographic characteristics	Frequency	%	Cumulative (%)
<i>Age</i>			
18-20 years	4	2.2	2.2
21-39 years	142	77.2	79.4
40-60 years	38	20.6	100
<i>Gender</i>			
Male	147	74.5	74.5
Female	37	25.5	100
<i>Monthly family income</i>			
≤10,000 PKR <sup>a</sup>	3	1.6	1.6
10,001-50,000 PKR	87	47.3	48.9
50,001-99,999 PKR	42	22.8	71.7
≥100,000 PKR	49	26.6	98.4
Refused to disclose	3	1.6	100
<i>Educational level</i>			
Undergraduate	13	7.1	7.1
Graduate and post graduate	165	89.6	96.7
PhD	6	3.3	100
<i>Marital status</i>			
Bachelor (not engaged)	98	53.3	53.3
Engaged	20	10.9	64.2
Married (no kids)	21	11.3	75.5
Married (have kids)	45	24.5	100
<i>Residential area</i>			
Urban	151	82	82
Sub-urban	22	12	94
Rural	11	6	100

**Table II.**  
Sample characteristics

**Notes:**  $n = 184$ ; <sup>a</sup>1 PKR = 0.01 USD  
**Source:** Oanda (2013)

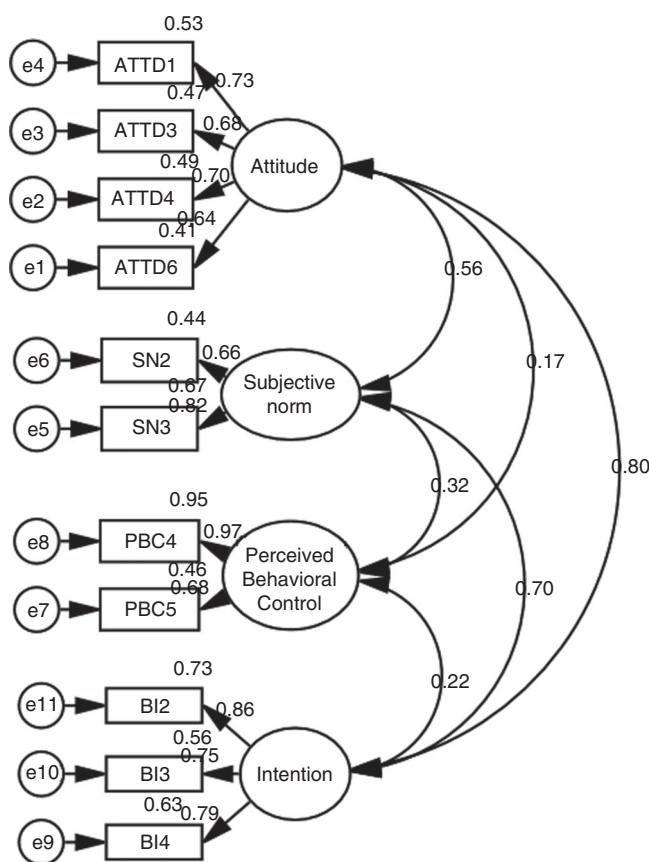
Furthermore, the mean values (where 1 is lowest and 7 is highest) of responses corresponding to the elements of TPB (refer to Table IV) exhibit that the sample respondents have highly positive attitude and buying intention toward organic food as indicated by the mean values of 5.875 and 5.922, respectively. The mean value for subjective norms was found to be 5.467. However, it was identified that the corresponding mean value for perceived behavioral control (4.527) is comparatively lower, indicating that the sample respondents do not have a higher level of self-confidence to engage in organic food buying despite of high-positive attitude and intentions toward organic food purchase.

#### 4.2 The measurement model results

The goodness of fit of the measurement model was established by confirming the content validity and the construct validity.

*Content validity.* To confirm the content validity, factor loadings can be used to ensure that all the items designed to measure a construct should load highly and significantly on the constructs they were designed to measure (Chin, 1998; Hair *et al.*, 2010). Figure 2 shows that all the items were highly and significantly loading on the respective constructs which confirms the content validity of the measurement model.

*Convergent validity.* According to the SEM literature, the convergent validity refers to the extent to which a set of indicators converges in measuring the concept of concern



**Notes:** Fit values  $\chi^2 = 57.278$ ; ratio = 1.507;  $p$ -value = 0.23;  $df = 38$ ; GFI = 0.946; AGFI = 0.907; TLI = 0.964; CFI = 0.975; RMSEA = 0.53

**Figure 2.**  
Measurement model

(Bagozzi and Yi, 1988; Hair *et al.*, 2010). The convergent validity, therefore, can be confirmed using the item's reliability, internal consistency (Cronbach's  $\alpha$  coefficient), composite reliability and the average variance extracted (AVE).

According to the CFA results reported in Table III, the factor loadings for all items were significant and exceeded the suggested cutoff level of 0.60 (Chin *et al.*, 1997). In addition, the results of internal reliability using Cronbach's  $\alpha$  values ranged from 0.70 to 0.83, higher than 0.70 as recommended by Nunnally and Bernstein (1994). Composite reliability values of all latent constructs ranged from 0.71 to 0.84 which were well above the acceptable level of 0.70 (Hair *et al.*, 2010).

Similarly, the average variances extracted, reflecting the overall amount of shared variance among the indicators measuring a particular latent construct ranged from 0.50 to 0.70, surpassing the acceptable threshold level of 0.50 (Bagozzi and Yi, 1988; Hair *et al.*, 2010).

Based on the significant importance of items in measuring their own constructs, all the latent constructs having composite reliability of at least 0.70 and AVE of at least

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Constructs	Items	Internal reliability Cronbach $\alpha$	Factor loadings	Convergent validity	
				Composite reliability (CR) <sup>a</sup>	AVE <sup>b</sup>
Attitude	ATTD1	0.78	0.731	0.78	0.5
	ATTD3		0.685		
	ATTD4		0.701		
	ATTD6		0.633		
Perceived behavioral control	PBC5	0.79	0.671	0.82	0.7
	PBC4		0.986		
Subjective norms	SN3	0.70	0.819	0.71	0.6
	SN2		0.664		
Buying intention	BI2	0.83	0.856	0.84	0.6
	BI3		0.750		
	BI4		0.792		

**Table III.**  
Confirmatory factor analysis results

**Notes:** <sup>a</sup>CR =  $(\sum \text{factor loading})^2 / \{(\sum \text{factor loading})^2 + \sum (\text{variance of error})\}$ ; <sup>b</sup>AVE =  $\sum (\text{factor loading})^2 / \{(\sum (\text{factor loading})^2 + \sum (\text{variance of error}))\}$ . All the loadings are significant at the 0.001 level of significance

0.50, it can be concluded that the measurement model has an adequate convergent validity level.

*Discriminant validity.* The discriminant validity is defined as the extent to which a set of variables of a particular construct differ from other constructs in the model. This implies that the variance shared among a set of items measuring a construct and their own construct is higher than the variance shared with other constructs in the model (Compeau *et al.*, 1999). Following the criterion suggested by Fornell and Larcker (1981), the discriminant validity is determined by comparing the square root of the AVE values with the correlations among the constructs. The results, as presented in Table IV, indicated that the square root of AVE as represented in the diagonal are higher than other values in its rows and columns. These results verifying that the model has adequate discriminant validity. In summary, the measurement model has confirmed adequate reliability, convergent validity and discriminant validity.

#### 4.3 Goodness of fit indicators

To measure the goodness of fit of the model, various measures were utilized. The observed normed  $\chi^2$  for measurement model was 1.507 ( $\chi^2 = 57.278$ ,  $df = 38$ ) which is  $< 3.0$  as suggested by Bagozzi and Yi (1988). Other fit indexes also indicated a good fit for the measurement model. The adjusted goodness-of-fit index (AGFI) was 0.907,

Constructs	1	2	3	4	Min	Max	Mean	SD
1. Buying intention	0.805				1.00	7.00	5.922	1.075
2. Subjective norms	0.696	0.746			1.00	7.00	5.467	1.274
3. Perceived behavioral control	0.216	0.314	0.843		1.00	7.00	4.527	1.683
4. Attitude	0.798	0.562	0.18	0.690	1.50	7.00	5.875	1.035

**Table IV.**  
Discriminant validity and descriptive analysis

**Note:** Diagonal values represent the square root of the average variance extracted while the off diagonal values represent the correlations among the latent constructs

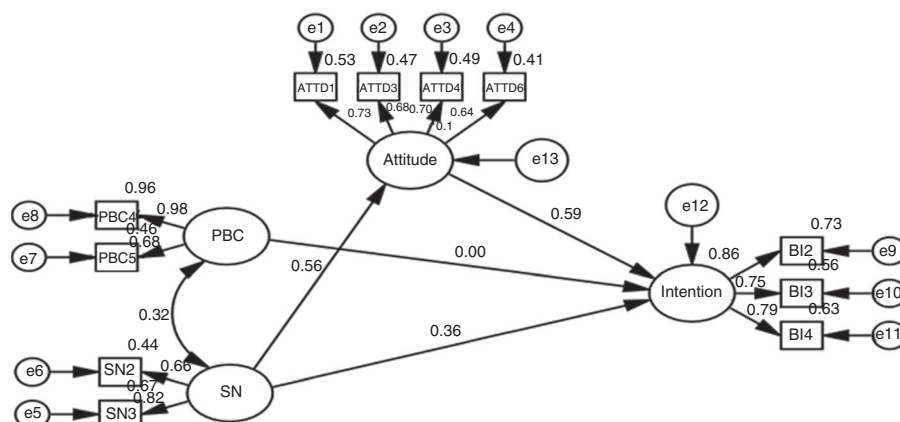
which is higher than the threshold value of 0.80 as suggested in the SEM literature (Chau and Hu, 2001). The non-normed fit index (NNFI or TLI) and comparative fit index (CFI) were 0.964 and 0.975, respectively, higher than 0.95 as suggested by Bagozzi and Yi (1988). In addition, the root mean square error of approximation (RMSEA) was 0.053, which is lower than 0.08 proposed by Browne and Cudeck (1993). The combination of these indicators confirms that the measurement model has fitted the data and it can efficiently reproduce the covariance matrix.

#### 4.4 Structural model results

Having confirmed the validity and reliability of the measurement model, the next step was to test the hypotheses by running the structural model. Figure 3 shows the causal linkages and fit statistics for the structural model. The overall goodness of fit of the model was acceptable when compared to the threshold values suggested in the SEM literature. The normed  $\chi^2$  was 1.469 which is  $< 3.0$ ; the AGFI was 0.909, higher than the threshold value of 0.80; the NNFI (or TLI) was 0.967 and CFI was 0.976, higher than the 0.95; and RMSEA was 0.051, which is lower than 0.08. Hence, the model has a good fit considering the threshold values suggested by Bagozzi and Yi (1988), Browne and Cudeck (1993) and Chau and Hu (2001).

As can be seen from the results reported in Table V, the effect of attitude and subjective norms on the organic food buying intention was significant at the 0.001 level of significance with indicators ( $\beta = 0.593$ ,  $t$ -value = 5.886,  $p < 0.001$ ) and ( $\beta = 0.363$ ,  $t$ -value = 3.473,  $p < 0.001$ ), respectively. Similarly, the results indicated that subjective norms have a positive significant impact on the attitude toward buying organic food at the 0.001 level of significance. Hence  $H1$ ,  $H3$  and  $H4$  were supported as postulated in the study.

On the other hand, the effect of perceived behavioral control on the intention to buy organic food was not statistically supported ( $\beta = -0.001$ ,  $t$ -value =  $-0.021$ ,  $p > 0.05$ ). These results did not support  $H2$  as proposed in this study.



**Notes:** Fit values  $\chi^2 = 57.279$ ; ratio = 1.469;  $p$ -value = 0.030;  $df = 39$ ; GFI = 0.946; AGFI = 0.909; TLI = 0.967; CFI = 0.976; RMSEA = 0.051

**Figure 3.**  
Structural model results

Hypothesis	Hypothesized direct effect	Path coefficient	t-value	p-value	Decision
H1	Attitude has a positive effect on organic food buying intention	0.593***	5.886	0.000	Supported
H2	Perceived behavioral control has a positive effect on the organic food buying intention	-0.001	-0.021	0.983	Not supported
H3	Subjective norms have a positive effect on the attitude towards buying the organic food	0.561***	5.117	0.000	Supported
H4	Subjective norms have a positive effect on the organic food buying intention	0.363***	3.473	0.000	Supported

**Table V.**  
Hypothesized direct effect

**Notes:** \*\*\* $p < 0.001$ ; \*\* $p < 0.01$ ; \* $p < 0.05$

#### 4.5 The moderation effects of subjective norms

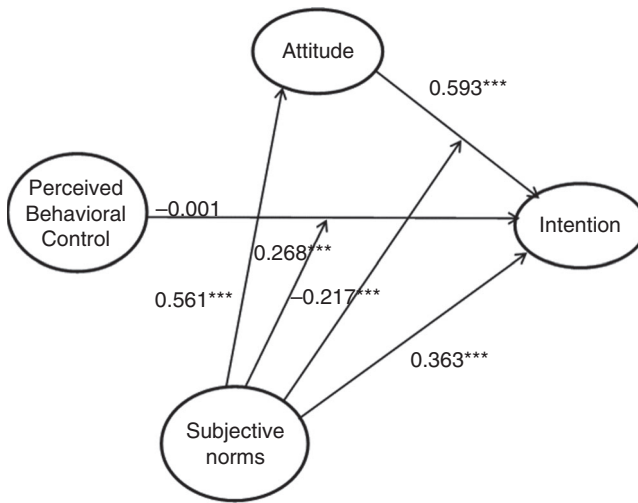
In examining the moderating effects of subjective norms on the relationships between attitude and buying intention, and perceived behavioral control and buying intention toward organic food, the interaction variables were introduced in the model. Using AMOS, the factor scores of subjective norms, attitude, perceived behavioral control and the buying intention were created. To create the interaction terms between attitude and subjective norms, and perceived behavioral control and subjective norms, the three variables were standardized by subtracting the mean from each variable and dividing by the standard deviation. This procedure was suggested by Frazier *et al.* (2004) to avoid the multicollinearity issue. After the interaction terms were introduced, the structural model was tested in AMOS and the effects of the interaction variables were assessed. Table VI and Figure 4 depict that subjective norms moderate the effects of attitude and perceived behavioral control on the intention to buy organic food with indicators ( $\beta = -0.217$ ,  $t\text{-value} = -3.554$ ,  $p < 0.001$ ) and ( $\beta = 0.268$ ,  $t\text{-value} = 3.724$ ,  $p < 0.001$ ), respectively. These results supported H5 and H6 as proposed in the study.

Furthermore, the nature of the significant interactions was investigated by using multiple line graphs in order to examine the regression lines at two levels (high and low) of the hypothesized moderator, i.e. at one standard deviation above and below the median. The multiple line graph in Figure 5 shows that the influence of attitude on the intention to buy organic food will be slightly higher, when the social influence/pressure is lower. Whereas, the multiple line graph in Figure 6 shows that if the person perceives that he has good control over the resources required in order to buy organic

Hypothesis	Hypothesized direct effect	Path coefficient	t-value	p-value	Decision
H5	Subjective norms moderate the effect of attitude on organic food buying intention	(-)0.217***	-3.554	0.000	Supported
H6	Subjective norms moderate the effect of Perceived behavioral control on the organic food buying intention	0.268***	3.724	0.000	Supported

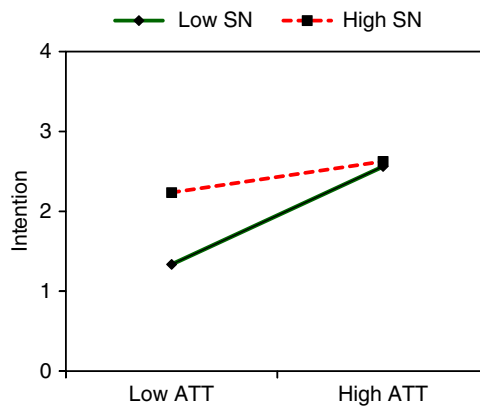
**Table VI.**  
Moderation effects of subjective norms

**Notes:** \*\*\* $p < 0.001$ ; \*\* $p < 0.01$ ; \* $p < 0.05$

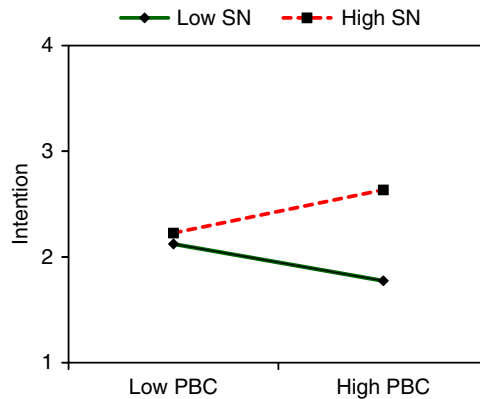


Note: \*\*\* $p < 0.001$

**Figure 4.**  
Hypotheses testing summary



**Figure 5.**  
Moderating effect of subjective norms on the relationship between attitude and buying intention



**Figure 6.**  
Moderating effect of subjective norms on the relationship between perceived behavioral control and buying intention

products, the higher social influence can affect the intention to buy organic food to a greater extent as compared to lower social influence.

### 5. Discussion and conclusion

This paper attempted to explore the extended influence of subjective norms on the components of TPB, and consequently, modify the applicability of TPB in the context of organic food purchase. The study found that subjective norms have a much superior role in shaping buying intentions than what is generally perceived by a vast majority of researchers. Subjective norms have a direct significant impact on buying intentions. It is in line with the findings of previous studies (see Chen, 2007; Voon *et al.*, 2011). In addition, subjective norms influence attitudes toward buying intentions. This finding lends support to study conducted by Tarkiainen and Sundqvist (2005). Furthermore, subjective norms moderate the relationship between perceived behavioral control and buying intentions, and the relationship between attitude and buying intentions. This finding is consistent with the study performed by Povey *et al.* (2000) who found that attitudes and perceived behavior control are better predictors of intentions when the social environment is more conducive and supportive to perform a behavior (eating healthy food). The present study found no significant relationship between perceived behavioral control and organic food buying intentions. This finding contradicts and contrasts with past studies which stated that perceived behavioral control significantly influences willingness to purchase organic food (Ajzen, 2006; Gracia and de Magistris, 2007; Riefer and Hamm, 2008; Voon *et al.*, 2011). As discussed before, the mean value corresponding to perceived behavioral control is low as compared to other components. Furthermore, it was found that subjective norms moderate the relationship between perceived behavioral control and buying intention toward organic food. Moreover, Pakistani consumers, being a part of a collectivist society as per definition of collectivism by Hofstede (1991), are majorly compliants rather than deviants with respect to their reference groups. They do not possess a high level of autonomy and self-confidence (perceived behavioral control) when it comes to decision-making regarding the trial/purchase of novel products. They rely on the approvals of their referents in order to avoid any risk and uncertainty associated with a particular behavior. It provides an explanation for insignificant direct effect of perceived behavioral control on buying intentions toward organic food which is still an emerging concept in Pakistan. In addition, it also justifies the moderating role of subjective norms on the relationship between perceived behavioral control and buying intentions.

The study has a few limitations as it was conducted in southern-Punjab, Pakistan. Consumers belonging to other parts of the country may vary in their inclination toward buying organic food based on their attitudes, subjective norms and perceived behavioral control. Similarly the sample respondents represented the viewpoint of highly educated people toward buying organic food. It is quite possible that people having lower level of knowledge and education perceive organic food consumption in a different manner.

Based on the findings of this paper, it is recommended that academicians need to give more attention to the effects of subjective norms on buying intentions toward organic food. Subjective norms affect perceived behavior control, is a finding that is worth further investigation. It was believed that perceived behavior control is primarily the perception of an individual toward controlling his behavior. Thus it was thought of as somewhat independent from the effect of subjective norms. This paper

seriously challenges this assumption and the findings suggest the dependence of perceived behavior control on subjective norms. This study also has implications for marketers of organic food products. As the role of subjective norms is significant in driving consumers toward organic food purchasing, the marketers need to target the opinion leaders who can utter positive word of mouth about organic food consumption. Resultantly, the level of interest and confidence toward use of organic food would rise among potential customers. Adoption of organic food may serve many health-related benefits to the society of Pakistan where people frequently encounter various serious diseases due to eating unhealthy food. As exclusive distribution and higher prices have been viewed as potential barriers (Stream Organic, 2013), therefore, in order to promote the use of organic food, it is essential to make it available intensively and at affordable prices. It is anticipated that intensive distribution and affordable prices can spur the demand of organic food as the study demonstrates positive intentions of the respondents toward organic food purchase. In order to increase the availability, the number of organic farmers must increase. Increase in number of organic farmers supported by appropriate marketing strategies can be of great economic and commercial importance; it can help in furnishing the local demand as well as exporting organic food products to international markets like Finland, Sweden, Italy, the Netherlands, Austria, Denmark, Germany and Britain where organic food is in high demand. This study adds to the body of knowledge by examining indirect effects of subjective norms on components of TPB. It demands for remodeling of existing framework in order to enhance the predictive power of variables of TPB to explain behavior. Future researchers can further investigate the role of subjective norms in other countries to validate the findings of this paper. In addition, longitudinal studies can be conducted to get a detailed know-how about the difference between buying intentions and actual purchase of organic food over a long period. Furthermore, in depth case studies can be conducted to have a deep insight about underlying potential motivators and barriers of organic food purchase. This would help the marketers to formulate the strategies to promote the demand and increase the sales of organic food in a successful manner.

## References

- Aertsens, J., Mondelaers, K. and Van Huylenbroeck, G. (2009), "Differences in retail strategies on the emerging organic market", *British Food Journal*, Vol. 111 No. 2, pp. 138-154.
- Ajzen, A. and Timko, C. (1986), "Correspondence between health attitudes and behavior", *Journal of Basic and Applied Social Psychology*, Vol. 7 No. 4, pp. 259-276.
- Ajzen, I. (1991), "The theory of planned behavior", *Organizational Behavior and Human Decision Processes*, Vol. 50 No. 2, pp. 179-211.
- Ajzen, I. (2006), "Theory of planned behaviour – diagram", available at: <http://people.umass.edu/ajzen/tpb.html> (accessed April 27, 2013).
- Ajzen, I. and Fishbein, M. (1980), *Understanding Attitudes and Predicting Social Behavior*, Prentice-Hall, Englewood-Cliffs, NJ.
- Anderson, J.C. and Gerbing, D.W. (1988), "Structural equation modeling in practice: a review and recommended two-step approach", *Psychological Bulletin*, Vol. 103 No. 3, pp. 411-423.
- Bagozzi, R.P. and Yi, Y. (1988), "On the evaluation of structural equation model", *Journal of Academy of Marketing Science*, Vol. 16 No. 1, pp. 74-94.
- Browne, M.W. and Cudeck, R. (1993), *Alternative Ways of Assessing Model Fit*, Sage Publications, Newbury Park, CA.
- Chang, M.K. (1998), "Predicting unethical behavior: a comparison of the theory of reasoned action of the theory of planned behavior", *Journal of Business Ethics*, Vol. 17 No. 16, pp. 1825-1833.



- Chau, P.Y.K. and Hu, P.J.H. (2001), "Information technology acceptance by individual professional: a model comparison approach", *Decision Sciences*, Vol. 32 No. 4, pp. 699-719.
- Chen, M.F. (2007), "Consumer attitudes and purchase intentions in relation to organic foods in Taiwan: moderating effects of food-related personality traits", *Food Quality and Preference*, Vol. 18 No. 7, pp. 1008-1021.
- Chin, W. (1998), "Issues and opinion on structural equation modeling", *MIS Quarterly*, Vol. 22 No. 1, pp. 7-16.
- Chin, W.W., Gopal, A. and Salisbury, W.D. (1997), "Advancing the theory of adaptive structuration: the development of a scale to measure faithfulness of appropriation", *Information Systems Research*, Vol. 8 No. 4, pp. 342-367.
- Compeau, D.R., Higgins, C.A. and Huff, S. (1999), "Social cognitive theory and individual reaction to computing technology: a longitudinal study", *MIS Quarterly*, Vol. 23 No. 2, pp. 145-158.
- Conner, M. and Sparks, P. (1996), "The theory of planned behaviour and health behaviours", in Conner, M. and Norman, P. (Eds), *Predicting Health Behavior*, Open University Press, Buckingham, pp. 121-162.
- Dean, M., Raats, M.M. and Shepherd, R. (2008), "Moral concerns and consumer choice of fresh and processed organic foods", *Journal of Applied Social Psychology*, Vol. 38 No. 8, pp. 2088-2107.
- Doll, R. and Turoff, P. (1993), "The causes of cancer: quantitative estimate of avoidable risks of cancer in the United States today", *Journal of the National Cancer Institute*, Vol. 85 No. 6, pp. 1291-1308.
- Dossey, B.M. and Keegan, L. (2008), *Holistic Nursing: A Handbook for Practice*, Jones and Bartlett Learning, Sudbury, MA.
- Fishbein, M.A. (1967), *Readings in Attitude Theory and Measurement*, Wiley, New York, NY.
- Fishbein, M.A. and Ajzen, I. (1975), *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*, Addison-Wesley, Reading, MA.
- Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.
- Frazier, P.A., Tix, A.P. and Barron, K.E. (2004), "Testing moderator and mediator effects in counseling psychology research", *Journal of Counseling Psychology*, Vol. 51 No. 1, pp. 115-134.
- Gracia, A. and de Magistris, T. (2007), "Organic food product purchase behaviour: a pilot study for urban consumers in the South of Italy", *Spanish Journal of Agricultural Research*, Vol. 5 No. 4, pp. 439-451.
- Grunert, S.C. and Juhl, H.J. (1995), "Values, environmental attitudes, and buying of organic foods", *Journal of Economic Psychology*, Vol. 16 No. 1, pp. 39-62.
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2010), *Multivariate Data Analysis*, Prentice Hall, Upper Saddle River, NJ.
- Hill, H. and Lynchehaun, F. (2002), "Organic milk: attitudes and consumption patterns", *British Food Journal*, Vol. 104 No. 7, pp. 526-542.
- Hofstede, G.H. (1991), *Cultures and Organizations: Software of the Mind*, McGraw-Hill, London.
- Honkanen, P., Verplanken, B. and Olsen, S.O. (2006), "Ethical values and motives driving organic food choice", *Journal of Consumer Behaviour*, Vol. 5 No. 5, pp. 420-430.
- Hoyer, W.D. and MacInnis, D.J. (2004), *Consumer Behavior*, Houghton Mifflin, Boston, MA.
- Hughner, R.S., McDonagh, P., Prothero, A., Shultz, C.J. and Stanton, J. (2007), "Who are organic food consumers? A compilation and review of why people purchase organic food", *Journal of Consumer Behaviour*, Vol. 6 Nos 2/3, pp. 1-17.

- Jager, W. (2000), *Modelling Consumer Behaviour*, University of Groningen, Groningen.
- Jung, C.G. (1971), *Psychological Types, Collected Works*, Vol. 6, Princeton University Press, Princeton, NJ.
- Kalafatis, S., Pollard, M., East, R. and Tsogas, M.H. (1999), "Green marketing and Ajzen's theory of planned behaviour: a cross-market examination", *Journal of Consumer Marketing*, Vol. 16 No. 5, pp. 441-460.
- Krystallis, A. and Chrysosohoidis, G. (2005), "Consumers' willingness to pay for organic food: factors that affect it and variation per organic product type", *British Food Journal*, Vol. 107 No. 5, pp. 320-343.
- Kuhar, A. and Juvancic, L. (2005), "Modelling consumer preferences towards organic and integrated fruits and vegetables in Slovenia", paper presented at 97th EAAE Seminar on The Economics and Policy of Diet and Health, April 21-22, Reading, MA.
- Lockie, S., Lyons, K., Lawrence, G. and Grice, J. (2004), "Choosing organics: a path analysis of factors underlying the selection of organic food among Australian consumers", *Appetite*, Vol. 43 No. 2, pp. 135-146.
- McClelland, D.C. (1987), *Human Motivation*, Cambridge University Press, New York, NY.
- McEachern, M.G. and Willock, J. (2004), "Producers and consumers of organic meat: a focus on attitudes and motivations", *British Food Journal*, Vol. 106 No. 7, pp. 534-552.
- Magnusson, M.K., Arvola, A., Hursti, U.K.K., Åberg, L. and Sjöden, P.O. (2001), "Attitudes towards organic foods among Swedish consumers", *British Food Journal*, Vol. 103 No. 3, pp. 209-227.
- Menon, M. (2009), "Organic agriculture and market potential in India", in Willer, H. and Kilcher, L. (Eds), *The World of Organic Agriculture. Statistics and Emerging Trends*, FIBL-IFOAM Report, Bonn, pp. 140-143, available at: <http://orgprints.org/18380/16/willer-kilcher-2009.pdf#page=142> (accessed February 20, 2013).
- Michaelidou, N. and Hassan, L.M. (2008), "The role of health consciousness, food safety concern and ethical identity on attitudes and intentions towards organic food", *International Journal of Consumer Studies*, Vol. 32 No. 1, pp. 163-170.
- Misra, S., Huang, C.L. and Ott, S. (1991), "Georgia consumers' preference for organically grown fresh produce", *Journal of Agribusiness*, Vol. 9 No. 2, pp. 53-65.
- Nunnally, J.C. and Bernstein, I.H. (1994), *Psychometric Theory*, McGraw-Hill, New York, NY.
- Oanda (2013), "Currency converter", available at: [www.oanda.com/currency/converter/](http://www.oanda.com/currency/converter/) (accessed April 10, 2013).
- O'Neal, P.W. (Ed.) (2007), *Motivation of Health Behavior*, Nova Publishers, New York, NY.
- Özfer, A. and Ucar, O.A. (2008), "Turkish academic staff's perception of organic foods", *British Food Journal*, Vol. 110 No. 9, pp. 948-960.
- Padel, S. and Foster, C. (2005), "Exploring the gap between attitudes and behavior: understanding why consumers buy or do not buy organic food", *British Food Journal*, Vol. 107 No. 8, pp. 606-625.
- Paisley, C.M. and Sparks, P. (1998), "Expectations of reducing fat intake: the role of perceived need within the theory of planned behavior", *Psychology and Health*, Vol. 13 No. 2, pp. 341-353.
- Paisley, C.M., Lloyd, H., Sparks, P. and Mela, D.J. (1995), "Consumer perceptions of dietary changes for reducing fat intake", *Nutrition Research*, Vol. 15 No. 12, pp. 1755-1766.
- Perrini, F.S., Castaldo, N.M. and Tencati, A. (2010), "The impact of corporate social responsibility associations on trust in organic products marketed by mainstream retailers: a study of Italian consumers", *Business Strategy and the Environment*, Vol. 19 No. 8, pp. 512-526.

- Povey, R., Conner, M., Sparks, P., James, R. and Shepherd, R. (1998), "Interpretations of healthy and unhealthy eating and implications for dietary change", *Health Education Research*, Vol. 13 No. 2, pp. 171-183.
- Povey, R., Conner, M., Sparks, P., Rhiannon, J. and Shepherd, R. (2000), "The theory of planned behaviour and healthy eating: examining additive and moderating effects of social influence variables", *Psychology and Health*, Vol. 14 No. 6, pp. 991-1006.
- Riefer, A. and Hamm, U. (2008), "Changes in families' organic food consumption", paper presented at 12th Congress of the European Association of Agricultural Economists – EAAE, August 26-29, Ghent.
- Roddy, G., Cowan, C.A. and Hutchinson, G. (1996), "Consumer attitudes and behaviour to organic foods in Ireland", *Journal of International Consumer Marketing*, Vol. 9 No. 2, pp. 41-63.
- Rodriguez, E., Lacaze, V. and Lupin, B. (2008), "Valuation of consumers' willingness-to-pay for organic food in Argentina", paper presented at 12th Congress of the European Association of Agricultural Economists – EAAE, August 26-29, Ghent.
- Roitner-Schobesberger, B., Darnhofer, I., Somsook, S. and Vogl, C.R. (2008), "Consumer perceptions of organic foods in Bangkok, Thailand", *Food Policy*, Vol. 33 No. 2, pp. 112-121.
- Ryan, M.J. (1982), "Behavioral intention formation: the interdependency of attitudinal and social influence variables", *Journal of Consumer Research*, Vol. 9 No. 3, pp. 263-278.
- Saba, A. and Messina, F. (2003), "Attitudes towards organic foods and risk/benefit perception associated with pesticides", *Food Quality and Preference*, Vol. 14 No. 8, pp. 637-645.
- Sheppard, B.H., Hartwick, J. and Warshaw, P.R. (1988), "The theory of reasoned action: a meta-analysis of past research with recommendations for modifications and future research", *Journal of Consumer Research*, Vol. 15 No. 3, pp. 325-343.
- Shimp, T.A. and Kavas, A. (1984), "The theory of reasoned action applied to coupon usage", *Journal of Consumer Research*, Vol. 11 No. 3, pp. 795-809.
- Sparks, P. and Shepherd, R. (1992), "Self-identity and the theory of planned behavior: assessing the role of identification with green consumerism", *Social Psychology Quarterly*, Vol. 55 No. 4, pp. 1388-1399.
- Stream Organic (2013), "Pakistan: why is organic food so costly in Hyderabad?", available at: [www.streamorganic.com/index.php/home-mainmenu-1/news-mainmenu-2/1-latest/4274-news-pakistan-why-is-organic-food-so-costly-in-hyderabad.html/](http://www.streamorganic.com/index.php/home-mainmenu-1/news-mainmenu-2/1-latest/4274-news-pakistan-why-is-organic-food-so-costly-in-hyderabad.html/) (accessed April 9, 2013).
- Tarkiainen, A. and Sundqvist, S. (2005), "Subjective norms, attitudes and intentions of Finnish consumers in buying organic food", *British Food Journal*, Vol. 107 Nos 10/11, pp. 808-822.
- Thøgersen, J. (2009a), "Consumer decision making with regard to organic food products", in Vaz, M.T.D.N., Vaz, P., Nijkamp, P. and Rastoin, J.L. (Eds), *Traditional Food Production Facing Sustainability: A European Challenge*, Ashgate, Farnham, pp. 173-194.
- Thøgersen, J. (2009b), "The motivational roots of norms for environmentally responsible behavior", *Basic and Applied Social Psychology*, Vol. 31 No. 4, pp. 348-362.
- Torjusen, H., Sangstad, L., O'Doherty Jensen, K. and Kjaernes, U. (2004), *European Consumers' Conceptions of Organic Food: A Review of Available Research*, National Institute for Consumer Research, Oslo.
- Ulbricht, T.L.V. and Southgate, D.A.T. (1991), "Coronary heart disease: seven dietary factors", *The Lancet*, Vol. 338 No. 8773, pp. 985-992.
- Vallerand, R.J., Deshaies, P., Cuerrier, J.P., Pelletier, L.G. and Mongeau, C. (1992), "Ajzen and Fishbein's theory of reasoned action as applied to moral behavior: a confirmatory analysis", *Journal of Personality and Social Psychology*, Vol. 62 No. 1, pp. 98-109.

- Vindigni, G., Janssen, M.A. and Jager, W. (2002), "Organic food consumption: a multi-theoretical framework of consumer decision making", *British Food Journal*, Vol. 104 No. 8, pp. 624-642.
- Voon, J.P., Ngui, K.S. and Agrawal, A. (2011), "Determinants of willingness to purchase organic food: an exploratory study using structural equation modeling", *International Food and Agribusiness Management Review*, Vol. 14 No. 2, pp. 103-120.
- Wandel, M. and Bugge, A. (1997), "Environmental concern in consumer evaluation of food quality", *Food Quality and Preference*, Vol. 8 No. 1, pp. 19-26.
- Willer, H. and Kilcher, L. (Eds) (2012), *The World of Organic Agriculture. Statistics and Emerging Trends*, FIBL-IFOAM Report, Bonn, available at: [www.organic-world.net/statistics.html/](http://www.organic-world.net/statistics.html/) (accessed February 19, 2013).
- Zepeda, L. and Li, J. (2007), "Characteristics of organic food shoppers", *Journal of Agricultural Applied Economics*, Vol. 39 No. 1, pp. 17-28.
- Zotos, Y., Ziamou, P. and Tsakiridou, E. (1999), "Marketing organically produced food products in Greece", *Greener Management International*, No. 25, Spring, pp. 91-104.

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