

Do subjective norms matter in organic food buying intentions in Pakistan?

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ABSTRACT

The paper investigates 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. 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. 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 towards buying intention. 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 component of TPB. Whereas, marketers can target the opinion leaders and reference groups to increase the demand of organic food.

Keywords – Consumer Behavior, Organic Food, Attitude, Perceived Behavioral Control, Subjective Norms, Buying Intention, Theory of Planned Behavior, Structural Equation Modeling, Pakistan

1. Introduction

Consumers in the current world are more concerned and conscious about the health and environmental friendly products. It is claimed by the past researchers that organically produced food is healthier, nutritious and has better taste (Perrini *et al.* 2010; Krystallis and Chryssohoidis, 2005). These factors have driven the consumers to develop positive attitude towards purchasing organic food. 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

organic farming and buying concepts and popularity have grown rapidly in developing countries as well.

It was reported that the global market of organic products has grown by more than 20% since 2005. According to latest available statistics, i.e. by year 2010, Australia (32%), Argentina (11%), USA (5%) and China (5%) have occupied the top positions with respect to land utilization for organic farming (Willer & 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 becoming more concerned about organic products due to the improvement of quality of life and perceptual shift from traditional foods towards health conscious foods. In terms of numbers of organic farmers, India leads the list with 400551, representing 25% of total organic producers in the world. The sales of organic products in India have increased (138%) significantly in just five years. The sales figure was 39 million Euros in 2005, and it had increased to 93 million Euros in 2010 (Willer & Kilcher, 2012). The scenario depicts that consumer choice has shifted somewhat towards 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. The number of producers increased significantly in Pakistan from 28 to 1045 in just five years from 2005-2010 (Willer and Kilcher, 2012). The aforementioned figures depict the wide spread acceptance of organic farming approach to fulfill to 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, Tarkianen 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% to 30% higher than generic products which makes organic food purchase somewhat out of reach of lower to middle income group, the major consumer market in Pakistan. In a recent report, it is 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 towards purchasing organic food is not the sole determinant that can lead the consumers towards purchasing organic food.

Present paper focuses on the organic food buying in Pakistan in context of theory of planned behavior (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. Moreover, 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 focusing on moderating effects of subjective norms on the relationship between perceived behavioral control and buying intention, and the relationship between attitude and buying intention.

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 Theory of planned behavior (TPB)

The origin of theory of planned behavior can be traced back to the theory of reasoned action (TRA) (Fishbein, 1967; Fishbein and Ajzen, 1975) emphasized on predicting human behavior and behavioral characteristics. TRA proposed 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; *firstly*, the attitude toward the act which is the function of perceived consequences the consumer may link with the behavior. *Secondly*, subjective norms, the prime focus of this paper, are a function of belief 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 theory of reasoned action is theory of planned behavior (TPB) proposed by Ajzen (1991). According to Ajzen (1991) TPB entails three concepts such as attitude formation, perceived behavioral control and subjective norms. The theory stretches that individuals' intention to perform a certain behavior is influenced by the individuals' behavioral attitudes (i.e. Attitude towards buying organic food), behavioral control (i.e. How the decision is being controlled during purchase decision) and finally subjective norms (i.e. Importance of others opinions).

2.2 Behavioral intention

The focal point in TPB is the individual's intention to engage in 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 and many past studies have applied this theory to study the buying intentions related with environmental friendly products, especially organic products (Kalafatis *et al.*, 1999, Saba and Messina, 2003; Tarkiainen and Sundqvist, 2005; Chen, 2007; Gracia and de Magistris, 2007; Thøgersen, 2007; 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 (belief) and affection (emotions) towards a particular object (Hoyer and MacInnis, 2004; Dossey and Keegan, 2008). Thøgersen (2007) identified that in consumption of organic food, 'belief' about the consequences (better taste, healthier, environmentally friendly) is more vital. The person who has strong health consciousness or high value towards healthy products; that belief may drive the person in consumption of organic food (Michaelidou and Hassan, 2008). Roitner-Schobesberger *et al.* (2008) further stressed that health consciousness factor was one of the main driving forces in selecting organic foods in Thailand. Moreover, while forming cognition process in buying products environmental friendliness was considered as a major element in selecting 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 is 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.

In addition, 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 attitudes leading towards 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 the context of organic food buying in Finland, they found a significant path from subjective norms to attitudes towards purchasing organic food. Therefore, to study this causal path in further depth, it is hypothesized that:

H₂: Subjective norms have a positive effect on attitude towards buying organic food.

H₃: Attitude has a significant mediating effect on the relationship between the subjective norms and the organic food buying intention.

2.4 Subjective norms

Subjective norms relate to the perceived social influences to engage or not to engage in a given behavior (Ajzen, 1991; O'Neal, 2007). Subjective norms reveal the beliefs of individuals about how they would be viewed by their reference groups if they perform a certain behavior. Subjective norms have two components: normative beliefs, belief about the importance of reference and outcome evaluation, which is positive or negative judgment about each belief (Ajzen, 1991).

Theory of needs proposed by McClelland (1987) suggested that individuals have a propensity to exhibit a behavior that is admired by primary reference groups, as they seek relationship and group association. Applied to organic food consumption, Chen (2007), Dean *et al.* (2008) and Thøgersen (2009) found significant positive relation 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.

Moreover, in addition to the direct effect of subjective norms on TPB elements as mentioned before, past studies have also discussed about the indirect and the moderating effects of social influence variables on TPB 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.

2.5 Perceived behavioral control

Perceived behavioral control concerns with individual's own judgment about their capability to engage in a particular behavior (Ajzen, 1991). It refers to the belief of the people about available resources such as buying power (money) as organic food is comparatively expensive than non-organic food; and availability of time as in case of many countries (Italy, Germany, Spain,

Netherlands, Pakistan), people need to find specialty shops to buy organic food (Tarkiainen and Sundqvist, 2005). Thøgersen (2007) opined that perceived behavioral control, shaped by perceived barriers and perceived ability, has influence in selecting organic food. Perceived barriers such as price and availability have significant dominance in the consumption of organic food (Magnusson *et al.*, 2001, Hill and Lynchehaun, 2002; Vindigni *et al.*, 2002; McEachern and Willock, 2004; Padel and Foster, 2005; Chrysosoidis and Krystallis, 2005; Hughner *et al.*, 2007; Rodri'guez *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:

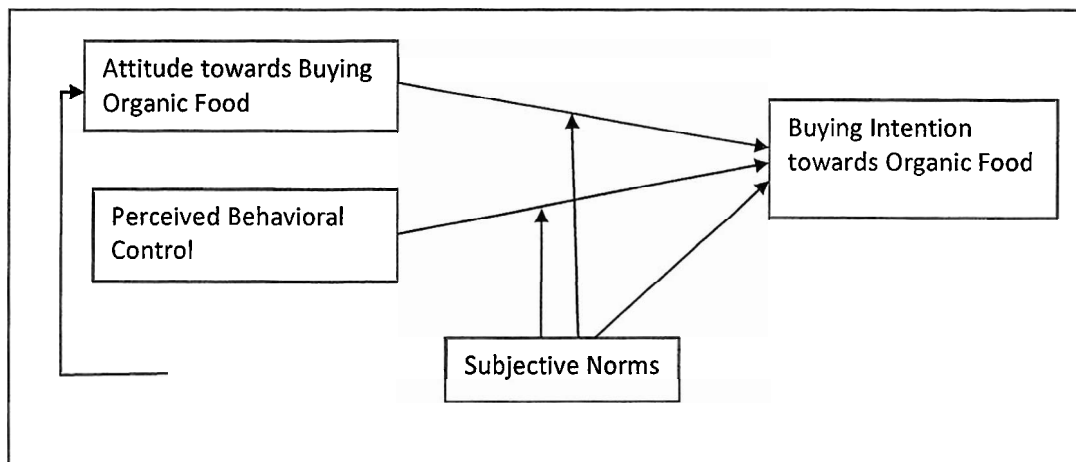
H₇: Perceived behavioral control has a significant positive effect on the organic food buying intention.

2.6 Research framework

The theoretical base of this paper is founded by reviewing the literature. In the literature, causal linkages have been identified between attitude towards buying, perceived behavioral control, subjective norms and buying intention. In this study, the TPB model (Ajzen, 1991) is further extended and modified by proposing that subjective norms moderate the relationship between Attitude and buying intention, and between perceived behavioral control and buying intention with reference to organic food purchasing in Pakistan. Figure 1 elaborates the proposed model in a sequential manner.

Figure 1.

Integrated Framework on the Effects of Subjective norms on TPB Components



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 (Ays *et al.*, 2008). Respondents belonged to diverse demographics in terms of age, gender, income, education and marital status. Self-administered questionnaires were distributed among the respondents using simple random sampling technique. 184 useable questionnaires were obtained during three week data collection period in December, 2012.

3.2 Measurement

To measure Attitude, Perceived Behaviour Control, Subjective Norms and Buying Intention, a structured questionnaire comprising of 22 items was adapted and modified based on previous studies (Ajzen & Fishbein, 1980; Misra *et al.*, 1991; Grunert & 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 given below.

Table I.
Measurement of Constructs

Constructs	Items	Cronbach alpha
Attitude towards Buying Organic Food	(ATTD1) I prefer organic food because it is processed without any chemicals	0.786
	(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	
Perceived Behavioral Control	(PC1) I can take the decision independently to buy organic food	0.746
	(PC2) I have the financial capability to buy organic food	
	(PC3) I have the time to go for buying organic food	
	(PC4) I have complete information and awareness regarding where to buy organic food	
	(PC5) Organic food is readily available in the location where I reside	
	(PC6) I can handle any (money, time, information related) difficulties associated with my buying decision	
Subjective Norms	(SN1) The trend of buying organic food among people around me is increasing	0.689
	(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	
Intention to Buy Organic Food	(BI1) I would look for specialty shops to buy organic food	0.792
	(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	

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.

4.1 Demographic characteristics of respondents

Demographic characteristics of the study 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 %) were between 21-39 years old. Male respondents accounted for almost 75% of total sample. 70% of the respondents belonged to lower to middle income social class. 26.6% of the respondents represented affluent social class. Education level of almost 90% of the respondents ranged from graduate to post graduate level. 64.2% of the respondents were unmarried. 82% of the respondents were residing in urban areas. 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 towards 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 towards organic food purchase.

Table II.
Sample Characteristics (n=184)

Demographic Characteristics	Frequency	Percent (%)	Cumulative (%)
Age			
18-20 years	4	2.2	2.2
21-39 years	142	77.2	79.4
40-60 years	38	20.6	100

Gender			
Male	147	74.5	74.5
Female	37	25.5	100
Monthly Family Income			
≤ 10,000 PKR*	3	1.6	1.6
10,001 to 50,000 PKR	87	47.3	48.9
50,001 to 99,999 PKR	42	22.8	71.7
≥100,000 PKR	49	26.6	98.4
Refused to disclose	3	1.6	100
Educational Level			
Undergraduate	13	7.1	7.1
Graduate and Post Graduate	165	89.6	96.7
PhD	6	3.3	100
Marital Status			
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
Residential Area			
Urban	151	82	82
Sub-Urban	22	12	94
Rural	11	6	100

*1 PKR equals 0.01 USD (Oanda, 2013)

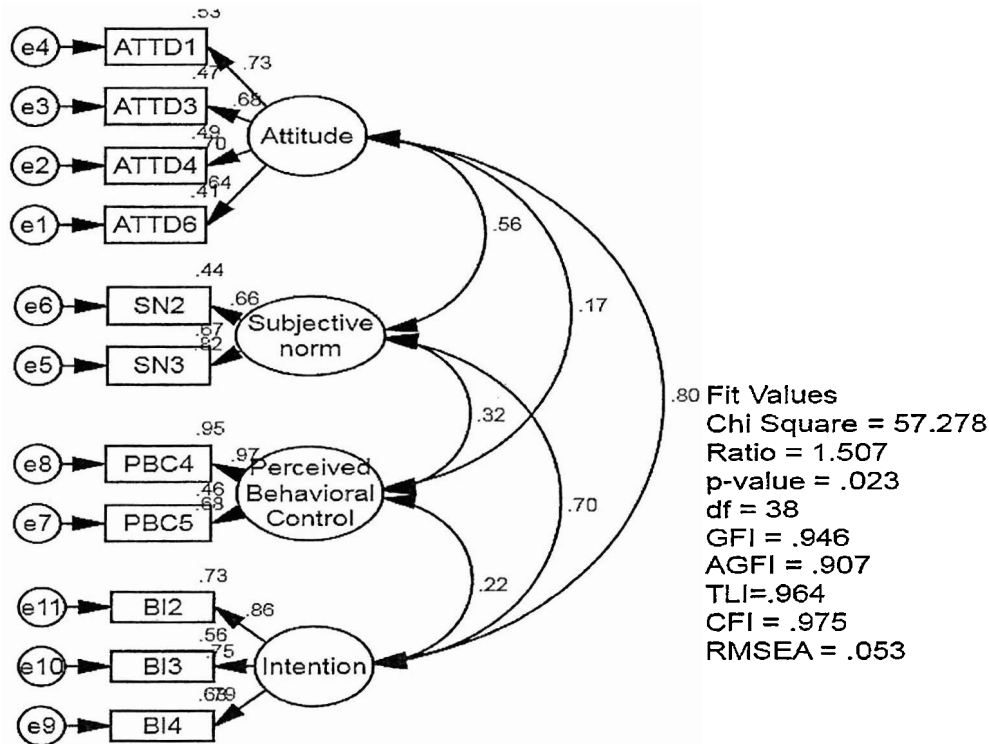
4.2 The measurement model results

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.

Figure 2.
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 (Bagozzi & 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.

According to the CFA results reported in Table III, the factor loadings for all items are significant and exceed the suggested cutoff level of 0.60 (Chin, Gopal & Salisbury, 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).

With regards to the Composite reliability as a measure of the convergent validity, of all latent constructs ranged from 0.71 to 0.84 which are 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, range from 0.50 to 0.70 surpassing the acceptable threshold level of 0.50 (Bagozzi & Yi, 1988; Hair *et al.*, 2010).

Table III.
Confirmatory Factor Analysis Results

Constructs	Items	Internal Reliability Cronbach alpha	Convergent Validity		
			Factor Loadings	Composite Reliability(CR) ^a	AVE ^b
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		

Notes. All the loadings are significant at the 0.001 level of significance.

a: $CR = \frac{\sum (\text{factor loading})^2}{\{\sum (\text{factor loading})^2\} + \sum (\text{variance of error})}$

b: $AVE = \frac{\sum (\text{factor loading})^2}{\sum (\text{factor loading})^2 + \sum (\text{variance of error})}$

Based on the significant importance of items in measuring their own constructs, all the latent constructs having composite reliability of at least 0.7 and average variance extracted of at least 0.5, 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 can differentiate a particular construct 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 mode (Compeau *et al.*, 1999). Following the criterion suggested by Fornell and Larker (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 measure has adequate discriminant validity. In summary, the measurement model has confirmed adequate reliability, convergent validity, and discriminant validity.

Table IV.
Discriminant Validity and Descriptive Analysis

Constructs	1	2	3	4	Min	Max	Mean	Std. Deviation
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

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

4.3 Goodness of fit indicators

To measure the goodness of fit of the model, various measures were utilized. The observed normed χ^2 for measurement model was 1.507 ($\chi^2 = 57.278$, $df = 38$) which is lesser than 3.0 as suggested by Bagozzi and Yi (1988). Other fit indexes also indicate a good fit for the measurement model. The adjusted goodness-of-fit index (AGFI) is 0.907, which is higher than the threshold value of 0.80 as suggested in the SEM literature (Chau & Hu, 2001). The non-normed fit index (NNFI or TLI) is 0.964 and comparative fit index (CFI) is 0.975, higher than the 0.95 suggested by Bagozzi and Yi (1988). In addition, the root mean square error of approximation (RMSEA) is 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 χ^2 was 1.469 which is lesser than 3.0; the adjusted goodness-of-fit index (AGFI) is 0.909 higher than the threshold value of 0.80; the non-normed fit index (NNFI or TLI) is 0.967 and comparative fit index (CFI) is 0.976 higher than the 0.95; and RMSEA is 0.051 which is lower than 0.08, thus the model has a good fit (Bagozzi & Yi, 1988; Browne & Cudeck, 1993; Chau & Hu, 2001).

As can be seen from the results reported in Table V, the effect of attitude and subjective norm on the organic food buying intention was significant at the 0.001 level of significance with indicators ($\beta=0.593$, t value=5.886, $p<0.001$)($\beta=0.363$, t value=3.473, $p<0.001$) respectively. Similarly, the results indicated that subjective norms have a positive significant impact on the attitude towards buying organic food at the 0.001 level of significance. Hence H_1 , H_2 and H_4 were supported as postulated in the study.

Figure 3
Structural Model Results

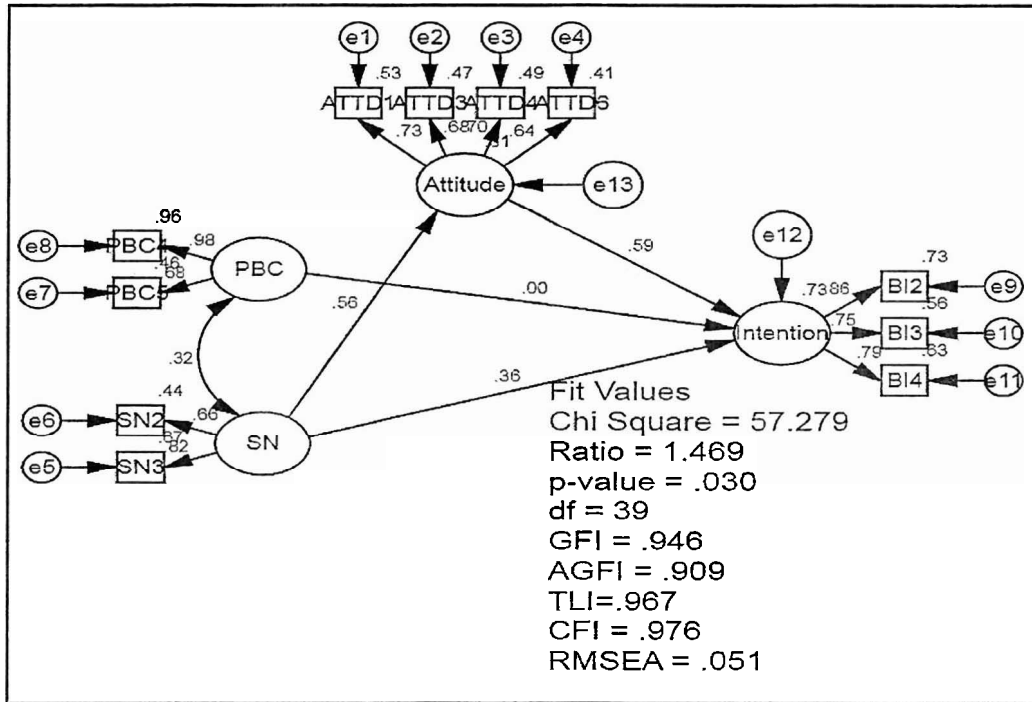


Table V.
Hypothesized Direct Effect

Hypothesis	Hypothesized Direct Effect	Path Coefficient	t Value	p Value	Decision
H ₁	Attitude has a positive effect on organic food buying intention	0.593***	5.886	0.000	Supported
H ₂	Subjective norm has a positive effect on the Attitude towards buying the organic food	0.561***	5.117	0.000	Supported
H ₄	Subjective norm has a positive effect on the organic food buying intention	0.363***	3.473	0.000	Supported
H ₇	Perceived behavioral control has a positive effect on the organic food buying intention	-0.001	-0.021	0.983	Not Supported

***:p<0.001; **:p<0.01; *:p<0.05

On the other hand, the effect of perceived behavioral control on the intention to buy organic food was not statistically supported ($\beta = -0.001$, $t \text{ value} = -0.021$, $p > 0.05$). These results did not support H₇ as proposed in this study.

4.5 The mediation effect of attitude

To test the hypothesis regarding the mediating effect of attitude on the effect of subjective norms on organic food buying intention, the bootstrap method was used in AMOS. The bootstrap technique was used to re-sample 200 samples of the same size and the parameters were estimated. The bias-corrected confidence interval was to test the significance of the indirect effect of attitude on intention. The results showed that the direct effect of subjective norms on organic food buying intention was significant at the 0.001 level of significance ($\beta=0.676$, $p<0.001$). After accounting for the effect of attitude as a mediator, the direct effect of subjective norms on intention was still significant, yet less ($\beta=0.363$, $p<0.001$). We next tested the significance of the indirect effect of subjective norms on intention $a*b$. The results in Table VI summarize the findings and they confirm that the indirect effect was found to be significant at the 0.001 level of significance. Since the direct effect, when accounting for the effect of the mediator, is still significant, the mediator variable can be described as a partial mediator. By calculating the Variance Accounted For (VAF) using the formula:

$$VAF = \frac{a * b}{a * b + c'} = \frac{0.333}{0.333 + 0.363}$$

$$VAF= 48\%.$$

This result depicts that attitude can account for 48% of the effect of subjective norms on intention and the rest of the effect is directly exercised.

Table VI.
Mediation Effect Results

Hypothesized Effect	a	b	c	c'	Indirect Path Coefficient (a*b)	t Value (a*b)	p Value (a*b)	Decision
(H ₃) Attitude mediates the effect of Subjective norms on organic food buying intention	0.561***	0.593***	0.676***	0.363***	0.333**	3.36	0.000	Partial Mediation

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

Note:

a: effect of SN on Attitude

b: effect of Attitude on Intention

c: the direct effect of SN on intention when the effect of Attitude is not accounted for.

c': the direct effect of SN on Intention when the effect of Attitude is accounted for.

4.6 The moderation effect of subjective norms

In examining the moderating effect of subjective norms on the relationships between attitude and perceived behavioral control from one hand and the intention to buy organic food from the

other, the interaction variables were introduced to the model. In doing so, all the variables were first standardized by subtracting the mean and dividing by the standard deviation of each variable. This procedure was suggested by Frazier, Tix, and Barron (2004) to avoid the multicollinearity issue. The structural model was, then, tested in AMOS and the effects of the interaction variables were assessed. Table VII and Figure 4 depicts that subjective norms moderates the effects of attitude and perceived behavioral control on the intention to buy organic food with indicators ($\beta = -0.217$, t value = -3.554 , $p < 0.001$) and ($\beta = 0.268$, t value = 3.724 , $p < 0.001$) respectively. These results supported H_5 and H_6 as in the study.

Furthermore, the 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 is higher. Similarly, the graph in Figure 6 shows that if the person perceives that he has good control over the resources required in order to buy organic products, the higher social influence can affect the intention to buy organic food to a greater extent as compared to lower social influence.

Table VII.
Moderation Effects of Subjective Norms

Hypothesis	Hypothesized Direct Effect	Path Coefficient	t Value	p Value	Decision
H_5	Subjective Norms moderate the effect of Attitude on organic food buying intention	(-0.217^{***})	-3.554	0.000	Supported
H_6	Subjective Norms moderate the effect of Perceived behavioral control on the organic food buying intention	0.268^{***}	3.724	0.000	Supported

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

Figure 4
Hypotheses Testing Summary

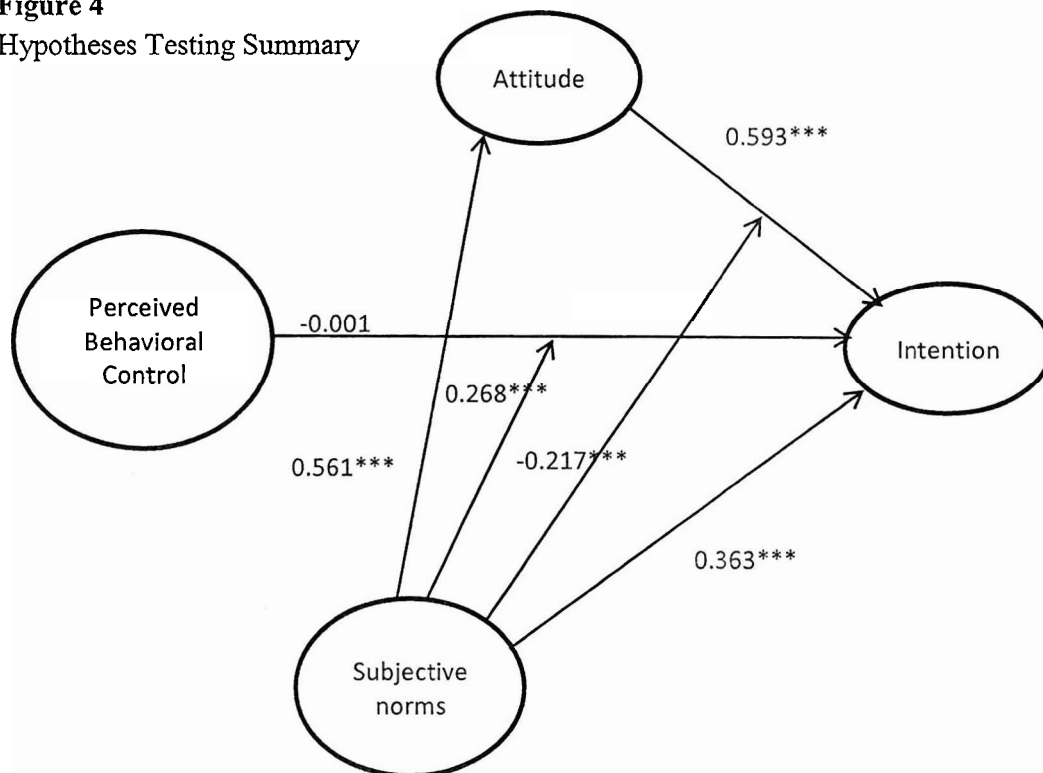
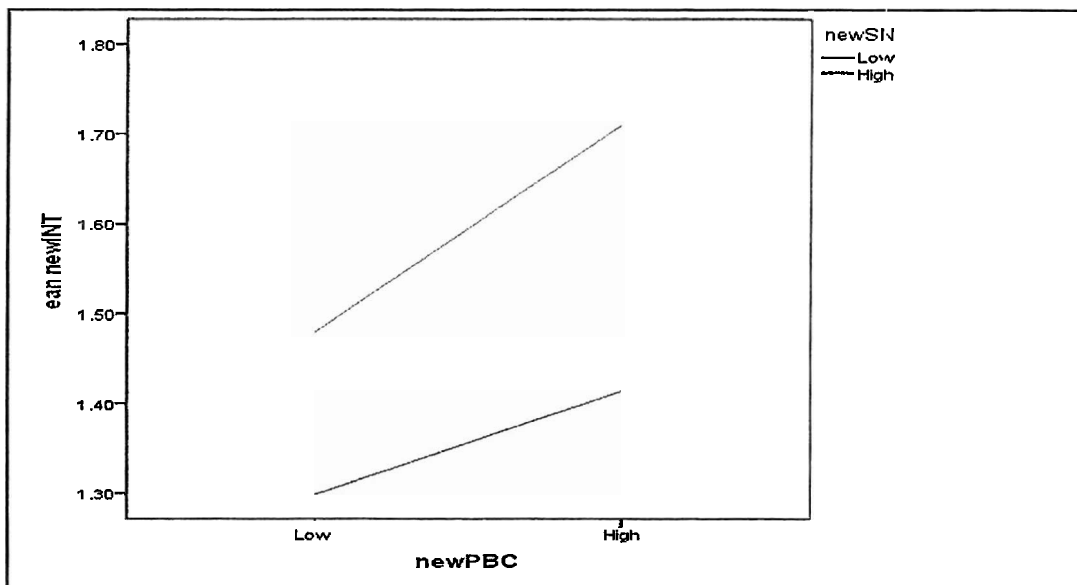


Figure 5
Moderating Effect of Subjective Norms on the Relationship between Attitude and Buying Intention



Figure 6
Moderating Effect of Subjective Norms on the Relationship between Perceived Behavioral Control and Buying Intention



5. Discussion and conclusion

The focal point of this paper was to investigate 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 much superior role in shaping buying intentions than what is generally perceived by 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 towards 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 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 towards organic food. Moreover, Pakistani consumers, being a part of collectivist society as per definition of collectivism by Hofstede (1991), are majorly conformists 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 towards 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 towards buying organic food based on their attitudes, subjective norms and perceived behavioral control. Similarly the sample respondents represented the viewpoint of highly educated people towards 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, academicians need to give more attention to the effects of subjective norms on buying intentions towards organic food. Subjective norms effect 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 towards 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. 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.

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