To buy or not to buy organic food: evaluating the moderating effect of gender using PLS-MGA

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Abstract: Grounded in the theory of planned behaviour (TPB) and norm activation model (NAM) this study aim to examine the effect of factors such as attitude, subjective norm, perceived behavioural control and moral norm that may motivate consumer to purchase organic food in the context of Malaysia. Additionally, this research intends to extend the TPB by incorporating moral norm into the model. Moreover, this study aims to examine the moderating role of gender with respect to all relationships. Survey method was used and collected 120 responses from male and 126 from female. Data were analysed by using partial least square and multi-group technique. Findings revealed that attitude, subjective norm, perceived behavioural control and moral norm have significant positive effect on purchase intention. Contrary to expectation there was no significance difference between male and female for all developed relationships. Theoretical and managerial implications are discussed.

Keywords: organic food; theory of planned behaviour; TPB; purchase behaviour; moral norm; gender; norm activation model; NAM; Malaysian consumers.

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1 Introduction

Organic food is not only useful for human beings, but also has long-term benefits to the environment, since it emphasises conservation and sustainability of soil and water as well as the use of renewable resources, while producing nutritious food (Hsu et al., 2016; Teng and Wang, 2015). Certainly, the awareness about personal health, nutritional value and food quality has increased among consumer (Hustvedt and Dickson, 2009; Popa et al., 2018). Thus, the present day consumers have switched their dietary preferences from conventionally grown food to organic foods, which are perceived to be healthier and more environmentally friendly (Pontonio et al., 2016).

Despite the worldwide increased popularity and awareness of organic foods, there remains a relatively low consumption of organic food (Al-Swidi et al., 2014; Chekima et al., 2017). Belz and Peattie (2012) found that there is a discrepancy between what people claim and/or express through their values, attitudes, dispositions, and inclination, and how they actually behave which is referred to attitude-behaviour gap. It calls for more research to be conducted in order to minimise the attitude-behaviour and intention-behaviour gap that hinders consumers from translating their attitude, values, inclination and intention into actual behaviour (Carrington et al., 2010; Chekima et al., 2017; Gleim and Lawson, 2014; Moser, 2015). This study is an effort to respond to this call.

To explain and predict consumers' behaviour towards purchasing organic food, this study has employed the theory of planned behaviour (TPB) (Ajzen and Fishbein, 1980). This theory is considered as one of the most important theories in explaining human behaviour in different fields (Aertsens et al., 2009; Kim et al., 2013; Ko and Jin, 2017). According to this theory, consumers' intention to purchase organic food is a function of

their positive or negative feelings towards purchasing organic food (attitude); the pressure that consumers encounter from surroundings (e.g., parent, sibilings, friends, etc.) to purchase organic food (subjective norm), and to which extent consumers perceive the process of purchasing organic foods as simple or difficult (perceived behaviour control). Nevertheless, past studies demonstrated that, the effect of these antecedents on consumers' intention to purchase green food is inconsistent due to contextual and/or dispostional factors. For example, in the food purchase context, studies reported that, male and female consumers act differently. More clearly, females have higher participation in food-related activities, higher nutrition knowledge and more tendency to eat healthier (Bellows et al., 2010; Weaver and Brittin, 2001). Not only this, it is also found that, male and female respondents hold different level of values and meaning to different types of food (Bellows et al., 2010; Wardle et al., 2004). Additionally, in the context of organic food, studies found that women have more preference to purchase and to consume organic food compared to men (Padel and Foster, 2005; Tanner and Wölfing Kast, 2003). Accordingly, the first objective of this study is to examine, to which extent the effect of attitude, subjective norm, and perceived behaviour on purchase intention of organic food will vary between male and female in the Malaysian context.

It is argued that, TPB can be extended depending on the different contexts, which may improve and increase the predictive power of the theoretical model (Ajzen, 1991; Perugini and Bagozzi, 2001). It is evident in current behavioural studies that extended the TPB specific to different domains by including additional variable (Quoquab et al., 2017; Yadav and Pathak, 2017). In the same manner, this study has extended the TPB by incorporating new construct i.e., moral norm. In more detail, the TPB includes only self-interest motives such as attitude, subjective norm and perceived behavioural control. Nevertheless, past studies argued that individuals' behaviour can be affected not only by self-interest motives, also by prosocial motives (Bertoldo and Castro, 2016; Park and Ha, 2012) which was supported by the norm activation model (NAM) in order to explain individuals' pro-social motives (Schwartz, 1977). Based on this model, individuals behave in a pro-social manner because they feel morally obliged to act in certain ways. NAM was used successfully in explaining various types of eco-friendly behaviours/intentions such as car use reduction (Eriksson et al., 2008), environmental citizenship (Stern, 2000), and electricity saving behaviour (Zhang et al., 2013). Since organic food purchase is a pro-environmental behaviour, this study considers NAM to support the effect of moral norm on purchase intention in the context of organic food. Consequently, the second objective of this study is to extend the TPB by including moral norm as a new construct in the model.

The rest of the paper is organised as follows. First, the relevant literature is reviewed, and study hypotheses are proposed. Next, research methodology employed in this study is explained. Third, data analysis and results are presented. Finally, the managerial implications of the findings are discussed along with limitations and future research directions.

2 Literature review and hypotheses development

2.1 Theoretical underpinning

The TPB (Ajzen, 1991) is an extensively utilised theory in behavioural and social psychology studies (Quoquab et al., 2017; Sharma et al., 2019). It serves as a helpful framework for a comprehensive analysis of factors that determine purchase decisions related to pro-environmental behaviour (Chen and Tung, 2014; Chou et al., 2012; Yadav and Pathak, 2017). As stated earlier, the TPB takes into consideration three main factors of human behaviour: attitude, subjective norms, and perceived behavioural control. These are the fundamental antecedents of consumers' intention to engage in particular behaviour, which in turn affects their actual behaviour.

Purchase intention can be described as the likelihood of a consumer's choice to purchase a product (Dodds et al., 1991; Grewal et al., 1998) or to visit a store offering services (Shao et al., 2004). It is a decision that can result from the value and benefits that are perceived by consumers (Zeithaml, 1988). On the other hand, attitude towards the behaviour refers to "the degree to which a person has a favourable or unfavourable assessment of the behaviour in question" [Ajzen, (1991), p.188], whereas, subjective norm refers to "the perceived social pressure to perform the behaviour" [Ajzen, (1991), p.188]. Additionally, the perceived behavioural control represents "the perceived ease or difficulty of performing the behaviour" [Ajzen, (1991), p.188]. Many past studies have adopted TPB to predict consumers' behavioural intentions in various disciplines (Casidy et al., 2016; Chen, 2016; Han et al., 2010; Paul et al., 2016). Similarly, this study employs TPB to examine the antecedent of consumers' purchase intention of organic food in Malaysian context. Based on the above discussions, the following hypotheses are developed:

H1 There are positive relationships between:

- a attitude
- b subjective norm
- c perceived behaviour control and purchase intention of organic food.

H2 There is a positive relationship between purchase intention and purchase behaviour of organic food.

2.2 Gender as a moderator

While many studies found a significant positive relationship between purchase intention and purchase behaviour (Spears and Singh, 2004; Yadav and Pathak, 2017), Frederiks et al. (2015) did not find support for this relationship. In the same manner, the effect of attitude, subjective norm and perceived behavioural control on consumer purchase intention of organic food is found inconclusive. For example, some studies found a weak relationship (Rodríguez-Barreiro et al., 2013) and others found insignificant relationship (Moser, 2015; Verhoef, 2005). It is argued that, there is a discrepancy between what people think, believe (attitude), say (intention), and how they actually behave (behaviour) (Daziano and Achtnicht, 2014; Kollmuss and Agyeman, 2002). Such behaviour has been considered in the literature as inconsistent and non-rational (Sheeran and Webb, 2016). One possible reason for this inconsistent findings may be due to the fact that, besides

having positive feelings, attitude, and intention towards purchase, there might be other factors that indirectly affect consumers' final purchase decision. In order to minimise the attitude-behaviour and intention-behaviour gaps that hinder consumers from translating their attitude, values, inclination and intention into actual behaviour, there might be a need to consider a third factor as a possible moderator to strengthen these weak relationships.

Past studies found that, under certain circumstances female consumers are more environmentally concerned and are engaged in more pro-environmental behaviour compared to their male counterparts (Cicellin et al., 2015; Gracia et al., 2012; Lee et al., 2013; Matthes et al., 2014). Likewise, Hunter et al. (2004) examined gender differences in the environmental context among 22 countries and found that female respondents exhibit more pro-environmental behaviour compared to male, such as purchasing organic food and recycling behaviour. Another stream of research revealed that male has less tendency to participate in pro-environmental behaviour compared to female (Diamantopoulos et al., 2003; Mostafa, 2007), while others found no gender differences in environmental behaviours (Reynisdottir et al., 2008; Wolters, 2014).

In the food purchase context, studies reported that male and female consumers act differently. Female consumers have higher participation in food-related activities, higher nutrition knowledge and have more tendency to eat healthier (Bellows et al., 2010; Weaver and Brittin, 2001). Not only this, it is also found that, male and female respondents hold different level of values and meaning to different types of food (Bellows et al., 2010; Wardle et al., 2004). Additionally, in the context of organic food, studies found that women have more preference to purchase and consume organic food compared to men (Tanner and Wölfing Kast, 2003).

Based on the above discussions, this research argued that the effect of attitude, subjective norm and perceived behavioural control on consumer intention to purchase organic food will vary between male and female. Also, the relationship between behavioural intention and actual purchase of organic food will vary between male and female. Based on such argument, the following hypotheses are developed:

H3 Gender will moderate the relationship between attitude and behavioural intention.

H4 Gender will moderate the relationship between subjective norm and behavioural intention.

H5 Gender will moderate the relationship between perceived behavioural control and behavioural intention.

H6 Gender will moderate the relationship between behavioural intention and purchase behaviour.

2.3 Extending the TPB

As discussed earlier, this study aims to extend the TPB by including moral norm to improve the predictive ability of this theoretical model. This inclusion was justified and supported by the NAM (Schwartz, 1977). According to this model, moral norm is activated by people's awareness of the consequences (AC) and the ascription of responsibility (AR). Moral norm refers to morality that people ought to follow. In other words, it is a person's belief towards what is right and what is wrong (Schwartz, 1977). NAM suggests that, not only the social norm but also moral norm can affect individuals'

pro-environmental behaviour. Individuals with lower level of moral norm have less motivation to perform certain behaviour, while individuals with higher level of moral norm are more likely to engage in the specific behaviour (Schwartz, 1977).

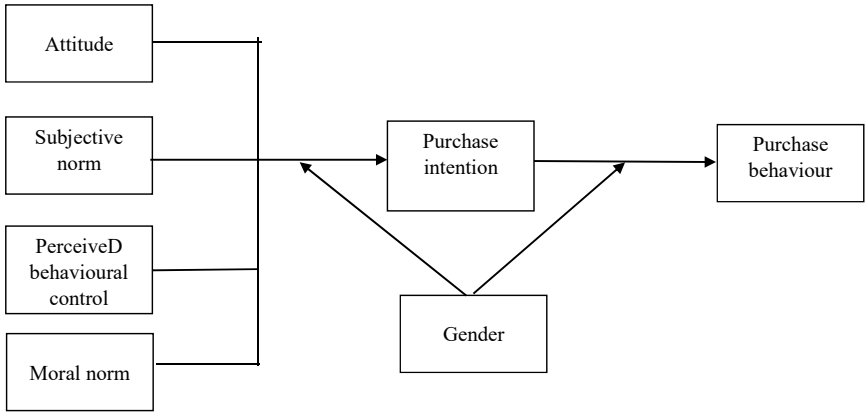
Past studies have confirmed the effect of moral norm on the purchase intention in different contexts such as energy saving behaviour in places of work (Gao et al., 2017), home care provision (Vermette and Godin, 1996), forestry machinery industry (Salam and Roy, 2014), committing driving infractions (Parker et al., 1995), green hotels (Chen and Tung, 2014), designated smoking sections (Boissonneault and Godin, 1990), as well as energy efficiency in the household (Fornara et al., 2016). Moral norm was found to be a critical predictor of intentions in 9 of the 11 total studies that Conner and Armitage (1998) conducted in their meta-analysis. In the research conducted by Thøgersen and Ölander (2006), moral norm was found as the single most vital indicator of the respondents' evaluations of the frequency of their purchases of various organic foods. Similarly, in this research, it is assumed that, consumers with high moral norm will have more moral obligations and responsibilities to purchase organic food. Thus, purchasing non-organic food may lead them to feel guilty and uncomfortable. Therefore, it can be concluded that consumers with high moral norm have more intention to purchase organic food. Nevertheless, the strength of this relationship probably will vary between male and female. Based on these findings, the following hypotheses are developed:

H7 There is a positive significant relationship between moral norm and purchase intention.

H8 Gender will moderate the relationship between moral norm and purchase intention.

The proposed conceptual framework is illustrated in Figure 1.

Figure 1 Conceptual framework of the study



3 Research methodology

3.1 Sampling design and data collection

Data were collected from organic food consumers in Klang Valley, Malaysia. Since it was impossible to include all consumers of organic food in the country in the sample, a

non-probability sampling technique particularly, judgmental sampling was adopted for collecting data. This type of sampling permits the theoretical generalisation of the results (Calder et al., 1981) which is in line with the objective of this study. Five big shopping malls in Klang valley area were selected to accomplish the objective of the study. Sample size was decided based on Hair et al.'s (2010) recommendation, i.e., 10 respondents to each item. Accordingly, the minimum sample size is 190 = (19 items*10).

Self-administered survey questionnaires were distributed to consumers who were at least 18 years old and who had experience of purchasing and consuming organic food in the last 6 months. Consumers who are at least 18 years old are sufficiently knowledgeable to make decisions and have purchasing power. In addition, it was expected that, consumers who have experience of purchasing and consuming organic food in the last 6 months have better knowledge about organic food and are able to provide relevant information pertaining to the phenomenon.

3.2 Variables and measures

In this study, all measures were adapted from existing literature. Attitude was measured using four items from Yadav (2016), whereas, subjective norm and perceived behavioural control were measured by using six items from Han et al. (2010). A three-item scale to measure moral norm was adapted from Fornara et al. (2016). The purchase intention scale was adapted from Singh and Verma (2017) which was a three-item scale. Moreover, purchase behaviour was measured by using three items adapted from Yadav and Pathak (2017). Five-point Likert scale ranging from 1 = 'strongly disagree' to 5 = 'strongly agree' is used to measure each item. Measurement items are shown in the Appendix.

Table 1 Profile of the respondents (full and split data sets)

	Full sample (n = 246)		*Male (n = 120)*		*Female (n = 126)*	
	Frequency	*%*	*Frequency*	*%*	*Frequency*	*%*
Age						
35 and less	114	46.3	56	46.7	58	46.0
More than 36	132	53.6	64	53.5	68	54.0
Income						
RM6000 and less	125	50.8	61	50.7	64	50.8
RM6001 and above	121	49.1	59	49.2	62	49.2

Around 300 questionnaires were distributed, among which 246 questionnaires were returned and found usable for further analysis. Table 1 shows respondents' demographic information (male = 120 and female = 126). The majority of the respondents are more than 36 years old (approximately 53.3%; full sample set), 53.5% were male and 54% were female. In terms of income, the majority of the respondents have income less than RM6000 (50.8%; full data set), 50.7% (male) and 50.8% (female).

4 Data analysis and findings

SPSS (version 23) was used to clean the data (checking for error, missing value, outlier, linearity, etc.) and to test the descriptive analysis. Next, structural equation modelling SmartPLS, version 3.2.6 (Ringle et al., 2015) was used to test the theoretical model. PLS-SEM has an advantage of estimating complicated model that has many relationships (direct, indirect) (Hair et al., 2017). Moreover, it is a suitable technique for the multi-group analysis. In total, 120 responses were obtained from male, while 126 responses from female. Following Hair et al.'s (2017) guidelines, this study examined the internal consistency reliability, convergent validity, discriminant validity, measurement invariance, and the structural model.

4.1 Measurement model assessment

As shown in Table 2, factor loadings for all items exceeded the recommend value of 0.60 (Chin, 1998; Quoquab et al., 2018), Cronbach alpha (CA) for all constructs surpassed the advised value of 0.70 (Henseler et al., 2009; Nunnally, 1978), composite reliability (CR) for all constructs exceeded the cut-off value of 0.80 (Chua et al., 2019; Henseler et al., 2016) and average variance extracted (AVE) for all constructs transcend the threshold value of 0.50 (Hair et al., 2017; Mohammad et al., 2019a). Thus, measurement model for full and split data sets reached satisfactory level in terms of their reliability and convergent validity. Next, discriminant validity was assessed using HTMT method (Henseler et al., 2015). As showed in Table 3, all discriminant values were less than the threshold value of HTMT.85 (Kline, 2011); thus, discriminant validity was established for full and split data sets.

4.2 Measurement invariance assessment

Before conducting MGA to compare the path coefficients between male and female in the organic food context, the suitability of the measurement models and measurement invariance should be confirmed (Henseler et al., 2016). Measurement invariance refers to whether or not, under different conditions of observing and studying phenomena, measurement operation yield measures of the same attribute (Henseler et al., 2016). Without measurement invariance, conclusion about model relationships are questionable (Hult et al., 2008). Henseler et al. (2016) suggested the procedures of measurement invariance of composites (MICOM) method for PLS-SEM. These procedures involve three steps:

1 configural invariance assessment (measurement models have the same basic factor structure for both groups)

2 compositional invariance assessment (i.e., composite scores are equal across the two groups)

3 equality of composite means values and variances.

Table 2 Measurement model assessment (full and split models)

Construct	*Items*	*Full sample (n = 246)*				*Male (n = 120)*				*Female (n = 126)*			
		Loadings	*CA*	*CR*	*AVR*	*Loadings*	*CA*	*CR*	*AVE*	*Lodgings*	*CA*	*CR*	*AVE*
Attitude	AT2	0.797	0.756	0.841	0.569	0.728	0.748	0.84	0.569	0.854	0.765	0.838	0.566
	AT1	0.744				0.71				0.781			
	AT3	0.762				0.799				0.717			
	AT4	0.713				0.776				0.642			
Moral norm	MN1	0.8	0.749	0.857	0.667	0.842	0.732	0.847	0.651	0.755	0.767	0.866	0.683
	MN2	0.868				0.868				0.872			
	MN3	0.778				0.699				0.848			
Purchase behaviour	PB1	0.851	0.775	0.868	0.687	0.843	0.758	0.86	0.672	0.859	0.793	0.877	0.704
	PB2	0.787				0.79				0.787			
	PB3	0.847				0.825				0.868			
Perceived behavioural control	PBC1	0.89	0.816	0.89	0.729	0.89	0.851	0.909	0.769	0.892	0.768	0.865	0.683
	PBC2	0.868				0.88				0.856			
	PBC3	0.801				0.862				0.72			
Purchase intention	PI1	0.818	0.772	0.867	0.685	0.812	0.755	0.859	0.67	0.821	0.787	0.875	0.701
	PI2	0.837				0.84				0.833			
	PI3	0.829				0.804				0.857			
Subjective norm	SN1	0.894	0.775	0.865	0.682	0.876	0.727	0.839	0.636	0.914	0.816	0.888	0.725
	SN2	0.752				0.724				0.78			
	SN3	0.826				0.786				0.855			

Table 3 Discriminant validity assessment (full and split models)

Full set	*Attitude*	*Moral norm*	*Purchase behaviour*	*Perceived behavioural control*	*Purchase intention*	*Subjective norm*
ATT						
MN	0.385					
PB	0.542	0.289				
PBC	0.597	0.428	0.411			
PI	0.766	0.562	0.617	0.717		
SN	0.527	0.221	0.373	0.426	0.655	
Male	*Attitude*	*Moral norm*	*Purchase behaviour*	*Perceive behavioural control*	*Purchase intention*	*Subjective norm*
ATT						
MN	0.399					
PB	0.5	0.317				
PBC	0.539	0.383	0.331			
PI	0.81	0.555	0.605	0.627		
SN	0.507	0.137	0.154	0.358	0.619	
Female	*Attitude*	*Moral norm*	*Purchase behaviour*	*Perceived behavioural control*	*Purchase intention*	*Subjective norm*
ATT						
MN	0.37					
PB	0.576	0.258				
PBC	0.671	0.486	0.504			
PI	0.728	0.565	0.624	0.835		
SN	0.545	0.301	0.553	0.513	0.688	

If configurable and compositional variance are established, partial measurement invariance is confirmed. If partial measurement invariance is established, the composite has equal mean values and variance across all group, full measurement invariance is confirmed (Henseler et al., 2016).

Firstly, configural invariance is established between male and female data sets because the measurement models have identical indicators (same number of constructs and items loaded on those constructs (Table 2 and Table 3). Secondly, compositional invariance was evaluated using a permutation procedure, to ensure that the composite scores are alike across male and female groups. The output of permutation test found that, none of the c values is significantly different from each other (Table 4). All permutation c value results (= 1) fall within 95% confidence interval; thus, compositional invariance is established. Thirdly, composites' equality of mean values and variances was assessed across the male and female. Compositional invariance requires examine whether the means values and variance between the composite score of first group and composite score of second group differ regarding their means and variance. The results of permutation test reveal that all composite constructs have no significant differences in

terms of the composite mean value and variances ratio because the result full the 95% confidence interval. Thus, full measurement invariance is confirmed (Table 4).

Table 4 Summary of the MICOM results

MICOM step 1				
Configural invariance established? Yes				
MICOM step 2				
Composite	*Correlation c*	*95% confidence interval*	*P-value*	*Compositional invariance*
ATT	0.986	0.983–1.00	0.076	Yes
MN	0.991	0.979–1.000	0.237	Yes
PB	1.000	0.99–1.000	0.876	Yes
PBC	0.999	0.996–1.000	0.501	Yes
PI	1.000	0.997–1.000	0.958	Yes
SN	0.999	0.989–1.000	0.752	Yes
MICOMP step 3				
Composite	*Difference of the composite's mean value (= 0)*	*95% confidence interval*	*P-value*	*Equal mean values?*
ATT	0.01	–0.254–0.256	0.938	Yes
MN	0.097	–0.259–0.265	0.444	Yes
PB	0.12	–0.246–0.262	0.374	Yes
PBC	0.021	–0.261–0.242	0.856	Yes
PI	0.098	–0.25–0.262	0.454	Yes
SN	0.159	–0.247–0.243	0.212	Yes
Composite	*Difference of the composite's variances ratio (= 0)*	*95% confidence interval*	*P-value*	*Equal variance values?*
ATT	–0.151	–0.359–0.369	0.429	Yes
MN	0.099	–0.305–0.31	0.559	Yes
PB	–0.193	–0.302–0.322	0.255	Yes
PBC	0.216	–0.369–0.4	0.254	Yes
PI	–0.023	–0.389–0.388	0.916	Yes
SN	–0.154	–0.361–0.36	0.427	Yes

4.3 Structural model assessment

The structural model represents the causal relationship between the latent variables (Mohammad et al., 2015; Quoquab et al. 2019). Hair et al. (2017), Henseler (2017) and Mohammad et al. (2019b) have suggested different criteria to assess the quality of the structural model including coefficient of determination (R^2), predictive power (Q2) and the path coefficients in terms of their size, sign and significance. Bootstrapping procedures with 5000 re-sampling was utilised to estimate the significance of the path coefficient (Hair et al., 2017).

Table 5 Structural model result (full and split models)

Hypotheses	*Relationships*	*Full dataset (n = 246)*				*Male (n = 120)*				*Female (n = 126)*			
		Std. B.	*SE*	*t-values*	*Results*	*Std. B*	*SE*	*t-values*	*Result*	*Std.*	*SE*	*t-values*	*Result*
H1a	ATT -> PI	0.315	0.053	5.931	S	0.368	0.075	4.898	S	0.272	0.062	4.382	S
H1b	SN -> PI	0.281	0.05	5.594	S	0.28	0.078	3.597	S	0.269	0.071	3.813	S
H1c	PBC -> PI	0.259	0.059	4.362	S	0.195	0.085	2.299	S	0.338	0.073	4.603	S
H2	PI -> PB	0.49	0.058	8.405	S	0.465	0.086	5.416	S	0.513	0.08	6.434	S
H7	MN -> PI	0.201	0.047	4.321	S	0.22	0.066	3.365	S	0.171	0.07	2.461	S

Table 6 In sample and out of sample prediction (full and split models)

	Full dataset (n = 246)		*Male (n = 120)*		*Female (n = 126)*	
	R-square	*Q2*	*R-square*	*Q2*	*R-square*	*Q2*
PB	0.24	0.15	0.216	0.132	0.262	0.162
PI	0.584	0.372	0.564	0.316	0.629	0.4

Table 4 demonstrate the path coefficients, standard error and t values for full and split datasets. The results revealed that attitude for full dataset ($B = 0.315$, $p < 0.05$), for male ($B = 0.368$, $p < 0.05$), and for female ($B = 0.272$, $p < 0.05$) exert positive and significant effect on behavioural intention in all three datasets. Thus, H1a is supported. Again, Table 4 demonstrate that subjective norm for full dataset ($B = 0.281$, $p < 0.05$), for male ($B = 0.28$, $p < 0.05$), and for female ($B = 0.268$, $p < 0.05$) are found to be significant in affecting behavioural intention in all three datasets, This provide support for H1b. Referring to same table, perceived behaviour control for full dataset ($B = 0.259$, $p < 0.05$), male ($B = 0.195$, $p < 0.05$), and female ($B = 0.338$, $p < 0.05$) also exert significant effect on purchase intention, thus supporting H1c. In addition, the result in Table 4, disclose that purchase intention for full dataset ($B = 0.49$, $p < 0.05$), for male ($B = 0.465$, $p < 0.05$), and for female ($B = 0.513$, $p < 0.05$) are exercising positive and significant effect on purchase behaviour, which provide support for H2. Additionally, moral norm for full dataset ($B = 0.201$, $p < 0.05$), for male ($B = 0.22$, $p < 0.05$), and for female ($B = 0.171$, $p < 0.05$) are found to be significantly affecting purchase intention, which support H7.

In terms of the R^2 value, 24% of the variance in purchase intention is explained by attitude, subjective norm, perceived behavioural control and moral norm in the full dataset, while the male dataset explained 0.216%, and female dataset explained 27.3% (see Table 6). The R^2 results also indicate that purchase intention explained 58.4% of the variance in purchase behaviour (full data), 56.4 % in male dataset, and 62.9% in female dataset.

Next, blindfolding procedure (Geisser, 1975; Stone, 1974), was employed to evaluate the predictive relevance (Q2) for all datasets. Blindfolding procedure is a re-sampling tactic that omits and predicts each data point of the reflective measurement model indicators of dependent variables. This procedure helps to find if there is any difference between the original and the predicted values. As illustrated in Table 6, Q2 values for purchase intention and purchase behaviour for all dataset (full and split) are greater than zero, thus confirming the predictive relevance of all models (Fornell and Cha, 1994).

4.4 Multi-group analysis

After full measurement invariance is established, PLS-MGA is conducted to discover the differences between male and female by using Welch-Satterthwait Test (Hair et al., 2017). Differences between the path coefficients between the two data sets are shown in Table 7. None of the paths are found to be significantly different between the two data sets (male and female), thus H3, H4, H5, H6 and H8 were not supported.

Table 7 Path difference between male and female

Hypotheses	*Relationship*	*Male std. B*	*Female std. B*	*Path coefficient difference*	*t-values*	*p-values*	
H3	ATT -> PI	0.368	0.272	0.096	0.950	0.344	NS
H4	SN -> PI	0.28	0.269	0.011	0.101	0.921	NS
H5	PBC -> PI	0.195	0.338	0.143	1.221	0.223	NS
H6	PI -> PB	0.465	0.513	0.048	0.412	0.681	NS
H8	MN -> PI	0.22	0.171	0.049	0.506	0.614	NS

5 Discussion

The primary objectives of the research were to examine the effect of attitude, subjective norm, and perceived behavioural control on consumer intention to purchase organic food. Moreover, to examine the moderating role of gender on the relationships between attitudes, subjective norm, perceived behavioural control and behavioural intention. Additionally, to extend the TPB by considering new variable. i.e., moral norm. To achieve these objectives, questionnaire was developed and distributed to consumers who purchased organic food last six months in Klang Valley area. After that, SPSS and SmartPLS were used to prepare the data and examine the hypothetical model.

The output of this research found support for the positive relationship between attitude, subjective norm, perceived behavioural control, and purchase intention which provide support for H1a, H1b, and H1c. These results are in line with TPB which suggests that, attitude, subjective norm and perceived behavioural control are the major three factors that affect and shape consumers' intention to act in certain way. This result also in agreement with past studies that found similar results in different contexts. For example, Han et al. (2017) found that travellers' intention to participate in bicycling is predicted by their attitude, subjective norm and perceived behavioural control. Similar result found by Tarkiainen and Sundqvist (2005) in the context of organic food purchase. The output of PLS found support for the positive relationship between behavioural intention and purchase intention in the organic food context. This result is consistent with the TPB that considers consumers' intention as a vital factor that guide consumers' final decision in regard to purchase (behaviour) in a specific manner. Moreover, this result is congruent with past studies that found positive association between intention and behaviour (Chen and Peng, 2012; Lien et al., 2012; Quoquab et al., 2018).

The findings of this research revealed that moral norm exerts positive and significant effect on consumers' intention to purchase organic food which provide support for H7. This implies that, the individuals with high moral norm have greater willingness to purchase organic foods. This finding is aligned with earlier studies which found moral norm is a crucial predictor of intention with regard to the adoption of electric vehicles (He and Zhan, 2018; Kiatkawsin and Han, 2017). Similarly, in the context of organic food purchase, this study emphasises the importance of considering and including moral norm in the TPB to enhance its ability to predict consumers' intention to purchase organic food.

The findings of this study found that gender did not moderate the relationship between attitude, subjective norm, perceived behavioural control, moral norm and behavioural intention; also between behavioural intention and purchase behaviour. In other words, there is no significant difference between male and female when testing the relationship between attitude, subjective norm, and perceived behavioural control moral norm and purchase intention of organic food in the context of Malaysia. This implies that, both categories (male and female) not only have good intention to purchase organic food, they also materialise this intention in their daily activities. One plausible explanation for this insignificant relationships is that, in this study, there is a strong and significant relationship between the independent variables (i.e., attitude, subjective norm, moral norm and the dependent variable (i.e., purchase intention). Baron and Kenny (1986) argued that moderator variable works better in a weak relationship between the predictor and the criterion. Therefore, including gender as a moderator does not significantly affect these relationships. Another possible explanation for this insignificant role of gender as moderator can be ascribed to the high and equal income for both male and female respondents. Customers' ability to purchase organic food can be affected by various factors such as their income, the price of organic food, the availability of organic food in the domestic market, etc. In this study, we found that both male and female have good and equal income to some extent. Thus, both groups can afford purchasing the organic food. Additional feasible clarification for this result can be embedded in the culture of the country. Malaysians regardless of their gender, race, and religion are highly educated and knowledgeable about the importance and benefit of buying and consuming organic food. Thus, this study did not find significant difference between male and female in terms of their intention and behaviour in the organic food purchase context.

6 Conclusions and implications

This research adds to the preceding consumer behaviour literature in regard to the consumption of organic produce by closely examining the neglected motivation of moral norm in the prediction of consumers' purchase intention of organic food. Myriad of studies have noted crucial motives regarding organic product. These include food safety concerns (Michaelidou and Hassan, 2008; Baker et al., 2004), health concerns (Wandel and Bugge, 1997) and personal values (Michaelidou and Hassan, 2008; Lea and Worsley, 2005). However, motivational factors like moral norm motive have been overlooked in previous research. Therefore, this study extended the TPB by including moral norm. This study integrated both TPB and NAM to have better understanding of consumer behaviour of organic food purchase. Thus, it can be concluded that, a significant factor in consumers' purchase intention is moral norm. More importantly, this study affirms that, moral norm has a vital effect on purchase behaviour via the mediating role of purchase intention. This study makes a novel contribution and creates a new pathway for potential future researchers who are interested in investigating moral norm's mechanism in relation to TPB model in the context of organic food. Moreover, this is a pioneer study that includes gender as a moderator variable that can moderate all relationships developed in this study. This inclusion was guided by the theory and literature. Although the result of PLS-MGA did not find support for gender as a moderator, this has enhanced our understating about Malaysian consumers' attitude, beliefs, intention and behaviour toward organic food purchase.

From the perspective of managerial contribution, this research contributes parameters for managers to develop increasingly effective marketing techniques that will not only assist companies in reaping unexpected benefits of selling organic food, but also will help the environment and society at large. The main objective of this research was to identify the primary predictors that motivate the purchase intention of organic foods in Malaysia as well as to expand our knowledge of the acceptance of organic foods. This study offers managers new levels of action to promote the organic food purchasing behaviours among their customers. It is vital to identify the underlying factors that influence consumers' organic food purchase behaviour as to assist marketers in developing appropriate marketing strategies to match consumer needs. In addition, the results of this study can aid the policy makers in the development of appropriate policies to boost organic food consumption behaviours. This would reduce the negative direct and indirect effects of individual consumption on the environment, especially considering the trend towards urbanisation and other lifestyle changes in Malaysia. In the long run, these study findings may lead to the reduction of environmental issues in Malaysia.

7 Limitation and future research directions

Though this study contributes significantly to the existing literature, there are some limitations that can be addressed in the future research. For example, other research approach such as qualitative research can be utilised, and respondents can be interviewed for better and more comprehensive explanations and perceptions. In addition, a combination of quantitative and qualitative research would further the knowledge and understanding of the motivational factors of purchasing organic food. Furthermore, future researchers can conduct studies in every state of Malaysia to gain a better perspective, as time constraints limited this study to the Klang Valley area. In this research, the respondents were those that reside in urban areas, meaning those that generally hold higher income and education as well as a more modern lifestyle compared to their rural counterparts; those surveyed were shopping at organic specialty stores and chain supermarkets. Therefore, the respondents were already aware about the benefit of organic foods and established patronage towards organic food stores. Future research could include broader segments of the population including the individuals who reside in rural areas.

References

Aertsens, J., Verbeke, W., Mondelaers, K. and Van Huylenbroeck, G. (2009) 'Personal determinants of organic food consumption: a review', *British Food Journal*, Vol. 111, No. 10, pp.1140–1167.

Ajzen, I. (1991) 'The theory of planned behavior', *Organizational Behavior and Human Decision Processes*, Vol. 50, No. 2, pp.179–211.

Ajzen, I. and Fishbein, M. (1980) *Understanding Attitudes and Predicting Social Behaviour*, Prentice-Hall, Englewood Cliffs, NJ.

Al-Swidi, A., Mohammed Rafiul Huque, S., Haroon Hafeez, M. and Noor Mohd Shariff, M. (2014) 'The role of subjective norms in theory of planned behavior in the context of organic food consumption', *British Food Journal*, Vol. 116, No. 10, pp.1561–1580.

Baker, S., Thompson, K.E., Engelken, J. and Huntley, K. (2004) 'Mapping the values driving organic food choice: Germany vs. the UK', *European Journal of Marketing*, Vol. 38, No. 8, pp.995–1012.

Baron, R.M. and Kenny, D.A. 1986) 'The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations', *Journal of Personality and Social Psychology*, Vol. 51, No. 6, pp.1173–1182.

Bellows, A.C., Alcaraz, G. and Hallman, W.K. (2010) 'Gender and food, a study of attitudes in the USA towards organic, local, US grown, and GM-free foods', *Appetite*, Vol. 55, No. 3, pp.540–550.

Belz, F-M. and Peattie, K. (2012) *Sustainability Marketing: A Global Perspective*, John Wiley, Chichester, UK.

Bertoldo, R. and Castro, P. (2016) 'The outer influence inside us: exploring the relation between social and personal norms', *Resources, Conservation and Recycling*, Vol. 112, No. 1, pp.45–53.

Boissonneault, E. and Godin, G. (1990) 'The prediction of intention to smoke only in designated work site areas', *Journal of occupational medicine. Official publication of the Industrial Medical Association*, Vol. 32, No. 7, pp.621–624.

Calder, B.J., Phillips, L.W. and Tybout, A.M. (1981) 'Designing research for application', *Journal of Consumer Research*, Vol. 8, No. 2, pp.197–207.

Carrington, M.J., Neville, B.A. and Whitwell, G.J. (2010) 'Why ethical consumers don't walk their talk: towards a framework for understanding the gap between the ethical purchase intentions and actual buying behaviour of ethically minded consumers', *Journal of Business Ethics*, Vol. 97, No. 1, pp.139–158.

Casidy, R., Phau, I. and Lwin, M. (2016) 'The role of religious leaders on digital piracy attitude and intention', *Journal of Retailing and Consumer Service*, Vol. 32, No. 1, pp.244–252.

Chekima, B., Igau, A., Wafa, S.A.W.S.K. and Chekima, K. (2017) 'Narrowing the gap: factors driving organic food consumption', *Journal of Cleaner Production*, Vol. 166, No. 5, pp.1438–1447.

Chen, A. and Peng, N. (2012) 'Green hotel knowledge and tourists' staying behavior', *Annals of Tourism Research*, Vol. 39, No. 4, pp.2211–2219.

Chen, M.F. (2016) 'Extending the theory of planned behavior model to explain people's energy savings and carbon reduction behavioral intentions to mitigate climate change in Taiwan-moral obligation matters', *Journal of Cleaner Production*, Vol. 112, No. 2, pp.1746–1753.

Chen, M-F. and Tung, P-J. (2014) 'Developing an extended theory of planned behavior model to predict consumers' intention to visit green hotels', *International Journal of Hospitality Management*, Vol. 36, No. 3, pp.221–230.

Chin, W.W. (1998) 'The partial least squares approach to structural equation modeling', *Modern Methods for Business Research*, Vol. 295, No. 2, pp.295–336.

Chou, C-J., Chen, K-S. and Wang, Y-Y. (2012) 'Green practices in the restaurant industry from an innovation adoption perspective: evidence from Taiwan', *International Journal of Hospitality Management*, Vol. 31, No. 3, pp.703–711.

Chua, K., Quoquab, F. and Mohammad, J. (2019) 'Factors affecting environmental citizenship behaviour', *Asia Pacific Journal of Marketing and Logistics*, https://doi.org/10.1108/APJML-05-2018-0177.

Cicellin, M., Mussolino, D. and Viganò, R. (2015) 'Gender diversity and father-daughter relationships: understanding the role of paternalistic leadership in family firm succession', *International Journal of Business Governance and Ethics*, Vol. 10, No. 1, pp.97–118.

Conner, M. and Armitage, C.J. (1998) 'Extending the theory of planned behavior: a review and avenues for further research', *Journal of Applied Social Psychology*, Vol. 28, No. 15, pp.1429–1464.

Daziano, R.A. and Achtnicht, M. (2014) 'Accounting for uncertainty in willingness to pay for environmental benefits', *Energy Economics*, Vol. 44, No. 3, pp.166–177.

Diamantopoulos, A., Schlegelmilch, B.B., Sinkovics, R.R. and Bohlen, G.M. (2003) 'Can socio-demographics still play a role in profiling green consumers? A review of the evidence and an empirical investigation', *Journal of Business Research*, Vol. 56, No. 6, pp.465–480.

Dodds, W.B., Monroe, K.B. and Grewal, D. (1991) 'Effects of price, brand, and store information on buyers' product evaluations', *Journal of Marketing Research*, Vol. 28, No. 3, pp.307–319.

Eriksson, L., Garvill, J. and Nordlund, A.M. (2008) 'Interrupting habitual car use: the importance of car habit strength and moral motivation for personal car use reduction', *Transportation Research Part F: Traffic Psychology and Behaviour*, Vol. 11, No. 1, pp.10–23.

Fornara, F., Pattitoni, P., Mura, M. and Strazzera, E. (2016) 'Predicting intention to improve household energy efficiency: the role of value-belief-norm theory, normative and informational influence, and specific attitude', *Journal of Environmental Psychology*, Vol. 45, No. 1, pp.1–10.

Fornell, C. and Cha, J. (1994) 'Partial least squares', in Bagozzi, R.P. (Ed.): *Advanced Methods of Marketing Research*, pp.52–78, Blackwell, Cambridge, MA.

Frederiks, E.R., Stenner, K. and Hobman, E.V. (2015) 'Household energy use: applying behavioural economics to understand consumer decision-making and behaviour', *Renewable and Sustainable Energy Reviews*, Vol. 41, No. 1, pp.1385–1394.

Gao, L., Wang, S., Li, J. and Li, H. (2017) 'Application of the extended theory of planned behavior to understand individual's energy saving behavior in workplaces', *Resources, Conservation and Recycling*, Vol. 127, No. 11, pp.107–113.

Geisser, S. (1975) 'A predictive approach to the random effect model', *Biometrika*, Vol. 61, No. 1, pp.101–107.

Gleim, M. and Lawson, J.S. (2014) 'Spanning the gap: an examination of the factors leading to the green gap', *Journal of Consumer Marketing*, Vol. 31, Nos. 6/7, pp.503–514.

Gracia, A., De Magistris, T. and Nayga Jr., R.M. (2012) 'Importance of social influence in consumers' willingness to pay for local food: are there gender differences?', *Agribusiness*, Vol. 28, No. 3, pp.361–371.

Grewal, D., Krishnan, R., Baker, J., and Borin, N. (1998) 'The effect of store name, brand name and price discounts on consumers' evaluations and purchase intentions', Journal of retailing, Vol. 74, No. 3, pp. 331-352.

Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2010) *Multivariate Data*, 7th ed., Prentice Hall, Upper Saddle River.

Hair, J.F., Hult, G.T.M., Ringle, C.M. and Sarstedt, M. (2017) *A Primer On Partial Least Squares Structural Equation Modeling (PLS-SEM)*, 2nd ed., Sage, Los Angeles, CA.

Han, H., Hsu, L.T. and Sheu, C. (2010) 'Application of the theory of planned behavior to green hotel choice: testing the effect of environmental friendly activities', *Tourism Management*, Vol. 31, No. 3, pp.325–334.

Han, H., Meng, B. and Kim, W. (2017) 'Emerging bicycle tourism and the theory of planned behavior', *Journal of Sustainable Tourism*, Vol.25, No. 2, pp.292–309.

He, X. and Zhan, W. (2018) 'How to activate moral norm to adopt electric vehicles in China? An empirical study based on extended norm activation theory', *Journal of Cleaner Production*, Vol. 172, No. 2, pp.3546–3556.

Henseler, J. (2017) 'Bridging design and behavioral research with variance-based structural equation modeling', *Journal of Advertising*, Vol. 46, No. 1, pp.178–192.

Henseler, J., Hubona, G.S. and Pauline, A.R. (2016) 'Using PLS path modeling in new technology research: updated guidelines', *Industrial Management & Data Systems*, Vol. 116, No. 1, pp.2–20.

Henseler, J., Ringle, C.M. and Sarstedt, M. (2015) 'A new criterion for assessing discriminant validity in variance-based structural equation modelling', *Journal of the Academy of Marketing Science*, Vol. 43, No. 1, pp.115–135.

Henseler, J., Ringle, C.M. and Sinkovics, R.R. (2009) 'The use of partial least squares path modeling in international marketing', in Sinkovics, R.R. and Ghauri, P.N. (Eds.): *New Challenges to International Marketing (Advances in International Marketing)*, Vol. 20, pp.277–319, Emerald Group Publishing, Bingley,

Hsu, S-Y., Chang, C-C. and Lin, T.T. (2016) 'An analysis of purchase intentions toward organic food on health consciousness and food safety with/under structural equation modeling', *British Food Journal*, Vol. 118, No. 1, pp.200–216.

Hult, G., Ketchen Jr., D.J., Griffith, D.A., Chabowski, B.R., Hoffman, M.K., Dykes, B.J., Pollitte, W.A. and Cavusgil, S.T. (2008) 'An assessment of the measurement of performance in international business research', *Journal of International Business Studies*, Vol. 39, No. 6, pp.1064–1080.

Hunter, L.M., Hatch, A. and Johnson, A. (2004) 'Cross-national gender variation in environmental behaviors', *Social Science Quarterly*, Vol. 85, No. 3, pp.677–694.

Hustvedt, G. and Dickson, M.A. (2009) 'Consumer likelihood of purchasing organic cotton apparel: Influence of attitudes and self-identity', *Journal of Fashion Marketing and Management, An International Journal*, Vol. 13, No. 1, pp.49–65.

Kiatkawsin, K. and Han, H. (2017) 'Young travelers' intention to behave pro-environmentally: merging the value-belief-norm theory and the expectancy theory', *Tourism Management*, Vol. 59, No. 3, pp.76–88.

Kim, Y.J., Njite, D. and Hancer, M. (2013) 'Anticipated emotion in consumers' intentions to select eco-friendly restaurants: augmenting the theory of planned behavior', *International Journal of Hospitality Management*, Vol. 34, No. 3, pp.255–262.

Kline, R.B. (2011) *Principles and Practice of Structural Equation Modelling*, Guilford Press, New York, NY.

Ko, B.S. and Jin, B. (2017) 'Predictors of purchase intention toward green apparel products: a cross-cultural investigation in the USA and China', *Journal of Fashion Marketing and Management*, Vol. 21, No. 1, pp.70–87.

Kollmuss, A. and Agyeman, J. (2002) 'Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behavior?', *Environmental Education Research*, Vol. 8, No. 3, pp.239–260.

Lea, E. and Worsley, T. (2005) 'Australians' organic food beliefs, demographics and values', *British Food Journal*, Vol. 107, No. 11, pp.855–869.

Lee, E., Park, N-K. and Han, J.H. (2013) 'Gender difference in environmental attitude and behaviors in adoption of energy-efficient lighting at home', *Journal of Sustainable Development*, Vol. 6, No. 9, pp.36–56.

Lien, C-Y., Huang, C-W. and Chang, H-J. (2012) 'The influence of green consumption cognition of consumers on behavioural intention – a case study of the restaurant service industry', *African Journal of Business Management*, Vol. 6, No. 26, pp.7888–7895.

Matthes, J., Wonneberger, A. and Schmuck, D. (2014) 'Consumers' green involvement and the persuasive effects of emotional versus functional ads', *Journal of Business Research*, Vol. 67, No. 9, pp.1885–1893.

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. 2, pp.163–170.

Mohammad, J., Quoquab, F., Halimah, S. and Thurasamy, R. (2019a) 'Workplace internet leisure and employees' productivity: the mediating role of employee satisfaction', *Internet Research*, Vol. 29, No. 4, pp.725–748.

Mohammad, J., Quoquab, F., Idris, F., Al Jabari, M. and Wishah, R. (2019b) 'The mediating role of overall fairness perception: a structural equation modelling assessment', *Employee Relations*, Vol. 41, No. 3, pp.614–636.

Mohammad, J., Quoquab, F., Rahman, N.M.N.A. and Idris, F. (2015) 'Organisational citizenship behaviour in the Islamic financial sector: does Islamic work ethic make sense?', *International Journal of Business Governance and Ethics*, Vol. 10, No. 1, pp.1–27.

Moser, A.K. (2015) 'Thinking green, buying green? Drivers of pro-environmental purchasing behavior', *Journal of Consumer Marketing*, Vol. 32, No. 3, pp.167–175.

Mostafa, M.M. (2007) 'Gender differences in Egyptian consumers' green purchase behaviour: the effects of environmental knowledge, concern and attitude', *International Journal of Consumer Studies*, Vol. 31, No. 3, pp.220–229.

Nunnally, J.C. (1978) *Psychometric Theory*, 2nd ed., McGraw-Hill, New York.

Padel, S. and Foster, C. (2005) 'Exploring the gap between attitudes and behaviour: Understanding why consumers buy or do not buy organic food', *British Food Journal*, Vol. 107, No. 8, pp.606–625.

Park, J. and Ha, S. (2012) 'Understanding pro-environmental behavior: a comparison of sustainable consumers and apathetic consumers', *International Journal Retail Distribution Management*, Vol. 40, No. 5, pp.388–403.

Parker, D., Manstead, A.S. and Stradling, S.G. (1995) 'Extending the theory of planned behaviour: the role of personal norm', *British Journal of Social Psychology*, Vol. 34, No. 2, pp.127–138.

Paul, J., Modi, A. and Patel, J. (2016) 'Predicting green product consumption using theory of planned behavior and reasoned action', *Journal of Retailing and Consumer Services*, Vol. 29, No. 1, pp.123–134.

Perugini, M. and Bagozzi, R.P. (2001) 'The role of desires and anticipated emotions in goal directed behaviours: broadening and deepening the theory of planned behaviour', *British Journal of Social Psychology*, Vol. 40, No. 1, pp.79–98.

Pontonio, E., Rizzello, C.G., Di Cagno, R., Dousset, X., Clément, H., Filannino, P. et al. (2016) 'How organic farming of wheat may affect the sourdough and the nutritional and technological features of leavened baked goods', *International journal of Food Microbiology*, Vol. 239, No. 4, pp.44–53.

Popa, M., Mitelut, A., Popa, E., Stan, A. and Popa, V. (2018) 'Organic foods contribution to nutritional quality and value', *Trends in Food Science & Technology*, Vol. 84, No. 1, pp.15–18.

Quoquab, F., Mohammad, J. and Sukari, N. (2019) 'A multiple-item scale for measuring 'sustainable consumption behaviour' construct', *Asia Pacific Journal of Marketing and Logistics*, Vol. 31, No. 4, pp.791–816.

Quoquab, F., Mohammad, J., Yasin, N.M. and Abdullah, N.L. (2018) 'Antecedents of switching intention in the mobile telecommunications industry: a partial least square approach', *Asia Pacific Journal of Marketing and Logistics*, Vol. 30, No. 4, pp.1087–1111.

Quoquab, F., Pahlevan, S., Mohammad, J. and Thurasamy, R. (2017) 'Factors affecting consumers' intention to purchase counterfeit product: empirical study in the Malaysian market', *Asia Pacific Journal of Marketing and Logistics*, Vol. 29, No. 4, pp.837–853.

Reynisdottir, M., Song, H. and Agrusa, J. (2008) 'Willingness to pay entrance fees to natural attractions: an Icelandic case study', *Tourism Management*, Vol. 29, No. 6, pp.1076–1083.

Ringle, C.M., Wende, S. and Becker, J-M. (2015) *SmartPLS 3*, SmartPLS GmbH, Boenningstedt [online] http://www.smartpls.com (accessed 3 March 2018).

Rodríguez-Barreiro, L.M., Fernández-Manzanal, R., Serra, L.M., Carrasquer, J., Murillo, M.B., Morales, M.J., Calvo, J.M. and Valle, J.d. (2013) 'Approach to a causal model between attitudes and environmental behaviour. a graduate case study', *Journal of Cleaner Production*, Vol. 48, No. 63, pp.116–125.

Salam, K.R. and Roy, M.L. (2014) 'Becoming environmental stakeholders: evidence from the forestry machinery industry', *International Journal of Business Governance and Ethics*, Vol. 9, No. 4, pp.313–329.

Schwartz, S.H. (1977) 'Normative influences on altruism', in *Advances in Experimental Social Psychology*, Vol. 10, pp.221–279, Elsevier.

Shao, C.Y., Baker, J.A. and Wagner, J. (2004) 'The effects of appropriateness of service contact personnel dress on customer expectations of service quality and purchase intention: the moderating influences of involvement and gender', *Journal of Business Research*, Vol. 57, No. 10, pp.1164–1176.

Sharma, D., Bhattacharya, S. and Thukral, S. (2019) 'Resource-based view on corporate sustainable financial reporting and firm performance: evidences from emerging Indian economy', *International Journal of Business Governance and Ethics*, Vol. 13, No. 4, pp.323–344.

Sheeran, P. and Webb, T.L. (2016) 'The intention-behavior gap', *Social and Personality Psychology Compass*, Vol. 10, pp.503–518.

Singh, A. and Verma, P. (2017) 'Factors influencing Indian consumers' actual buying behaviour towards organic food products', *Journal of Cleaner Production*, Vol. 167, No. 4, pp.473–483.

Spears, N. and Singh, S.N. (2004) 'Measuring attitude toward the brand and purchase intentions', *Journal of Current Issues & Research in Advertising*, Vol. 26, No. 2, pp.53–66.

Stern, P.C. (2000) 'New environmental theories: toward a coherent theory of environmentally significant behavior', *Journal of Social Issues*, Vol. 56, No. 3, pp.407–424.

Stone, M. (1974) 'Cross-validatory choice and assessment of statistical predictions', *Journal of the Royal Statistical Society*, Vol. 36, No. 2, pp.111–147.

Tanner, C. and Wölfing Kast, S. (2003) 'Promoting sustainable consumption: determinants of green purchases by Swiss consumers', *Psychology & Marketing*, Vol. 20, No. 10, pp.883–902.

Tarkiainen, A. and Sundqvist, S. (2005) 'Subjective norms, attitudes and intentions of Finnish consumers in buying organic food', *British Food Journal*, Vol. 107, No. 11, pp.808–822.

Teng, C-C. and Wang, Y-M. (2015) 'Decisional factors driving organic food consumption: generation of consumer purchase intentions', British Food Journal, Vol. 117, No. 3, pp.1066–1081.

Thøgersen, J. and Ölander, F. (2006) 'The dynamic interaction of personal norms and environment-friendly buying behavior: a panel study 1', *Journal of Applied Social Psychology*, Vol. 36, No. 7, pp.1758–1780.

Verhoef, P.C. (2005) 'Explaining purchases of organic meat by Dutch consumers', *European Review of Agricultural Economics*, Vol. 32, No. 2, pp.245–267.

Vermette, L. and Godin, G. (1996) 'Nurses' intentions to provide home care: the impact of AIDS and homosexuality', *Aids Care*, Vol. 8, No. 4, pp.479–488.

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.

Wardle, J., Haase, A.M., Steptoe, A., Nillapun, M., Jonwutiwes, K. and Bellisie, F. (2004) 'Gender differences in food choice: the contribution of health beliefs and dieting', *Annals of Behavioral Medicine*, Vol. 27, No. 2, pp.107–116.

Weaver, M.R. and Brittin, H.C. (2001) 'Food preferences of men and women by sensory evaluation versus questionnaire', *Family and Consumer Sciences Research Journal*, Vol. 29, No. 3, pp.288–301.

Wolters, E.A. (2014) 'Attitude-behavior consistency in household water consumption', *The Social Science Journal*, Vol. 51, No. 3, pp.455–463.

Yadav, R. (2016) 'Altruistic or egoistic: which value promotes organic food consumption among young consumers? A study in the context of a developing nation', *Journal of Retailing and Consumer Services*, Vol. 33, No. 4, pp.92–97.

Yadav, R. and Pathak, G.S. (2017) 'Determinants of consumers' green purchase behavior in a developing nation: applying and extending the theory of planned behavior', *Ecological Economics*, Vol. 134, No. 2, pp.114–122.

Yadav, R. and Pathak, G.S. (2017) Determinants of consumers' green purchase behaviour in a developing nation: applying and extending the theory of planned behaviour', *Ecological Economics*, Vol. 134, No. 3, pp.114–122.

Zeithaml, V.A. (1988) 'Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence', *Journal of Marketing*, Vol. 52, No. 3, pp.2–22.

Zhang, Y., Wang, Z. and Zhou, G. (2013) 'Antecedents of employee electricity saving behavior in organizations: an empirical study based on norm activation model', *Energy Policy*, Vol. 62, No. 4, pp.1120–1127.

Appendix

Attitude	1	Buying organic food is a good idea.
	2	Buying organic food is a wise choice.
	3	I like the idea of buying organic food.
	4	Buying organic food would be pleasant.
Subjective norm	5	Most people who are important to me, think that I should buy organic food.
	6	Most people who are important to me would want me to purchase organic food.
	7	People whose opinions I value would prefer that I should buy organic food
Perceived behavioural control	8	To buy or not to buy organic food is completely up to me.
	9	I am confident that if I want, I can buy organic food.
	10	I have resources, time, and opportunities to buy organic food.
Moral norm	11	I feel morally obligated to purchase organic food rather than non-organic food regardless of what others are doing.
	12	I feel guilty if I do not purchase organic food rather than non-organic food.
	13	If I purchase organic food rather than non-organic food.
		I feel good about myself
Purchase intention	14	I intend to consume organic foods in the future
	15	I am always interested in purchasing more organic food for the family's needs
	16	I always intend to look for organic foods, although outside the city
Purchase behaviour	17	I have been purchasing organic food at regular basis.
	18	I have been purchasing organic food to fulfil my daily needs.
	19	I have been purchasing organic food over the past six months.