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## **Ecological purchase behaviour: insights from a Middle Eastern country**

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**Abstract:** This study examined the influence of attitude towards environment and subjective norms on the ecological purchase intentions of Iranian consumers. The study subsequently investigated the influence of ecological purchase intentions on actual purchase behaviour of consumers and explored the key factors resulting in the lack of tendency for purchasing ecological products by Iranian consumers. Out of the three conjectured hypotheses, two were supported, which partially supported theory of reasoned action proposed by Ajzen and Fishbein (1980). Findings of the study revealed that the subjective norms significantly influenced ecological purchase intentions, which in turn significantly resulted in purchase behaviour. However, the influence of attitudes towards environment on ecological purchase intentions was not significant.

**Keywords:** ecological purchase; purchase intentions; purchase behaviour; Iran; attitude towards environment; ATE; subjective norms; SN; ecological purchase intentions; EPI; ecological purchase behaviour; EPB.

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## 1 Introduction

Humans have always been looking for ways of improving their lifestyle and living environment. Nevertheless, in the 21st century, unavoidable problems have been caused for citizens by rapid growth of population, expansion of cities and density of industrialised centres. Population growth is normally followed by increase in consumption amount for urban and industrial purposes, as well as waste resulted from consumption. Waste dumped in the nature threatens humans' lives and causes pollutions to the planet. One of the best ways to get rid of such problems is recycling. While global environmental crisis has turned into a significant social issue over the past two decades and has shaped people's mindset and raised their awareness on environmental problems such as global warming and pollution (Damoori et al., 2011), little attention is given to recycling in developing countries and huge amounts of waste are discarded in nature without proper recycling. In this interim, using environmentally friendly products will decrease damages to nature. Although previous studies have demonstrated environmentally friendly behaviour to be perceived as low status, results of recent research suggest that attitudes towards conservation behaviour may be improving (Welte and Anastasio, 2010). Given the widespread public acceptance of the global environmental crisis, environmentalism has become a criterion of influencing consumer

purchase behaviour from marketing point of view (Follows and Jobber, 2000). As noted by Aoyagi-Usui et al. (2003), factors encouraging environmental actions differ by country and by type of actions. Thus, an improved understanding of the factors that drive consumers towards more ecological purchase choices (Calcott and Walls, 2005; Dietz et al., 1998; van Birgelen et al., 2009), enable governments and companies to influence consumers' environmental mind-set and behaviour in the long run.

In this article, we investigate how attitude towards environment (ATE) and external influence from the community relate to consumer purchase decisions. We build a conceptual framework based on Ajzen and Fishbein's (1980) theory of reasoned action and try to answer the following research questions:

- 1 Does ATE and protection influence ecological purchase intentions (EPI) of consumers?
- 2 Do subjective norms (SN) influence EPI of consumers?
- 3 What are the factors affecting lack of tendency for purchasing ecological products?

Subjective norm can be viewed as an individual's perception of the social pressure on him/her to perform the target behaviour (Ajzen and Fishbein, 1980). To answer the first two questions, we tested our framework empirically using a sample of Iranian consumers. As for the third question, a survey including a list of common factors in the form of statements was provided to respondents and they were asked to select their agreement with several statements using a seven-point Likert type scale. This study contributes to the theory of reasoned action and its application in environmental behaviour across Iranian culture as it is the first known study in Iranian context using this method. It also expands our understanding about the environmental intentions and behaviours of consumers from a developing country and determines the major factors affecting the lack of tendency for purchasing ecological products by Iranian consumers. As argued by Oliver and Lee (2010), it is also important to understand how culture impacts decision making regarding environmentally friendly products.

The remainder of this paper is organised as the following. First a review of the current literature is provided followed by research objectives and hypotheses. Then, research methodology is explained followed by results. Lastly, findings are discussed and paper is concluded.

## **2 Literature review**

In the past decades, a series of commercial and organisational research activities were dealing with sustainability and green products (e.g., Desmond and Crane, 2004; Crane, 2000; Kilbourne, 1998; Fisk, 1998; Bhate and Lawler, 1997; Dagnoli, 1991; Freeman and Dagnoli, 1990) and protecting environments became an important issue in both regional and global scales (e.g., Ginsberg and Bloom, 2004; Kornblut, 2001; Dunlap and Saad, 2000; Asprion, 2000; Dunlap et al., 1993; McDaniel and Rylander, 1993).

The issue of environmental protection, which has created 'green consumerism' motion, has roots in the awareness of the destruction of natural resources and entities (Moisander, 2007; Manaktola and Jauhari, 2007). This has led to changes in consumer behaviours and activities (Kangun et al., 1991; Martin and Simintiras, 1995; Todd, 2004). Therefore, green products became well-known and widely spread over different markets

(Nimse et al., 2007; D'Souza et al., 2006; Paladino, 2005; Lockie et al., 2002). This orientation is evident in a variety of industries, including food sector (e.g., Padel and Foster, 2005; Paladino, 2005; Harper and Makatouni, 2002; Tanner and Kast, 2003; Walley et al., 2000), personal care sector (D'Souza et al., 2006), and construction (Allen and Potiowsky, 2008).

Without a clear understanding of consumer behaviour, it would be difficult to devise effective marketing and sales strategies and business models. There is a rich literature regarding consumer's attitude and behaviour for various product categories (Chen, 2007; Padel and Foster, 2005; Zanolli and Naspetti, 2002; Magnusson et al., 2001). A significant amount of literature on green consumer behaviour concentrates on non-consumption and post-consumption behaviours (Follows and Jobber, 2000; Lee, 2009). However, there is still a gap in the literature, which might be challenged by investigating the purchase behaviour of green products (e.g., the moral concerns) (Goldstein et al., 2008; Hage et al., 2009; Thøgersen, 1996).

Green marketing tools and environmental advertisement will help promotion of awareness in users and thus will guide them into purchasing green products. It should be noted that majority of recent studies regarding green marketing and purchase behaviour have been conducted in industrialised countries (Chatterjee, 2009; Bleda and Valente, 2008; Chan, 2004; Davis, 1993), therefore the results might be relevant in those cultures and generalisation would be hard. As Ottman (1992) and Peattie (1992) argue, attitudes and demand for green products might be different in various cultures and even in different market segments.

There are some critical issues regarding green products, which are of paramount importance. For instance, 'value' which is defined as "the consumer's overall assessment of the utility of a product based on perceptions of what is received and what is given" [Zeithaml, (1988), p.14], or "a belief about desirable end states" (Feather, 1990; Rokeach, 1973; Schwartz and Blisky, 1987).

'Attitude' refers to personal assessment of the favourability or unfavourability of certain behaviour. As Ajzen (1985) notes, a positive attitude of an individual towards undertaking a certain behaviour, makes it more likely for that person to undertake.

While, 'SN' reflects individual's perceived social pressure to act in a certain way, it has a significant effect on purchase intention of customers (Bamberg, 2003; Hillhouse et al., 2000; Kalafatis, 1999). A number of researches show that although certain behaviour could be so favourable to an individual, it might not be accomplished by him/her if he/she perceives it difficult (Chen, 2007). It might be because of the consumer's past experiences and behaviours (Conner and Armitage, 1998) and his past learning background (Bentler and Speckart, 1979).

Yet, Cleveland et al. (2005) believe that the degree of consumer's locus of control influences his/her decision to buy the product. Although, consumers might be unaware of some environmental problems, they may prefer more environmental friendly products if they receive more information about benefits associated with them (Niva et al., 1998; Laroche et al., 2001).

Consumer behaviourists believe that attitudes could help in prediction of peoples' actions. A number of factors are in the literature which shows that how attitudes could be useful to predict behaviour. For instance, personality type (Cacioppo et al., 1986), beliefs (Norman, 1975), prior knowledge and personal experience (Davidson et al., 1985; Smith and Swinyard, 1983; Fazio and Zanna, 1981) and some other factors (Ajzen, 1989) might influence on consumers' buying behaviour.

Tanner and Kast (2003) argue that according to the over consumption of products in industrial countries and the resulting environmental degradation, a shift towards more sustainable patterns is necessary. They consider personal and contextual barriers to consumers' purchases of green products and more specifically, green food products. Personal factors include: attitudes, personal norms, perceived behaviour barriers, knowledge, etc., and contextual factors are such as socioeconomic characteristics, living conditions, and store characteristics.

Some studies also have focused on consumers ethics. For example, Shaw and Shiu (2003) elaborated the increasing demand for ethical choices, or Carrigan and Attalla (2001) argued that marketing ethics and social responsibility are inherently controversial, they examine whether or not consumers care about ethical behaviour.

Follows and Jobber (2000) concentrated on environmentally responsible purchase behaviour. They tested a consumer model of environmentally responsible purchase behaviour using covariance structural analysis.

Chan (2001) investigated the determinants of Chinese consumers' green purchase behaviour. The influence of various cultural and psychological factors affecting the green purchase behaviour of Chinese consumers was examined using structural equation modelling (SEM). The results showed that subject's man-nature orientation, degree of collectivism, ecological affect, and ecological knowledge influence on the consumers' attitude toward green purchase behaviour. Lee (2008) considered three stages for marketing of green products. The first stage refers to 1980s, when green marketing initiated and born in industries (Peattie and Crane, 2005). During 1990s, second stage started while marketers experienced backlashes (Wong et al., 1996) and a weak relationship used to exist between green products, consumer attitudes and purchasing behaviour (Schrum et al., 1995). Since 2000, the third stage began. This stage was the most effective period and if full of evidences concerning governmental supports, advanced technology and global awareness.

By the way, Peattie and Crane (2005) categorised the most important marketing practices which are the main causes of green marketing's failure (i.e., green spinning, green selling, green harvesting, entrepreneur marketing, and compliance marketing).

Paço and Raposo (2009) studied the green segmentation of Portuguese consumers market, using a series of variables such as: concern, activism, commitment, ecological consciousness, affect, SN, green products buying behaviour, environmentally friendly behaviour, willingness to pay, information search, recycling and skepticism towards environmental claims.

Mostafa (2006) examined the influence of various attitudinal and psychographic factors on the green purchase behaviour of Egyptian consumers using hierarchal multiple regression model. In this research, consumers' ecological knowledge, concern, attitudes, altruism, and perceived effectiveness were influential. Mostafa (2007) concentrated on the influence of three attitudinal and cognitive factors on gender differences in green purchase behaviour in Egypt. More recently, he investigated the influence of consumer animosity on purchase behaviour of Egyptian consumers (Mostafa, 2010) and tested the proposed model in an Arab non-western context. The findings of his study confirmed the influence of consumers' ethnocentrism and consumer animosity on the purchase behaviour. In another study, Bahae and Pisani (2009a, 2009b) conducted a survey to investigate the Iranian consumers' attitude toward US products. Also, Mohamadian and Khataei (2011) investigated the influence of psychological and social factors on green

purchase behaviour of Iranian consumers. The main factors were: ecological attitude, social norms, personal norms and perceived effectiveness.

Sinnappan and Rahman (2011) examine the factors affecting green purchasing behaviours of Malaysian consumers. They finally conclude that elaborating both cognitive and affective elements to consumers would promote their social responsibility.

Ali et al. (2011) investigated the determinants of Pakistani consumers' green purchase behaviour. The results of their study revealed that consumers are prone to buy green products more often, but so far as the quality and price are important to them, those products should have a competitive advantage which makes them preferred in comparison to traditional products.

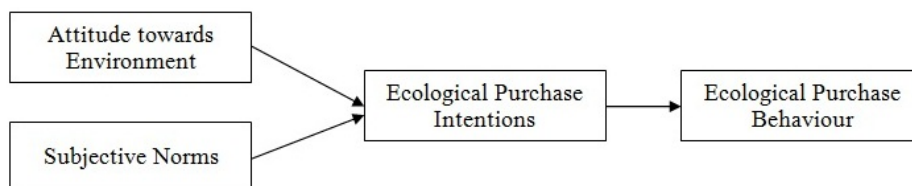
Albayrak et al. (2011) studied the influence of scepticism on green purchase behaviour among graduate students of Akdeniz University in Turkey. They argued that "marketing managers strive to understand the emerging 'green' market and to identify the determinants of their purchasing behaviour, in the last 30 years". They also noted that while previously the main concentration was on demographic characteristics, the current trends reveal a new direction toward analysing psychological variables such as environmental concern, perceived consumer effectiveness, environmental knowledge, and collectivism. Finally, they concluded that scepticism has negative impact on green purchase behaviour.

In a nutshell, a variety of studies show that consumers' attitude towards environmental and SN play a significant role in their green purchase behaviour. However, different studies concentrate on different aspects of a reality, which are ecological purchase behaviour (EPB) and its entanglement with consumers' attitudes. The most important issue is first to highlight the critical role of green products and their influence on a more sustainable environment, and second how to influence consumers' attitude to make green purchase behaviours more common.

### 3 Research objectives and hypotheses

This research aims to investigate impact of ATE and SN on EPI on the one hand, and the subsequent impact of EPI on EPB, on the other hand. The conceptual framework of the study is shown in Figure 1.

**Figure 1** The research model



*Source:* Based on Ajzen and Fishbein (1980)

To this end, based on the framework shown above which is in line Ajzen and Fishbein's (1980) theory of reasoned action, the following three hypotheses are developed:

Hypothesis 1 (H1) ATE has a positive influence on EPI.

Hypothesis 2 (H2) SN has a positive influence on EPI.

Hypothesis 3 (H3) EPI has a positive influence on EPB.

This research will also explore the underlying factors for the lack of tendency of consumers to buy ecological products. Final results of the study will include both the analysis of the research hypotheses and some results of the survey.

## 4 Methods

### 4.1 Sample and data

The required data was collected by using a structured questionnaire from postgraduate students across different universities of Iran. Postgraduate students were selected for this study since they not only form a group of consumers, but also have a higher level of education and maturity as compared to undergraduate students. By limiting our subjects to only postgraduate students, we expect to have more homogenous samples. A convenient sampling method was applied. A total of 274 completed questionnaires were deemed usable and applied for subsequent analysis. Majority of respondents were male (60.2%) and were doing their master studies (81.4%). Table 1 summarises respondents' profile.

**Table 1** Demographic profile of respondents

<i>Demographics</i>	<i>Frequency</i>	<i>Percentage</i>
Gender		
Male	165	60.2
Female	109	39.8
Education level		
PhD	51	18.6
Master	223	81.4

### 4.2 Instrument

The measurement items for this study were adopted from the study by van Birgelen et al. (2009), and are shown in the Appendix. For all the measures, a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) was applied.

## 5 Results

In order to test the research model, we used SPSS for descriptive, correlation and reliability analysis. Then, AMOS version 16 was applied to test the research model and hypotheses using SEM, as a proven comprehensive approach for testing hypotheses among observed and latent variables (Belanger and Carter, 2008).

### 5.1 Measurement model

In order to ensure measurement quality, construct reliability and convergent validity were tested. For a good model fit, the chi-square normalised by degrees of freedom ( $\chi^2/\text{df}$ ), called as CMIN, should not be lower than 3, goodness of fit index (GFI) should exceed 0.9, adjusted goodness of fit index (AGFI) should be higher than 0.8, non-normed fit index (NNFI) should exceed 0.9, comparative fit index (CFI) should exceed 0.9 and root mean squared error (RMSEA) should not exceed 0.08. After calculating the above mentioned measures, a number of fit indices did not meet the requirements. Therefore, items with a loading of less than 0.5 were removed respectively and the estimates were calculated again. After revising the measurement model, all measures were within the acceptable area (GFI = 0.929, AGFI = 0.891, NNFI = 0.910, CFI = 0.932, RMSEA = 0.070, CMIN = 2.356), suggesting adequate model fit.

The internal consistency of each scale was assessed using Cronbach's  $\alpha$  levels and it was verified as all constructs has a Cronbach's alpha of higher than 0.5, as suggested by Hair et al. (1998) and Bowling (1997), as an indication of good internal consistency. The composite reliability represents the total error of the observation variable belonging to certain potential variable, and it is used to judge the inner coherence of the measurement model. Composite reliability is suggested to exceed 0.6 (Fornell and Larcker, 1981). As for convergent validity, Hair et al. (1995) suggest that a factor loading value which exceeds 0.5 is considered to be a very significant value for convergent validity. Since all the items in the revised model have a loading of over 0.5, it is concluded that convergent validity is achieved. Besides, the discriminant validity of the constructs were examined and verified.

**Table 2** Reliability tests of constructs

<i>Constructs</i>	<i>Items</i>	<i>Cronbach's alpha</i>	<i>Loadings</i>	<i>Composite reliability</i>
ATE	ATE4	0.819	0.65	0.8
	ATE5R*		0.94	
	ATE6R**		0.77	
SN	SN1	0.548	0.55	0.6
	SN3		0.51	
	SN4		0.58	
EPI	EPI1	0.718	0.59	0.7
	EPI2		0.74	
	EPI3		0.67	
	EPI4		0.52	
EPB	EPB1	0.594	0.57	0.6
	EPB2		0.50	
	EPB3		0.65	

Notes: \*Reversed ATE5; \*\*reversed ATE6



### 5.2 Structural model and hypotheses testing results

Structural model fit the data well as the goodness-of-fit indices were all within recommended range (GFI = 0.929, AGFI = 0.894, NNFI = 0.914, CFI = 0.933, RMSEA = 0.069, CMIN = 2.288). The results of regression analysis for hypotheses revealed that in Iranian context, ATE does not influence EPI (rejecting Hypothesis 1). It was found that EPI is significantly influenced by subjective norm, which highlights the importance of people within the sphere of influence of the consumer on his/her purchase decision makings (supporting Hypothesis 2). Finally, it was revealed that EPI significantly influence EPB which supports Hypothesis 3. Findings of this study (except the non-significant influence of attitude towards intention) are supported by Ajzen and Fishbein's (1980) theory of reasoned action and are in line with findings of previous researchers (Follows and Jobber, 2000).

As we can see from the results of this study, ATE does not have a great impact on EPI and although it is not coincident with Ajzen and Fishbein's (1980) theory of reasoned action, because of cultural web of beliefs in Iranian context, this result can be interpreted. In the Iranian society, use of ecological products is a new phenomenon. On one hand SN play a more important role in purchase intentions as compared to ATE, and on the other hand norms and word of mouth cannot be neglected. In the Iranian society, attitudes hardly form and once they are formed, they hardly change. Thus, people prefer to follow some SN in their purchase intentions. Thus, we can understand why the first hypothesis was not supported, while the second one was confirmed.

**Table 3** Results of hypotheses testing

<i>Path</i>	<i>Hypothesis</i>	<i>Path coefficient</i>	<i>C.R.</i>	<i>p-value</i>	<i>Results</i>
EPI ← ATE	H1	0.08	0.735	0.463	Not supported
EPI ← SN	H2	0.96	4.786	***	Supported
EPB ← EPI	H3	0.96	6.748	***	Supported

The answer to the last research question was provided by analysing the results of the survey. It was found that the most important factor affecting the lack of tendency by Iranian consumers for purchasing ecological products was the difficulty in obtaining such products due to their limited supply, followed by their higher price. Table 4 summarises the findings of this section.

**Table 4** Factors affecting lack of tendency for purchasing ecological products

<i>Factors</i>	<i>Mean</i>	<i>Std. deviation</i>
• Difficulty of obtaining ecological products due to limited number of suppliers for such products	6.29	0.74
• Higher price	6.24	0.69
• Lack of sufficient information provided about advantages of such ecological products	5.99	0.87
• Less variability	5.85	0.81
• Difficulty of application	2.22	1.03

As we can see in Table 4, the most important factors affecting the lack of tendency by Iranian consumers in purchasing ecological products are the difficulty in obtaining such products due to their limited supply and their higher price. It is clear that limited supply and high prices play an important role in any purchase intentions and decisions in almost all societies including Iranian society. Difficulty of application was found to be the least important factor, which shows that although supply of these products is limited, producers have come up with appropriate products which are consumer-friendly and easy to be used by consumers. We also found out that 'less variability' is among the factors with low importance from the perspective of consumers, which indicates that producers of green products have also focused on the variability of their products. Overall, it can be argued that although producers of green products in Iran have had enough plans in their product lines which have resulted in good variability and easy application of such products, they have succeeded in promoting their products and shifting the culture towards one which emphasises on green product usage.

## **6 Discussion and conclusions**

This study has attempted to shed more light on the influential factors leading to EPB of Iranian consumers. While this study is among the first of its kind to examine this issue from a Middle-Eastern country, it differentiated itself from earlier studied in other geographical contexts by investigating the critical factors leading to lack of tendency to purchase of ecological products from the perspective of consumers. The findings of this study can be exploited by companies as a remedy to come up with more appealing ecological products by solving the issues pertaining to the key factors resulting in lack of purchasing tendency of Iranian consumers. Besides, given the findings of this study which revealed the influential role of SN on EPI, green products manufacturing companies may adjust their marketing strategies to suit the unique characteristics of this Middle-Eastern society. In line with the growing demands of consumers for environmentally responsible products, this research improved the understanding about the EPI and behaviours of Iranian consumers and provided invaluable insights for product-development and marketing managers with regards to consumers' EPBs. Ecological product is a relatively unexplored market niche in Iran, which can bring about financial benefits and sustainable growth to the companies involved. By innovating existing products and turning them into green ones, companies can explore this market through sustainable growth. Consequently, sustainable development initiatives can benefit companies and bring about good image for them (Nejati et al., 2010).

This study is not without limitation. The major limitation of this study pertains to its sample which has been collected from post-graduate students, thereby limiting the research findings to highly educated group of consumers. Moreover, convenient sampling applied in this study may limit the generalisability of the results. Besides, the focus of the current study was on self-reported consumers' perceptions of their ecological intentions and behaviours rather than on their actual observable purchase behaviour. However, efforts have been made to minimise this limitation by ensuring respondents on the anonymity of the survey. Future studies may try to include samples with other level of education and control its influence on the findings. Besides, as an avenue for future research, other related theories such as theory of planned behaviour (Ajzen, 1985) can be applied to explain ecological consumption behaviour of consumers. Furthermore, future

studies may also apply a more detailed framework where attitude is divided into its sub-categories. A recent study by Rahbar and Abdul Wahid (2010) on Malaysian consumers' purchase behaviour revealed that from the three components of consumer attitudes toward environmental protection (namely individual responsibility in environmental protection, government and industries roles, and financial roles), only the last two showed positive and significant impacts on consumers' actual purchase behaviour.

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## Appendix

### *Instrument items*

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#### Attitude towards environment

- ATE1: How this product may affect the environment is important to me.
- ATE2: It is important to me whether this product adds to a landfill site.
- ATE3: It is important to me whether a product causes the depletion of forests.
- ATE4: It is important to me whether a product causes global warming.
- ATE5: I feel people worry too much about how disposable products may affect the environment (reverse scale).
- ATE6: The amount of energy used to make a product is not important to me (reverse scale).

#### Subjective norms

- SN1: People in my circle of friends highly value my decision for purchasing environmental friendly goods.
- SN2: My family highly values my decision for purchasing environmental friendly goods.
- SN3: Purchasing environmental friendly goods has a significant importance in my community.
- SN4: When I buy environmentally-friendly goods, I feel that I have done something positive for environment.

#### Ecological purchase intentions

- EPI1: I prefer to buy environmentally-friendly goods.
- EPI2: I plan to buy environmentally-friendly goods in future.
- EPI3: I intend to buy environmentally-friendly goods within next month.
- EPI4: With regard to purchasing goods, I prefer to buy environmental-friendly goods in spite of higher price.

#### Ecological purchase behaviour

- EPB1: I often buy environmentally-friendly goods.
  - EPB2: I behave in an environmentally friendly way with regard to purchasing goods.
  - EPB3: I pay attention to the environmental friendliness of goods.
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