



*Journal of Advances in
Science and Technology*

*Vol. IV, No. VIII, February-
2013, ISSN 2230-9659*

DETERMINANTS OF GREEN CONSUMPTION BEHAVIOR OF ECO- FRIENDLY MOBILE PHONES

Determinants of Green Consumption Behavior of Eco-Friendly Mobile Phones

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Abstract – The mediation effects of subjective norms, attitudes and perceived behavioural control on these variables and purchase intentions were also assessed. A significant relationship was found between subjective norms, attitudes, product involvement, objective environmental knowledge and purchase intentions. No mediation effects were found. These findings are of practical value to green marketers, allowing them to design marketing initiatives accordingly.

INTRODUCTION

As environmental problems continue to increase in significance and command greater consumer awareness and attention, the corresponding opportunities for environmental marketers also increases. If marketers can generate interest among young consumers to purchase green products, the outcome of this accumulated effect could potentially play a crucial role in providing a solution towards tackling environmental problems (Bradley, Waliczek and Zajicek, 1999).

As the severity of environmental issues continues to grow alongside the increasing popularity of mobile phones, green marketing of eco-friendly mobile phones could possibly be one way to combat the escalating rate of ecological problems. There is limited analysis that examines the adoptions of environmentally-friendly fast moving consumer goods, such as electronics (Dobel, Paludan and Jensen, 2003), thus this study presents some important preliminary insights. Mobile phone usage was reported as a high in 2007 (77%) and was found to be the second most popular tool for communication (ABS, 2007). It may be plausible that a potential market exists for phones with a reduced negative impact on the environment.

An eco-friendly mobile phone is defined as follows: (a) 10 cents for every \$1 one spends through the mobile will be donated to carbon emission reduction programs, (b) electronic billing and on-line statement viewing will be used instead of paper bills to save trees; (c) recycled materials will be used to deliver customer welcome packs and any other necessary information and (d) free delivery of used mobile phones to Mobile Muster (official recycling program of the mobile industry) will be offered to customers (GreenMobiles, 2008a).

The Theory of Reasoned Action (TRA) and Theory of Planned behaviour (TPB) are used as the underlying frameworks for this study, whereby consistent with extant research, intentions have been used as a proxy of behaviour (Ajzen, 1991; Ajzen and Fishbein, 1980). This is also attributable to the newness of green mobiles in the market, whereby data of green mobile phone consumption patterns are not readily accessible. Therefore, actual purchase behaviour cannot be accurately gauged. As such, exploratory research will be conducted as it is suitable for gaining insight into an issue that little is known about (Churchill and Iacobucci, 2002).

As such, this article aims to address the following **research objectives**: (1) What are the antecedents that motivate young consumers to form intentions to purchase green mobiles? and (2) Do subjective norms, attitudes towards green mobiles and perceived behavioural control, mediate the influence of these antecedents on consumer purchase intentions?

THEORETICAL BACKGROUND & CONCEPTUAL MODEL

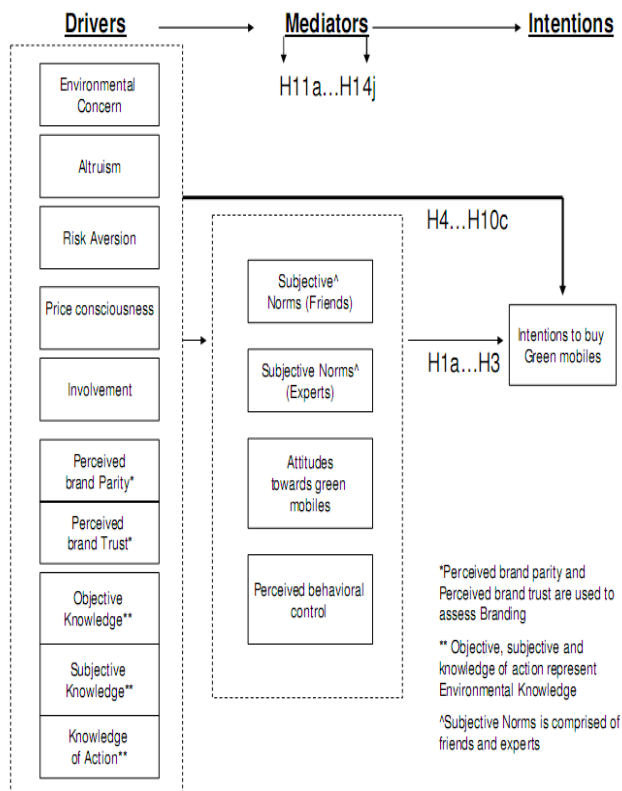
The Theory of Reasoned Action (TRA) highlights links between attitudes, subjective norms, intentions and consumer purchasing behaviour. The framework proposes that an individual's behaviour is prompted by their intention to act. Behavioural intentions measure a person's relative strength of purpose to execute certain behaviour (Ajzen and Fishbein, 1975). This is influenced by their attitude towards that action and how their subjective norm/social influences have impacted their thought patterns (Ajzen and Fishbein, 1980; Manstead and Parker, 1999; Hale, Householder, and Greene, 2003).

The Theory of Planned Behaviour (TPB) asserts that an individual's *voluntary* behaviour, instead of actual

behaviours and intentions, are predicted by their attitudes and how they view what others would think if they materialized that behaviour (Ajzen, 1991; Ajzen, 2002). Hence, the inclusion of “perceived behavioural control” accounts for circumstances where consumers do have intentions of purchasing, but fail to due to a lack of control over their behaviour (Miller, 2005).

The TRA/TPB has shown that attitudes, subjective norms and perceived behavioural control can influence intentions and behaviour (Manstead and Parker, 1999; Miller, 2005; Lutz, 1991), as can a suite of psychographic variables. In summary, we explore various factors identified in past research that can influence purchase intentions of green mobiles, amongst young Australian consumers (eg. Paladino, 2005). These factors include: subjective norms, attitudes, perceived behavioral control, environmental concern, altruism, risk aversion, price consciousness, product involvement, branding and environmental knowledge. These antecedents were chosen as research supports their relationships with purchase behaviours. Despite this, there are limited studies that assess the influence of product involvement and mediation effects of subjective norms, attitudes and perceived behavioural control on green purchase intentions. Hence, this study will address this gap in existing literature. As a result of space constraints, each hypothesis cannot be explained. Rather, the conceptual model examined, together with the relevant hypotheses is noted in Figure 1.

Figure 1: Conceptual Model



METHODOLOGY

Quantitative analysis was applied to obtain the data through a four-page survey questionnaire. In order to satisfy research objectives, a survey sample that was highly representative of young consumers was chosen. Accordingly, 250 surveys were distributed to a sample of students from an undergraduate class at an Maharashtra University. A total of 175 eligible surveys were collected yielding a response rate of 70%. All respondents were aged between 18 and 30 years old. A five point Likert scale was used to measure responses, where 1= strongly disagree and 5 = strongly agree. The statistical methods employed were exploratory factor analysis (EFA), reliability analysis, correlation analysis and multiple regression.

EFA determined that only 2 scales from the New Environment Paradigm (NEP), “limits to growth” and “man over nature” were found to be valid measures of environmental concern. Information was found to be a valid measure of objective environmental knowledge and internal LOC was used as a scale to assess perceived behavioural control.

Reliability analysis was determined by Cronbach’s alpha (α), whereby scores approaching or exceeding 0.8 signified acceptable reliability. However, the items with low alphas were not further reduced to one-item measures, as validity and reliability could not be established (Hair, Black, Babin, Anderson and Tatham, 2006). As the exploratory nature of this study is typically characterized by its’ flexibility with regards to research methods, items with alphas below 0.7 were accepted (Hair, Babin, Money and Samouel, 2003; Churchill and Iacobucci, 2002: 95). Correlation analysis found no correlations above 0.8 hence there was no indication of multi-co linearity (Hair, et. al., 2003).

In order to assess mediation effects, the procedure established by Baron and Kenny (1986) and explained by Hair et. al. (2003) was performed. Firstly, correlations were used to determine significant relationships between variables. If the new relationship between the independent and dependent variables remained significant and unchanged, when the mediating construct was included in the model as an additional predictor, then mediation was not supported. If it is reduced but remained significant when mediating variable was included, partial mediation would be supported. If the relationship reduced to a point of insignificance, then full mediation exists (Hair et. al., 2003).

SUMMARY OF RESULTS

Due to space constraints, a table summary of the hypotheses results is noted below. These will be explained at the presentation should the paper be accepted.

Table 1: Summary of Regression Results

Hypothesis	Independent Variable	Result
H1a	Subjective norms (friends)	Supported at $p \leq 0.01$
H1b	Subjective norms (experts)	Supported at $p \leq 0.05$
H2	Attitudes towards "green" mobiles	Partially Supported at $p \leq 0.10$
H3	Perceived behavioural control	Not supported
H4	Environmental concern	Not supported
H5	Altruism	Not supported
H6	Risk Aversion	Not supported
H7	Price consciousness	Not supported
H8	Product involvement	Supported at $p \leq 0.01$
H9a	Perceived brand parity	Not supported
H9b	Perceived brand trust	Not supported
H10a	Objective environmental knowledge	Supported at $p \leq 0.01$
H10b	Subjective environmental knowledge	Not supported
H10c	Knowledge of environmental action	Not supported
Hypothesis	Mediating Variable	Result
H11 a -- j	Subjective norms (friends)	Not supported
H12 a -- j	Subjective norms (experts)	Not supported
H13 a -- j	Attitudes towards green mobiles	Not supported
H14 a -- j	Perceived behavioural control	Not supported

THEORETICAL AND MANAGERIAL IMPLICATIONS

This study contributes to the expanding body of work that supports the TRA/TPB as a reliable predictive framework. The general support of individual hypotheses in this study reveals that the TRA/TPB can be a useful theory for examining the motivating factors behind the purchase of eco-friendly electronic products.

Of most interest were the strong results pertaining to the role of subjective norms. The influence of others appeared to be particularly strong for this cohort of consumers and had an immediate impact on the purchases selected by students in the study. Indeed, mobiles are also seen as a tool used by young people to 'express themselves'. As such, the influence of peers becomes even more pronounced for this product category. This is strongly supported by the results of the study. This also helps to explain the role of product involvement. It was found that if the product is of high personal importance to a student, it will positively influence their intentions to purchase.

There was also strong support for the role of objective environmental knowledge. Higher awareness and consciousness of the current ecological problems appears to be a significant factor in encouraging green purchases among the students in this study.

However, results showed a partial association between attitudes and purchase intentions. This could be attributed to the lack of product information and availability which has been found to render environmental attitudes as a less dominating determinant of ecological purchasing behaviour (Balachander and Farquhar, 1994).

The lack of significant mediation effects could be attributed to the lack of consumer knowledge due to

the newness of this product category and weak overall support for the direct associations between independent variables and purchase intentions of green mobiles.

Nevertheless, in light of increasing environmental issues, this study investigates influences that can affect purchase intentions of an ecological electronic product that could potentially appeal to a large market. The association between product involvement and behavioural intentions in a green context was also assessed. These results are significant as there is limited analysis of this relationship in extant literature.

The study was conducted amongst young consumers within an Indian context, this allows for the comparison of consumer intentions to purchase green products between different age groups and other countries. The chosen sample is also generally one of the more profitable target market segments for mobiles (The Age, 2004). As such, analysis of the relationship between specific aspects of the chosen variables with purchase intentions, does provide richer data for marketers to make more informed decisions.

The study was limited to the use of a student sample in Maharashtra. As such, their responses may not be representative of all consumers of different age brackets, residing in diverse geographic locations. While this impedes the generalisability of the study, it must be acknowledged that this is indeed a common limitation of most survey research.

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