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A taxonomy of mobile phone consumers: insights for marketing managers

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Amid less attention to the market segmentation of innovations through positioning innovations in the minds of consumers, the paper explores consumer innovativeness, need for emotion, and prestige price sensitivity to develop a taxonomy of mobile phone consumers. The study analyses survey data of 416 consumers using factor analysis and cluster analyses indicating interesting findings. Four distinct clusters emerge, namely cognitive adopters, prestige-seeking emotional innovators, emotional adopters, and prestige-seeking cognitive innovators. Findings reveal that prestige-seeking emotional innovators and prestige-seeking cognitive innovators have relatively higher level of innovativeness and prestige price sensitivity, but at the same time differ between them in terms of their level of need for emotion. The paper contributes to knowledge by suggesting that marketing constructs such as consumers' sensitivity to the prestige cue of prices as well as consumers' need for emotion are used to cluster mobile phone consumers. The taxonomy is highly relevant to marketing managers as it gives insights into potential additional bases for segmentation, positioning, and marketing communication strategy targeting innovative consumers through cognitive and/or emotional cues.

Keywords: consumer innovativeness; prestige price sensitivity; emotion; taxonomy; cluster; mobile phones

Introduction

Consumer innovativeness accounts for much of the success or failure of new products. The concept is important and relevant in management and marketing practices since organizations rely on new products for their profitability and future growth (Steenkamp, Hofstede, & Wedel, 1999), while innovative consumers are an important segment for organizations (Park, Yu, & Zhou, 2010). Consumer innovators have a key impact on consumer society as trendsetters since the rate by which they adopt new products encourages other customers to follow (López-Nicolás, Molina-Castillo, & Bouwman, 2008; Shoham & Ruvio, 2008).

Previous research examines different conceptualizations of consumer innovativeness (e.g., domain specific, cognitive, and sensory innovativeness) and links the concept with the purchase of new products (Goldsmith, Freiden, & Eastman, 1995; Roehrich, 2004) through psychological and other factors (e.g., personality). Academics and practitioners focus on the personality of consumer innovators, which explains purchase behavior and which is important for new products (Clark & Goldsmith, 2006). However, significant gaps remain with regard to the profile and specific characteristics of the innovative

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consumer (Klink & Athaide, 2010; Okazaki, 2006). Specifically, gaps remain with respect to consumer innovativeness and other factors such as emotions and prestige price sensitivity, which although important in purchases of innovations, researchers investigate mostly in isolation to consumer innovativeness. Previous research argues that emotions guide and persuade individual behaviors (e.g., Duhachek, 2004) and even generate 'an energy' to pursue desires (e.g., Belk, Ger, & Askegaard, 2003); therefore, the purchase of new products might serve to gratify emotion-related needs (e.g., need for emotion). Similarly, consumer innovators are price sensitive (Goldsmith & Newell, 1997) and purchases of new products can be expensive but at the same time 'prestigious'. Companies position innovations as high quality and/or exclusive products through 'prestigious' pricing that suggests high quality and status (Vigneron & Johnson, 1999). Vigneron and Johnson (1999) link prestige with motives of sociability and self-expression, which show that consumers who seek prestige in products or brands do so because of their values and traits which include conspicuousness, need for uniqueness, sociability, and possibly need for emotion. On this basis, emotions as trait and prestige price sensitivity are key constructs to understand consumers' adoption of innovations. These constructs are relevant to marketers of varied innovations (e.g., mobile phones, electronics) to develop successful segmentation and positioning strategies, as marketers can use them alongside consumer innovativeness and other relevant psychological characteristics such as mavenism (Goldsmith, Clark, & Goldsmith, 2006), need for variety and novelty, and need for uniqueness (Goldsmith et al., 2006; Michaelidou, 2011; Rohm & Swaminathan, 2004) to classify consumer innovators.

In line with the above discussion to embrace broader perspectives of key marketing concepts such as emotions (Richins, 1997) and price sensitivity (Lichtenstein, Ridgway, & Netemeyer, 1993), this study explores consumer innovativeness, need for emotion, and prestige price sensitivity as segmentation bases used to cluster consumers. The study focuses on domain-specific innovativeness, since importantly an individual's innovativeness is a function of the product category of interest (Gatignon & Robertson, 1985; Hirschman, 1980; Klink & Athaide, 2010). Research shows that domain-specific innovativeness relates to the acceptance of new products (Goldsmith & Hofacker, 1991; Goldsmith et al., 1995; Klink & Athaide, 2010) and suggests that consumers' innovativeness manifests within specific product categories and leads to purchase of new products within that particular domain.

Context of study

Previous research in the domain of innovation management highlights the novelty and importance of the mobile communication technology, which involves high rates of growth, and rapid rate of diffusion and adoption of mobile communication technology in both developed and developing countries (Chircu & Mahajan, 2009). Currently, there are four billion mobile phones in use globally of which more than one billion (27%) are smartphones and three billion have SMS capability (Digitalbuzz, 2012). Figure 1 shows that currently 82.3% of the global population have a mobile phone (Google statistics, 2012).

According to Kalba (2008), mobile phones are a 'manifestation of globalization' and have out-diffused all prior technologies within a relatively short period of time. Mobile and smartphones are versatile in terms of usage and allow their users to access information (e.g., weather, maps, news), listen to music, play games, and watch videos as well as socialize via Facebook and Twitter. Similarly, mobile and smartphones represent a contemporary marketing communication tool that companies utilize to target their

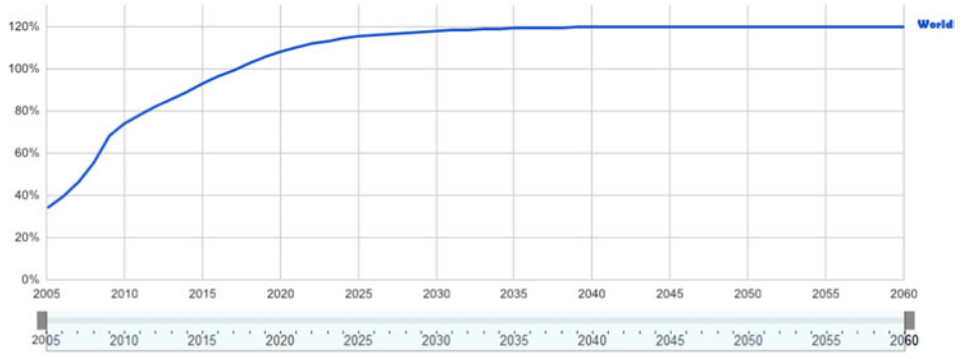

Figure 1. Percentage of world population with mobile phones.

customers with SMS messages and promotions. Simply, consumers' rate of adoption of mobile and smartphones encourages advertisers to invest in mobile space. Statistics show that mobile advertising in the UK has grown 116% to £83 million ($130 million) in 2010 (Internet Advertising Bureau UK, 2012). In 2011, mobile phones outperforms PCs in terms of Internet searches, whereas analysts predict that in 2014 mobile Internet will takeover desktop Internet usage (Digitalbuzz, 2012). In 2010, the market volume of mobile phones in the UK was 27.2 million units, and analysts forecast that it will reach 36.6 million units in 2015, an increase of 34.5% (Datamonitor, 2011). Statistics from Ofcom show that 91% of adults in the UK own or use a mobile phone, while 27% of adults and 47% of teenagers own a smartphone (Ofcom, 2011).

Another important aspect is that mobile and smartphones have a short life cycle, are more risky and complex than other innovative products, and they require consumers to learn about them (Saaksjarvi, 2003). Hence, the identification of innovators within this specific domain is highly useful and relevant for practitioners to develop their marketing and communication strategies. Previous research examines mobile phones on the basis of switching costs and satisfaction (e.g., Lee, Lee, & Feick, 2001), customer confusion (Turnbull, Leek, & Ying, 2000), and buyer behavior (Kimiloglu, Nasir, & Nasir, 2010). Other research examines mobile technology (e.g., mobile phones) in four fast-growing developing countries (Chircu & Mahajan, 2009). Recently, research investigates a mobile phone-based money transfer service in Kenya (Wooder & Baker, 2012). However, research devotes less attention to the market segmentation of mobile phones (e.g., Kimiloglu et al., 2010; O'Regan, Kalidas, Maksimova, & Reshetin, 2011), despite some studies focus on the categorization of buyers of mobile phones on the basis of the importance they attached to various attributes of mobile phones, such as physical features and functionality (e.g., Kimiloglu et al., 2010).

To the authors' best knowledge, a taxonomy of consumers in the domain of the mobile phone market on the basis of consumer innovativeness, need for emotion, and prestige price sensitivity does not exist. This study therefore offers original insights that advance management practice in the mobile phone market, since understanding how innovative, emotional, and prestigiously price-sensitive consumers are will give practitioners insights into how to better plan their marketing campaigns, position their innovations, and target their customers with emotion- and prestige-customized promotional messages. The study begins with a review of the extant literature on consumer innovativeness, need for emotion, and prestige price sensitivity. It proceeds with a description of the methodology,

data analysis, and results. The discussion of the results and the implications for marketing practitioners then follow. The paper concludes with limitations and future research.

Conceptual background

Market segmentation is a vital notion in marketing practice with important benefits (Dickson & Ginter, 1987; O'Connor & Sullivan, 1995; Wedel & Kamakura, 1999) for business and organizations. Academics and practitioners use market segmentation as a method to identify consumer and business segments in varied sectors, for example banking and financial services (e.g., Athanassopoulos, 2000; Machauer & Morgner, 2001), hospitality and tourism industry (e.g., Bojanic, 2007; Shani, Wang, Hutchinson, & Lai, 2010), and high-tech industry (e.g., Sharma & Lambert, 1994). In the domain of innovation, early research (Rogers, 1962) used personal characteristics and innovativeness to classify consumers according to their adoption of new products as innovators, early adopters, early majority, late majority, and laggards. Other early research identified characteristics of adopters of innovations on the basis of demographic and psychographic characteristics such as experience with the product and creativity (Dickerson & Gentry, 1983). Dickerson and Gentry (1983) investigate adopters of home computers and identify that these consumers had more experience with the product and that their profile was similar with that of creative consumers (also Hirschman, 1980). Later, research links consumer innovation with product involvement and shows that innovators have a high degree of involvement with the product category of interest (Foxall, 1994, 1995; Foxall & Bhate, 1993). The authors examine innovators for food items and suggest that this type of consumers are willing to try new products, accept the risk of unsatisfactory purchases, use more environmental stimuli (e.g., information), and are more active in their search for information (Foxall, 1994, 1995; Foxall & Bhate, 1993). Furthermore, other research classifies innovators of technological products according to knowledge and compatibility into technovators, supplemental experts, novices, and core experts, and suggests that technovators have a high level of involvement and are willing to test new products (Saaksjarvi, 2003). Moreover, commercial research (e.g., Sri consulting) has also used innovativeness to classify segments of US consumers (VALS) into eight categories (http://strategicbusinessinsights.com/).

Consumer innovativeness

Consumer innovativeness is a personality trait that concerns individual differences in response to new products (Goldsmith & Hofacker, 1991; Midgley & Dowling, 1978; Mudd, 1990). Early literature defines consumer innovativeness as a tendency or disposition to buy new products faster than other consumers (Midgley & Dowling, 1978). Although there is no consensus as to what constitutes 'innovativeness' (Roehrich, 2004), earlier research distinguishes innovativeness as 'innate' and 'actualized' (Midgley, 1977; Midgley & Dowling, 1978). Steenkamp et al. (1999) define innate innovativeness as a 'predisposition to buy new and different products and brands rather than remain with previous choices and consumer patterns' (p. 56), while 'actualized' innovativeness denotes an overt response toward new products (Gatignon & Robertson, 1991). Previous research uses 'actualized' innovativeness to exemplify the diffusion of innovations and hence to categorize consumers into innovators, early adopters, early majority, late majority, or laggards (e.g., Rogers, 1962). In contrast, researchers treat 'innate' innovativeness as a personality trait which refers to the propensities or latent preferences

of consumers to adopt novel experiences and products (e.g., Hirschman, 1980; Venkataraman, 1991; Venkataraman & Price, 1990), and it is distinct from that of innovation adoption categorization (Rogers, 1962). Researchers have also studied innovativeness in relation to cognition and sensation (Venkataraman & Price, 1990) and suggest that cognitive innovators prefer a greater amount of information and tend to be price sensitive, while sensory innovators are more interested in pleasure and novelty (Aroean, 2012; Park et al., 2010).

Furthermore, Roehrich (2004) provides a discussion of the 'forces,' or 'inherent needs,' which relate to and explain innate innovativeness. The author suggests that a number of underlying needs explain innate innovativeness such as the need for stimulation, variety-seeking tendency (Joachimstaler & Lastovicka, 1984; Raju, 1980; Venkatesan, 1973; Wahlers, Dunn, & Etzel, 1986), novelty-seeking and creativity (Hirschman, 1980; Mudd, 1990), and need for uniqueness (Burns & Krampf, 1991; Gatignon & Robertson, 1985). Innovativeness thus closely relates to a creative and variety-seeking mentality that includes the thinking of new ideas, the desire for new experiences, and the exploration of unique solutions to problems (Ridgway & Price, 1994, p. 69). Innate innovativeness also relates to willingness to change (Aroean, 2012; Im, Bayus, & Mason, 2003), risk taking (Rogers, 1962) as well as novelty-seeking, which is an internal force that drives the individual to seek out novel information (Aroean, 2012; Hirschman, 1980; Manning, Bearden, & Madden, 1995). As such, innovative consumers are keen to update their knowledge with the newest information on innovation independently of the influence of others (Manning et al., 1995). Theorists describe innovativeness as a normally distributed characteristic in the consumer population (Gatignon & Robertson, 1991; Goldsmith, d'Hauteville, & Flynn, 1998; Midgley & Dowling, 1978).

Need for emotion

Extant literature extensively examines emotions and shows that emotions motivate consumers and guide their attitudes and behavior (Allen, Machleit, Kleine, & Notani, 2005; Bagozzi, Gopinath, & Nyer, 1999; Duhachek, 2004). In addition, emotions affect customer satisfaction, retention, and mistrust of firms (Vanhamme & Lindgreen, 2001; Westbrook & Oliver 1991) as well as customers' approach and avoidance behaviors (Penz & Hogg, 2011). Researchers view emotions as an enduring trait, namely 'need for emotion' (Lee, Amir, & Ariely, 2009; Roehm & Roehm, 2005), which refers to the tendency to see affective stimuli and enjoy emotionally laden situations (Raman, Chattopadhyay, & Hoyer, 1995), irrespective of the strength of the experiential emotion *per se*; thus, need for emotion differs from the notion of 'affect intensity' (Larsen, Diener, & Emmons, 1986). Need for emotion is relevant to the 'sensory' property of consumer innovativeness (Park et al., 2010; Venkataraman & Price, 1990) given that the construct indicates that individuals prefer to use emotions in their interactions with marketing stimuli (Raman et al., 1995). Arguably, need for emotion relates to consumer innovativeness through stimulation, impulsivity, and creative capability (e.g., Sethi, Smith, & Park, 2001; Steenkamp et al., 1999). First, research emphasizes that need for emotion relates to an individual's personal value of stimulation, and hence as a stimulation-laden trait, it indicates sensitivity and receptiveness to emotional stimulation (Schwartz & Sagiv, 1995). On this basis, need for emotion therefore leads to consumer innovativeness and subsequently to the adoption of innovations (Raju, 1980). In addition, Roehrich's (2004) suggestion that innovative individuals seek stimulation in their consumption (e.g., emotional or sensory stimulation) supports the idea that stimulation predicts adoption of innovations. Second, need for emotion relates to consumer

innovativeness through impulsivity. Impulsivity refers to 'a sudden inclination to act without deliberation' (Goldenson, 1984, p. 37). The author suggests that impulsivity is a manifestation of consumer innovativeness whereby consumer innovativeness exerts an impulsive enactment, which leads to adoption of product innovations. In other words, innovative consumers adopt an innovation on impulse as a consequence of new stimuli (e.g., information) about the innovation. This indicates that innovative consumers are sensitive and receptive to stimuli that lead to an immediate reaction (i.e., purchasing on impulse), and suggests that need for emotion provides space for such impulsive reaction. On this basis, need for emotion interacts with consumer innovativeness because it can trigger an impulsive response, such as the purchase of an innovation, as a consequence of consumers' receptiveness to the stimuli. Third, in line with previous research (e.g., Dickerson & Gentry, 1983; Ridgway & Price, 1994), need for emotion relates to consumer innovativeness via creativity. Consumer innovators have an 'emergent nature,' which reflects a 'unique capability to imagine or envision how concepts might be further developed so that they will be successful in the mainstream marketplace' (Hoffman, Kopalle, & Novak, 2009, p. 4). Environmental psychology and specifically optimal stimulation level theory explain the link between need for emotion and innovativeness via creativity whereby creative individuals engage in creative activities to maintain their optimal stimulation level which includes emotional or sensory stimulation (Mehrabian & Russell, 1974; Raju, 1980).

Prestige price sensitivity

Previous research links consumer innovativeness with price sensitivity, for example Goldsmith and Newell (1997) suggest that innovative consumers are price insensitive, while Park et al. (2010) show that cognitive innovative consumers are price conscious as opposed to sensory innovative consumers. According to Lichtenstein et al. (1993), price as a cue construes of positive perceptions about what price 'signals to other people about the purchaser' (p. 236), including status and prestige. Prestige price sensitivity refers to a belief by consumers that the purchase of the most expensive brand is a positive experience, which impresses others (Lichtenstein et al., 1993; Netemeyer, Burton, & Lichtenstein, 1995). The authors define prestige sensitivity as 'a favorable perception of the price cue based on feelings of prominence and status that higher prices signal to other people about the purchaser' (Lichtenstein et al., 1993, p. 236). Consumers purchase expensive products because of what others will think about them. Hence, prestige is valuable for consumers who like to express their social status, or persona to others (Lichtenstein et al., 1993; Zeithaml, 1988). In addition, the purchase of new products or innovations may express high status and prestige, and price can be a cue that demonstrates the prestige of those products (O'Neill & Lambert, 2001). Previous research highlights the role of power, self-enhancement, and expression in consumer innovativeness (e.g., Roehrich, 2004; Rogers, 1962; Steenkamp et al., 1999; Vandecasteele & Geuens, 2010; Vigneron & Johnson, 1999). Such values drive consumers to achieve high social status and prestige (see Schwartz, 1992) through purchases of new products (Simonson & Nowlis, 2000; Steenkamp et al., 1999).

Methodology

Method and sample

The present study employs Hirschman's (1980) and Goldsmith and Hofacker's (1991) attitudinal perspective of innovativeness and uses an exploratory research design (without

a priori assumptions) to develop a taxonomy of mobile phone consumers based on these constructs. A questionnaire was used to collect data from a sample of respondents in two metropolitan cities in the UK. A drop-off-and-collect survey technique was utilized whereby questionnaires were distributed and collected from places such as offices, residential areas, shopping centers, sport centers, and other public premises. A total of 416 completed questionnaires were collected out of 800 dropped-off, representing a response rate of more than 50%.

Measurements

The scale used to capture consumer innovativeness derives from Goldsmith and Hofacker (1991) and was preferred over other scales due of its originality in capturing domain-specific innovativeness (Roehrich, 2004) and which is linked to the purchase of new products (Goldsmith et al., 1995). The scale consists of six items measured on a range of 1–7. To measure prestige price sensitivity, a scale of nine items originating from Lichtenstein et al. (1993) was used. Finally, a set of 12 items originating from Raman et al. (1995) was used to measure need for emotion on a scale of 1–7. Items capturing consumer innovativeness and prestige price sensitivity (i.e., Goldsmith & Hofacker, 1991; Lichtenstein et al., 1993) were gauged for mobile phones. To capture need for emotion, respondents were asked to consider mobile phones when indicating their answers. The reason for doing this is that although need for emotion is viewed as a personality trait, which maybe beyond product domain specificity, literature suggests that emotions differ according to consumption situations (Richins, 1997). Previous research measuring similar personality traits (e.g., optimal stimulation level, variety-seeking) did not gauge the items according to the product domain (e.g., Michaelidou 2011; Rohm & Swaminathan, 2004). Therefore, for the purchase of different products, consumers may be confronted with different emotions. In addition, literature suggests that emotions refer to specific objects or stimulus events (Scherer, 2005), thus they are likely to vary across consumption contexts. Hence, consumers' need for emotion is likely to be manifested differently across purchase and consumption contexts.

Analysis and results

The sample consists of 48% males and 52% females. Table 1 indicates the sample's age and gender.

Exploratory factor analysis

In line with previous research (Michaelidou, 2011; Rohm & Swaminathan, 2004), prior to cluster analysis, we run exploratory factor analysis (EFA) via Principal Component

Table 1. Sample by age and gender.

		Male	Female	Total
Age	17–29	64	98	162
	30–39	74	60	134
	40–49	51	33	84
	50–59	10	21	31
	60 +	1	4	5
Total		200	216	416

Analysis with oblique rotation, in view of the theoretical linkage among the factors, to reduce the data and be able to yield clean and interpretable clusters. As expected, the solution from EFA indicates three distinct and interpretable factors explaining 68.9% of the variance (Table 2). We do not include items with loadings below 0.40 in the analysis in order to allow a clearer interpretation. Reliability analysis indicates that coefficient α

Table 2. Component matrix.

	Component		
Items	1	2	3
Compared to my friends, I do little purchasing for mobile phones			0.781
In general, I am the last in my circle of friends to know the latest trends for mobile phones			0.851
I know more about new versions of mobile phones than other people			0.897
If I heard that a new version of this product was available, I would be interested enough to buy it			0.803
In general, I am among the last in my circle of friends to purchase new products like this			0.881
I will consider buying a new version of a mobile phone, even if I have just heard about it			0.712
People notice when I buy the most expensive mobile phone	0.604		
Buying a high-priced mobile phone makes me feel good about myself	0.897		
Buying the most expensive mobile phone makes me feel classy	0.924		
I enjoy the prestige of buying a high-priced mobile phone	0.880		
It says something to people when I buy the high-priced version of a mobile phone	0.862		
My friends will think I am cheap if I consistently buy the lowest-priced version of a mobile phone	0.881		
I have purchased the most expensive mobile phone just because I knew other people would notice	0.863		
I think others make judgments about me by the mobile phone I buy	0.838		
Even for a relatively inexpensive product, I think that buying a costly brand is impressive	0.867		
I try to anticipate and avoid situations where there is a likely chance of my getting emotionally involved		0.799	
Experiencing strong emotions is not something I enjoy very much		0.852	
I would rather be in a situation where I experience little emotion than one which is sure to get me emotionally involved		0.861	
I don't look forward to being in situations that others have found emotional		0.813	
I look forward to situations that I know are less emotionally involving		0.821	
I like to be unemotional in emotional situations		0.789	
I find little satisfaction in experiencing strong emotions		0.827	
I prefer to keep my feelings under check		0.744	
I feel relieved rather than fulfilled after experiencing a situation that was very emotional		0.801	
I prefer to ignore the emotional aspects of situations rather than getting involved in them		0.834	
More often than not, making decisions based on emotions just leads to more errors		0.647	
I don't like to have the responsibility of handling a situation that is emotional in nature.		0.813	

values are above 0.91 for the three factors. This solution is rationalized as scales have been used to measure consumer innovativeness, need for emotion, and perceived price sensitivity. An alternative method of data reduction would have been to take overall scores of the scales for cluster analysis, although this approach would have yielded the same results. The factors represent the three different constructs, consumer innovativeness (c 3), need for emotion (c 2), and prestige price sensitivity (c 1), thus these names were retained.

Cluster analysis

We subsequently run cluster analysis to partition the sample of mobile phone consumers into segments using the factor scores derived from EFA, following widely accepted cluster procedures (Everitt, Sabene, & Leese, 2001; Punj & Stewart, 1983; Rohm & Swaminathan, 2004). Cluster analysis is an exploratory procedure, which aims to discover groups of observations that are homogenous and separated from others (Everitt et al., 2001) and is widely used in diverse disciplines for classifying samples. Compared to other classification techniques, cluster analysis makes no a priori assumptions with regard to differences within populations (Punj & Stewart, 1983), therefore as a method it is considered free of management' bias in that it allows consumer-revealed segments to emerge from the data (Allred, Smith, & Swinyard, 2006; Kimiloglu et al., 2010).

The clustering procedure involves two stages, with stage 1 as the internal validation where the data were randomly divided into two subsets. Using hierarchical cluster analysis with Ward's method, the analysis on the first subset generates the possible alternative cluster solutions (Punj & Stewart, 1983). Stage 2 involves the use of the second data subset to conduct K-means cluster analysis using the cluster solutions (3, 4, and 5) indicated by the hierarchical cluster analysis. We then compare the cluster memberships from the K-means analysis on the second data subset with those produced by the hierarchical cluster analysis in order to choose the most appropriate solution (Punj & Stewart, 1983). We consider the four-cluster solution as the most meaningful and interpretable. We then run a final K-means cluster analysis with four-cluster solution (Everitt et al., 2001). Table 3 shows the final cluster solution.

Cluster descriptors

The section below describes the clusters. The analysis shows that clusters discriminate in terms of the level of consumer innovativeness: clusters 2 and 4 with higher level of innovativeness (e.g., positive score) as opposed to clusters 1 and 3 that score negatively. On this basis, we use the terms innovators versus adopters to name the clusters.

Table 3. Final cluster solution.

	Clusters					
	1	2	3	4	ANOVA (F)	*P*
Prestige price sensitivity	−0.503	0.972	−0.806	1.27	223.454	0.000
Need for emotion	−0.426	0.500	1.39	−1.14	173.775	0.000
Consumer innovativeness	−0.565	0.894	−0.251	0.927	115.772	0.000
N	207	110	62	37		

Note: Cluster descriptors are based on factor scores. Scores range from 3 to −3 (high to low).

Cluster 1: cognitive adopters

This is the largest of the four clusters and includes 50% of sample. In comparison to the other clusters, consumers in this cluster score below average in all three variables. These mobile phone consumers are less innovative and have a lower need for emotion as opposed to clusters 2 and 3. Given their score, these consumers are not very familiar with the latest innovations in mobile and smartphones and they do not keep up with the new technologies. Consumers in this cluster are not prestigiously price sensitive, thus they do not seek luxury and prestige in their purchases of mobile phones, although they are likely to be value conscious. It is argued that such consumers maybe more interested in cognitive and tangible attributes of mobile phones such as the functionality, cost efficiency, and practical design, and are less interested in the intangible attributes such as image and prestige (e.g., what the mobile phone says about the user). Consumers in this cluster somewhat resemble the profile of cognitive innovators (Venkataraman & Price, 1990), therefore are likely to be more susceptible to cognitive types of communication strategies such as strategies based on unique functional selling points and generic or comparative advertising (e.g., Laskey, Day, & Crask, 1989).

Cluster 2: prestige-seeking emotional innovators

This cluster includes 26% of sample and score above average on all three descriptors. They have the second highest score for consumer innovativeness following cluster 4. This cluster also has the relative highest prestige price sensitivity indicating that these individuals enjoy the prestige of buying a pricey mobile phone and they are concerned with what others think about their mobile phone. These consumers feel that their mobile phones indicate status and are a reflection of themselves, and therefore they consider expensive mobile phones to buy. At the same time, they are innovative, which indicates that they keep up with the latest developments and innovations in order to make sure that they buy the most expensive mobile phone. Finally, these individuals score above average on need for emotion, which indicates their preference for emotional stimuli, as opposed to cognitive stimuli, and therefore are likely to be more susceptive to affective or transformational advertising, including emotional, resonance, and brand image (Laskey et al., 1989).

Cluster 3: emotional adopters

Consumers in this cluster comprise 15% of the sample of mobile phone consumers that have the highest need for emotion and lowest level of prestige price sensitivity compared to the other clusters. They also have a below-average level of consumer innovativeness. On the basis of their scores, mobile phone consumers in this cluster like to experience emotions but are less innovative compared to clusters 2 and 4. As such, they are less concerned about luxury and prestige when it comes to purchasing mobile phones although they are concerned with the emotional experience and emotional aspects of buying a mobile phone. This indicates that consumers in this group rely on their emotion (or is emotionally impulsive) in purchasing mobile phones, possibly utilizing affective or emotional cues to make decisions on mobile phones. These consumers are therefore more susceptive to affective or transformational message strategies, albeit those not focusing on prestige, such as for example ‘use occasion’ (Laskey et al., 1989) where the emphasis would be to establish a link between the product and a highly emotional situation.

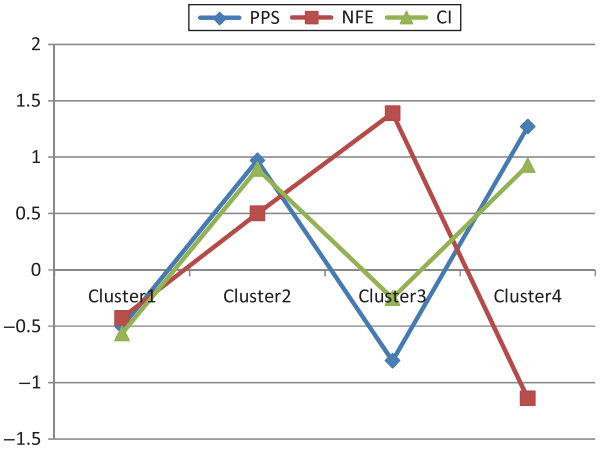

Figure 2. Final cluster solution map.

Cluster 4: prestige-seeking cognitive innovators

Cluster 4 is the smallest cluster with only 9% of consumers. This cluster comprises of mobile phone consumers with the highest level of consumer innovativeness, the lowest need for emotion, and the highest prestige price sensitivity, relative to the other clusters. Individuals in this cluster are innovative, and compared to consumers in the other clusters are the most knowledgeable about mobile phone innovations and are concerned about the luxury and prestige of their mobile phones. They are likely to own and buy expensive brands/versions of mobile phones because they make them feel classy. On the other hand, these consumers have a low need for emotion in their consumption experiences, which indicates that they are likely to seek prestige based on functional attributes of innovations, such as the latest technology and functional capabilities of the mobile phones or smartphones as opposed to intangible attributes such as brand image. These individuals are therefore likely to be cognitive innovators (Venkataraman & Price, 1990), and are likely to respond more favorably to cognitive communication strategies that focus on technological aspects and features of mobile phones. Marketers that wish to target such individuals may also integrate transformational elements in communication strategies such as user images (Laskey et al., 1989) as these consumers are concerned with what their mobile phones reflect about them.

Cluster validation

Previous research uses non-clustering demographic variables to perform external validity checks, which validate their clustering solutions (Ketchen & Shook, 1996; Michaelidou, 2011; Rohm & Swaminathan, 2004). In this study, we examine external validity of the clusters by assessing criterion-related validity using gender and age, via χ^2 tests. Findings report that age discriminates the clusters ($\chi^2 = 56.362$, df $= 12$, $p < 0.000$) but gender does not ($\chi^2 = 3.911$, df $= 3$, $p > 0.05$). Therefore, in terms of gender, all clusters roughly have equal ratio between genders. In terms of age, most of consumers in cluster 1 span from 17 to 49, while clusters 2 and 4 (with the relative highest level of innovativeness and prestige price sensitivity) consist of mostly younger individuals aged 17–29. Table 4 shows the clusters in terms of gender and age.

Table 4. Clusters by gender and age.

	Sex		Age				
Cluster	Male	Female	17–29	30–39	40–49	50–59	60 +
1	99	108	55	70	56	22	4
2	52	58	63	34	12	1	0
3	26	36	20	24	9	8	1
4	23	14	24	6	7	0	0
Total	200	216	162	134	84	31	5

Discussion and implications

The study explores consumer innovativeness, prestige price sensitivity, and need for emotion as clustering variables to develop a taxonomy of consumer in the domain of mobile phones. While previous research categorizes mobile phone consumers (e.g., Kimiloglu et al., 2010) on the basis of overt behavioral variables, this study differentiates from this research in that it explores consumer innovativeness, prestige price sensitivity, and need for emotion as clustering variables to segment mobile phone consumers, and hence highlights their relevance to market segmentation and development of marketing communication campaigns.

Results indicate four interpretable clusters: *cognitive adopters*, *prestige-seeking emotional innovators*, *emotional adopters*, and *prestige-seeking cognitive innovators*. Cognitive adopters score below average on all three factors. These consumers are not very interested in mobile phone innovations and the prestige involved in the purchase of a new mobile phone. They are most likely to be concerned with the functional attributes of mobile phones as opposed to emotional intangible attributes and are not likely to adopt a mobile phone innovation earlier than others (e.g., Rogers, 1962), as they may not seem to be open to changes and novelties. In contrast, cluster 3, the *emotional adopters*, are consumers who are mostly interested in emotional experiences and emotional aspects of buying a mobile phone as opposed to prestige and innovation. Managers should target this group of consumers via the use of emotional cues in their communications campaigns to signify the emotional connection between the mobile phone and the user.

Clusters 2 and 4, which comprise of consumers below 30 years of age, score statistically higher on consumer innovativeness and they represent the *prestige-seeking emotional innovators* and the *prestige-seeking cognitive innovators*. In line with previous research (Hirschman, 1980; Midgley & Dowling, 1978; Rogers, 1962), these consumers have a tendency to buy mobile phone innovations faster than others and they look for novelty and prestige in their purchases of mobile phone innovations. They therefore represent an important market segment for mobile phone managers who favor to promote the prestige sense of new product. Between them, the two clusters differ in terms of their need for emotion. The prestige-seeking emotional innovators in cluster 2 have a relatively higher need for emotion in the domain of mobile phone purchases, whereas individuals in cluster 4, the *prestige seeking cognitive innovators*, are more receptive to cognitive information about mobile phones. A possible explanation might be that the cluster of *prestige-seeking cognitive innovators* includes more men than women, although gender does not statistically discriminate these clusters. Both clusters 2 and 4 have a relatively higher level of prestige seeking in their purchases of mobile phones, compared to clusters 1 and 3. This prestige-seeking tendency that manifests in the domain of mobile phone purchases is a result of goals of self-enhancement and social status (Steenkamp, et al.,

1999; Vigneron & Johnson, 1999) and indicates that mobile phone managers should target such individuals with marketing communication campaigns that entail self-expression and user image.

Conclusion and implications

The study explores consumer innovativeness, prestige price sensitivity, and need for emotion as clustering variables to develop a taxonomy of mobile phone consumers and provides exploratory insights into the usefulness of these constructs for market segmentation, targeting, and promotion of innovations. Four distinct and interpretable clusters emerge from the data analysis with statistically significant differences in terms of consumer innovativeness, prestige price sensitivity, and need for emotion. Within the constellation of mobile phone consumers in this study, interestingly, there are two clusters (2 and 4), which have relatively higher level of innovativeness and prestige price sensitivity, but at the same time differ between them in terms of their level of need for emotion. These consumers in clusters 2 and 4, who comprise 35% of the sample, are innovative consumers in the domain of mobile phone purchases and therefore are the most desirable prospect customers for mobile phone companies. These consumers are interested in the latest mobile phone innovations, they actively seek information (cognitive or emotional) that pertains to mobile phones, and they are among the first to buy new innovations of mobile phones in the market. However, they differ in terms of their need for emotion which indicates that marketing managers should develop integrated communication approaches to target these individuals, for example via a creative and stimulating integration of both cognitive or rational and emotional appeals. Specifically, apart from the factual, latest trends in the mobile phone market, marketing managers should provide emotional cues such as celebrities, humor, and other emotional cues in their marketing communication campaigns.

Limitations

This study is not free of limitations. First, as the cluster analysis emphasizes the within-cluster homogeneity against between-cluster heterogeneity, and within the context of the sample size of this paper, the findings represent an initial reference for further larger-scale research that may produce larger groups/clusters. However, the findings somehow demonstrate a common sense, where the majority of consumers are not likely to be highly innovative and highly prestigious, but the minority are (clusters 2 and 4). Second, the findings exist within the selected cluster variables of innovativeness, need for emotion, and prestige price sensitivity. There are other emotion-related measures with different context of research, therefore the findings should be treated and comprehended carefully within their present context. Last, additional demographic variables could provide a more complete profile of the consumer clusters.

Future research

In terms of future research, additional systematic research should examine the role of prestige and emotion in purchases of innovation products given the implications in segmentation, targeting, and positioning strategy. A possible research route would be to compare the findings (the clusters) from the UK market to other countries to explore similarities and discrepancies that are important for mobile phone marketers that operate

internationally. To get a more comprehensive picture of the mobile phone consumers, particularly with young, dynamic consumers, another possible research direction is to expand the cluster variable set, for example to include other relevant constructs such as need for cognition, need for uniqueness, mavenism, and attitude toward mobile phone services. Last, it is hopeful that the findings of this study will serve as and encourage further advancement in technology innovation development and marketing study.

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