Australasian Marketing Journal 19 (2011) 238–246

Contents lists available at ScienceDirect

Australasian Marketing Journal

journal homepage: www.elsevier.com/locate/amj

Mobile phone feature preferences, customer satisfaction and repurchase intent among male users

Matti Haverila *

School of Business and Management, American University of Sharjah, University City, Sharjah 26666, United Arab Emirates

ARTICLE INFO

Article history:
Received 10 February 2011
Revised 16 May 2011
Accepted 23 May 2011
Available online 23 June 2011

Keywords:
Feature preferences
Conceptualization
Customer satisfaction
Repurchase intent

ABSTRACT

Despite the fact that there is a plethora of research regarding the mobile phone feature preferences, there appears to be lack of research regarding the relationship between the feature preferences and their relationship between customer satisfaction and repurchase intent. Therefore the objective of this research is to investigate the mobile phone feature preferences among male respondents in Finland. In conjunction with this the conceptualization of the feature preferences is studied as well as their relationship to customer satisfaction and repurchase intent of the mobile phone. The results indicate that battery/talk time is the most important feature for the respondents. The respondents perceive there to be six logical factors among the feature preferences as follows: business functionality, support functions, aesthetics + design, parts + processes, solidity, and tones + games. The first three correlate with customer satisfaction, and only the business functionality factor correlates with repurchase intent. Finally the relationship between customer satisfaction and repurchase intent is investigated, and comparisons to similar studies are made. Limitations and managerial implications are discussed.

1. Introduction

The cell phone can be perceived to be a ubiquitous communication device. The recent statistics provided by the International Telecommunication Union (ITU) (2010) indicate that the mobile cellular subscriptions exceeded 5 billion worldwide early 2010. Finland has been one of the pioneers in the adaption of the mobile technology, and the penetration is currently above 1.41 mobile subscriptions per person. The mobile phone penetration in Australia on the other hand has been slightly lower exceeding 1.00 person in 2007 and being approximately 1.14 in 2009. The manufacturers of the cell phones have been adding more or less relevant features to the mobile phones since the introduction of the mobile phone to the consumer markets. These features include for example video, multimedia messaging, and GPS just to mention a few.

The previous research has investigated the mobile phone feature preferences in some detail. For example Işıklar and Buyuközkan (2007) proposed a multi-criteria decision making approach for the purpose of assessing mobile phones as regards to the user's feature preferences order among youth in Turkey. This approach, however, has not been validated with robust statistical methods, nor has been tested in other country settings. In addition Işıklar and Buyuközkan (2007) did not test the relationship between feature preferences and customer satisfaction and repurchase intent. Economides and Grousopoulou (2009) also investigated the importance of a limited feature set, services and costs among young male and female users. Again the relationship between the feature preferences and customer satisfaction and repurchase intent was not investigated. Han et al. (2004) incorporated the user satisfaction into their study, but the relationship was studied with design (aesthetics) features, not with the features preferences per se. In addition repurchase intentions were not studied. Zhou and Nakamoto (2007) also investigated how the enhanced and unique features affect product preferences, and the moderating role of product familiarity in this relationship, but again the relationship with customer satisfaction and repurchase intent was not examined. Finally Goode et al. (2005) studied the relationship between customer satisfaction and key input factors like experience of product quality, level of service charges, level of call charges, and level of satisfaction with the service provider in the context of mobile phones. In conclusion there appears to be a plethora of research regarding the cell phone feature preferences on one hand, and customer satisfaction in the context of the mobile phones on the other, but research dealing directly with the relationship of mobile phone features preferences and customer satisfaction appears to be lacking.

As regards to comparing the feature preferences between males and females, there are a few studies, which have addressed this issue (Economides and Grousopoulou, 2009; Glasscock and Wogalter, 2006; Haverila, forthcoming; Işıklar and Buyuközkan, 2007). All of these studies found differences between the genders regarding the feature preferences. Regarding the use of communications

* Tel.: +971 6 515 5555, fax: +971 6 558 5065.
E-mail addresses: matti.haverila@infacs.com, mhaverila@aus.edu

1441-3582/$ - see front matter © 2011 Australian and New Zealand Marketing Academy. Published by Elsevier Ltd. All rights reserved.
doi:10.1016/j.ausmj.2011.05.009

technology the previous research has discovered that the attitudes of males are more favorable towards the use of communications technology, and also that the use of computers is stereotypically perceived to be predominantly a male activity (Busch, 1995; Jackson et al., 2001; Jackson et al., 2008). The studies, which have compared customer satisfaction between genders, have indicated the gender might have an impact on customer satisfaction and particularly on the drivers of customer satisfaction (Bryant and Cha, 1996; Danaher, 1998; Mittal and Kamakura, 2001; Sánchez-Hernández et al., 2010; Söderlund, 2002). For these reasons it was decided that the study will be conducted only from the point of view of male users of the mobile phone.

The purpose of this paper is to investigate what is the importance of the mobile phone feature preferences and also what is their relationship with customer satisfaction and repurchase intent among the young male users. Thus the research objectives are following. The first research objective is to investigate what is the order of importance of the feature preferences among the male users. The second research objective is to examine how do the male users conceptualize the feature preferences, and the third research objective is to study if there is a relationship between the conceptualized feature preference factors, and customer satisfaction and the repurchase intent of the mobile phone. The final and fourth research objective is to investigate the nature of the relationship between customer satisfaction and repurchase intent. These research questions are important to answer given the growing importance and changing role of mobile phones in the modern culture globally. There are many other things (e.g. the quality of the relationship between the customer and the retailer/manufacturer, and the social status (Martensen, 2007)) in play determining the ultimate customer satisfaction and the repurchase intent. This study concentrates, however, on the relationship of product feature preferences, and customer satisfaction and the repurchase intent only.

This research is organized as follows. After the introduction the theoretical aspects of mobile phone feature preferences, customer satisfaction and repurchase intent are discussed. This is followed by the methodology of the research, the data analysis, and discussion section, and finally future research possibilities, managerial implications as well as the limitations will be discussed.

2. Product feature preferences

2.1. Product feature preferences theory

The appeal of a product can be enhanced by adding features that the competition does not have yet (Glasscock and Wogalter, 2006; Goldenberg et al., 2003; Matzler et al., 1996). The features are sources of primary benefits received when the product is purchased (Yoon and Kijewski, 1997), and thus they have a positive impact on product evaluation (Mukherjee and Hoyer, 2001). This positive impact of adding new features to the product has been demonstrated to be a robust phenomenon interestingly even in situations when the new features are irrelevant (Carpenter et al., 1994), or possibly damaging (Meyers-Levy and Tybout, 1989). Users experience the positive impact of adding new features, however, with a diminishing degree so that features added to a relatively inferior product have a more positive impact on the product assessment than features added to a relatively superior product (Nowlis and Simonson, 1996).

Many studies have discovered that product features have an impact on the quality assessment of consumers (Clodfelter and Fowler, 2001; Mukherjee and Hoyer, 2001; Nowlis and Simonson, 1996; Shimp and Bearden, 1982; Yoon and Kijewski, 1997). The prior literature has indicated that consumers assess the quality and performance using both intrinsic and extrinsic product cues in order to reduce the risk during pre-purchase behavior. Intrinsic cues are related to the physical characteristics or features of the product (Van den Heuvel et al., 2007). The change of the intrinsic characteristics means that the nature of the product will change. The extrinsic cues are also related to the product, but not part of the physical product itself. Examples of extrinsic cues include price, brand name, level of advertising (Clodfelter and Fowler, 2001), website quality (Wells et al., 2011), country of manufacture (Lambert, 1972), and warranty (Shimp and Bearden, 1982).

It is obvious that the extrinsic and intrinsic quality and performance cues are interrelated, and cannot be separated from each other (Lambert, 1972). Prior research has discovered, however, that under certain conditions intrinsic cues are more important than the extrinsic cues when consumers are assessing the quality of the product (Jacoby et al., 1971). In addition the prior research has discovered that extrinsic cues might not be able to diminish the uncertainty associated with whether an innovative product will perform the expected function (Shimp and Bearden, 1982). In addition Zeithaml (1971) also demonstrated that the intrinsic and extrinsic cues have an impact on the perceived quality and perceived value in addition to the actual quality as experienced by the consumers.

Finally it is not always obvious that adding new features will improve the product evaluation. Prior research has found out that adding new features might enhance product evaluations regarding low-complexity products, but the opposite might be the case for high-complexity products due to the negative learning-cost inferences related to the new features, and also that this can in fact persist even if the consumers are given explicit information about the new features (Mukherjee and Hoyer, 2001). Thus similarly to the study done by Wells et al. (2011) it can be claimed that while the intrinsic features of a mobile phone may be predictive of the quality of the mobile phone for technologically more sophisticated users, this might not be the case for less advanced users who then use the extrinsic features as quality cues (Rao and Monroe, 1988).

2.2. Mobile phone feature preferences

The technology and style (colors, design, size etc.) have developed immensely since the original mobile phone launch. In the beginning the voice features dominated while today the mobile phone includes multi-tasking features like camera, calendar, mp3 player etc. It is evident that the mobile phones are deeply rooted in every person's everyday life (Palen and Salzman, 2002), and enable undertaking of many tasks, which go way beyond the traditional communication (Lee, 2007).

A recent study by J.D. Power (Parsons, 2010) discovered that the key drivers of customer satisfaction are: Ease of operation, operating system (smart phones only), physical design, handset features, and battery functionality. The claim is that the "Voice of the Customer" can be heard by investigating mobile phone users' responses to these question categories. The analysis of the data enables the identification and quantification of the drivers of satisfaction (Parsons, 2010). Işıklar and Buyuközkan (2007) developed a multi-criteria decision making (MCDM) approach to evaluate the mobile phone options in respect to the users' preferences order. They first identified the most desirable features influencing the choice of the mobile phone, and then used these in two MCDM models for the evaluation procedure. At this stage the selection criteria was categorized into product and user-related criteria (Appendix). Secondly they determined the relative weights of the evaluation criteria, and then ranked the mobile phone alternatives in the third phase. Finally they used a case study to demonstrate the effectiveness of their method. Their approach was an *ex ante* approach (before the event) and thus they did not investigate or validate their approach in a *posteriori* situation (empirical), which

is the aim in this study. The difference between these approaches is that whether the customer did or did not have experience about the product (the mobile phone in this case) under investigation. When comparing the set of criteria developed by Işıklar and Buyuközkan to the set of criteria used by J.D. Power, it can be said the two approaches are quite similar the only difference being that the Işıklar and Buyuközkan approach is perhaps more detailed.

Adding new features to the mobile phone has been common in the industry. This phenomenon described leads often to featuritis (Palen et al., 2000), feature creep (Qualasvirta, 2005) or feature fatigue (Thompson et al., 2005), which often decreases the success of the launches of new mobile phones (van Biljon et al., 2008). Knowing the features that customers prefer ought be of special interest for the mobile phone marketers and manufacturers.

While the prior research regarding the mobile phones appears to ample, there is little research concerning the feature preferences among males (Glasscock and Wogalter, 2006), and particularly regarding the relationship between feature preferences, customer satisfaction and repurchase intent is under researched. As indicated in the introduction section it is likely that there are differences between males and females as regards to customer satisfaction and repurchase intent, and their drivers (Bryant and Cha, 1996; Mittal and Kamakura, 2001; Sánchez-Hernández et al., 2010) as well as mobile phone feature preferences (Economides and Grousopoulou, 2009; Glasscock and Wogalter, 2006; Haverila, forthcoming; Işıklar and Buyuközkan, 2007). Therefore the aim in this study is to assess these relationships only from the male point of view. The objectives to develop mobile phones with such features that achieve high customer satisfaction and repurchase intent among different kinds of user groups or segments (Işıklar and Buyuközkan, 2007), which makes the design of mobile phones challenging (Lee et al., 2006), and the selection of a mobile phone from the customer's point of view a provoking process.

3. Customer satisfaction, repurchase intent and mobile phones

Customer satisfaction is probably one of the most researched topics in the area of marketing. Hundreds if not thousands of articles have been published during last 40 years or so around this subject. As indicated there appears to be a lack of research, however, as regards to the relationship between mobile phone feature preferences and customer satisfaction and repurchase intent.

Philip Kotler has defined customer satisfaction as the "personal feeling of pleasure resulting from comparing a product's pursued performance in relation to his/her expectations". Furthermore Kotler (1994) claims that the key to customer retention, and thus repurchase intent (Hennig-Thurau and Klee, 1997), is customer satisfaction. Repurchase intent or loyalty on the other hand has been defined as the deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite situational influences and marketing efforts having the potential to cause switching behavior (Oliver, 1999).

Oliver further claims that consumer loyalty can transpire at four different levels: cognitive, affective, conative (behavioral intention), and action (actual behavior). In spite of the fact that all these dimensions of consumer loyalty are meaningful, the current research focuses on conative (behavioral intention) loyalty like most of the research done so far. Furthermore it has been claimed in prior research that behavioral intentions can predict behavior but usually only in moderate – high involvement/risk contexts (East et al., 2005) like mobile phones (Goode et al., 2005; Sharma and Ojha, 2004; Turnbull et al., 2000). Some researchers have discovered discrepancies between the actual behavioral and conative (behavioral intention) loyalty (Lee et al. 2010; Naumann et al., forthcoming; Sharp et al., 2002) so that the behavioral intention loyalty tends to be higher than the actual behavior particularly if the behavioral intention loyalty is measured right after the purchase event. Wang et al. (2007) discovered that the relationship between customer satisfaction and loyalty varies by segment in the mobile phone industry in China, which further strengthens the point of view taken in this study as regards to assessing the customer satisfaction and repurchase intent from the male users point of view.

The mobile phone market has become a highly competitive market in spite of the fact that it is a relatively new industry. When the intensity of competition increases the companies operating in the industry are more likely to sustain their current level of sales, profit margin, and market share through not only keeping their current customers, but also getting new customers. It is true, however, that keeping the current customers is much easier and has been discovered to form a more dependable basis for profitable performance (Fornell and Wernerfelt, 1987; Peters, 1988; Reichheld and Sasser, 1990), which emphasizes the importance of the satisfaction of current customers.

The interesting characteristic of the mobile phone industry is its' rapidly evolving nature, short product life-cycles (Tseng and Lo, 2011), the addition of new features to the mobile phones, and fierce competition among numerous companies in the industry. When the customer faces additional functionality and enlarged complexity in the mobile phone, he/she is likely to encounter problems, which can have a negative impact on the customer satisfaction, and consequently decrease customers' repurchase intent (Sangareddy et al., 2009).

Kirk Parsons, who is a senior director responsible for the wireless practice at J.D. Power (Parsons, 2010), has stated that: "As consumers continuously upgrade their mobile phones, overall handset satisfaction should continue to rise, as these devices tend to make our lives more convenient and prove entertaining. It is crucial, however, that manufacturers ensure these features are intuitive and that wireless carriers educate customers to maximize their wireless experience. While manufacturers continue to develop advanced features, they must also continue to provide a high-quality calling experience for their users." Nemati et al. (2010) found support for this by discovering a positive correlation between innovation and customer satisfaction. Thus the first hypothesis reads as follows:

Hypothesis 1. *There exists a positive relationship between the feature preference factors and customer satisfaction among the male users of mobile phones.*

Customer satisfaction has a crucial role in customer retention and loyalty (Anderson and Fornell, 1994; Bansal and Taylor, 1999; Cronin et al., 2000; Kristensen et al., 2000; Patterson et al., 1997). This information should enable the manufacturers of mobile phones to initiate new product development programs through which the repurchase intent and sales can be maximized (Parsons, 2010). Therefore the second hypothesis reads as follows:

Hypothesis 2. *There exists a positive relationship between the feature preference factors and repurchase intent among the male users of mobile phones.*

As indicated higher satisfaction should lead to higher loyalty (Ball et al., 2004; Hallowell, 1996; Strauss and Neuhaus, 1997).Therefore the third hypothesis reads as follows:

Hypothesis 3. *There exists a positive relationship between the customer satisfaction and repurchase intent among the male users of mobile phones.*

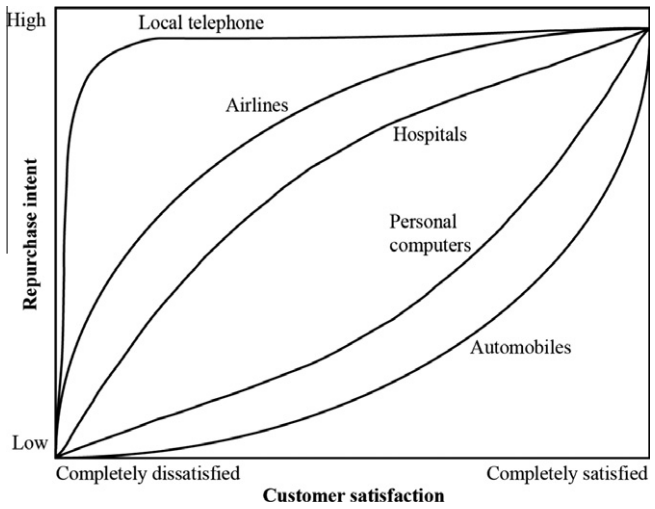

Fig. 1. Relationship between customer satisfaction and repurchase intent (Jones and Sasser, 1995).

Customer satisfaction can, however, be viewed as a necessary prerequisite, but does not as such guarantee loyalty. Jones and Sasser (1995) indicated that issues like monopolistic competition, low number of substitutes, lack of dominance in brand equity, high cost of switching, powerful loyalty programs, and proprietary technology make the relationship between customer satisfaction and loyalty stronger. On the other hand if the products in the industry can be perceived as commodities, if there area large number of substitutes, if customers are indifferent, and if there is a low cost of switching the relationship between customer satisfaction and loyalty becomes weaker. Thus following the logic of Jones and Sasser (1995) in industries like automobiles and personal computers where for example the cost of switching is low, the loyalty programs are weak overall, and there is a large number of competitors and products, the relationship between customer satisfaction and loyalty should be moderate at best. In other words even reasonably high levels of customer satisfaction should not lead to high loyalty or repurchase intent (Fig. 1).

On the basis of the previous the fourth hypothesis of the study reads as follows:

Hypothesis 4. *The nature of the relationship between customer satisfaction and repurchase intent among the male users of mobile phones is not linear but rather parabolic similarly to the automobiles and computer industries in the Jones and Sasser study (1995).*

In conclusion there appears to be plenty of research done in the area of mobile phones, but the research done regarding the relationship between feature preferences, customer satisfaction and repurchase intent is limited. It seems to be clear that while there are other factors in play, proper features of the mobile phone should lead to higher satisfaction and repurchase intent (Smith, 2007). Whether this is the case in the mobile phone industry among male users will be found out in this research.

4. Methodology

4.1. Sample

The respondents to this research came from high schools and a large university located in the metropolitan area of Tampere, Finland. The principals of the high schools were first approached by an E-Mail asking their permission for students to participate into the research. The principals then approached their students with an E-Mail describing the nature of the study and an Internet link to the questionnaire. In the case of the university the IT department was first approached in order to ask for a permission to conduct the research. Then an E-Mail was sent to the students describing the study and an Internet link to the questionnaire.

The ages of the male respondents were between 16 and 57 years. The number of respondents in the study was 289 so that 58 respondents were high school, 199 were university undergraduate, and 32 postgraduate students. The average age of respondents was 23.7 (standard deviation 6.90).

4.2. Measurement and questionnaire development

In order to explore the mobile phone feature preferences of the males in Finland the tool developed by Işıklar and Buyuközkan (2007) was used (see Appendix).We asked the students to indicate their feature preferences, customer satisfaction and repurchase intent using an Internet-based questionnaire with a Likert type scale 1–7 (1 = very unimportant, 7 = very important) for the question. The decision to use an Internet questionnaire was a matter of convenience. Sending questionnaires back and forth was not an option due to the long physical distance. Also with an Internet questionnaire it was possible to make sure that the respondents answered all questions. Finally the data input was not needed since the Internet questionnaire provides data in digital format. The frequency of the use of the various features of the mobile phone among the respondents can be seen in Table 1 (1 = frequently during the day, 2 = daily, 3 = 2–3 per week, and 4 = weekly).

4.3. Methodology

The JMP 1-2-3-software by SAS was used for statistical analysis. To meet our first research objective we calculated the means and standard deviations of the responses for the feature preferences (Table 2). To meet our second research objective, we carried out an exploratory factor analysis (EFA) in order to identify the fundamental structure of the feature preferences in the data (Glasscock and Wogalter, 2006). To find out the suitability of the factor analytic model the correlation matrix of the variables needs to include numerous correlations above 0.3 (Hair et al., 2006). The decision to use EFA can also be defended since there is limited knowledge of the dimensionality of mobile phone preferences (Anderson and Gerbing, 1988).

The commonly used and criticism-free principal components (PC) Varimax rotation, in which high loadings in the factors are probable, was used as the factoring method since the objective of the research was data reduction to a smaller number of

Table 1
Use of mobile phone features (n = 289).

	Mean	Standard deviation	n
Phone	1.30	0.64	274
SMS	1.95	0.62	254
Internet	2.63	1.44	104
Calendar	2.64	1.12	128
Music	2.83	1.59	92
E-Mail	2.95	2.00	55
Camera + video	3.03	1.39	72
Calculator	3.04	2.01	57
Notes	3.08	2.09	53
Other	3.17	2.60	24
Games	3.59	2.25	44
Pictures	3.65	2.60	43
MMS	4.03	3.32	38

Table 2
Importance of feature preferences.

#	Feature	Mean	Std. dev.	#	Feature	Mean	Std. dev.
1	Battery/talk time	6.27	1.10	11	Standard parts used	4.51	1.70
2	Quality	5.66	1.28	12	Brand	4.33	1.88
3	Ease of use	5.58	1.44	13	Business services	4.30	2.06
4	Price	5.53	1.66	14	Roaming	4.26	1.57
5	Size of the display	5.48	1.46	15	Technical support	4.15	1.70
6	Memory	5.34	1.52	16	Local language	4.13	2.02
7	Design	5.03	1.52	17	Safety (radiation)	4.01	1.89
8	Aesthetics	4.96	1.42	18	Water resistance	3.84	1.62
9	Standard processes used	4.63	1.50	19	Ringing tones	2.72	1.71
10	Solidity	4.59	1.63	20	Games	2.54	1.57

factors (Hair et al., 2006). Varimax rotation also gives a more apparent separation of factors, which makes interpretation of the factors easier (Kim and Mueller, 1978). Scree plots and Eigen values were examined in order to ascertain the number of factors largely responsible for variation in the data (Tabachnick and Fidell, 2001). The Kaiser criterion was used as a threshold level (1.00) for Eigen values in order to determine the number of factors. Also the variance explained by the factor solution was checked. Hair et al. (2006) consider a factor solution that accounts for 60% or more of total variance to be satisfactory in the social sciences, and Diekhoff (1992) and Heck (1988) regard 50% of total variance explained as the threshold. The desired factor loading level for a variable was set at 0.425 (Hair et al., 2006). Finally communality measures were assessed with a threshold level of 0.50 (Hair et al., 2006). A communality value under 0.50 indicates that less than half of the variance has been taken into account in identifying the latent construct. It is important to note, however, that the communalities must be interpreted in relation to the interpretability of the factors (Fabrigar et al., 1999; Hair et al., 2006).

The reliability assessment of the scales was analyzed with Cronbach alpha (1951) on the basis of internal consistency in multi-item factors, and correlations in the 2-item factors (Hair et al., 1996).

To meet our third research objective a multiple regression analysis was performed in order to study the relationship of the feature preferences and customer satisfaction on one hand, and the relationship of customer satisfaction and repurchase intent on the other. Finally in order to meet our fourth research objective we examined the nature of the relationship between customer satisfaction and repurchase intent with a simple two-dimensional graph similarly to approach used by Jones and Sasser (1995).

5. Data analysis and discussion

5.1. Descriptive statistics

As indicated the averages and standard deviations of mobile phone feature preferences were calculated first. The results are in Table 2 in the order of importance. Expectedly battery/talk time is a very important feature while the quality, ease of use, price, size of the display, memory, and design can be regarded as important. Also expectedly the features games and ringtones were not perceived as important by the respondents.

The overall level of customer satisfaction and repurchase intent among the respondents was 5.49 (standard deviation 1.60) and 5.43 (standard deviation 1.44), respectively. Out of 289 respondents 42 (14.5%) gave a below the center score (4) for customer satisfaction, and 20 (6.9%) gave a below the center score (4) for the repurchase intent. Consistently with the findings in the previous studies the customer satisfaction levels are at the same level, and the attitudinal loyalty (repurchase intent) levels are much higher in this study than in the study done by Martensen (2007) among tweens. However, while some might consider these levels to be high, one should, however, pay attention to the nature of the industry (Jones and Sasser, 1995) as discussed in the theoretical framework.

5.2. Feature preferences patterns

As regards to the second research objective an EFA was performed. The results can be seen in Table 3. Inspection of the correlation matrix indicated the suitability of the variable set to EFA. The Bartlett test of sphericity was significant and the Kaiser–Meyer–Olkin measure of sampling adequacy was greater than 0.60. Inspection of the anti-image correlation matrix revealed that all the measures of sampling adequacy were above the acceptable level of 0.50 (Hair et al., 2006). Six factors were discovered in total. Their descriptive names can be seen in Table 3. The factor solution appears to be logical from the practical point of view. Only one variable had to be dropped from the final factor solution due to the low loading of the variable (battery/talk time) to the factor. Reliability assessment on the basis of internal consistency resulted in acceptable Cronbach (1951) alphas (>0.60) in multi-item factors, and correlations in the 2-item factors (>0.30) (Hair et al., 1996).

Since the previous research has not attempted to discover or identify the feature preferences factors or patterns among any user groups or segments, this research also adds to the theory of product feature preferences. In addition to looking at the feature preferences as such it is also apparent that the product features can be grouped logically and statistically into distinct feature clusters in an acceptable way. The process has then enabled in bringing intrinsic structure into the feature preferences. In this research these clusters among the male respondents are business functionality, support functions, parts + processes, aesthetics + design, solidity, and tones + games.

5.3. Hypotheses testing

5.3.1. Relationship of feature preference factors with customer satisfaction and repurchase intent

In order to respond to the third research question a multiple regression analysis was performed. Inspection of the collinearity statistics indicated no problems with the model. The results can be seen from Table 4.As the results indicate both models show significant results with customer satisfaction (significance level = 0.003) and with repurchase intent (significance level = 0.033). Two of the factors have a significant correlation with customer satisfaction. These variables are business services, and standard parts and processes. Aesthetics and design had a marginally significant relationship with customer satisfaction (significance level = 0.071). The variables support functions, solidity (resistance against physical impact, and tones + games) indicated insignificant correlation with customer satisfaction. As indicated in Section 5.2 the feature battery/talk time had to be dropped from the factor solution due to the low variable loading. The correlation of the battery/talk time variable with customer satisfaction was therefore measured independently and was moderately significant ($t = 0.22$, significance level = 0.001). Therefore hypothesis 1 is partially supported.

Table 3
Feature preference factors.

	Communality	Business functionality	Support functions	Parts + processes	Aesthetics + design	Solidity	Tones + games
Business services	0.544	0.711					
Display	0.617	0.648					
Roaming	0.482	0.632					
Memory	0.567	0.619					
Brand	0.392	0.444					
Ease of use	0.619		0.703				
Safety	0.552		0.682				
Tech support	0.573		0.663				
Language	0.519		0.519				
Standard parts	0.809			0.887			
Standard processes	0.775			0.862			
Price	0.607			0.502			
Aesthetics	0.647				0.758		
Design	0.627				0.706		
Quality	0.568				0.450		
Water	0.826					0.899	
Physical impact	0.838					0.892	
Games	0.673						0.778
Ring tones	0.634						0.778
	Eigenvalue	4.19	2.50	1.53	1.38	1.18	1.09
	Variance exp. (%)	22.06	13.17	8.04	7.24	6.23	5.74
	Cum. var. (%)	22.06	35.23	43.26	50.50	56.73	62.47
Cronbach alpha/correlation		0.696	0.632	0.704	0.695	0.687	0.413

Table 4
Multiple regression: feature preference factors vs. customer satisfaction and repurchase intent.

Dependent	Term	Estimate	*t* Ratio	Prob > |*t*|
Customer satisfaction	Intercept	5.491	59.90	<0.0001
($F = 3.38$, sig. = 0.003)	Business functionality	0.243	2.65	0.009
	Support functions	−0.030	−0.32	0.747
	Parts + processes	0.266	2.90	0.004
	Aesthetics + design	0.166	1.81	0.071
	Solidity	−0.045	−0.48	0.628
	Tones + games	0.103	1.13	0.261
Repurchase intent	Intercept	5.429	64.89	<0.0001
($F = 2.33$, sig. = 0.033)	Business functionality	0.287	3.42	0.001
	Support functions	−0.051	−0.6	0.546
	Parts + processes	−0.004	−0.05	0.962
	Aesthetics + design	−0.030	−0.36	0.720
	Solidity	−0.084	−1.01	0.315
	Tones + games	0.073	0.88	0.382

The analysis of the direct impact of the factors on repurchase intent indicated that one of the factors, business functionality, had a significant correlation with repurchase intent in the regression model. The business functionality factor included the variables business services, display, roaming, memory, and brand. Thus it is clear that this factor and these variables are very important for the customer both from the customer satisfaction and repurchase intent point of view. Again as indicated in Section 5.2 the feature battery/talk time had to be dropped from the factor solution due to the low variable loading. The correlation of the battery/talk time variable with repurchase intent was therefore measured independently and was not significant. Therefore Hypothesis 2 is partially supported.

5.3.2. The nature of the relationship between customer satisfaction and repurchase intent

To conclude the fourth research question, the relationship between customer satisfaction and repurchase intent was calculated, which revealed a significant, but moderate correlation of 0.346 ($t < 0.0001$). Therefore Hypothesis 3 is supported. This means that high customer satisfaction appears to lead to high repurchase intent. This finding is consistent with the results of Martensen's study among tweens (2007).To demonstrate the relationship between customer satisfaction and repurchase intent, a graph (Fig. 2) was drawn similarly to Jones and Sasser (1995) (Fig. 1).

The relationship between customer satisfaction and repurchase intent in Fig. 2 is interesting and does not quite follow the illustrations in the Jones and Sasser (1995) article (Fig. 1). It seems that there are two different portions in the graph: respondents with higher or equal to 4 in customer satisfaction score (where 85.5% of the respondents of this study actually are), and respondents with lower than 4 in customer satisfaction score. When customer satisfaction level is higher than 4 the shape of the graph follows quite closely (and also expectedly taken into account the nature of the industry) the Jones and Sasser graph (1995). On this basis one could claim that the mobile phone industry is similar to the

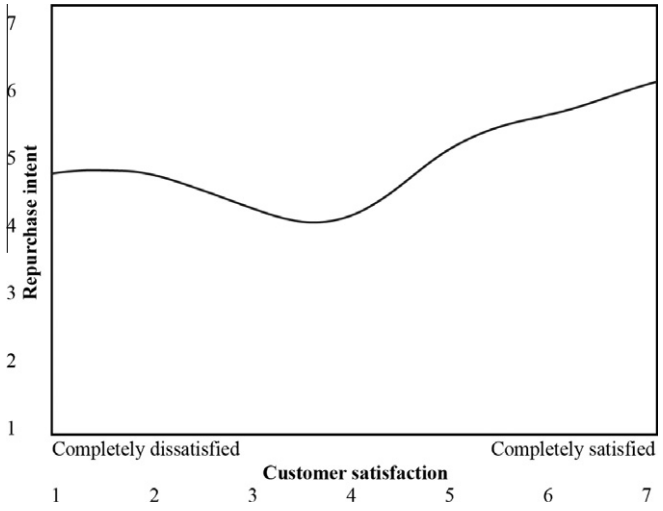

Fig. 2. Graphical illustration between customer satisfaction and repurchase intent.

personal computer or automobile industry when the customer satisfaction levels exceed the level 4. These industries are characterized by lack of monopolistic competition, large number of substitutes, low dominance of brand equity by any of the manufacturers, low cost of switching, lack of loyalty programs, and proprietary technology (but none dominating). The resemblance between the Jones and Sasser (1995) graph (Fig. 1) for the automobile and computer industry, and Fig. 2 is quite large also in that regard that the very high customer satisfaction level (=7) does not lead to very high levels of repurchase intent (=7).

The dissimilarity to Jones and Sasser graph (1995) appears when the customer satisfaction levels are below the middle score level 4. It is apparent that the customers with below 4 customer satisfaction scores seem to hit a plateau level of approximately 4.5 in their repurchase intentions indicating that these customers would still consider buying the same brand in spite of the fact that their customer satisfaction level is very low. Therefore it can be concluded that hypothesis 4 is partially supported.

6. General discussion

The purpose of the study was to investigate the mobile phone feature preferences among male users in Finland. Expectedly the battery/talk time was the most important mobile phone feature. As regards to the conceptualization of the mobile phone feature preferences there were six factors discovered among the respondents' feature preferences. Three of these factors (business functionality, standard parts and processes, and aesthetics and design) correlated with customer satisfaction in the multiple regression model, and only one, business functionality, correlated with the behavioral loyalty (repurchase intent).

Finally the relationship between customer satisfaction and repurchase intent was analyzed. A significant, but moderate, correlation was discovered. The relationship graph between the customer satisfaction and repurchase intent constructs indicated similarity with similar industries (automobiles and computers) in the graph in the Jones and Sasser (1995) article, but only at customer satisfaction levels above 4. The relationship appeared to be at plateau level when customer satisfaction levels were below 4. It could be that the reason for this is in the evolution of technology. Thus if the customers are unhappy with their current mobile phone, but are aware of the better technology in the newer brands of the manufacturer, and since they have experience with the user interface (i.e. the standard processes) and the features (Kim and Srinivasan, 2009), their aim is to buy the same brand. This finding is consistent with a recent research by Tseng and Lo (2011) who discovered that when the customers are not satisfied with their current phone, and they perceive next-generation mobile phones as being easier to use and more useful than their current model phones, they are more likely to upgrade their mobile phones to the next-generation models. Finally it is possible that the prior experience with the user interface and the features reflect a switching barrier to the purchasing of new mobile phone brands, which have been discovered to significantly impact customer retention (Lam et al., 2004; Mittal and Lassar, 1998; Keaveney, 1995) also in the mobile phone industry (Oyeniyi and Abiodun, 2010).

7. Managerial implications

This research has many managerial implications. First of all it is important to recognize the importance of the various feature preferences. This is particularly important due to the extensive number of potential features that can be embedded into a mobile phone. As indicated having too many (unnecessary) features might have a negative impact on customer satisfaction and repurchase intent. In addition the awareness of the feature preferences sets in terms of their conceptualization is important for the R&D and marketing functions of the mobile phone manufacturer. If customers perceive that certain feature preferences belong together then these features can be grouped together in the R&D process, and marketed as one uniform feature set. Also the fact that specific feature preference variables (talk time/battery) and factors (Business functionality, and Parts and Processes) correlate with customer satisfaction is important for the R&D and marketing functions. The role of business functionality is particularly important since it correlates significantly with repurchase intentions of the male mobile phone users. For this reason the improvement of the business functionality in the mobile phone and link to the personal and/or legacy corporate information systems is vital and builds switching barriers to other brands. This further emphasized by the fact that the male mobile phone users appear to be reasonably loyal customers, and tend not to switch in spite of the low customer satisfaction levels.

8. Limitations of the study and future research

This research like any other research has its limitations. The research approach here is somewhat exploratory, and therefore the validity of the results in other settings should be investigated. Also it is possible that the sample in this study might be biased towards the direction of respondents who are more interested in the use of mobile phones. It is likely, however, that this is a unworthy concern since of practically all males in Finland are users of mobile phones. The importance of the business functionality features of the mobile phone is apparent in this study, and it is probable that this might be the case also on a more global basis particularly as regards to so-called smart phones, which by definition have a more advanced feature set than the regular mobile phones. It is of course essential that this claim is validated in a much broader research setting. Finally the relationship between customer satisfaction and repurchase intent needs further investigation with larger sample size and different country settings.

Appendix

The questionnaire: Mobile phonefeature preferences (Scale 1-7; 1= very unimportant, 7= very important).

Product related features	User related features
1. Basic requirements	1. Functionality
a. Reasonable cost/price	a. Ease of use of the mobile phone
b. Standard parts used	
c. Standard processes in the mobile phone	
2. Physical characteristics	2. Brand choice
a. The physical (aesthetic) characteristics (design standards, color, weight, dimensions, shape)	a. Brand of the phone
b. Water resistance	b. Technical support
c. Solidity/resistance towards physical impact	
d. Design	
e. Raw material quality and properties	
f. Size of the display screen	
3. Technical features	3. Customer excitement
a. Size of the memory	a. Games
b. Talk time and standby time (battery life)	b. Ringing tones diversity
c. International roaming	c. Local language adaptability
d. Safety standards in terms of radiation	d. Business services

References

Anderson, E.W., Fornell, C., 1994. A customer satisfaction research prospectus. In: Rust, R.T., Oliver, R.L. (Eds.), Service Quality: New Directions in Theory and Practice. Sage, London, pp. 241–268.

Anderson, J.C., Gerbing, D.W., 1988. Structural equation modeling in practice: A review and recommended two-step approach. Psychological Bulletin 103 (3), 411–423.

Ball, D., Coelho, P.S., Machás, A., 2004. The role of communication and trust in explaining customer loyalty: an extension to the ECSI model. European Journal of Marketing 38 (9/10), 1272–1293.

Bansal, H.S., Taylor, S.F., 1999. The service provider switching model (SPSM): a model of consumer switching behaviour in the service industry. Journal of Service Research 2 (2), 200–218.

Bryant, B.E., Cha, J., 1996. Crossing the threshold. Marketing Research 8 (4), 20–28.

Busch, T., 1995. Gender differences in self-efficacy and attitudes towards computers. Journal of Educational Computing Research 12 (2), 147–158.

Carpenter, G.S., Glazer, R., Nakamoto, K., 1994. Meaningful brands from meaningless differentiation. Journal of Marketing Research 31 (3), 339–350.

Clodfelter, R., Fowler, D., 2001. Do consumers' perceptions of product quality differ from objective measures of product quality? University of Central Arkansas, Small Business Advancement National Center. <http://www.sbaer.uca.edu/research/sma/2001/68.pdf> (accessed 9.05.11).

Cronbach, L.J., 1951. Coefficient alpha and the internal structure of tests. Psychometrika 16 (3), 297–334.

Cronin, J., Brady, M., Hult, T., 2000. Assessing the effects of quality, value and customer satisfaction on consumer behavioural intentions in service environments. Journal of Retailing 76 (2), 193–218.

Danaher, Peter J., 1998. Customer heterogeneity in service management. Journal of Service Research 1 (2), 129–139.

Diekhoff, G., 1992. Statistics for the Social and Behavioral Sciences: Univariate, Bivariate, Multivariate, Wm C. Brown Publishers, Dubuque, IA.

East, R., Gendall, P., Hammond, K., Lomax, W., 2005. Consumer loyalty: singular, additive or interactive? Australasian Marketing Journal 13 (2), 10–26.

Economides, A.A., Grousopoulou, A., 2009. Students' thoughts about the importance and costs of their mobile devices' features and services. Telematics and Informatics 26 (1), 57–84.

Fabrigar, L.R., Wegener, D.T., MacCallum, R.C., Strahan, E.J., 1999. Evaluating the use of exploratory factor analysis in psychological research. Psychological Methods 4 (3), 272–299.

Fornell, C., Wernerfelt, B., 1987. Defensive marketing strategy by customer complaint management: a theoretical analysis. Journal of Marketing Research 24 (4), 337–346.

Glasscock, N. F., Wogalter, M.S., 2006. Evaluating preferences for mobile phone features. In: Proceedings of the Human Factors and Ergonomics Society, 50th Annual Meeting.

Goldenberg, J., Horowitz, R., Levav, A., Mazursky, D., 2003. Finding your innovation sweet spot. Harvard Business Review 81 (3), 120–129.

Goode, M.H., Davies, F., Moutinho, L., Jamal, A., 2005. Determining customer satisfaction from mobile phones: a neural network approach. Journal of Marketing Management 21 (7/8), 755–778.

Hair, J.F., Black, B.C., Babin, B.J., Anderson, R.E., Tatham, R.L., 2006. Multivariate Data Analysis, 6th ed. Pearson International Edition.

Haverila, M., forthcoming. Cell phone feature preferences and gender differences among college students. International Journal of Mobile Communications.

Hallowell, R., 1996. The relationship of customer satisfaction, customer loyalty, and profitability: an empirical study. International Journal of Service Industry Management 7 (4), 27–42.

Han, S.H., Kim, K.J., Yun, M.H., Hong, S.W., Kim, J., 2004. Identifying mobile phone design features critical to user satisfaction. Human Factors and Ergonomics in Manufacturing 14 (1), 15–29.

Heck, R.H., 1988. Factor analysis: exploratory and confirmatory approaches. In: Marcoulides, G.A. (Ed.), Modern methods for business research. Lawrence Erlbaum Associates, Hillsdale, pp. 117–215.

Hennig-Thurau, T., Klee, A., 1997. The impact of customer satisfaction and relationship quality on customer retention: a critical reassessment and model development. Psychology & Marketing 14 (8), 737–764.

International Telecommunications Union (ITU), 2010. Mobile cellular subscriptions. <http://www.itu.int/ITU-D/icteye/Reporting/ShowReportFrame.aspx?ReportName=/WTI/CellularSubscribersPublic&ReportFormat=HTML4.0&RP_intYear=2008&RP_intLanguageID=1&RP_bitLiveData=False> (accessed 10.03.10).

Işıklar, G., Buyuközkan, G., 2007. Using a multi-criteria decision making approach to evaluate mobile phone alternatives. Computer Standards & Interfaces 29 (2), 265–274.

Jackson, L.A., Ervin, K.S., Gardner, P.D., Schmit, N., 2001. Gender and the internet: women communicating and men searching. Sex Roles 44 (5/6), 363–380.

Jackson, L.A., Zhao, Y., Kolenic, A., Fitzgerald, H.E., Harold, R., von Eye, A., 2008. Race, gender, and information technology use: the new digital divide. Cyberpsychology & Behavior 11 (4), 2817–2829.

Jacoby, J., Olson, J.C., Haddock, R.A., 1971. Price, brand name, and product composition characteristics as determinants of perceived quality. Journal of Applied Psychology 55 (6), 570–579.

Jones, T.O., Sasser, W.E., 1995. Why satisfied customers defect? Harvard Business Review 73 (6), 88–91.

Keaveney, S.M., 1995. Customer switching behavior in service industries: an exploratory study. Journal of Marketing 59 (2), 71–82.

Kim, J., Mueller, C.W., 1978. Factor Analysis: Statistical Methods and Practical Issues. Sage, Beverly Hills, CA.

Kim, S.H., Srinivasan, V., 2009. A conjoint-hazard model of the timing of buyers' upgrading to improved versions of high-technology products. Journal of Product Innovation Management 26 (3), 278–290.

Kristensen, K., Martensen, A., Grønholdt, L., 2000. Customer satisfaction measurement at Post Denmark: results of application of the European Customer Satisfaction Index methodology. Total Quality Management 11 (7), 1007–1015.

Kotler, P., 1994. Marketing Management. Analysis, Planning, Implementation, and Control, 8th ed. Prentice-Hall, Englewood Cliffs, NJ.

Lam, S.Y., Shankar, V., Erramilli, M.K., Murthy, B., 2004. Customer value, satisfaction, and switching costs: an illustration from business-to-business service context. Journal of the Academy of Marketing Science 32 (3), 293–311.

Lambert, Z.V., 1972. Price and choice behavior. Journal of Marketing Research 9 (1), 35–40.

Lee, H., Lee, J., Kang, M.S., 2010. Does satisfaction make customers repurchase same brand again? Allied Academies International Conference. Academy of Marketing Studies 15 (1), 40–44.

Lee, Y.S., 2007. Older Adults' User Experiences with Mobile Phones: Identification of User Clusters and User Requirements. Doctoral dissertation, Virginia Polytechnic Institute and State University.

Lee, Y.S., Hong, S.W., Smith-Jackson, T.L., Nussbaum, M.A., Tomioka, K., 2006. Systematic evaluation methodology for cell phone user interfaces. Interacting with Computers 18 (2), 304–325.

Matzler, K., Hinterhuber, H.H., Bailom, F., Sauerwein, E., 1996. How to delight your customers. Journal of Product & Brand Management 5 (2), 6–18.

Martensen, A., 2007. Tweens' satisfaction and brand loyalty in the mobile phone market. Young Consumers 8 (2), 108–116.

Mittal, V., Kamakura, A.W., 2001. Satisfaction, repurchase intent, and repurchase behavior: investigating the moderating effect of consumer characteristics. Journal of Marketing Research 38 (1), 131–142.

Mittal, B., Lassar, W.M., 1998. Why do customers switch? The dynamics of satisfaction versus loyalty. Journal of Services Marketing 12 (3), 177–194.

Mukherjee, A., Hoyer, W.D., 2001. The effect of novel attributes on product evaluation. Journal of Consumer Research 28 (3), 462–472.

Meyers-Levy, J., Tybout, A.M., 1989. Schema congruity as a basis for product evaluations. Journal of Consumer Research 16 (1), 39–54.

Naumann, E., Haverila, M., Khan, S., Williams, P., forthcoming. Understanding the causes of defection among satisfied B2B service customers. Journal of Marketing Management.

Nemati, A.R., Khan, K., Iftikhar, M., 2010. Impact of innovation on customer satisfaction and brand loyalty, a study of mobile phones users in Pakistan. European Journal of Social Sciences 16 (2), 299–306.

Nowlis, S.M., Simonson, I., 1996. The effect of new product features on brand choice. Journal of Marketing Research 33 (1), 36–46.
Oliver, R.L., 1999. Whence customer loyalty? Journal of Marketing 63 (3), 33–44.
Oyeniyi, J.O., Abiodun, J.A., 2010. Switching cost and customers loyalty in the mobile phone market: The Nigerian experience. Business Intelligence Journal 3 (1), 111–121.
Palen, L., Salzman, M., 2002. Beyond the handset: designing for wireless communications usability. ACM Transactions on Computer-Human Interaction 9 (2), 125–151.
Palen, L., Salzman, M., Youngs, E. (2000), Going wireless: Behavior & practice of new mobile phone users. In: Proceedings of the 2000 ACM Conference on Computer Supported Cooperative Work, Philadelphia, Pennsylvania, pp. 201–210.
Patterson, P.G., Johnson, L.W., Spreng, R.A., 1997. Modeling the determinants of customer satisfaction for business-to-business professional services. Journal of Academy of Marketing Science 25 (1), 4–17.
Peters, T., 1988. Thriving on Chaos. Alfred A. Knopf, New York, NY.
Parsons, K., 2010. Mobile phones. <http://businesscenter.jdpower.com/default.aspx?f=/jdpacontent/corpcomm/Home/Electronics/Electronics_MobilePhones.htm> (accessed 8.02.11).
Qualasvirta, A., 2005. Grounding the innovation of future technologies. Human Technology 1 (1), 58–75.
Rao, A.R., Monroe, K.B., 1988. The moderating effect of prior knowledge on cue utilization in product evaluations. Journal of Consumer Research 15 (2), 253–264.
Reichheld, F.F., Sasser, W.E., 1990. Zero defections: quality comes to services. Harvard Business Review 68 (5), 105–111.
Sánchez-Hernández, R.M., Martínez-Tur, V., Peiró, J.M., Moliner, C., 2010. Linking functional and relational service quality to customer satisfaction and loyalty: differences between men and women. Psychological Reports 106 (2), 598–610.
Sangareddy, S.R., Jha, S., Ye, C., Desouza, K.C., 2009. Attaining superior complaint resolution. Communications of the ACM 52 (10), 122–126.
Sharma, N., Ojha, S., 2004. Measuring service performance in mobile communications. Service Industries Journal 24 (6), 109–128.
Sharp, A., Sharp, B., Wright, M., 2002. Questioning the value of the "True" brand loyalty distinction. International Journal of Research in Marketing 19 (1), 81–90.
Shimp, T.A., Bearden, W.O., 1982. Warranty and other extrinsic cue effects on consumers' risk perceptions. The Journal of Consumer Research 9 (1), 38–46.
Smith, S.M., 2007. How to measure customer satisfaction: Satisfaction measurement and theory. <http://www.aboutsurveys.com/how-to-measure-customer-satisfaction-satisfaction-measurement-and-theory> (accessed 16.02. 2011).
Strauss, B., Neuhaus, P., 1997. The qualitative satisfaction model. International Journal of Service Industry Management 9 (2), 169–188.
Söderlund, M., 2002. Customer familiarity and its effects on satisfaction and behavioral intentions. Psychology & Marketing 19 (10), 861–880.
Tabachnick, B.G., Fidell, L.S., 2001. Using Multivariate Statistics, Allyn and Bacon. Needham Heights, MA.
Thompson, D.V., Hamilton, R.W., Rust, R.T., 2005. Feature fatigue: when product capabilities become too much of a good thing. Journal of Marketing Research 42 (4), 431–442.
Tseng, F.-M., Lo, H.-Y., 2011. Antecedents of consumers' intentions to upgrade their mobile phones. Telecommunications Policy 35 (1), 74–86.
Turnbull, P.W., Leek, S., Ying, G., 2000. Customer confusion: the mobile phone market. Journal of Marketing Management 16 (1–3), 143–163.
Van Biljon, J., Kotzé, P., Renaud, K., 2008. Mobile phone usage of young adults: The impact of motivational factors. OZCHI, 287. In: Proceedings of the 20th Australasian Conference on Computer-Human Interaction: Designing for Habitus and Habitat, pp. 57–64.
Van den Heuvel, T., van Trijp, H., van Woerkum, C., Renes, R.J., Gremmen, B., 2007. Linking product offering to consumer needs; inclusion of credence attributes and the influences of product features. Food Quality and Preference 18 (2), 296–304.
Wang, X., Zhao, P., Wang, G., Liu, J., 2007. Market segmentation based on customer satisfaction-loyalty links. Frontiers of Business Research in China 1 (2), 211–221.
Zeithaml, V.A., 1971. Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence. Journal of Marketing 52 (3), 2–22.
Wells, J.D., Valacich, J.S., Hess, T.J., 2011. What signal are you sending? How website quality influences perceptions of product quality and purchase intentions. MIS Quarterly 35 (2), 373–396.
Yoon, E., Kijewski, V., 1997. Dynamics of the relationship between product features, quality evaluation, and pricing. Pricing Strategy & Practice 5 (2), 45–60.
Zhou, K.Z., Nakamoto, K., 2007. How do enhanced and unique features affect new product preference? The moderating role of product familiarity. Journal of the Academy of Marketing Science 35 (1), 53–62.