Innovation resistance among mature consumers

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Abstract
Purpose – The purpose of this paper is to investigate innovation resistance among mature consumers in the mobile banking context. The reasons inhibiting mature consumers' mobile banking adoption were compared to those of younger consumers.
Design/methodology/approach – Following Ram and Sheth, resistance was measured with five barriers namely Usage, Value, Risk, Tradition and Image barriers. An extensive internet survey was implemented and 1,525 usable responses were collected, of which 370 respondents (24.3 percent) represented the mature consumer segment (age over 55) and 1,155 respondents (75.7 percent) represented the younger consumers.
Findings – The empirical findings indicate that the value barrier is the most intense barrier to mobile banking adoption among both mature and younger consumers. However, aging appears to be related especially to the risk and image barriers; the most significant differences between mature and younger consumers' perceptions of mobile banking were related to input and output mechanisms of information, the battery life of a mobile phone, a fear that the list of PIN codes would be lost and end up in the wrong hands and the usefulness of new technology in general.
Practical implications – The study has practical implications to marketers in different fields in that strategies to overcome resistance to innovations like mobile banking are discussed.
Originality/value – Innovation resistance can be seen as a less developed concept in adoption research. While the majority of studies have focused on the success of innovations and reasons to adopt, this study empirically investigates the reasons preventing innovation adoption.

Keywords Innovation, Older consumers, Banks, Mobile communication systems, Consumer behaviour

Paper type Research paper

An executive summary for managers and executive readers can be found at the end of this article.

Introduction

Currently the developed countries are undergoing perhaps the most influential demographic change in their history as the population ages, causing far-reaching changes in the proportion of elderly people as a percentage of the total population. There are at least two reasons for the aging of populations: increase in life expectancy and high birth rates during the years 1946 and 1964 – just after the Second World War (Moschis, 2003). Marketers have been interested in recognizing and tracking changes in the demographic trends, since they have great influence in long-term marketing and business strategies (Oumlil *et al.*, 2000). In the USA, the number of people aged 55 years or more will double by the year 2030 and constitute 33 percent of the USA population (US Census Bureau, 2000; Moschis *et al.*, 2004). Moreover, the segment of the population over 65 is growing twice as fast as the overall population so that by the year 2050 one in every five persons will fall into the 65-plus segment (Kennett *et al.*, 1995). The same trend will be experienced in other industrialized countries as well. For example, in Finland, where this study was conducted, already nearly half of the households have at least one member aged 55 or more (Myrskylä, 2005).

There seems to be no clear definition for the mature consumer. Some of the earliest studies in the field considered the 50-plus segment of the population as a "mature" market (Bartos, 1980). Conaway (1994) states that the mature market is the group of consumers over the age of 50, but sometimes grouped as those over the age of 55. Today mature consumers are often defined as those falling into the 55-plus segment (Kennett *et al.*, 1995; Moschis *et al.*, 2004) while some of the studies restrict mature consumers to those over 65 years of age (Oumlil *et al.*, 2000; Mattila *et al.*, 2003). In this study mature consumers are defined as those consumers over the age of 55.

Besides recognizing the changes, companies need to understand the consumption behavior and attitudes of the burgeoning mature market. Indeed, today elderly people constitute an even more important consumer segment for companies than ever before, deserving attention from marketers in different fields. A number of studies have documented the attractive financial status of the mature segment. Currently, the mature segment represents approximately one fourth of the population in the USA, yet it controls 63 percent of the wealth and owns 77 percent of the country's financial assets (Conaway, 1994). Usually the individual's lifetime wealth is at its zenith at retirement. Engagement in work begins to decrease substantially at the age of 55-60 (Myrskylä, 2005). Retiring will decrease household income but the income per member of the household does not decrease that much since the children have usually already moved away. Thus, mature consumers have significant purchasing power but also a need to carefully manage their assets over the remainder of their lifespan,

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making the 55-plus segment extremely lucrative to the financial service providers (Kennett *et al.*, 1995).

Internet banking services have already been well adopted by Finnish bank customers, nearly 70 percent of the population paying their bills over the internet. A number of studies have documented the benefits of internet banking for consumers. These include time savings and freedom from time and place for consumers (Karjaluoto *et al.*, 2002). In addition, internet banking is perceived to be easy and fast to use (Karjaluoto, 2002), likewise convenient and compatible with users' existing lifestyles (Black *et al.*, 2002; Gerrard and Cunningham, 2003). For consumers, mobile banking adds the element of mobility to internet banking used over fixed networks thus providing additional service for certain occasions. While, compared to the branch office, internet banking services provide huge economic benefits for the banks, mobile services serve rather as a way to offer customers value added than as a way to make more money. In this respect, banks are developing their mobile services in order to stay competitive in the market and find new ways of serving their customers.

Managing the mature consumer segment is one of the hot topics in electronic banking today. Mature consumers are becoming familiar with technology such as computers, the internet and mobile phones. It is often said that mature consumers will not try new products, but the opposite is the case. Leventhal (1997) argues that aging consumers will definitely try new products but for different reasons than younger consumers. He claims that mature consumers try something if it meets a specific personal need rather than because it is trendy. Therefore, companies, like banks for instance, need to demonstrate how their products and services meet different needs and provide their customers with value added. When considering how to best serve the needs and identify the opportunities in the mature market, the process of aging must be understood. A person ages with respect to two types of changes: biophysical and psychosocial (Kennett *et al.*, 1995).

Biophysical aging is related to the ability to process information – not necessarily by causing cognitive decline but rather in the manner and speed with which information is processed and handled (Kennett *et al.*, 1995). Biophysical aging may also result in physical and health impairments like decline in vision. These impairments include changes in visual capacity, loss of acuity, dark adaptation, contrast sensitivity, sensitivity to glare, contradiction in the visual field, decline in color sensitivity, more light absorption by the retina and a decline in the ability to focus on successive images (Moschis, 1992). Service providers should take biophysical aging into account in their marketing strategies. Lumpkin *et al.* (1985) found that the mature customer greatly appreciates helpful sales stuff sympathetic and sensitive to the needs of an elderly customer. Moreover, they found reader-friendly labels and tags to be determinant attributes in a store choice by mature consumers. Kennett *et al.* (1995) suggest that financial service providers could increase the print size on necessary forms, provide assistance in filling out these forms and enhance the overall sensitivity of their employees in order to address the changes caused by consumers' biophysical aging.

While biophysical aging is easily observable, psychosocial aging is less apparent. This process includes both psychological and social aging. Psychologically aging means increasingly thinking of oneself as an old person, while socially aging is related to the roles associated with old age, like being a retiree and a grandparent (Moschis, 2003). Thus, aging means dealing with these emotional changes in human life. As mature consumers go through these changes their needs for products and services are likely to change, likewise their perceptions of and responses to marketing stimuli (Moschis, 2003). However, people react differently to aging. Two types of attitudinal perspectives can be identified: Personal perceptions and public perceptions. Personal perceptions refer to how older people see themselves. For instance, Moschis (2003) states that while some mature customers are still "young at heart", others consider themselves old and act their age. Public perceptions, for their part, refer to how other people perceive aging consumers. The mature market is often considered to be a group of vulnerable old people much opposed to change and with limited financial resources. However, figures show that they have more purchasing power than many other groups of consumers and, according to Moschis (2003) they, for example, invest more, spend more on luxury products and choose their products on the basis of quality and brand name. As Leventhal (1997, p. 276) puts it: "Like sexism, ageism is stereotyping". Marketers too often stereotype older consumers and ignore them in their marketing actions. Prior to 1980, especially, older consumers were considered insignificant, but during the 1980s perceptions of the older consumer market began to change and today an increasing number of companies is recognizing the importance of the mature market (Moschis, 2003). However, Moschis (2003) notes that there are a large number of companies, even today, who do not make an effort to market to the older segment because either they see no reason for doing so, or then do not know how to.

In order to serve and market to mature consumers, service providers must understand the barriers that prevent elderly people from adopting service innovations. The aim of this study is to explore how the innovation resistance of mature consumers differs from the resistance of younger people in the mobile banking context. First, the theory of innovation resistance is explained. Thereafter we describe the development of the questionnaire, measures and data collection. Next the results are presented and conclusions drawn. Finally, managerial implications of the study are provided.

Consumer resistance to innovations

The vast body of literature on innovation diffusion has suffered from pro-change bias (Sheth, 1981; Ram, 1987; Rogers, 2003). It assumes that all innovations are always good and should be adopted by everyone (Rogers, 2003). The premise of the assumption is that the innovations are, without exception, improvements over existing product or service substitutes (Ram, 1987). However, innovations mean change to consumers, and resistance to change is a normal consumer response that has to be overcome before adoption may begin (Ram, 1987).

Sheth (1981) argues that since the vast majority of consumers have no a priori desire to change, we might learn more by concentrating on understanding the reasons for innovation resistance rather than on the reasons for adoption. He seeks to understand the psychology of innovation resistance and argues that:

- habit toward an existing practice or behavior; and
- perceived risks associated with innovation adoption are the most useful constructs for innovation resistance.

While the habit toward an existing behavior is related to the typical human tendency to strive for consistency and status quo rather than continuously search for new behaviors, the perceived risks are associated with physical, social or economic consequences, performance uncertainty and perceived side effect interconnected to the innovation (Sheth, 1981). Ram and Sheth (1989) further develop our understanding of innovation resistance by suggesting functional and psychological barriers to innovation adoption. They divide functional barriers into usage, value and risk barriers, while psychological barriers include tradition and image barriers.

The usage barrier comes into operation when an innovation is not compatible with existing workflows, practices or habits, being probably the most general cause for consumer resistance to innovations (Ram and Sheth, 1989). The value barrier, for its part, is based on the monetary value of an innovation referring to an idea that if the innovation does not offer strong performance-to-price compared to its substitutes, it is not worthwhile for consumers to change their ways of performing their tasks (Ram and Sheth, 1989). Indeed, an important reason for the failure of many products and services is the lack of acceptance by the "pragmatists", those who believe that the cost of learning the innovation, e.g. new technology, far outweighs the benefits it may have offer them (Dunphy and Herbig, 1995).

Risk barrier refers to the degree of risks an innovation entails (Ram and Sheth, 1989). Uncertainty is inbuilt in innovations, and therefore, they always entail at least some degree of perceived risk. According to Ram and Sheth (1989) risk may be:

- physical and cause harm to a person or his property;
- economic, representing a wrong decision to adopt an innovation instead of waiting for a better or more inexpensive version;
- functional, referring to the performance and ability to function properly; and finally
- social, referring to social ostracism and fear of being seen in a negative light by others.

Among psychological barriers, the tradition barrier mainly implies the change an innovation may cause in daily routines. If the routines are important to a consumer, the tradition barrier will most likely be high. Moreover, behavior that is contrary to a consumer's social and family values and social norms will cause the barrier (Ram and Sheth, 1989). The image barrier, for its part, comes into play since innovations attain a certain identity from their origins like the product category to which they belong, the country of origin or brand. Thus the image barrier originates from stereotyped thinking and hampers the adoption of an innovation (Ram and Sheth, 1989).

The study

Questionnaire development and measures

The usage barrier is mostly related to the usability of the service and the changes it requires from the consumers. Kuisma *et al.* (2007) qualitatively searched for the reasons why the remaining 30 percent of Finnish bank customers resist internet banking. They found that some of the non-users consider internet banking to be difficult, inconvenient and slow to use. Moreover, they report that some of the non-users feel that the proceeding at the computer monitor is unclear and the use of changing PIN codes is inconvenient as the codes need to be carried along. In mobile banking services especially, consumers have reported inconvenience due to the keyboard and display of the device. Bill payment via mobile phone is perceived to be too difficult and time-consuming as the device enables only a limited amount of information processing and hence the whole bill is not visible on the display (Laukkanen and Lauronen, 2005).

Value barrier refers to performance-to-price value compared to substitutes. Kuisma *et al.* (2007) report that some of the non-users feel that the relative advantage of internet banking is poor from their perspective, since the purchase of a computer and internet connection would cause them more costs than benefits. Fain and Roberts (1997), then again, argue that the relative advantage may be perceived as poor since online banking does not offer any functions not previously available. Hence, like internet banking, mobile banking might also be perceived as too expensive by some consumers. However, in their qualitative mobile banking study Laukkanen and Lauronen (2005) found that some of the mobile banking services increase customers' feeling of control to their financial matters. The authors report that some respondents felt that they need to be constantly aware of the exact balance in their account, which was the reason for them to use mobile request for account balance service almost daily.

Risk barrier refers to the risks consumers encounter or perceive in innovations. Fain and Roberts (1997) point out that marketers should keep in mind that risk is rather a perception of a consumer than a characteristic of a product. Some customers, for example, fear that they might make mistakes when conducting their bank affairs via a computer or a mobile phone (Laukkanen and Lauronen, 2005; Kuisma *et al.*, 2007). In mobile banking especially the data input and output mechanisms are argued to impede the banking process creating feelings of insecurity (Laukkanen and Lauronen, 2005). Moreover, some consumers are worried about connection breaks that may pose major risks to their banking actions (Black *et al.*, 2001; Kuisma *et al.*, 2007). The portable list of PIN codes also poses security threats to internet banking as the list might get lost. Indeed, this is argued to be an important factor generating resistance to internet banking among non-users (Kuisma *et al.*, 2007). Furthermore, the security and privacy of the service raise concerns among consumers in online transactions. Security is more related to the fear of financial loss, whereas privacy is connected to the ethical handling of the personal information of the customer. Pavlou (2003) explains privacy risk in online transactions as a possibility of theft of private information. Moreover, the internet banking context confidentiality is found to be a dominant issue in perceived security (Liao and Cheung, 2002).

The tradition barrier to electronic banking may arise, for example, as it is not the way consumers are accustomed to paying bills (Fain and Roberts, 1997). Therefore, it may be that in internet and mobile banking the barrier exists among those consumers who simply prefer to deal directly with the bank clerk instead of using arms-length technologies (e.g. Heinonen, 2004; Forman and Sriram, 1991). Hence, not all customers may see the need for new, complementary channels.

The image barrier could be considered as the image of electronic and mobile banking services in general. Fain and Roberts (1997) state that the image barrier in electronic banking emerges from the negative "hard-to-use" image of computers in general and the internet channel in particular. Thus, it may be that some consumers perceive the technology to be too difficult to use, so they instantly form a negative image to the service related to the technology.

The questionnaire was designed based on the theory of innovation resistance and existing electronic banking literature recapped above. Altogether, 18 statements were selected in the questionnaire examining the five different barriers for mobile banking resistance (Table I). A seven-point Likert scale ranging from totally disagree (1) to totally agree (7) was used.

Sampling

An online survey was designed. The questionnaire was placed on the log-out page of a large Scandinavian bank's online service in Finland, thereby only reaching users of online banking services. The questionnaire was open for 72 hours from noon to noon between November 6 and 9, 2006. This yielded 2,060 responses in total, of which 1,540 (74.8 percent) respondents did not have experience and 520 (25.2 percent) had experience of using a mobile phone for banking transactions. The interest of this paper is in those customers not having experience of using mobile banking services. Out of the 1,525 usable responses, 370 respondents (24.3 percent) represented mature consumers (age over 55) and 1,155 respondents (75.7 percent) represented the younger consumers.

Results

Consumers may have a number of reasons for resisting technological innovations. On the basis of earlier electronic banking studies documented in the literature, 18 factors were identified as possible reasons for bank customers to resist mobile banking. Based on the theory of innovation resistance, the factors were summed into five resistance barriers namely Usage, Value, Risk, Tradition and Image barriers. Reliability analysis, measured with Cronbach's alpha, showed adequate reliability levels for all of the barriers the scores being 0.935, 0.680, 0.828, 0.588 and 0.707 respectively. Research findings are first reported for mature consumers (age over 55) on barrier level and then compared to responses given by younger bank customers in more detail.

The results show that the value barrier is the most intense barrier to mobile banking adoption among mature consumers (Table II). Moreover, the value barrier resulted in the lowest standard deviation showing its crucial role for the majority of mature consumers. Thus it appears that among elderly non-users mobile banking innovation does not currently provide performance-to-price value compared to its substitutes. The tradition barrier, for its part, yielded a mean of less than 4, indicating that the self-service innovations in banking are

Table I Measure items

Sum variable (Cronbach's alpha)	Statement	Source
Usage barrier (0.935)	In my opinion, mobile banking services are easy to use[a]	Kuisma *et al.*, 2007
	In my opinion, the use of mobile banking services is convenient[a]	Kuisma *et al.*, 2007
	In my opinion, mobile banking services are fast to use[a]	Kuisma *et al.*, 2007
	In my opinion, progress in mobile banking services is clear[a]	Kuisma *et al.*, 2007
	The use of changing PIN codes in mobile banking services is convenient[a]	Kuisma *et al.*, 2007
Value barrier (0.680)	The use of mobile banking services is economical[a]	Kuisma *et al.*, 2007
	In my opinion, mobile banking does not offer any advantage compared to handling my financial matters in other ways	Fain and Roberts, 1997; Kuisma *et al.*, 2007
	In my opinion, the use of mobile banking services increases my ability to control my financial matters by myself[a]	Laukkanen and Lauronen, 2005
Risk barrier (0.828)	I fear that while I am paying a bill by mobile phone, I might make mistakes since the correctness of the inputted information is difficult to check from the screen	Laukkanen and Lauronen, 2005; Kuisma *et al.*, 2007
	I fear that while I am using mobile banking services, the battery of the mobile phone will run out or the connection will otherwise be lost	Black *et al.*, 2001; Kuisma *et al.*, 2007
	I fear that while I am using a mobile banking service, I might tap out the information of the bill wrongly	Laukkanen and Lauronen, 2005; Kuisma *et al.*, 2007
	I fear that the list of PIN codes may be lost and end up in the wrong hands	Kuisma *et al.*, 2007
	I trust that while I am using mobile banking services, third parties are not able to use my account or see my account information[a]	Pavlou, 2003; Liao and Cheung, 2002
Tradition barrier (0.588)	Patronizing in the banking office and chatting with the teller is a nice occasion on a weekday	Heinonen, 2004; Forman and Sriram, 1991
	I find self-service alternatives more pleasant than personal customer service[a]	Heinonen, 2004; Forman and Sriram, 1991
Image barrier(0.707)	I have a very positive image of mobile banking services[a]	Adapted from Ram and Sheth, 1989
	In my opinion, new technology is often too complicated to be useful	Fain and Roberts, 1997
	I have such an image that mobile banking services are difficult to use	Fain and Roberts, 1997

Note: [a] Inverted variables

Table II Barriers to mobile banking adoption among mature consumers (over 55)

Barrier	Mean	SD
Usage	4.80	1.35
Value	5.20	1.12
Risk	4.59	1.52
Tradition	3.56	1.75
Image	4.27	1.39

preferable to the traditional bank branch among mature internet banking customers and the reason for not using mobile banking is not related to reluctance to use arms-length service technology.

Next, we compared the responses of mature consumers to those in the younger age groups in more detail. The results show that mature internet banking customers differ from other internet banking users in the risk, tradition and image barriers they encounter to mobile banking adoption (Table III). Usage and value barriers are the most intense and equally perceived barriers to mobile banking adoption throughout the age groups. Instead, the risk barrier differentiates these groups the most, showing that mobile banking innovation entails significantly higher risk perceptions among mature consumers than among younger consumers. This finding is in line with the existing knowledge that mature consumers do not expose themselves to risks (see Brock, 1998).

Further, it seems that the tradition barrier is not an obstacle to either of these groups (means less than 4). However, it appears that younger consumers, compared to mature consumers, have slightly more positive perceptions of self-service alternatives in general. Similarly, younger consumers are on a borderline whether they perceive image as a barrier to mobile banking adoption or not, whereas mature consumers report greater means for the image barrier.

Taking a closer look inside the barriers reveals that mature consumers consider the use of PIN codes more inconvenient compared to younger consumers. The explanation can be found under the risk barrier, which showed that mature respondents reported significantly higher fears that the list of PIN codes would be lost and end up in the wrong hands compared to younger respondents, who did not consider it a risk at all.

The risk that third parties would be able to use bank customers' accounts, or see their account information while using mobile banking services is considered relatively low in both groups. Some of the earlier mobile banking studies have argued that security issues are among the greatest concerns in the adoption of mobile banking services (Brown *et al.*, 2003; Luarn and Lin, 2005) while some studies have stated that

Table III Resistance to mobile banking among younger and mature consumers

Resistance items	55 – mean	Over 55 mean	*p*-value (*t*-test)
Usage barrier	4.69	4.80	ns
In my opinion, mobile banking services are easy to use[a]	4.69	4.80	ns
In my opinion, the use of mobile banking services is convenient[a]	4.78	4.82	ns
In my opinion, mobile banking services are fast to use[a]	4.60	4.55	ns
In my opinion, progress in mobile banking services is clear[a]	4.71	4.84	ns
The use of changing PIN codes in mobile banking services is convenient[a]	4.65	4.88	$p = 0.035$
Value barrier	5.13	5.20	ns
The use of mobile banking services is economical[a]	5.09	5.11	ns
In my opinion, mobile banking does not offer any advantage compared to handling my financial matters in other ways	5.28	5.32	ns
In my opinion, the use of mobile banking services increases my ability to control my financial matters by myself[a]	5.03	5.21	ns
Risk barrier	4.18	4.59	$p < 0.0005$
I fear that while I am paying a bill by mobile phone, I might make mistakes since the correctness of the inputted information is difficult to check from the screen	4.64	5.04	$p = 0.002$
I fear that while I am using mobile banking services, the battery of the mobile phone will run out or the connection will otherwise be lost	4.22	4.67	$p = 0.001$
I fear that while I am using a mobile banking service, I might tap out the information of the bill wrongly	4.26	4.72	$p < 0.0005$
I fear that the list of PIN codes will be lost and end up in the wrong hands	3.56	4.24	$p < 0.0005$
I trust that while I am using mobile banking services, third parties are not able to use my account or see my account information[a]	4.15	4.21	ns
Tradition barrier	3.34	3.56	$p = 0.046$
Patronizing in the banking office and chatting with teller is a nice occasion on a weekday	3.50	3.71	ns
I find self-service alternatives more pleasant than personal customer service[a]	3.17	3.41	ns
Image barrier	4.01	4.27	$p = 0.005$
I have very positive image of mobile banking services[a]	4.81	5.06	$p = 0.11$
In my opinion, new technology is often too complicated to be useful	3.47	3.91	$p < 0.0005$
I have such an image that mobile banking services are difficult to use	3.78	3.77	ns

Note: [a] Inverted variables

security issues are not perceived by customers to be major obstacles in mobile banking transactions (Suoranta, 2003) and that, in fact, some customers feel that a mobile connection via personal mobile device is even more secure compared, for example, to public internet access (Laukkanen and Lauronen, 2005). The results of this study confirm that mobile banking security risk is considered relatively low even among the non-users of mobile banking and that the risk perceptions are more related to other types of risks in the service process. For example, the respondents appeared to be more worried about their own errors made while using the service than risks related to transaction security and privacy. Both the input and output mechanisms of a mobile phone raised significantly greater doubts among mature respondents compared to younger ones. Similarly, mature respondents were clearly more worried about connection breaks or the battery life of a mobile phone than were younger respondents. Finally, younger respondents appeared to have a slightly more positive image of mobile banking than older respondents, and neither of the groups considered new technology as too complicated to be useful, even though younger respondents' perceptions were significantly more positive.

Discussion

Aging of human beings has been explained through biophysical and psychosocial changes. While biophysical changes are related to the functioning of an individual including manner and speed of information processing and physical changes in the human body like impaired eyesight, psychosocial changes include changes in attitudes, personality and needs as well as changes in position in society. Innovation adoption often requires changes in consumers' existing habits and forces them to develop new ones. This generates innovation resistance which is a normal consumer response. Typically, the greater the change that innovation entails, the greater the resistance encountered by the consumers. The changes caused by aging partly resemble the way innovation resistance is explained in the earlier literature. While functional barriers are related to the degree of visible benefits, risks and ease-of-use of an innovation, psychological barriers are related to attitudes toward changes in daily routines and perceived image of an innovation. Our study showed that usage and value barriers are perceived equally by both younger and mature customers, indicating that aging is not related to usability or value-for-money perceptions of mobile banking. However, mature customers, compared to younger ones, related significantly higher degrees of risks to the use of mobile banking. Moreover, the psychological barrier, including the tradition and image barriers, was greater among mature consumers.

Technocrats usually believe in the superiority of the technology and suggest that consumers must be educated to enable them to utilize innovations (Dunphy and Herbig, 1995). This resembles the idea of the pro-change bias that all innovations are always good. Dunphy and Herbig (1995) suggest that a more marketing oriented view would be to examine the reasons why an innovation has not been adopted by certain consumers and to make attempts to modify the product or service to account for those factors found to cause resistance. However, Ram (1989) states that the type of resistance determines the strategies used to overcome innovation resistance. He argues that communication strategies, like advertising and face-to-face contact, are more applicable if consumers resist an innovation due to perceived social or psychological risks, if they need additional information or if the innovation is inconsistent with their current beliefs. However, if the resistance to an innovation is caused by perceived functional or economic risk, then the innovation modification strategy would be more effective (Ram, 1989).

Oumlil *et al.* (2000) highlight the role of consumer education programs in delivering the message of the marketing concept to the elderly. Efficient use of a service requires that consumers have knowledge of the service, access to it and intent to use it (Yeatts *et al.*, 1992). Access to a mobile phone is not a problem these days, when practically everyone, including the mature segment, carries a mobile phone in their pocket. The most recent mobile phone models allow the user, for instance, to change the font size on the screen. Moreover, they have color screens with enhanced resolution. These enhancements especially serve those who suffer from biophysical aging like declines in vision. Marketers should focus on educating customers to use the services and devices but also undertake marketing actions to overcome the barriers caused by psychosocial aging. Elderly customers are in the process of transforming their lifestyles and consumption behavior while similarly many of them attempt to retain more youthful styles (Oumlil *et al.*, 2000). Thus, through well designed marketing actions marketers can reach the huge potential of the mature consumers.

Managerial implications

Innovation resistance can be seen as a less applied concept in diffusion research. While majority of studies have focused on the success of innovations and reasons to adopt, the theory of innovation resistance aims to explain the reasons that inhibit innovation adoption. Mobile banking represents one of the recent innovations in the financial services sector, adding the element of pure mobility to service consumption. In the increasingly competing markets of financial services mobile banking can be seen as an attempt to provide the needed added value for customers by offering more opportunities to conduct different banking actions. Today mobile banking services enable consumers, for example, to request their account balance and the latest transactions in their accounts, to transfer funds between accounts, to make buy and sell orders on the stock exchange and to receive portfolio and price information. In Finland already roughly 70 percent of the population pays their bills over the internet. Currently the adoption rates of mobile banking, however, are significantly lower. This study aims to explain mature consumers' resistance to mobile banking innovation.

The results showed that the value barrier is the most intense barrier to mobile banking adoption among both younger and mature consumers. This means that mobile banking non-users consider that the innovation does not offer value-for-money or any other advantage compared to handling financial matters in other ways. Leventhal (1997) points out that when targeting the mature market companies need to demonstrate that the product or service meets a real need, since elderly people are not going to try something because it is trendy or the "thing to do". In this respect, banks could develop marketing campaigns illustrating the benefits of mobile banking compared to other ways of using the financial services.

The results of this study further suggested that aging is related, especially, to perceived risks of mobile banking, but also to the image and tradition barriers. Perceived risks appeared to be functional in nature as the most significant differences between mature and younger consumers were related to input and output mechanisms of information, battery life of a mobile phone and a fear that the list of PIN codes will be lost and end up in the wrong hands. Companies could employ innovation modification strategies to overcome this type of resistance. They could, for example, gather feedback from elderly customers on possible product or service modifications using, for example, qualitative interviews or laboratory tests. Banks could also develop other authentication methods to replace the lists of PIN codes. This is also supported by the finding that mature consumers find the use of changing PIN codes more inconvenient than younger bank customers. However, contrary to the general assumption that mobile banking would generate a security and privacy threat, the results suggested that actually the risk that third parties would be able to use an individual's account or see account information was considered relatively low among both age groups.

Moreover, the findings indicated that mature consumers consider new technology as more complicated to be useful than younger consumers. This means that a greater amount of cognitive effort is involved in the adoption of an innovation by mature consumers, and therefore generates more resistance. Mature consumers also have more negative image of mobile banking than their younger counterparts, indicating the existence of more strongly held beliefs about the innovation. In these cases, communication strategies like mass media or face-to-face contact with a customer could be more effective than product modification strategies in reducing mature consumers' resistance to mobile banking.

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Executive summary and implications for managers and executives

This summary has been provided to allow managers and executives a rapid appreciation of the content of this article. Those with a particular interest in the topic covered may then read the article in toto *to take advantage of the more comprehensive description of the research undertaken and its results to get the full benefit of the material present.*

The mature explosion

An increase in life expectancy and high birth rates in the two decades following the end of the Second World War are cited as main reasons for population ageing in the USA. By 2030, the number of people over 55 is set to double and this segment will comprise around a third of the total population. The over 65 group is expanding at twice the rate of the general population and by mid-millennium will account for one in every five people. Similar developments are occurring in other industrialized nations. In Finland, for example, nearly half of the households already contain at least one member aged over 55.

Some marketers are increasingly realizing the importance of this rapidly growing segment. Others, however, pay little attention to elderly consumers, who are often perceived as having limited finances and an apprehensive attitude towards innovation. Surveys have indicated otherwise and it is becoming evident that mature consumers enjoy significant spending power and will embrace new developments. Such developments must, however, satisfy a particular need, as older consumers do not mimic their younger counterparts by simply following the latest trends.

Meeting the needs of this segment demands an understanding of how people age. Some researchers claim that the ageing process contains both biophysical and psychosocial elements. Biophysical ageing can relate to a decline in physical capabilities such as quality of eyesight and the speed in which information is processed. Companies can take this aspect of ageing into account by using larger font sizes to make written information more "reader-friendly" and training staff to be sensitive and sympathetic towards mature consumers. Typical psychosocial ageing issues are how old a person feels and coming to terms with roles associated with old age such as being a grandparent and retiring from work.

Widespread assumption exists that innovation always equals improvement and should therefore be openly welcomed. But innovation also means change, and many experts point out that humans favor maintaining a consistent state of affairs rather than seeking out new routines. Resistance to change is therefore a normal consumer response that has to be overcome if new products and services are to become accepted.

Barriers to change

Researchers have identified both functional and psychological barriers to change. The functional barrier incorporates usage, value and risk, while tradition and image are components of the psychological barrier:

- Usage is associated with the usability of the innovation. It has been claimed that this barrier could be the main source of consumer resistance when an innovation demands radical changes to established practices or habits.

- Value relates to financial aspects and this barrier is responsible for the failure of many new developments. Failure often results because of people's perception that the cost of adopting an innovation is far greater than any ensuing benefits.
- Risk concerns the degree of inherent uncertainty of any innovation. Various types of risk have been identified including physical, social, economic and functional. Consumers become concerned about potential harm to person or property, how others will respond if they adopt the innovation, whether the development is cost effective enough, and whether the product or service will work properly.
- Tradition relates to the impact on daily routines and will surface if the innovation leads to behaviors and values that differ from the consumer's norms.
- Image can be linked to characteristics associated with the brand, product or country of origin that can for instance generate stereotypical perceptions. It is likely to hinder adoption when such perceptions are negative.

Laukkanen *et al.*, consider the above in relation to the use of mobile banking services in Finland. Internet banking has been widely adopted in the country and around 70 percent of consumers carry out payment transactions online, citing time saving, convenience and ease of use as key factors. Banking via mobile phone adds mobility and a greater control over financial matters to this list of benefits. Consequently, banks are developing mobile services in order to provide added value to their customers and to remain competitive.

Those who do not bank online have different perceptions. In terms of barriers identified, some consumers believe that investing in a computer and internet access can make online banking financially unviable. Others belief the service to be slow and difficult, and have raised specific concerns about on-screen procedures and PIN numbers. Research has uncovered similar reservations about mobile banking. Consumers expressed concerns about security issues surrounding PIN codes, safety of private information, confidentiality, loss of connection to the network and making errors themselves while using the service.

The authors carried out a study in order to determine which barriers are most closely linked with mobile banking resistance among mature consumers. Comparisons with younger consumers were also made. A questionnaire was placed on the website of a large Scandinavian bank for a target audience of online banking customers without experience of using mobile banking services. The study attracted 1,525 usable responses, of which 370 were from consumers over the age of 55.

Participants were asked to provide responses to 18 statements concerning different factors relating to mobile banking resistance. The factors related to the usage, value, risk, tradition and image barriers.

Results indicated value as being the most important barrier to mobile banking adoption among mature respondents suggesting that this consumer segment does not perceive the service as representing a good investment. Usage was also found to be significant – for both age groups.

Older consumers did display a generally positive attitude towards other self-service banking innovations, inviting the conclusion that the tradition barrier is not a factor. This was also the case with younger participants.

Image provided a barrier to mobile banking adoption among seniors, while the study showed younger respondents as being borderline in this respect. Findings showed agreement with previous research in terms of the risk barrier which was found to be more significant among the old. However, some of the risks identified earlier were no longer an issue for either group. There was less concern about connecting via a mobile phone and fears about outsiders being able to access accounts were low in both groups.

Younger consumers did not regard PIN codes as posing a security risk but older respondents thought otherwise. This group also expressed concern about their ability to use the service properly via the input and output mechanisms on a mobile phone. Despite this, seniors displayed agreement with younger respondents in their belief that new technology in general is not overly complicated.

The results indicated no correlation between age and usability or value for money perceptions of mobile banking. While image and tradition were slightly higher among mature respondents, the most significant difference was found in relation to risk.

Marketing implications

Previous investigations had recommended that marketers take different actions depending on the type of risk involved. Laukkanen *et al.* suggest likewise. When consumer resistance is caused by perceived social or psychological risks, marketers should develop effective communication strategies to provide the consumer with the necessary information. These strategies should include both advertising and face-to-face components.

When the risk is functional, the best policy is to modify the innovation itself. The authors suggest that inviting ideas from mature consumers as to how the product or service could be modified might be the best policy. Developing authentication processes alternative to PIN codes is another option to consider.

Companies need to ensure that a product or service fulfils a mature consumer's needs. In this context, promotion campaigns might emphasize how mobile banking is the best way for them to use financial services.

(A précis of the article "Innovation resistance among mature consumers". Supplied by Marketing Consultants for Emerald.)