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July 2010

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Credit Card Usage Behaviors among Elderly Korean Consumers

ABSTRACT

Korea is the fastest aging country in the world and silver market in Korea has

beginning to emerge in 2008 as Korean baby boomers start to retire and will become a

148 trillion KRW market by 2020. Based on the fact that Net assets of households

headed by over 55 years old are much higher than those of average Korean households,

understanding their usage behaviors on financial products becomes important to

financial institutions targeting old consumer groups. This study examines older Korean

consumers' credit card usage behaviors in terms of key demographic variables.

Keywords: Credit card usage behavior, Elderly consumer, Korea

JEL Code: M39

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INTRODUCTION

Korea is the fastest aging country in the world. According to the UN, a country is classified as an 'aging society' when more than 7% of its population is older than 65 years old. When the percentage reaches over 14%, it is classified as an 'aged society.' When more than 20% of population is older than 65, the country is called as a 'super aged society.' Korea became an aging country in 2000 by having 7.2% of its population with older than 65 years old. It is expected to become an aged society by 2019 and a super aged country by 2026 (Korea National Statistics Office 2006). No other country in the world has aged this fast. It took France 115 years and the U.S. 71 years to reach from an 'ageing society' to 'aged society.' Korea is expected to make this shift in less than 20 years. Therefore, unlike these developed countries which had a lot more time to deal with the aged population, Korea has to deal with aging population problem without much preparation time.

The shift in age structure of a society opens new market opportunities due to rising demand for so-called silver industry, which are targeted to the mature market. According to Industry estimates, silver market in Korea has beginning to emerge in 2008 as Korean baby boomers start to retire and will become a 148 trillion KRW market by 2020 (The Korea Chamber of Commerce and Industry, 2006). The expected growth rate of this market is 12.9%, which significantly exceeds overall consumer market growth rate of 4.7%.

Among various industries, the financial sector will face big market opportunity because of the wealth possessed by the older consumer group. In the U.S., people aged 55 and over control more than 75 percent of the USA's assets and more than half of the discretionary income (Linden, 1986). In Korea, net assets of households headed by over 55 years old are 33.6% higher than those of average households (The Korea Chamber of Commerce and Industry, 2006). Understanding this older consumer group's usage behaviors of financial products becomes vital to most financial institutions.

Therefore, the objective of this study is to examine older consumers' usage behaviors of financial products. More specifically, older consumer group's usage behaviors of credit cards are examined in terms of key demographic variables. In doing so, meaningful pattern of their consumption behaviors are hope to be identified to provide practical implications to marketers of financial products.

BACKGROUND

Silver Market in Korea

Population estimation in Korea reveals that the senior population over the age of 65 is increasing while the youth population under the age of 14 is shrinking down to the half of that in 1960s. The number of older persons has already doubled over the last 15 years, and is forecast to double again over the next 15 years (Korea National Statistics Office, 2010). The effect of population trend in total dependency ratio and index of aging is shown in the Figure 1.

From the marketer's perspective, this population shift means a shift in market power; bigger pie of total market says higher demand. According to Industry estimates, silver market in Korea has beginning to emerge in 2008 as Korean baby boomers start to retire and will become a 148 trillion KRW market by 2020 (The Korea Chamber of Commerce and Industry, 2006). The expected growth rate of this market is 12.9%, which significantly exceeds overall consumer market growth rate of 4.7%. Figure 2

reports the expected growth rate of silver market in Korea across various industries. Support for the high growth rate is evidenced by the amount of asset hold by mature population. Net assets of households headed by over 55 years old are much higher than those of average households as shown in Table 2. With the smaller size of senior households, the difference of net assets between younger and older groups becomes more significant on per capital basis. In addition, seniors today are more likely to spend. People are living longer and thus, when considering the lifetime value of consumers, seniors spend longest at the later life stage than in any other traditional marketing stage (Nielson and Curry, 1997). Thus, in terms of sheer size, economic power and longevity of demands, the older consumer market is increasingly important.

Insert Figure 1 and 2 and Table 1 about here

Aging and Credit Cards Usage Behaviors

Early work in gerontology has focused on explaining behaviors in later life. Disengagement theory holds that on retirement both society and older persons are mutually obliged to withdraw from each other and a new equilibrium is reached equally satisfying to the elderly and society (Atchley, 1987; Moschis, 1992; 1994a; 1996). With age, older people's social networks shrink, family size decreases, and consumption needs in general decrease including financial product such as credit cards. Biophysical changes in various body systems may deter the old people's ability to shop around. This may also contribute reduced need for credit cards as people get old. Thus, it is predicted that age is inversely related to credit card use among elderly people. Thus, the following hypothesis is suggested:

H1: The older the elderly person, the more likely the person (a) to have fewer numbers of credit cards and (b) to spend less amount of money by their credit cards.

Activity or engagement theory in gerontology holds that the aged person's psychological and social wellbeing is based on various types of activities relevant to a given role (e.g., profession). As they experience exit from obligatory role, the elderly engage in compensatory activities to remain socially and psychologically fit (Moschis, 1992; 1994a; 1996). However, whether an aged person will maintain socially and psychologically active lifestyles depends on availability of resources. Income is expected to enable the aged person to stay engaged and, therefore, affect credit card use (Moschis, 1994b). Income may affect an aged person's credit card usage behavior in a number of ways. First, the high level of income may attract many opportunity to get various credit cards in the first place. Second, availability of higher credit limit would affect higher income people's ability to use credit cards in various occasions. Third, the person's income *per se* is likely to affect his/her inclination to buy more products (therefore, more opportunity to use credit cards). Thus, it is expected that those with higher income will be also heavier user of credit cards, regardless of age.

H2: The higher the elderly person's income, more likely the person (a) to have more numbers of credit cards and (b) to spend more amounts by their credit cards.

An employed elderly person is likely to have more occasions where use of credit card is advantageous. For example, companies may require credit card payment as a proof of payment for expense-reporting purposes. In addition, regular income may encourage the use of credit card. On the other hand, in line with the disengagement theory, a person who is no longer employed may not have a similar need and situation. Thus, one can expect those who are retired to make lower use of credit cards, regardless of age.

H3: The elderly people who are retired are likely (a) to have less number of credit cards and (b) to spend less amount of money by their credit cards.

METHOD

Samples

A survey was conducted in 2009 across four major cities in Korea, using a quota sampling approach. Quotas are set first for gender and age categories based on population statistics. Then, they are adjusted to ensure a certain minimum respondents for each sub category. A total of 750 valid responses are collected by a professional marketing research company. Age quotas are set for five age groups with 150 samples for each age quota: (1) 60-64, (2) 65-69, (3) 70-74, (4) 75-79, and (5) 80+.

Credit card usage behaviors are measure in terms of number of credit card own and average monthly amount used by credit cards. 24.1% (n=181) of the sample own at least one credit card. Among those who own credit card, average monthly amount used by credit cards turns out to be about KRW260,000 (KRW 259,945).

RESULTS

Hypothesis Testing

In order to test the predicted differences in credit card usage among the elderly people, chi-square tests are conducted first because the number of credit cards owned and average amount used by credit cards are measured on a categorical scale. Although they are measured by a categorical scale, the response category is arranged in a continuous manner, ANOVA and t-tests are conducted together by converting them into a continuous scale. The test results are summarized in Table 2 and 3.

Insert Table 2 and 3 here

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In terms of the number of credit card owned, both chi-square tests and mean comparison tests support the predicted differences. The number of credit card owned is found to be negatively related to age (χ^2 =129.4, p<.001; Gamma=-.58, p<.001) and positively related to income (χ^2 =112.8, p<.001; Gamma=.49, p<.001). The retired elderly own fewer numbers of credit cards than those who are not retired (χ^2 =31.7, p<.001; Cramer's V=.21, p<.001). The comparisons in the average number of credit card owned also confirmed the predicted difference on age (F=31.4, p<.001), income (F=19.7, p<.001), and retirement status (F=21.2, p<.001). Thus, H1(a), H2(a) and H3(a) are supported.

As for the average monthly amount used by credit cards, the predicted difference is observed for income only (χ^2 =33.7, p<.05; Gamma=.31, p<.001), supporting H2(b). No significant difference is found either for age (χ^2 =18.2, p=.58; Gamma=-.08, p=.36) or for retirement status (χ^2 =5.1, p=.40; Cramer's V =.17, p=.40). Thus, H1(b) and H3(b) are not supported.

Exploratory Analysis on Interaction Effect between Age and Income

The possibility of interaction effect between age and income is further examined using ANOVA. It is expected that among those with high income, ownership and use will show little change with age, since income both enables the elderly to own a large number of credit cards and to purchase a large number of goods and services. However, among those with lower income, variations with age in both credit card ownership and use are expected, because limited income may suppress owning credit cards and purchases.

To examine this relationship, bottom two and upper tow brackets of age and income groups are combined and compared to maximize the effects due to age, income,

and their interaction. The ANOVA results are summarized in Table 4 and the relationship plots are presented in Figure 1 and 2.

Insert Table 4 and Figure 1 & 2 here

First, the results found significant main effects of age (F=110.55, p<.01) and income (F=41.43, p<.01) and a significant interaction effect of the two on credit card ownership (F=21.54, p<.01). The examination of the response plot in Figure 1 reveals that the pattern of interaction observed on the credit card ownership is not consistent with the prediction. Contrary to the expectation that predicts stronger effect of income over age at higher income level, age seems to have stronger effect over income at both high and low levels of income. That is, the credit card ownership is reduced as age increases in both high and low income groups.

Second, the results on the amount used by credit cards show significant main effect of income only (F=6.81, p<.05). The main effect of age and the interaction effect are not significant (F=3.24, p=.08 and F=.01, p=.91, respectively). These findings suggest that income is the main factor that produces differences in the amount used by credit cards for the elderly consumer.

CONCLUSIONS

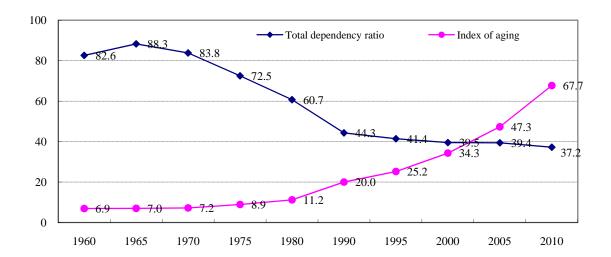
This study examined credit card usage behaviors among elderly consumers in Korea. Credit card use is predicted to be different according to age, income and retirement status. The results show that the number of card owned is negatively related to age and positively related to income level. Those who are not retired own more credit cards than those who retired. Although the average monthly expenditure by credit cards

is positively related to income as predicted, it is not significantly different in terms of age and retirement status.

These findings provide useful implications to marketers of a credit card company when they are searching for key target group from the elderly consumers. In general, revenues from credit card come from two main sources: membership fees and transaction fees. If a credit card company intends to increase revenue from membership fees or intends to increase its market share in number of credit card from elderly consumers, it has to target relatively younger, higher income and non-retired group of elderly consumers. Once the company reaches its target market share in number of credit card, it has to focus on high income group to generate its revenue from transaction fees because the expenditure by credit card among the elderly consumer group is influenced by their income level.

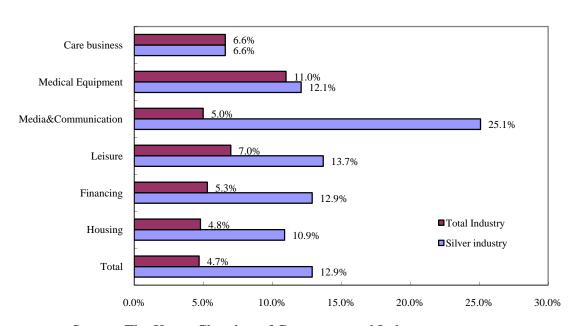
In order to have more complete understating on older consumer group's credit card usage behavior, comparison with younger consumer group is necessary in future research. Also, examinations and comparisons across usage behaviors on other financial products and services are required in future research.

Figure 1
Dependency Ratio and Index of Aging in Korea



Source: Statistics Korea (2009)

Figure 2
Growth Expectation of Silver Market in Korea



Source: The Korea Chamber of Commerce and Industry

Table 1 Net Assets by Age Groups (including savings, real estates, and other financial assets)

Age of Head of households	Total Assets (ten thousands won)	Net asset (ten thousands one)
Average	28,122.3	24,164.4
25-29	6,675.7	5,431.8
30-34	12,310.2	9,431.5
35-39	21,936.0	17,629.8
40-44	29,298.8	24,031.2
45-49	31,261.1	26,655.2
50-54	36,033.6	31,495.8
55-59	38,787.2	34,062.3
60-64	37,325.0	33,272.9
65 +	29,544.3	29,544.3

Source: Statistics Korea (2006)

Table 2 **Number of Credit Card Owned**

		Total		Number of	credit card		Chi-square	Average	
Der	Demographics		None	1	2	3+	(Gamma/	Number of	F
		(750)	(n=569)	(n=94)	(n=61)	(n=26)	Cramer's V)	Credit Cards ¹	
Total		100%	75.9%	12.5%	8.1%	3.5%		.39	
Age	60~64	20.0%	14.2%	37.2%	34.4%	50.0%	129.4**	.77 ^a	31.4**
C	65~69	20.0%	14.9%	34.0%	39.3%	34.6%	(Gamma= 58**)	.71 ^a	
	70~74	20.0%	22.1%	13.8%	13.1%	11.5%	,	.25 ^b	
	75~79	20.0%	22.8%	12.8%	13.1%	.0%		$.19^{bc}$	
	80+	20.0%	25.8%	2.1%	.0%	3.8%		.03°	
Income	Less than 1m	34.3%	42.5%	5.3%	11.5%	11.5%	112.8**	.11 ^a	19.7**
	1m~1.99m	26.4%	25.3%	37.2%	24.6%	15.4%	(Gamma =.49**)	.39 ^b	
	2m~2.99m	15.7%	13.2%	30.9%	21.3%	3.8%	,	.49 ^{bc}	
	3m~4.99m	21.1%	17.0%	24.5%	37.7%	57.7%		$.72^{\rm cd}$	
	More than 5m	2.5%	1.9%	2.1%	4.9%	11.5%		.90 ^d	
Retired	Yes	44.7%	49.7%	25.5%	41.0%	11.5%	31.7**	.25	21.2**
	No	55.3%	50.3%	74.5%	59.0%	88.5%	(Cramer's V=.21**)	.51	

^{*:} p<.05, **: p<.01

a,b,c,d: Means with different alphabets are significantly different (p<.05) based on Duncan contrasts.

The average number of credit cards is calculated by treating the categorical responses as a continuous scale.

Table 3 **Average Monthly Amount Used by Credit Cards**

				N	Monthly A	mount Use	ed		CI.		
Demographics		Total (n=181)	~99K	100~ 199K	200~ 299K	300~ 299K	400~ 499K	500K~	Chi-square (Gamma/ Cramer's V)	Average Amount Used ¹	F
			(n=26)	(n=49)	(n=49)	(n=22)	(n=12)	(n=25)			
Total		100%	14.4%	27.1%	27.1%	11.0%	6.6%	13.8%		260.0K	
Age	60~64	38.1%	42.3%	34.7%	34.7%	50.0%	16.7%	48.0%	18.2	265.9K	.8
C	65~69	35.9%	26.9%	32.7%	42.9%	40.0%	41.7%	32.0%	(Gamma= 08)	268.5K	
	70~74	13.3%	11.5%	16.3%	14.3%	.0%	16.7%	16.0%		258.3K	
	75~79	11.0%	19.2%	14.3%	6.1%	10.0%	25.0%	.0%		205.0K	
	80+	1.7%	.0%	2.0%	2.0%	.0%	.0%	4.0%		316.7K	
Income	Less than 1m	8.3%	15.4%	6.1%	8.2%	.0%	8.3%	12.0%	33.7*	$250.0K^{ab}$	6.2**
	1m~1.99m	29.8%	30.8%	42.9%	32.7%	20.0%	8.3%	16.0%	(Gamma =.31**)	214.8K ^a	
	2m~2.99m	23.8%	30.8%	26.5%	26.5%	25.0%	33.3%	.0%	,	$212.8K^{a}$	
	3m~4.99m	33.7%	23.1%	22.4%	28.6%	50.0%	41.7%	60.0%		$318.9K^{bc}$	
	More than 5m	4.4%	.0%	2.0%	4.1%	5.0%	8.3%	12.0%		387.5K ^c	
Retired	Yes	28.7%	15.4%	34.7%	34.7%	20.0%	33.3%	24.0%	5.1	259.6K	.0
	No	71.3%	84.6%	65.3%	65.3%	80.0%	66.7%	76.0%	(Cramer's V=.17)	260.1K	

^{*:} p<.05, **: p<.01

a,b,c,d

Means with different alphabets are significantly different (p<.05) based on Duncan contrasts.

The average amount is calculated by treating the categorical responses as a continuous scale. The middle value of each response category is used.

Table 4 ANOVA Results

		F-value			
Source	df	Number of credit card owned	Average amount used by credit card		
Main Effects					
Age	1	110.55**	3.24		
Income Interaction	1	41.43**	6.81*		
Age x Income	1	21.54**	0.01		

Figure 1 Credit Card Ownership by Age and Income

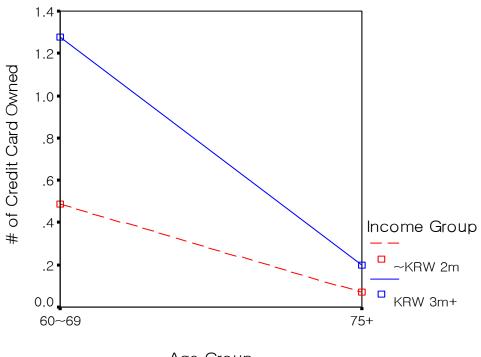
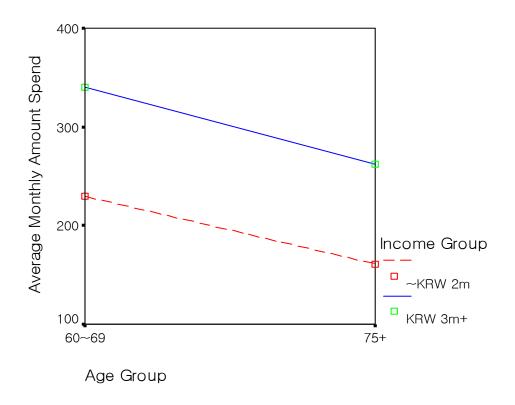


Figure 2
Average Monthly Amount by Age and Income



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