

# Features of customer behavior related to coupon service

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## **SUMMARY**

This research was undertaken to acquire knowledge leading to improvement in the use of mobile coupon services. We observed the case of a mobile coupon service called TAMATIKE, which was conducted in the Fukuoka area in JAPAN. We analyzed features of consumer behavior using questionnaire data collected from members of TAMATIKE using a questionnaire survey. This study was intended to examine the causes of TAMATIKE service users' actual actions related to mobile coupon redemption, including differences attributable to lifestyle patterns.

We found the possibility of differences in coupon use by attributes related to coupon value, such as economic value, scarcity, notability. The ease of coupon use shows a close relation with the use rate. Besides, it should be noted that there exist the differences of tendencies in coupon use by consumers' lifestyle segments.

## **INTRODUCTION**

Coupon service has been regarded as an effective sales promotion tool that attracts consumer interest. Furthermore, it can be powerful communication tool. Coupon service has been provided through various media such as magazines, newspapers, and fliers. For development of various coupon services, the media that distribute coupons and the means are important. Rapid developments in new technology have pulled the interest in using mobile channels as couponing tools. There is expectation that mobile coupons might reduce some of the problems associated with traditional coupon methodologies (Sullivan, 2008).

Mobile phones have become ubiquitous - far more powerful, less expensive, and suitable for data-driven applications, which make the use of mobile channels an effective means for reaching potential consumers (Barwise & Strong, 2002). Mobile coupons are digital coupons sent to mobile devices such as mobile phones, smart phones, or personal digital assistants. They can carry messages including text, images, audio, and video (Astrid & Kleijnen, 2008). Mobile devices' ubiquitous availability enables direct software support and information access for many new business functions in real time (Tarasewich, Nickerson & Warkentin, 2002). A mobile coupon is offered to subscription members, for whom it can provide 'customer-oriented information' inducing customers with memberships to visit the store. For that reason, providing mobile coupons is apparently a useful way to raise customer loyalty and to expand market and sales in corporate marketing.

As explained above, the merits of providing mobile coupons can be regarded as follows. First, mobile coupons are less expense and more convenient to use than paper coupons. Therefore, a strategy to provide mobile coupon according to some privileged status can contribute to increased sales revenues. Secondly, mobile coupon service is useful to improve relations with customers. For example, it might be used for customers to invite others to join the membership of their company. It is also possible to provide services only to a limited membership. Finally, mobile coupons can be an effective means for collecting customer

information using questionnaires, thereby acquiring personal characteristics, behavior, and history. Analyzing customer information can provide useful perspectives to marketers for offering optimal services for each with differentiation.

Nevertheless, shortcomings of mobile coupons exist as well. Several reports describe consumer reluctance to use mobile coupons (A GS1 Mobile Com, 2008). Consumers sometimes habitually download mobile coupons that they do not need or even want. For such reasons, mobile coupons might seldom be used. In such cases coupons are regarded as nuisance by consumers. Result of the Tsang, Ho, and Liang's research (2004) indicates that consumers generally have negative attitudes toward mobile advertising unless they have specifically consented to it, Consumers often ignore the message when interrupted by an advertisement. By relying on the permission of the target audience, permission-based advertising focuses on reducing the irritation. Therefore, a company providing service to consumers must take care that their couponing services are not frequently distributed in large quantities. Overuse might accompany risks of damage to their brand image. It is necessary to employ careful strategies when using mobile coupons, with continual efforts undertaken to conduct investigations that can resolve problems related with mobile couponing services.

In this study, we analyze the features of consumer behavior using questionnaire data executed to TAMATIKE members, the mobile coupon service of Fukuoka, Japan. The TAMATIKE service was designed as a part of research project led by the Japanese government. The research project was aimed at advancing new market cultivation through the fusion of IT technology and service engineering. For TAMATIKE, a trial project was undertaken to investigate whether any ripple effect occurred with the local economy according to the actions of citizens and tourists by providing mobile coupons. The purpose of the TAMATIKE related research project is to use acquired knowledge for future sales promotion of local companies and the solicitation method.

In the context of mobile marketing, a deep understanding of the nodes, consumer attitude

and behavior, mobile consumer segmentation can help retailers develop a better targeting strategy (Venkatesh Shankar, Alladi Venkatesh, Charles Hofacker and Prasad Naik, 2010). Many studies of coupon redemption have examined consumer attitudes toward mobile coupons. They investigate the relationship between characteristics of consumers and their behavior. Dickinger and Kleijnen (2008) specifically address non-demographic consumer characteristics that have been suggested as key variables to explain differentiating findings in antecedent–predictor relations.

Hsu Tsuen-ho; Wang Yi-sheng and Wen Su-chan (2006) found the perceived usefulness under 'behavioural attitude' has a big effect on using mobile coupon. Jayasingh & Eze (2009) report that perceived usefulness, perceived ease of use, perceived credibility, compatibility, and social factors influence the behavior and intentions of consumers when using mobile coupons. Furthermore, their results show that consumer work styles and lifestyles are related with coupon use behavior. We can find some case studies that have found high redemption of coupons, which implies that mobile coupon distribution is a valuable channel for retailers and other companies using coupons. It might be necessary to use knowledge of market segmentation to produce effective marketing efforts. In marketing fields, it should be determined which market segments should receive offers based on criteria such as past purchase history, potential customer value, and current usage of offers. Moreover, the customer lifestyle is important. When planning for a mobile coupon campaign, high rates of redemption must be anticipated, along with due consideration of how such an event might impact the profitability of the campaign.

In this study, we specifically sought to grasp the influence of characteristics of consumer lifestyles on their coupon use. Furthermore, we sought to ascertain differences attributable to coupon features. This study is intended to examine the cause of TAMATIKE service users' actual actions related to mobile coupon redemption, including differences related to lifestyle patterns.

The research questions examined in this study are as follows.

1. What are important factors related to decreased use rate of mobile coupons that have been acquired (downloaded)? Especially, we sought to ascertain reasons why they are not used.
2. How different are consumers' intentions to redeem mobile coupons according to their gender, age, and lifestyle patterns?
3. What are the different causes of coupon attributes that engender differences in consumer redemption?

# TAMATIKE – MOBILE COUPON SERVICE

TAMATIKE is a service using both internet and mobile devices. TAMATIKE members can download, using the internet or their mobile devices, various coupons of companies and institutions that have joined the service alliance. TAMATIKE service was conducted during September 1, 2010 – January 31, 2011, at which time the experiment finished. The cumulative membership of TAMATIKE was 4644 persons. About 464 kinds of coupons were offered to TAMATIKE members. Retail alliance members were about 120. The mobile coupons were redeemable at those stores. Each redemption device, shown in Figure 2, which is related with TAMATIKE service, was lent out at no charge.



Figure 1 Website of tamatike.co.jp.



Figure 2 Redemption equipment related to the TAMATIKE service.



Figure 3 On-site situation of TAMATIKE coupon service.

## **METHODS**

### **1) Examination of points of mobile coupon redemption related with user lifestyle**

For this study, a questionnaire was administered twice to TAMATIKE members. Two investigations were conducted with different purposes. The main purpose of the first investigation was classification of the members' respective lifestyles. The investigation was divided into two sections: the first asked for biographical information such as age, gender, occupation, and region of residence; the second comprised 15 questions asking about the respondent personality, consumption behavior, intentions at leisure, tendency to use information services, and coupon use (Table 1). The first questionnaire was administered to members on September to November, 2010 via a mail magazine. However, the second investigation was aimed at ex-post evaluation of TAMATIKE service effects and dissatisfaction with it. The second investigation was conducted on 15-22 February, 2011.

This report particularly describes the first investigation results. First, we designed the questionnaire to analyze the coupon user lifestyle characteristics. The questionnaire used for this study was developed in the following manner. Questionnaire items from earlier studies by Takenaka and Ueda (2008) and by Ishigaki and Takenaka (2010) were used on the questionnaire related to lifestyle data. It was administered according to the methodology used by the National Institute of Advanced Industrial Science and Technology (AIST) in their project "New market creation promotion enterprise by fusion of IT and service." The questionnaire itself was modified for adaptation to this study. Question items related to personality mainly used the Big Five method. Purchase behavior characteristics, typical patterns of action, electronic device use (degree of contact), and other items were examined. In previous studies, it was stabilized and the axis of the lifestyle was extracted. In the first investigation, members' replies were returned on the attached forms. Questionnaire respondents included 11,333 TAMATIKE Service members; 900 respondents acquired the



mobile coupons and used them once or more.

Table 1 Details of the question item in the first investigation

Conceptual definition	Contents of questions
like lively places	I like lively places.
acts with friends	I act together with a friend in many cases.
Scrupulous	I am meticulous.
emotional stability	My mood is changeable (become bright or dark easily)
Experience	I like experiencing new things.
trend intention	I am sensitive to fashion and trends.
examination of purchase	I decide what is bought after comparing as many things as possible.
wasting money	I think that I am a person who wastes a lot of money.
use membership points	I usually use many cards to collect points.
how to spend holidays	I would like to be at home rather than going outside on holidays.
go out with family and friends	I usually go out for shopping or eat meals with my family and friends on holidays.
length of net use time	For how much time do you use the internet during your free time?
net shopping use	Do you use net shopping with a personal computer or a mobile phone?
Use free member services	Do you use the free membership service when using mobile phones, such as an e-mail magazine or a free game site?

(Note: Questions were estimated using a five-point measure.)

## 2) Classification of TAMATIKE members' lifestyle segments

Using a spreadsheet, we sorted the data acquired during the first investigation. SPSS was used for data analyses. To classify the respondents' lifestyle patterns, principal component analysis was conducted. Maximum likelihood method was used to extract the components. As a standard which adopts the factors, we distinguished whether its eigen value was higher than 1.0 or not. The promax method (suitable for large-scale data (kappa coefficient=4)) was used for factor rotation. The structure of factors after rotation is shown in Table 2. Component parameters of four main components and main factors of each component were interpreted as characteristics of user lifestyle. Based on the results presented in Table 2, the lifestyle images of four types were grasped: 'Going out active type', 'Net use type', 'Indoor type', and 'Steady consumer type'. In addition to representing each person's lifestyle characteristics by four factors, each person's average answer value of the question item that represented each component was calculated as presented in red in Table 2.

Table 2 Results of principal component analysis

	1	2	3	4
like lively places	0.5957732	0.2294005	-0.2591201	0.0856028
trend intention	0.5615871	0.2487963	-0.2323437	0.2168551
experience	0.5608808	0.288729	-0.1613529	0.1820265
go out with family and friends	0.5411330	0.1800348	-0.5994711	0.1294727
acts with friends	0.5380055	0.0546314	-0.2148776	0.1517625
wasting money	0.2699677	0.2344048	-0.0109034	-0.2497344
use free member services	0.3475524	0.4026904	-0.0765204	0.2469735
net shopping use	0.2094552	0.8183674	-0.1528315	0.1381809
length of net use time	0.1697354	0.4328537	0.0221379	0.0329986
emotionally unstable	0.0119069	0.0228396	0.3071133	-0.0642239
how to spend holiday	-0.3871211	-0.1295806	0.6988038	0.0647822
scrupulosity	0.1410295	0.0432745	-0.0622061	0.4506551
examination of purchase	0.2589568	0.2279201	-0.0505928	0.5419266
use membership points	0.2661919	0.2076653	-0.0932101	0.2476219
Eigen value	2.890	1.476	1.320	1.180
Cumulative contribution ratio (%)	22.231	33.585	43.737	52.817

Table 3 Results of principal component correlation matrix

Principal component	1	2	3	4
1	1.0	0.381224	-0.42777	0.212278
2	0.381224	1.0	-0.13228	0.173034
3	-0.42777	-0.13228	1.0	-0.03441
4	0.212278	0.173034	-0.03441	1.0

Features of respective lifestyle segments can be regarded as follows.

- Component 1 ('Going out active type'): They like lively places. They are extroverted and sensitive to new concepts and trends. They feel that they waste money in many cases. They go out for holidays with family and friends. They seldom do net shopping.
- Component 2 ('Net use type'): Their time using the internet is long. They also use net shopping and free membership services positively. Their characteristics are largely featureless. They do not often engage in activities with friends.
- Component 3 ('Indoor type'): Their mood is changeable. They want to pass time slowly at home rather than going out on holidays. They are poor at collecting points and making deliberate purchases.
- Component 4 ('Steady consumer type'): They are meticulous. They make purchases after carrying out comparison and examination. They feel that they do not do waste money. They also use membership points.

# RESULTS

## 1) Use rate of acquired coupons

According to Figure 4, although 9,018 persons acquired TAMATIKE coupons, it turns out that only 1,151 among those people used the coupons. Of all users, 2,315 (21% of all users) did not acquire coupons. It turns out that many people did not use mobile coupons that were taken. Presumably some obstacle exists that hinders coupon use even after coupon acquisition. If acquired coupons were not used, the productivity of couponing worsened. Therefore, it is necessary to investigate the cause. Causes for the capacity factor decreased use rate of mobile coupons that had been acquired (downloaded) were 1) problems related to coupon attributes (certain obstacles encountered during coupon use) and 2) problems related to user characteristics (differences of lifestyle, attractiveness of coupons, etc.) can be inferred.

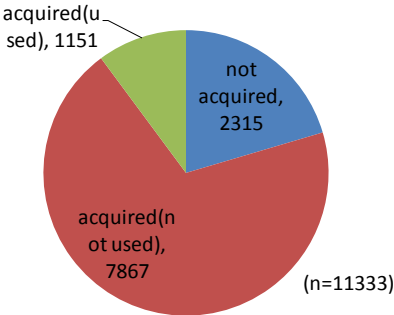


Figure 4 Acquisition and use of coupons

## 2) Relation between coupon use and attributes

Regarding the relation between coupon use and attributes, Figure 5 shows that if the coupon has a higher economic value, it is more likely to be used. The scarcity value of a coupon presents a similar tendency (Figure 6). Results show that TAMATIKE service users reacted to coupons offering more economic merits and also higher scarcity value. The value that distinguished other coupons with some values might stimulate a reaction by a consumer.

Furthermore, notability of coupons, meaning the degree to which the coupon is well known to consumers, influenced the coupon rate of use (Figure 7).

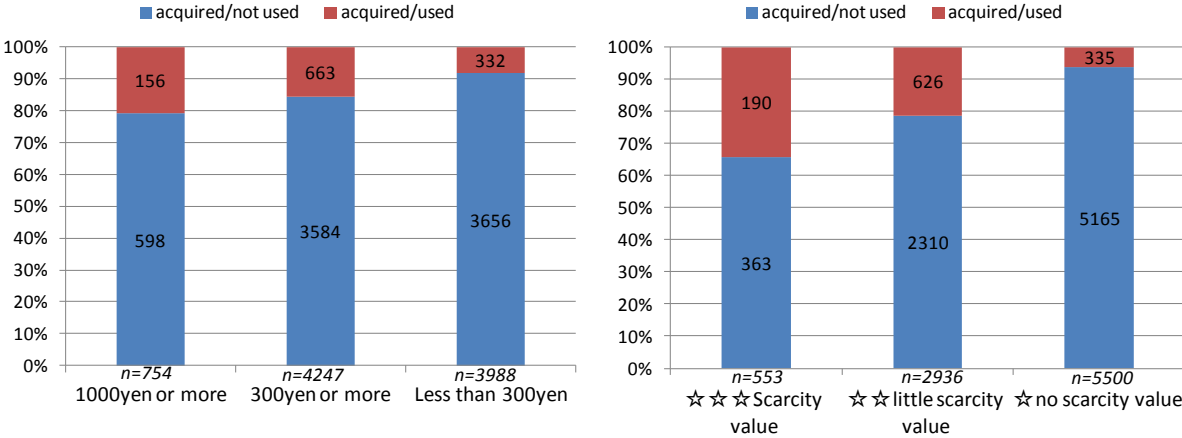


Figure 5 Difference of use rate related with economic value of the coupon (left).

Figure 6 Difference of use rate related with scarcity value of the coupon (right).

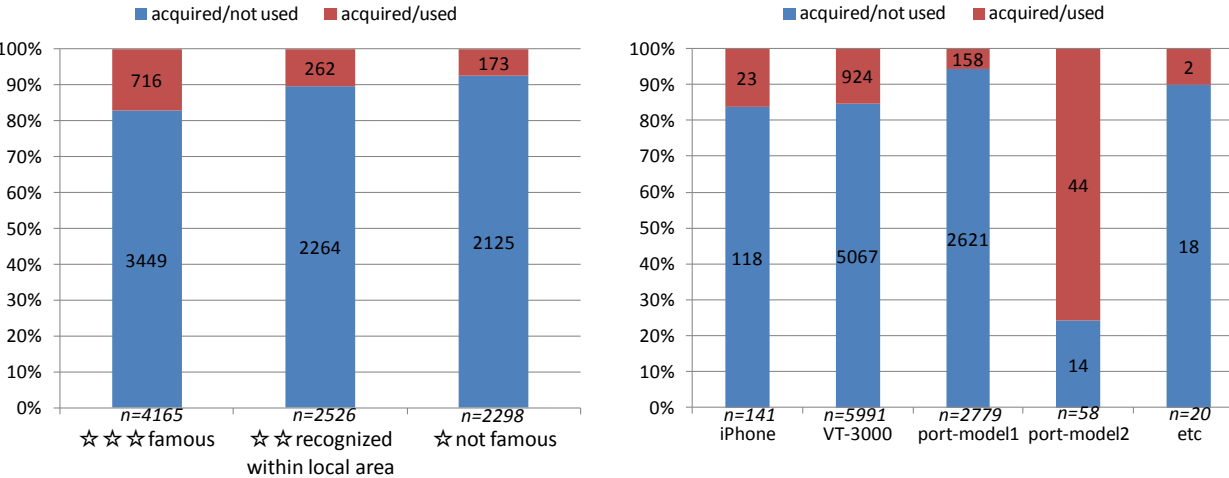


Figure 7 Difference of use rate related with coupon notability (left).

Figure 8 Difference of use rate related with the coupon redemption equipment (right).

Figure 8 shows the difference of the use rate related with the coupon redemption equipment. Compared to others, there are many more samples of VT-3300 and port model-1. The VT-3300 showed an overall 15.4% use rate, but the port model-1 was low, with about a 5% use rate. Although their use accounts for only a small number of data, we can probably

ascertain a tendency by which a port-model 2 has a capacity factor which raises the coupon use rate to a great degree. It seems likely that users feel a high ease of use of coupons. The coupon use rate might be raised by this perceived ease of coupon use, which makes users feel more comfortable. This feeling might be caused by differences in the method of erasing coupons. Differences in the circuit class might also alter the coupon use rate.

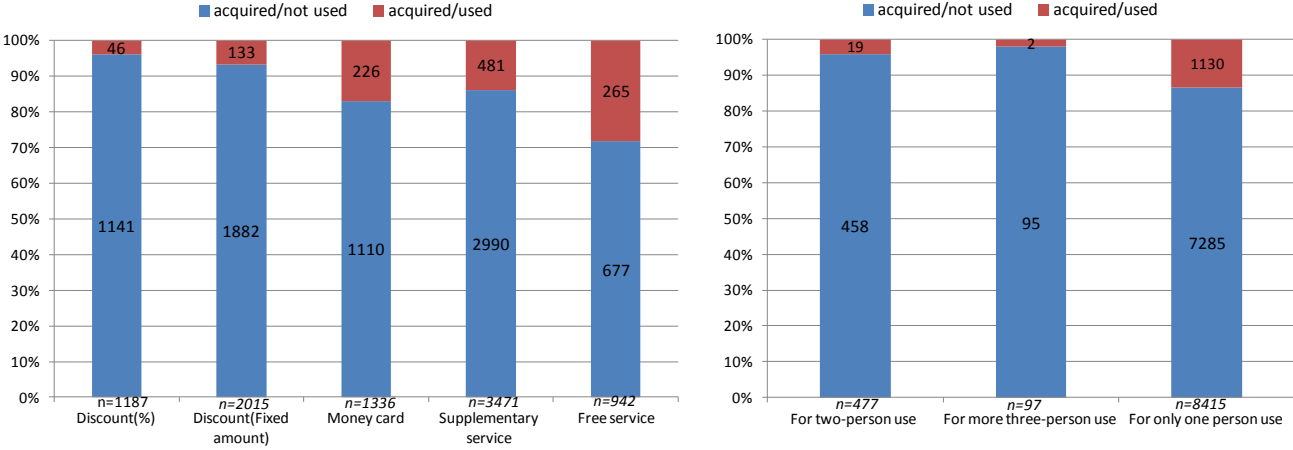


Figure 9 Difference of use rate related with the kind of coupon (left).

Figure 10 Difference of use rate related with the number of people who can use the coupon at one purchase opportunity (right).

The difference of use rate according to the kind of coupon is shown in Figure 9. Clearly, coupons related with discounts, both for percentages and fixed amount, are not being used. However, free services are found to be used very much. Coupons with supplementary services and money cards were also used often. Coupons for a single person are numerous and tend to be used much (Figure 10).

**3) Relation between mail magazine and coupon use**

Figure 11 and Figure 12 show the differences of the coupon use rate by joining membership of the TAMATIKE mail magazine club. It is apparent that their use depends on gender and age groups. The group members who not joined the mail magazine club (shown in Figure 11) had a lower rate of coupon acquisition than the group which had joined the mail magazine club (shown in Figure 12). The mail magazine has a function as a medium to urge the acquisition of coupons by its members. Particularly, young people (young men and women in their teens and 20s) in the group which had joined the mail magazine club tended to acquire coupons often. It is noteworthy that information related to the mail magazine led to coupon acquisition. However, we particularly address the decreased use rate of the group members who had joined the mail magazine club. An important point is that contribution by the mail magazine seldom raised coupon use.

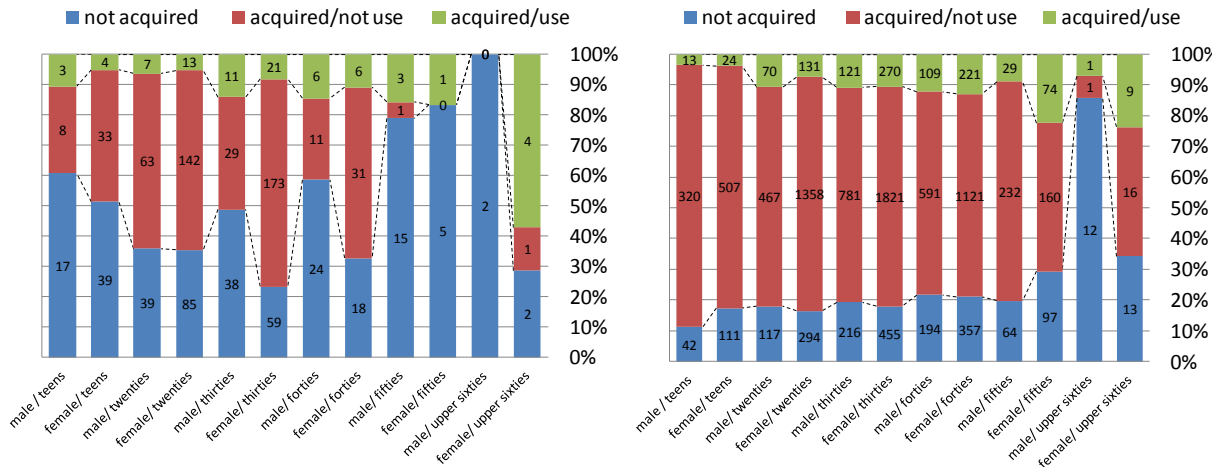


Figure 11 Coupon use rate of the group which has not joined the mail magazine club (left).

Figure 12 Coupon use rate of the group which has joined the mail magazine club (right).

**4) Coupon acquisition and use rate classified by user gender and age:**

**Relation between the use rate caused by the kind of coupon and gender and age**

Some differences of coupon acquisition and the use rate are attributable to consumer attributes. All data were divided into 12 groups based on the user gender and age. Coupon acquisition and tendency of use rates were calculated. Slightly more data of 30-49 year old women were present among all data. It seems that there were also many men in their 20s (Figure13).

We reported earlier that coupons related with discounts are used slightly less than other coupons are. However, people in the older age segments tend to use more discount coupons. For ‘money cards’, the relation between use and age is more clearly apparent(Figure 16). Women of 40-59 years old are regarded as tending to use coupons according to a plan. However, free service coupons are used often by all ages and gender groups.

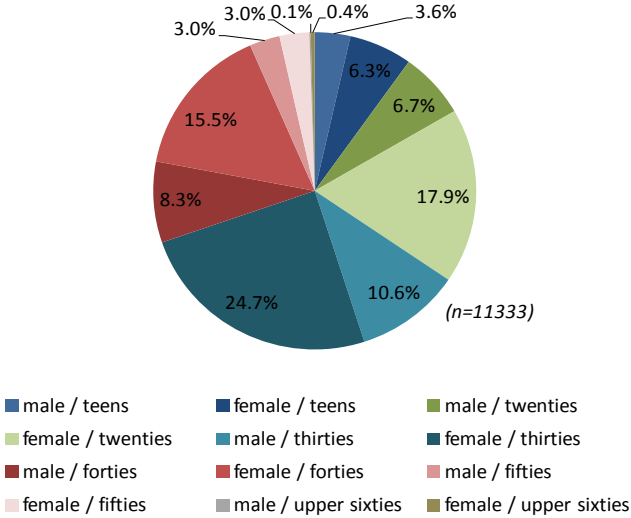


Figure 13 Groups by gender and age.

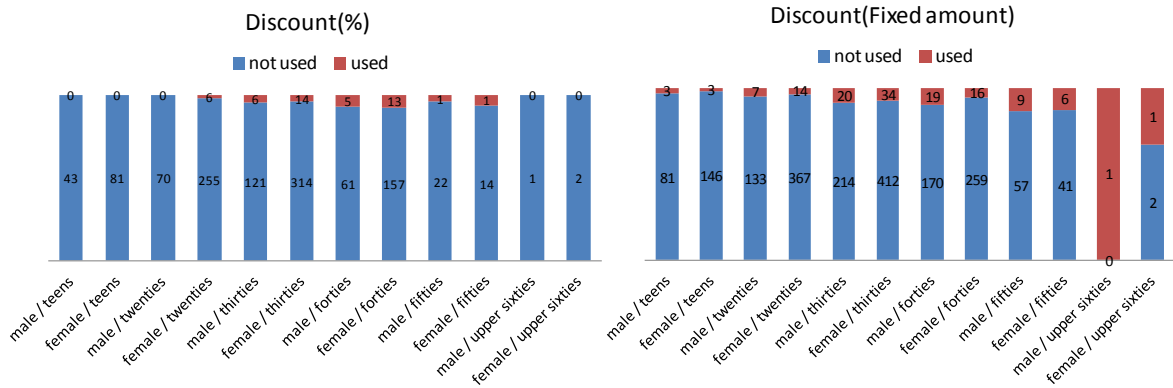


Figure 14 Differences of gender and age to use rate related with discount (%) coupons.

Figure 15 Differences of gender and age to use rate related with discount (fixed amount) coupons.

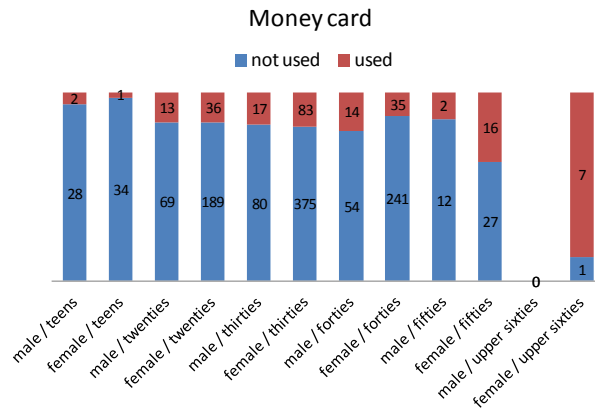


Figure 16 Differences of gender and age to use rate related with coupons (money card).

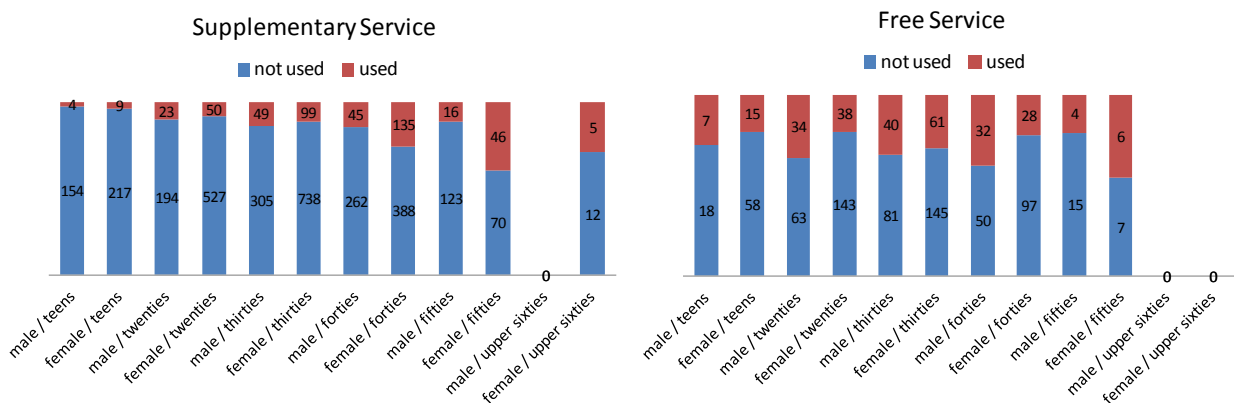


Figure 17 Difference of gender and age in the use rate related with coupons (supplementary service).

Figure 18 Difference of gender and age in the use rate related with coupons (free service).



### 5) Difference of coupon use according to lifestyle

Table 4 presents the relation between lifestyle and coupon use. ‘Indoor type’ is most common among users. Next, many ‘Net use type’ after ‘Indoor type’ users are included.

Table 4 Difference of coupon use by lifestyle

		Lifestyle segment				Total
		‘Going out active type’	‘Net use type’	‘Indoor type’	‘Steady consumer type’	
Not acquired	frequency	428	611	732	544	2315
	adjusted residual	-1.6	-0.1	1.2	0.4	
Acquired/ Not used	frequency	1577	2084	2441	1765	7867
	adjusted residual	1.5	-0.1	1.6	-3.0**	
Acquired/ Used	frequency	226	310	292	323	1151
	adjusted residual	0.0	0.3	-4.0**	4.1**	
Total		2231	3005	3465	2632	11333

$$\chi^2 \quad 27.6385 \quad p=0.000<0.01$$

(Note: Significance level of the adjusted residual \*\*p<.01)

It was presupposed that ‘Indoor type’ consumers have changing moods and have a tendency to refrain from going out. Furthermore, it was presumed that they are poor at planning purchases. Such an ‘Indoor type’ character is reflected also in coupon use. Results reflect characteristics of ‘Indoor type’. They have only a slight tendency for actual coupon use (Table 4). However, in the case of a ‘Steady consumer type’, many coupons are used compared with consumers of other types. It is considered that the characteristics of ‘Steady consumer type’ are influenced by their coupon use.

### 6) Lifestyle type according to gender and age

Figure 19 presents the following trend for teenaged women: the sample belonging to the ‘Indoor type’ was greater than 50%. This point can be regarded as a feature of young women. They might be sensitive, and this result might reflect their mental characteristics. Regarding the ‘Steady consumer type’, the ratio rises as age increases from the thirties. This tendency is

stronger when women reach their 50s. The ‘Steady consumer type’ is associated strongly with ‘Planned consumption’. We might say that as age rises, the tendency to conduct premeditated shopping increases.

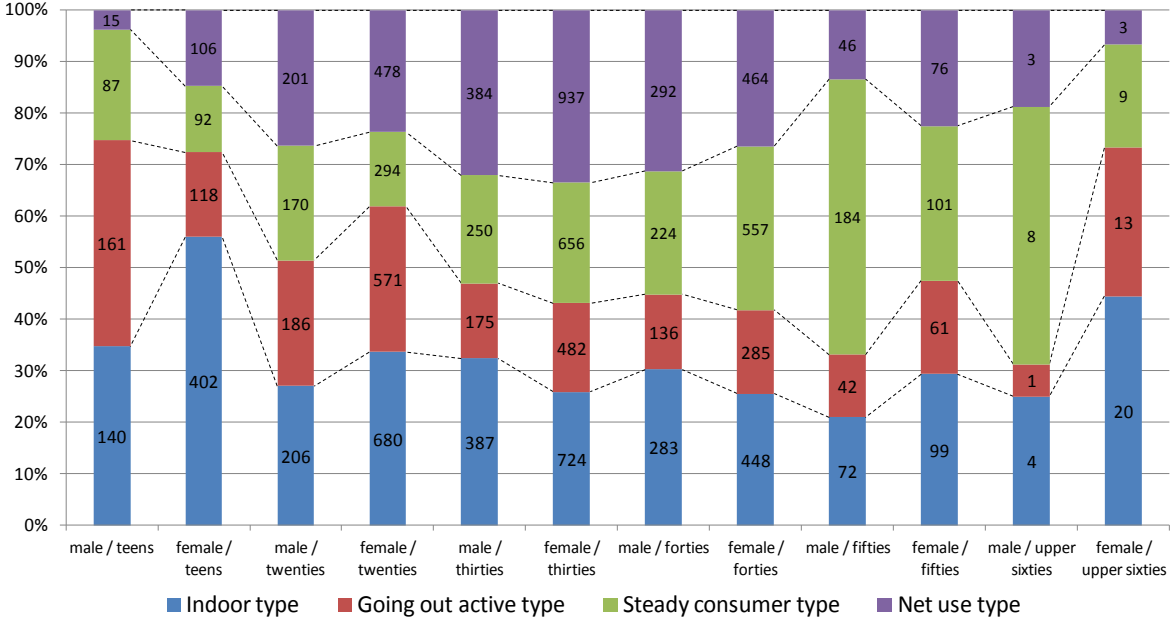


Figure 19 Rate of lifestyle segment to each gender and age segment.

## CONCLUSION

Results of analyses related to the main subjects are summarized below.

### 1) Relation between coupon attributes and the coupon use rate

The possibility of using differences by attributes of the coupons might be related to users’ utility and coupon value (economic value, scarcity, notability). The coupon use rate after coupon acquisition was high if the coupon was very notable, and if it had scarce value and economic value.

### 2) Ease

Ease shows a close relation with the use rate; it is high. The possibility exists that differences

in availability according to the kind of incentive obtained using the coupon and the place of issuing tickets affected some of the use data.

### **3) Coupon attributes**

Discount-related coupons (percentage and fixed amount) show a low rate of use. In contrast, coupons of the money cards, supplementary services, and free services were well used. The differences in attributes of a coupon have a high probability of being related to economic value, the worth of a coupon in terms of giving satisfaction to a user, and ease of use.

It is necessary to clarify the merits that a customer feels by advancing analyses in detail, and to examine the strategy of the contents of the optimal coupon according to the retailer offering the coupon.

### **4) Relation between lifestyle segment, gender, and age related with coupon use**

Regarding the differences in coupon use by lifestyle, a clear feature was apparent in the ‘Steady consumer type’ and ‘Indoor type’. In the ‘Indoor group’, the tendency not to use coupons that had been acquired previously was strongly apparent. Regarding the ‘Steady consumer type’, there was much use of the coupons. These consumers showed a clear tendency to use coupons compared to other lifestyle types.

### **5) Features of gender and age segment by lifestyle**

Some features of gender and the age groups according to lifestyle were detected. The features of respective genders and age groups which were clarified through analyses of the main subject are summarized as presented below.

#### ***5-1) Teens:***

They collect information from mail magazines, which make them positive about coupon

acquisition. Nevertheless, coupon acquisition did not often lead to actual use. Especially, teenaged women show 'Indoor type' features. A marked tendency is also that they do not use coupons after acquisition. On the other hand, teenaged men show a tendency to going out well. Regarding coupons not being used by teens, a lower propensity to spend might be an underlying explanation.

#### ***5-2) Twenties:***

Men and women who are 20-29 years old exhibit comparatively higher rate of "going out active" than older segments. Their relative tendency to use coupons compared to teens is a little high. We may say that people in their twenties are sensitive to new concepts and trends, and enjoy going out. It is necessary to clarify needs of a young people (teens and twenties) from the perspective of coupon service, and to devise coupon offers corresponding to those needs.

#### ***5-3) Thirties to Fifties:***

People who are 30-59 years old have a high percentage of 'Steady consumers' who perform planned consumer behaviors. Among women, a positive tendency to use coupons is revealed in these data.

#### ***5-4) Upper sixties:***

Among people of 60-69 years of age, there were few participants in this study, but they did show some acquisition of coupons. However, they tended to use exactly those coupons they had acquired. There was a marked tendency for use by women rather than men. Among elderly people particularly, the processes of coupon acquisition using a network, the use of redemption equipment, and the time and effort necessary to obtain and redeem coupons might present obstacles. Probably, regarding use by elderly people, further consideration will be

necessary.

## **6) Consideration**

It is necessary to examine the coupon offer strategy optimized according to retail outlets and facilities based on consumer lifestyles. It is necessary to summarize the knowledge which is applicable to coupon services and satisfaction rate also to other institutions. Through qualitative investigation of coupon users, we must grasp details of customer behavior and needs. The motives and reasons for using coupons and the determinants of customer satisfaction that underlie their coupon use action must be investigated further.

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