Stimulating customer response to promotions: The case of mobile phone coupons

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Abstract This paper explores whether the sending of direct mail (DM) coupons via mobile phone increases the probability of beauty salon customers using a coupon when visiting the store. Customer research was conducted after the statistical analysis of an experiment in 2004, in which a mobile DM coupon did not positively affect customers' store visit probability, but a coupon sent on a postcard did. This research examines the promotional effects of three types of mobile DM coupon on the probability of shop visit, coupon use and additional service purchase by adding two types of mail that might induce customers to take an action for strengthening recall of receipt. The variable of mobile DM coupon availability was statistically significant on store visit. The variable of mobile DM coupon type was statistically significant on coupon use probability, with positive effects of hyperlink vs negative effect of ordinary mail or telephone reservation mail (ie 'ordinary mail', 'hyperlink mail' and 'telephone reservation mail').

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INTRODUCTION

The Japan Direct Marketing Association reported that the mail-order market in Japan in 2004 was valued at 3,040bn yen, an increase of 9.0 per cent from the previous year. In recent years, e-mail has been frequently used as direct mail (DM) and its

unique properties compared with traditional DM such as postcard DM offers new ways of communicating with customers. DMs with a discount coupon or sales voucher are sent to the mailbox or the personal computer of a customer almost every day. In recent years, mobile e-mail has begun to be utilised as a new means of DM (mobile DM) because of the diffusion of cellular phone messaging services.

According to the Telecommunications Carriers Association, the number of contracts of cellular phones at the end of August 2007 reached around 99m, more than three-quarters of the Japanese population. Japanese young people use cellular

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phone messaging services even more frequently than they do voice communication services.¹ Some companies noted these phenomena and started implementing a new kind of sales promotional tool, mobile DM, to persuade customers to visit real shop: for example, 'TSUTAYA online' at a rental record shop or 'GYUKAKU Sugumeru' at a 'beef barbecue' restaurant.

At the beginning of this study, an initial experiment was conducted, which targeted customers of a beauty salon in 2004. Coupons were sent to 628 customers of the beauty parlour located at a university in Japan between February and October 2004. Two forms of DM were used to address customers: coupons in the form of postcards and coupons sent directly to consumers' mobile phones. The main objective of this experiment was to test the behavioural effect of mobile coupons in comparison with postcard coupons, specifically to measure the actual behavioural effects of mobile DM by cellular phone users.

The result showed that postcard DM coupons had a higher influence on the shop visits of consumers than mobile DM coupons, despite the same message, discount rate and deadline of both tools. Although mobile DM coupons showed characteristics such as their real-time nature, personalisation, portability and so on, they did not achieve the response level of postcard DM coupons.

This paper focuses on the behavioural effects of mobile DM on the customer's actual behaviour of store visit, coupon use and/or additional purchases. We conducted a second experiment in 2005 by adding two further kinds of mobile DM coupon. The first type of mobile DM coupon contained a 'hyperlink' connection to the internet and showed customers a discount coupon image. The second one contained the telephone number of the shop and persuaded customers to make a reservation by directly dialling the shop's telephone number. These two kinds of coupons are explained in detail in the next section. For the third one, the same kind of mobile DM coupons as our 2004 experiment was again used.

MOBILE DM COUPONS AS DIRECT MARKETING PROMOTION TOOLS

Direct marketing employs personal communication to develop and maintain long-term relationships with customers and seeks to increase purchase frequencies and the levels of customer expenditure. For this purpose, companies have to make efforts to ensure that their customers have a good experience in purchasing their products and that they should contain lifetime values. There are three major activities for direct marketing to undertake: (1) to account for customers' heterogeneity through segmentation; (2) to customise messages and cost for each segment; and (3) to acquire customer responses to marketing promotion.² It is also a feature of direct marketing that all transactions are completely recorded in a database.³ Quelch⁴ classified sales promotion according to four aspects, 'Immediate', 'Delayed', 'Price cut' and 'Value added', and DM is often used as 'Delayed — Price Cut' promotion (Coupon or Rebate). Papatla and Krishnamurthi⁵ found that a DM coupon makes brand loyalty decline and price elasticity increase. Bult *et al.*⁶ noticed the interaction between mail characteristics and the ones of targets who receive the mails, and presented a new target selection strategy. Hanna⁷ constructed a model that optimises a discount rate and the time limits of DM. Yuan and Tsao⁸ suggested a mobile advertisement method that considered an individual customer's preference.

Characteristics of mobile DM

Mobile DM has unique characteristics that are different from traditional DM methods. An accurate understanding of the merits and demerits of mobile DM will yield more effective DM promotion. For the purpose of this study, we are particularly interested in the differences between coupons delivered via mobile phones and those delivered in the form of a postcard. The characteristics of each method are summarised as follows:

Medium: Postcard coupons are printed on paper, while mobile coupons are shown on the display of a mobile phone.

Permission: Most postcard coupons are sent to customers, randomly selected from a database, without their permission. Mobile coupons, on the other hand, are sent to customers who have registered their e-mail addresses and given their consent to e-mail submission. Permission and acceptance are core issues to be resolved in mobile communication.⁹

Cost performance: Postcard coupons entail postcard and printing charges, which depend on the number of coupons. On the other hand, an unlimited number of mobile coupons can be sent out with an initial cost of a personal computer facility and mail software and a running cost largely comprising internet communication charges.

Real time and direct: Postcard coupons are delivered to a customer's mailbox within a few days. This is in contrast to mobile coupons, which reach customers immediately.

Portability: Postcard coupons need to be physically carried, that is, a consumer must keep them in his/her purse. Mobile coupons, however, are already in the mobile phones, which will allow a consumer to use them at any time or place, as long as he/she carries the mobile phone.

Amount of information and design: A postcard coupon can have a complex design and a reasonably high amount of product information such as pictures and users' comments. On the other hand, a mobile coupon can only hold a limited amount of information due to the small size of a mobile phone display; as a result, mobile coupons lack pictures, have smaller-sized letters, have a very simple context and are designed in a simple text format.

Buried: A postcard coupon will be kept safely in a certain place if the recipient finds it useful. A mobile coupon, however, may be buried in the daily waves of e-mails if a customer does not sort his/her e-mails into different folders as they arrive.

Packet communication fee: Mobile coupons require that the customers pay a packet communication fee, which in Japan is approximately 1 yen for 100 characters, when they register for mobile coupons. A postcard coupon does not incur any cost for the customer.

Questionnaires on the use of mobile DM coupons

The behavioural effects of mobile coupons could not be established by the 2004 experiment. Since our primary concern was to identify reasons for the differences between the behavioural effects of mobile coupons and postcard coupons, we sent out a questionnaire to 660 customers, which comprised participants in the 2004 experiment and those of another project on mobile submission frequency. The addresses that were unavailable were excluded from the survey. The response rate of this questionnaire survey was 16.4 per cent (108 customers). Of these, 83.3 per cent of all customers had received postcard coupons and 16.7 per cent had received mobile coupons.

Based on this survey, three primary reasons for customers not to redeem their postcard coupons were found: 'forgot to use' (46.4 per cent), 'bad timing' (21.4 per cent) and 'forgot that I had received it' (14.3 per cent). In the case of mobile coupons, the three primary reasons were: 'forgot that I had received it' (31.6 per cent), 'bad timing' (26.3 per cent) and 'forgot to use' (21.1 per cent). These results indicate that customers feel they are more likely to forget the receipt of mobile coupons by comparison with postcard coupons.

Figure 1 is a graphical representation of the results on questions concerning the properties of two different forms of coupons. According to Figure 1, more than 80 per cent of postcard coupon receivers evaluated the coupon as 'very good/strong' or 'good/strong' in all categories. On the other hand, 51 per cent of mobile coupon receivers evaluated the category 'Recall' as 'very weak' or 'weak', which is higher than that for postcard receivers. Other categories were evaluated as 'very good/strong' or 'good/strong' by more than 80 per cent of mobile coupon receivers, similar to the results for postcard receivers. Since Quelch⁴ classified coupons as promotional tools with 'delayed effect', 'Recall' is an important factor to retrieve coupons.

In summary, the most important factors required to receive a high response to mobile coupons from customers appear to be as follows: to ensure that customers remember receiving the

Figure 1: Property of the DM coupon

coupon, to adjust the timing of coupon submission for each customer, to send customers several reminders about the coupon and to improve the usability of the coupon.

With respect to the processing of promotional information by customers for the experience of promotional reward, we propose the following five steps: (1) decide to receive the information being delivered by the company via a particular promotional vehicle, (2) determine the value of the information received, (3) remember the information, (4) retrieve the information and (5) experience the reward from the promotion.

In order to compensate the human nature of 'forgetfulness' exhibited by the results of the questionnaire in the above, two kinds of mobile DM coupons were added in this research. The first kind of mobile DM coupon contains a hyperlink connection to the internet and shows customers a discount coupon image. The second one contains the telephone number of the shop and persuades customers to make a reservation of the shop visit by clicking the number of the shop telephone, which is explained in detail in the next section. In the third one, the same kind of mobile DM coupon as our 2004 experiment was used.

If the information is contained on a postcard (ie paper), the following responses by customers can be hypothesised: (1a) the information

comprises one-way communication; (2a) customers know one-way communication is not harmful to them and readily acceptable from past experience, even if they know that their address information is known; (3a) it is necessary to store the postcard in some way that will reinforce the memory of the receipt; (4a) in order to retrieve the information, it is necessary to take some action; (5a) eventually, customers will experience the reward offered by the promotion. By contrast, if the information is on a mobile display, the following responses by customers can be hypothesised: (1b) the information can lead to two-way communication; (2b) they know two-way communication may be harmful to them from past experience; this is not readily accepted because information safety must be assured, and they may not wish to register their e-mail addresses; (3b) there is no opportunity to store any physical version of the information, which will reduce the opportunity to reinforce the memory of the receipt; (4b) in order to retrieve information, they only have to remember the receipt of the promotional information — but they may fail to do it and (5b) as a result, they may fail to experience the reward offered by the promotion.

Since the beauty salon is a real shop and the customer is confident of information security in their communication with the shop, steps (1) and

(2) will be easily established. Steps (3) information storage, (4) information retrieval and (5) reward experiencing are the remaining issues. In this way, our proposed concept is in alignment with our customer research.

HYPOTHESES AND EXPERIMENT PLAN

Changes in customer base

The number of recorded customers available to researchers at the end of March in 2005 was 1,105 — an increase from 628 at the end of March in 2004. The number of mobile mail address registrants was 727 — more than double the 307 registrants in March 2004. E-mail address registrants opt to register their e-mail addresses by themselves, so that we can assume that they have given permission for the shop to send e-mail. Out of 727 mobile mail address registrants, mobile DM submission errors occurred for 214 customers (29.4 per cent) and were excluded from the analysis. This reduced our sample size of customers to 513. The reason for submission error may be due to frequent changes in mail address or the movements of customers due to graduation from the university.

The experiment described was conducted in the period from 1st April to 14th October 2005. The data comprised the following information: customer ID, address, e-mail address, shop visit date, purchased services, user or nonuser of cellular phone, service purchase frequency, information about whether customer used DM coupon or not, type of mail submitted. We used only e-mail address registrants for our experiment in 2005.

Three kinds of mobile coupons

We investigated three types of mobile coupons: 'ordinary mail', 'hyperlink mail' and 'telephone reservation mail'. A customer received one mailing over a three-month period. This coupon contained a 25 per cent discount for hairdressing, including colouring and permanent wave. The first type (ordinary mail with discount coupon) was the same as the coupons sent in 2004,

containing a short message and a discount voucher.

In addition to this, two new types of coupons — 'hyperlink mail' with discount coupon and 'telephone reservation mail' — were added to persuade the customer to react to the advertising campaign. These coupons are described below.

Hyperlink mail with discount coupon: A 'hyperlink' is the technique that enables one to jump to a specific internet site by clicking the URL in an e-mail. Customers can access the coupon on the internet site and display it anytime, anywhere by one click and can save it in the data folder of their cell phone (rather than the e-mail folder). The customers can find the coupon and display it quickly, so that the 'hyperlink mail' may be useful in improving usability. The coupon contained the name of the shop, the discount rate and the validity of the coupon.

Telephone reservation mail: The third mail contains the message that 'the discount is available by reservation after receiving this mail'. The telephone number of the shop is displayed in the mail, allowing customers to dial the number directly.

Certain types of cellular phone limit the number of characters permitted in a mail, so that there may be cases where the message is not displayed in full. Therefore, the two additional forms of mail have to be more concise in terms of content and body text than the 'ordinary' mail. The impression of the mail and whether the mail is opened or not will of course depend on the subject, so that the key words of the shop name, discount and coupon were included in the subject of all mail types. Further, the name of the individual customer is used at the beginning of the message to stimulate a sense of personal communication. Each mail has the DM contents as well as the name, telephone number and opening hours of the shop.

Submission plan for the mobile DM coupon

The purpose of this experiment is to measure the different effects of the three kinds of mobile DM coupons. It was planned that all customers should receive a DM coupon once every three months.

Table 1: Mobile DM submission plan

Group	4/1	4/15	5/1	5/15	6/1	6/15	7/1	7/15	8/1	8/15	9/1	9/15	10/1
1	MD	x	x	x	x	x	MD	x	x	x	x	x	MD
2	x	MD	x	x	x	x	x	MD	x	x	x	x	x
3	x	x	MD	x	x	x	x	x	MD	x	x	x	x
4	x	x	x	MD	x	x	x	x	x	MD	x	x	x
5	x	x	x	x	MD	x	x	x	x	x	MD	x	x
6	x	x	x	x	x	MD	x	x	x	x	x	MD	x

Note: MD refers to the receipt of a mobile DM coupon and x, nonreceipt in each period.

Figure 2: Percentage comparison of age groups between the sample of 2004 and 2005

Table 1 shows a summary of our experimental design: (1) All the registrants were divided into three main groups to receive one of the three different kinds of promotion (gender and age were randomly assigned). (2) Customers in each group were further divided into six sub-groups for timing purposes, from one to six. (3) Mail was assigned to sub-groups in such a way that a sub-group would receive one type of mobile DM every month (see Table 1). For example, on 1st April the first group received DM, but none of the other groups would receive any DM coupon in this period. Then, on 15th April, the second group would receive DM. To the sixth group mobile DM was submitted on 15th June and to the first group again on 1st July. This method ensured that a mobile DM was sent every second week but one customer received a mobile DM coupon only once in three months.

Preliminary data analysis on the number of visitors

The total number of successfully submitted customers was 513 (161 for the 'ordinary mail' group, 173 for the 'hyperlink mail' group, and 179

for the 'telephone reservation mail' group). In order to make it comparable to mobile registrants, a comparison in the proportion of age groups represented was made between the entire sample for this research of 2005 and the mobile registrants in the sample of our 2004 experiment. The following figures show these differences in detail.

The percentage by age group is shown in Figure 2. The percentage of 'unknowns' increased from 13 per cent in 2004 to 21 per cent in 2005. The percentage of 20–24-year-olds is 57 per cent, the highest among the group and not so much different from 60 per cent in 2004. This is because that the store is located near a university and the core customers are students. The proportion of males changed from 38 per cent in 2004 to 43 per cent in 2005. Our data suggest that the highest frequency of haircuts by customers was once in two weeks, so we decided to have two observation periods in one month. 513 customers multiplied by 13 time periods make for 6,669 observations. There were 274 visits among 6,669 observations (4.1 per cent) within the whole period. Out of 2,052

Figure 3: Visit rates of mobile DM receivers vs nonreceivers

observations, the visit rate of customers who received mobile DM coupons was 5.8 per cent with 120 visitors within the DM coupon effective period, resulting in a higher visit rate than that of customers who received no mobile DM coupons — 3.3 per cent with 154 visitors out of 4,612 purchases opportunities.

Therefore, the effect of mobile DM coupon seems to be recognised. Additionally, the visit rates of both groups tended to decline as time passed, yielding similar trends to that in our 2004 experiment. From these preliminary analyses of the experiment, we perceived that customers did respond to mobile DM coupons well (Figure 3).

Hypotheses

For the probability of beauty salon visits, the behavioural effectiveness of mobile coupons was measured among all customers, but the probability of coupon use was measured only among customers who received DM coupons and visited the shop. For additional purchases, it was measured only among customers who received DM coupons, visited the shop and used the DM coupon. The following three hypotheses were established for statistical tests corresponding to the three probabilities:

H₁: *Influence on shop visits by availability of DM:* There are significant differences among the shop visit probabilities by customers who received three kinds of mobile DM coupon or no coupon.

H₂: *Influence on coupon use by type of DM:* There are significant differences among the coupon use probabilities by customers who received three kinds of mobile DM coupon.

H₃: *Influence on additional purchases by type of DM:* There are significant differences among the additional purchase probabilities of customers who received mobile DM coupons. Customers who received mobile DM coupons purchase additional services, for example, permanent wave in addition to hair cut.

ANALYSES BASED ON LOGISTIC REGRESSION

In order to examine the hypotheses, from H₁ to H₃, we applied logistic regression models to the customer purchase data. Explanatory variables are as follows:

Age: 15–19, 20–24, 25–29, 30–34 or over 35, unknown

Gender: Male or female

DM.Avail: Availability of mobile mail coupons (available or not available)

DM.Avail×Type: Type of DM coupons (ordinary or hyperlink or telephone reservation) in the case of DM available

Cut.Freq: Total number of purchasing hairdressing services before the experiment

Colour.Freq: Total number of purchasing hair colouring services before the experiment

Perm.Freq: Total number of purchasing permanent wave services before the experiment

DM.Period: The first 14 days or the rest of the days of a month were grouped into one period, and at the beginning of each period, a mobile DM coupon was sent to each customer. The number of total periods is 13 periods.

The analyses were conducted by logistic regression given as follows:

$$\log \frac{p}{1-p} = \beta_1 \text{Age} + \beta_2 \text{Gender} + \beta_3 \text{DM.Avail} + \beta_4 \text{DM.Avail} \times \text{Type} + \beta_5 \text{Cut.Freq} + \beta_6 \text{Color.Freq} + \beta_7 \text{Perm.Freq} + \beta_8 \text{DM.Period}$$

where p is the probability of one of the three types, that is, (1) shop visits, (2) coupon use or (3) additional purchases, and β_i ($i=1\dots 8$) are the parameters of explanatory variables explained above. The explanatory variables contain different kinds of data, such as numeric data, categorical data and ordered categorical data. If an

explanatory variable is categorical in nature, for example, gender, the coefficients of the components are calculated by a contrast matrix. The coefficients are measured in a relative scale and the total is set to zero. Statistical software S-PLUS was used. NA is treated in the Splus command and a helmert matrix is used as default with or without ordered factors.

Shop visits probability model (SVP)

An SVP model estimates the probability of a customer's shop visits corresponding to hypothesis H_1 . The number of total purchase opportunity is 6,670. The dependent variable is the event that a customer visited the shop in each period (visit=1, no visit=0). By applying logistic regressions to the data, statistically significant explanatory variables were determined and the analysis of deviance with the estimated parameters and the calculated coefficients were summarised in Table 2.

The null hypotheses of all variables except for DM.Avail $\times$ DM.Type and Colour.Freq were rejected at the 5 per cent significance level. The variables included in this model are Gender, DM.Avail, DM.Period, Age, Cut.Freq and Perm.

Table 2: Shop visits probability model

Variable	Degree of freedom	Deviance	Estimated parameter	Factor	Coeff.
Gender	1	4.525**	-0.204	Male	-0.204
				Female	0.204
DM.Avail	1	0.117**	1.715	Promotion	1.715
				Nonpromotion	-1.715
DM.Period	12	59.188**	0.043	4/1-4/14	0.329
			-0.164	4/15-4/30	0.209
			0.207	5/1-5/14	-0.531
			0.063	5/15-5/31	0.995
			-0.019	6/1-6/14	0.547
			-0.024	6/15-6/30	0.101
			0.035	7/1-7/14	0.016
			-0.052	7/15-7/30	0.507
			-0.022	8/1-8/14	-0.298
			-0.068	8/15-8/31	-0.069
			-0.080	9/1-9/14	-0.669
			0.248	9/15-9/30	-0.968
				10/1-10/14	-0.167
Age	5	25.651**	-0.269	15-19	-0.607
			-0.231	20-24	-0.614
			-0.398	25-29	-1.000
			0.705	30-34	-2.296
			-0.801	35-	3.523
				Unknown	0.994
Cut.Freq	1	373.794**	0.418		0.418
Perm.Freq	1	8.201**	0.157		0.157

**Five per cent significant level.

Freq. The coefficients and statistics of significant variables are shown in Table 2, and are summarised in the following points.

1. The shop visits probability of females is higher than that of males. The result appears to imply that female customers who have more interest in hairstyling visit beauty salons more often than male customers.
2. The shop visits probability of the over-30-year-olds is higher than that for the under 30-year-olds. Customers over 30 years of age comprise only 7 per cent of all customers, but they seem to be loyal customers and visit the shop very often. By contrast, young customers of 20–24 years visit the shop infrequently and may possibly be using a variety of beauty salons.
3. The shop visits probability of customers who had previously purchased hairdressing services more often before the experiment is significantly higher than that of customers who had purchased the service less often. The same result was obtained in our 2004 experiment. In the same way, the shop visits probability of customers who had purchased permanent service more often before the experiment purchased services of cut is significantly higher than that of the counterpart. However, this is not the case with hair colouring.
4. The shop visits probability of customers who received a mobile DM coupon is significantly higher than that of customers who had not received a mobile DM coupon. This result was not obtained in our 2004 experiment. This may be because customers' positive perception of a mobile DM coupon has increased. The type of mobile DM coupon was not statistically significant, possibly because of the sample size.
5. The shop visits probability in the period of longer holidays in Japan, for example, 'Golden week' or 'Obon week', is significantly lower than that of the other periods. This may be because students had not been around the shop due to the school recess. This may be a particular characteristic of customers of this shop, who are mostly students. On the other hand, a high shop visits probability was obtained at the end of May and the beginning of June, and the end of July.

This research confirmed that mobile DM coupon increased shop visits probability that was not recognised in our 2004 experiment.

Coupon redemption rate for mobile DM receivers

Not all customers who received a mobile DM coupon may use that coupon even if those customers visited the shop. We calculated DM coupon redemption rates for mobile DM receivers and compared the rates among the different types of mobile DM coupon. In our 2004 experiment, the coupon redemption rate for postcard DM coupon receivers was 81 per cent, while for mobile DM receivers it was 36 per cent. This research obtained an average coupon redemption rate for mobile DM receivers of 39 per cent. In addition, we obtained different rates by mail type as follows: (1) ordinary mail: 29.3 per cent; (2) hyperlink mail: 51.4 per cent; and (3) telephone reservation mail: 26.2 per cent. The result shows that the redemption rate for hyperlink mail recorded roughly twice as much as that for the other types, but was still lower than that of 81 per cent for the postcard.

Mobile coupon use probability model (MCUP)

Our MCUP model estimates the probability of mobile DM coupon use by customers who received mobile DM and visited the shop in the coupon effective period. The population was limited to shop visitors who received mobile DM coupons and the total sample size as a result was 120. We might expect that most people who visited the shop use the coupons. Mobile address registrants in particular were considered to have an intention to use mobile DM. The dependent variable is coupon use by the mobile DM coupon recipient (use = 1, no use = 0). The independent variable of Mail.Avail was not included because all customers received the mail in this sample.

Table 3 shows the estimated parameters and calculated coefficients of the dependent variable. Gender, Mail.Type and Perm.Freq were rejected at the 5 per cent significance level and included

Table 3: Ratio of MDM use

Factor	Df	Deviance	Resid. Df	Factor	Coef
Gender	1	4.313**	–0.442	Male	–0.442
Mail.Type	2	11.297**	0.599	Female	0.442
			–0.197	Ordinary	–0.401
				Hyperlink	0.796
				Telephone reservation	–0.395
DM.Period	12	14.081			
Age	5	4.335			
Cut.Freq	1	0.406			
Colour.Freq	1	0.037			
Perm.Freq	1	2.908**	–0.514		0.518

**Five per cent significant level.

in the model. That is, the coupon use probability of females was significantly higher than that of males. The coupon use probability of ‘hyperlink mail’ receivers was significantly higher than that by ‘ordinary mail’ or by ‘telephone reservation mail’. The ‘hyperlink mail coupon’ option was added in order to decrease customer ‘forgetfulness’, which had reduced the effectiveness of mobile mail in our 2004 experiment. The redemption rate of ‘hyperlink mail’ was shown to be the highest among the three kinds of mail in the Section Hypotheses and Experiment Plan and was statistically significant.

After the experiment, we undertook an interview with the shop owner. We found that most customers who received this mail failed to make a reservation in advance (even though the ‘telephone reservation mail’ required making a reservation by telephone in advance). They visited the shop and showed the mail to the shop just like ‘ordinary mail’. The estimated coefficient of ordinary mail and that of ‘telephone reservation mail’ were nearly the same. The result appears to be reasonable if we take this fact into account.

The coupon use probability by those customers who had purchased permanent wave services was frequently significantly higher than that of infrequent permanent wave purchasers.

Additional purchase probability model (APP)

An APP model estimates the probability of additional purchases corresponding to hypothesis

H₃ by customers who received mobile DM. The population was limited to coupon users and the total sample size became 42. The dependent variable is additional purchases by the customer of mobile DM (additional purchase = 1, no purchase = 0). No dependent variable was rejected at the 5 per cent significance level. Although there were some records of additional purchases with a coupon, we did not find any statistically significant variables.

SUMMARY

From the results in the Section Shop visits probability model (SVP), we can suggest that in relation to the probability of a customer’s shop visit, the variables included at the 5 per cent statistical significance level in the final model are as follows: Gender, DM.Avail (DM received or not received), DM.Period, Age, Cut.Freq and Perm.Freq. We also confirmed that coupon use probability by ‘hyperlink mail’ receivers was significantly higher than that by ‘ordinary mail’ or by ‘telephone reservation mail’.

Since the beauty salon is a real shop and communication with the shop would not cause problems, steps (1)–(2) in the DM process will be easily established. The results in steps (3) information storage, (4) information retrieval and (5) reward experiencing were reported in our customer research.

Our finding indicates that future direct marketing policies should consider our proposed concept of ‘promotional information processing’ as follows: how customers (1) address promotional information that a company delivers via a

promotion vehicle, (2) decide on acceptance of that information and evaluate its value, (3) mentally process and store the information, (4) retrieve the promotional information and (5) experience the reward of the promotion. When using the mobile channel for promotional activity, it appears advisable to induce customer responses in as similar a way to those of traditional mechanisms (such as postcards) as possible to ensure effective mobile promotion. Specifically, we have to achieve (1) a safe encounter with the information, (2) ready acceptance, (3) successful storage by means of some physical action, (4) easier retrieval of the information, supported by easier handling of the mobile device, and (5) assurance in experiencing a promotional reward.

CONCLUSION

This research confirmed that mobile DM coupons increased shop visits probability, which was not recognised in our 2004 experiment, and shows the effectiveness of mobile DM promotion. The success of mobile DM promotion has an important implication in terms of the costs and benefits of promotion. Mobile DM promotion is much less expensive than postcard coupons. In order to prepare and send postcard DM coupons for this experiment, it cost about 60,000 yen or \$550, excluding the costs of labour, whereas it was almost free for the mobile DM coupon. In addition, this research confirmed that 'hyperlink mail', which induces customers to take an action, shows higher usage than the other two forms. This has an important implication: for mobile mail DM coupons to be successful, it is important to let the customer take some action in order to

avoid forgetting the mere fact of their receipt. This will remove obstacles to the process of 'information storage', 'information retrieval' and 'reward experience'. Our findings are of course predicated on the service products provided by a beauty salon, a well-established, trustworthy shop, which makes it possible to easily achieve the steps of 'encounter' and 'acceptance' of information in our proposed concept. Adjustment to different shop visit cycles may also be an important factor in increasing coupon use probability, a dimension that remains worthy of future research.

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