

# 行政院國家科學委員會專題研究計畫成果報告

## 直郵折價券效果重新評估—縱切面資料分析

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### 一、中文摘要

本研究提供了一個縱切面資料分析的模式，藉以詮釋顧客參與計畫程度及折價券使用頻率之關連性，並比較兩種不同形式折價券計畫之兌換率差異。由實證結果顯示，顧客自行挑選折價券計畫比隨機贈送之折價券計畫較能提高顧客使用率，此發現提供業者於設計折價券計畫時一個參考依據。懊悔理論指出顧客容易因無法兌換高額度折價券，或是因截止日到期未能兌換折價券而懊惱。我們發現較高面值折價券與較久的截止日是決定折價券兌換的重要因素之一。本研究另發現一個與過去研究相反的結果，也就是住家與零售店面之距離不是阻礙因子。此結果有一個重要管理意涵：促銷計畫若能達成顧客滿意，則店面所在地將不是一個主要的目標。

另外一個管理上重要發現為顧客先前折價券使用經驗決定未來使用率。這意味著管理者在進行折價券計畫前可透過簡單客戶篩選，瞭解顧客過去使用經驗，或是建立客戶資料庫來確保使用對象，而不是任意散佈折價券。

**關鍵詞：**直郵折價券、折價券使用率、縱切面資料、先前使用經驗、直銷

### Abstract

This paper employs longitudinal (as opposed to cross-sectional) data to empirically investigate the effectiveness of direct-mail coupon programs. The effectiveness is explained by demographic

variables and variables such as prior use and participation in coupon programs. Surveys of two forms of coupon program in Taiwan support the hypothesis that consumers who expend more effort to request the brands that they desire are more likely to redeem coupons. Evidence shows that prior use does associate with coupon-redemption behavior, while it is found that there are significant expiration date and face value effects. The distance of the consumers from the redemption location is found to be not significant.

**Keywords:** DM coupons, coupon usage, longitudinal data, prior use

### 二、緣由與目的

There is continuing debate about the determinants of coupon use. Many researchers have sought to explain coupon/deal redemption in terms of the socioeconomic and demographic characteristics of consumers or to identify the psychological factors that motivate consumers to use coupons. Although they have contributed a lot to our understanding of coupon redemption behavior, there is no coherent evidence for the effectiveness of coupon programs. Criticism of the mixed results has focused on insufficient explanatory variables in the proposed models and different sample size treatments. For example, Lichtenstein, Richard and Burton (1990), Cheong (1993), Inman and McAlister (1994), Mittal (1994), and Cronovich, Daneshvary and Schwer (1997) attributed the mixed results to drawbacks in conventional demographic variable analysis. They argued that consumer coupon use behavior could not

be explained only by demographics. The relative importance of non-demographic consumer characteristics (for example, psychological constructs) and coupon attractiveness (for example, coupons with higher face values and expiration dates) are also important factors in consumer behavior.

The approach taken in this paper is distinguished from existing studies in two directions. First, most research has typically focused on socioeconomic and demographic determinants or consumer shopping patterns, making it difficult for a marketer to draw conclusions about the effectiveness of a coupon program (for example, Narasimhan 1984; Lee and Brown 1985; Bawa and Shoemaker 1987; Kaufman and Hernandez 1990; Goodwin 1992; Cronovich Daneshvary and Schwer 1997). In light of marketing practice, it does not make much sense to talk about the “determinants” of a promotional activity. Rather, it would be more interesting to examine the responsiveness of the target consumers when they participate in the promotional activity. Secondly, it is important to note that a coupon program’s effectiveness predicts a longitudinal (as opposed to cross-sectional) relationship between coupon use and the consumers’ involvement in the program.

A number of academic and non-academic studies claim to identify the individual determinants for coupon use, but their results are based on cross-sectional data (Shoemaker and Tibrewala 1985; Hernandez 1988; Bagozzi, Baumgartner and Yi 1992; Cheong 1993; Schofield 1994; Tat and Bejou 1994; Green 1995; Bawa, Srinivansan and Srivastava 1997; Cronovich Daneshvary and Schwer 1997). The problem is that cross-sectional data cannot identify a consumer’s “true” shopping patterns and the time-related effect during the promotional period. To illustrate this point, suppose consumers do not favor a certain product brand, but choose to purchase more of the manufacturer-sponsored product earlier on a trial basis than do brand-loyal consumers. A positive relationship between coupon use and demographic characteristics would then appear in the cross-sectional data even if

individual consumers did not increase their coupon use over time (sample attrition bias). Any conclusions based on cross-sectional data could therefore be misleading, and the analysis would be at the least incomplete.

The objective of this paper is to reinvestigate the effects of coupons by using a longitudinal model to capture the interaction between coupon use and coupon promotions. We study the direct mail (DM) coupons, which are defined as a package of price-discount tickets sent through the mail. To show whether different coupon programs can exercise an effect on consumer coupon use, we carefully examine the coupon use discrepancies between redeemers who request their own brands in the coupon book and those who accept all of the brands that are offered. It is hypothesized that customers who request their own brands are most likely to have a higher interest in coupons than those who accept all of the brands offered. The coupon booklet comparison, which has received less attention in recent coupon program studies, will help re-examine the existing major hypotheses relating to coupon effects and provide managers with an effective instrument to predict how a given consumer will respond to a specific coupon.

### 三、結果與討論

Our major concern in fact was with the coefficient sign of the Ln(PART) variable. The hypothesis predicted a positive coefficient for the participation variable and the first-stage estimates lend support to this hypothesis.

We found the coefficients for the Ln(PART) variable to be indeed significant. In other words, an increased length of participation is associated with higher coupon usage. To be more specific, a 100 percent increase in participation length is predicted to increase coupon usage approximately 4.4 times for Self-Request form and 2.3 times for the All-Brand form. These results were similar to the aggregate results indicated earlier. The insignificant Brand-Switching parameter in the Self-Request form suggests that

brand-switching behavior does not have significant effects on coupon use.

Our analysis' important variable is  $\text{Ln}(\text{PRIORUSE})$ , which measures the log of the individual's coupon use behavior prior to the promotion program. The coefficient values estimate the effect of prior use on differences in coupon usage across participants. We found here that the coefficients for both forms were significant, but opposite of that for the  $\text{Ln}(\text{PART})$  coefficient. This means that the participation effects measured in the first-stage estimation understate the "pure" effect of participation on coupon usage.

We tested the effects of prior use patterns ( $\text{PRIORUSE}$ ) and distance ( $\text{DISTANCE}$ ) on the participation coefficient. As hypothesized, the  $\text{PART}$  coefficient will be smaller for greater prior use, and smaller for greater  $\text{DISTANCE}$  values. To test this hypothesis, the samples were stratified into five different subsamples, equation (4) was estimated separately for each subsample, and the participation coefficients were then compared across subsamples. We find evidence to support the prior-use hypotheses, meaning that prior use monotonically affects the relationship between coupon use and participation, while distance shows no monotonical relationship.

To sum up, this project approached the question "are DM coupon programs effective?" using longitudinal data. In general, the answer to this question is "yes" in the designated area. Two forms of coupon programs were activated simultaneously, showing that the Self-Request form yielded a better participation rate and greater coupon use than the All-Brand coupon form. The roles of expiration dates and face value, even when manipulated in attitudinal terms, rendered important insights into the design of a coupon promotion program. Consistent with most theoretical and empirical literature, both higher face values and longer expiration dates were significant determinants that maximized consumer response.

Prior use, which has received less attention in recent studies, was found to be a critical indicator for the number of coupons

used. An important implication of this finding from a company standpoint is that managers can obtain information about a consumer's prior coupon use beforehand in order to ensure that they send coupons to the appropriate target consumers.

The continued debate on the effect of a coupon program suggests that a better understanding of the determinants of coupon usage could have important managerial implications. Despite substantial research along this line, little has been directed towards relating this issue to the accumulated participation effect. Although our study shows that there is an increased significant participation effect on coupon use, previous literature, such as Neslin and Clarke (1987), have suggested that coupon effectiveness research should be conducted in several cities, because effectiveness differs from place to place. Thus, further research is suggested to expand this issue across cities or compare the cultural discrepancies in coupon-use behaviors among different countries.

#### 四、計畫成果自評

本一年期國科會計畫與原計畫進度相符。研究中提供了一個縱切面資料分析的模式，藉以詮釋顧客參與計畫程度及折價券使用頻率之關連性，並比較兩種不同形式折價券計畫之兌換率差異。對行銷業者而言，其所欲見的是整個促銷期間的總體結果，而不是單指某一時段的決定因素。也就是說，整個促銷計畫是否能建立顧客忠誠度將是實證的重要結果。一般橫切面資料分析無法提供消費者真實消費模式。雖此課題有其管理上之重要性，但卻極少研究觸及。未來計畫將研究成果改寫，並選擇相關學術期刊發表。

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