

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

MBS

Massey University Library Thesis Copyright Form

Title of thesis: The Effect On Trial And Purchase Behaviour
Of Mail-Drop Product Sampling And Purchase
Incentives Among Non-Users

(1) (a) I give permission for my thesis to be made available to readers in Massey University Library under conditions determined by the Librarian.

(b) I do not wish my thesis to be made available to readers without my written consent for ... months.

(2) (a) I agree that my thesis, or a copy, may be sent to another institution under conditions determined by the Librarian.

(b) I do not wish my thesis, or a copy, to be sent to another institution without my written consent for ... months.

(3) (a) I agree that my thesis may be copied for Library use.

(b) I do not wish my thesis to be copied for Library use for ... months.

Signed



D.E. McGuinness

Date

10 / 04 / 92

The copyright of this thesis belongs to the author. Readers must sign their name in the space below to show that they recognise this. They are asked to add their permanent address.

NAME AND ADDRESS

DATE

**THE EFFECT ON TRIAL AND PURCHASE BEHAVIOUR
OF MAIL-DROP PRODUCT SAMPLING AND PURCHASE
INCENTIVES AMONG NON-USERS**

A thesis prepared in partial fulfilment of the requirements for the
degree of Master of Business Studies
at Massey University

Dalton Erin McGuinness

1992

ABSTRACT

Escalating expenditure on sales promotion techniques has led to increasing concern over their effectiveness. Techniques such as product sampling and purchase incentives are widely believed to encourage new trial and purchase behaviour among non-users, but few studies have verified this belief empirically.

This thesis reports the results of three pioneering experiments that examine the effectiveness of mail-drop product samples, coupons, and cash-backs, as means of promoting new trial and purchase behaviour among non-users of three brands: a laundry detergent, an instant coffee, and a new toothpaste variant. A sample of 800 households was randomly selected and, for each product, households were assigned to one of four treatment groups: sample plus coupon, sample only, coupon only, and a control group. Trial and purchase data were obtained from 493 households after over two telephone interview waves.

The results indicated that samples achieved much higher rates of new trial and purchase behaviour than coupons. Coupons and cash-backs delivered alone were found to be ineffective means of encouraging purchase behaviour among non-users, and including them with samples only had a marginal, if any, effect on purchase behaviour.

This study has important implications for the practice of sampling and couponing. In particular, coupons may only subsidise purchases that would otherwise be made at full retail prices, which suggests that the current industry practice of providing coupons with samples may be unwarranted.

ACKNOWLEDGEMENTS

I wish to thank my supervisor, Mike Brennan, for his valuable guidance throughout this research and for setting me challenging standards. My thanks also to Phil Gendall for his helpful advice, and to Don Esslemont for always being prepared to discuss anything.

Special thanks to Zane Kearns for his support throughout this project - for not only lending an ear with conceptual issues, but also a hand with monotonous tasks. Grateful thanks also to numerous other people, without whose help with tasks such as selecting the respondents, preparing and distributing the treatments, and interviewing, the sheer size of this project would have been overwhelming.

I am also indebted to the three companies that sponsored the products used in this study.

TABLE OF CONTENTS

Abstract	i
Acknowledgments	ii
Table of Contents	iii
List of Tables	v

CHAPTER ONE: INTRODUCTION

1.1 Background	1
1.2 Sales Promotions	1
1.3 Product Sampling	2
1.4 Purchase Incentives	3
1.5 Sampling-Incentive Combinations	4
1.6 Summary	4

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction	5
2.2 Product Trial	5
2.3 Short Term Purchase Behaviour	10
2.4 Switching Behaviour	19
2.5 Long Term Purchase Behaviour	21
2.6 Summary	24
2.7 Objectives and Hypotheses	26

CHAPTER THREE: METHOD

3.1 Introduction	28
3.2 Products	28
3.3 Sample	30
3.4 Treatments	31
3.5 Procedure	33
3.6 Operational Definitions	37

CHAPTER FOUR: RESULTS

4.1	Introduction	39
4.2	Current Users Vs. Non-Users	39
4.3	New Product Trial	41
4.4	Coupon and Cash-Back Redemption	41
4.5	Non-Usage of Samples	44
4.6	Non-Redemption of Coupons and Cash-Backs	46
4.7	Short Term Purchase Behaviour	48
4.8	Switching Behaviour	51
4.9	Long Term Purchase Behaviour	56
4.10	Summary	58

CHAPTER FIVE: DISCUSSION

5.1	Introduction	59
5.2	Differences Between User Groups	59
5.3	Treatment Differences	60
5.4	Product Differences	66
5.5	Conclusions	68

REFERENCES	69
-----------------------------	----

APPENDICES

1	Detergent Treatments	75
2	Coffee Treatments	77
3	Toothpaste Treatments	81
4	Distributor Notes	84
5	Interviewer Notes	85
6	Questionnaires	91
7	Breakdown of Survey Response Rates	102

LIST OF TABLES

1	Sampling and Couponing Scenario	14
2	Treatments Applied in Each Experiment	32
3	Schedule of Activities and Participating Households	33
4	Treatment Response Rates for Each Experiment	37
5	Effect on Product Trial of Product Sampling and Purchase Incentives	40
6	Effect of Treatments on New Product Trial Among Non-Users	42
7	Reasons Why Non-Users Did Not Try Samples	44
8	What Non-Users Did With Untried Samples	45
9	Reasons Why Non-Users Did Not Redeem Incentives	46
10	Effect of Treatments on Short Term Purchase Behaviour	50
11	Effect of Treatments on Brand Switching	53
12	Effect of Detergent Treatments on Product-Form Switching	55
13	Effect of Coffee Treatments on Category Switching	56
14	Effect of Detergent Treatments on Long Term Purchase Behaviour	57
15	Breakdown of Response Rates for First Interview Wave	102
16	Breakdown of Response Rates for Second Interview Wave	102

CHAPTER ONE: INTRODUCTION

1.1 Background

Over the last decade, New Zealand companies have been through difficult times. Company profits have been adversely affected by a number of factors, including an economic recession, intensified competition and increasingly demanding consumers. To maintain profitability, many companies have had to rationalise their operations and seek more effective promotional methods to increase sales.

Companies have traditionally used advertising as their main method of promoting sales. However, because advertising only tends to provide underlying reasons for purchase and often requires several exposures to stimulate sales (Schultz et al., 1984), its effectiveness has been reduced by several factors including media clutter, brand proliferation, and increasingly fragmented consumer markets (Shimp, 1989). As a consequence, companies are spending an increasing proportion of their promotional budgets on sales promotion, in order to differentiate their brands with direct, action oriented, and short-term incentives to purchase (Berneman, 1990a; Boddewyn & Leardi, 1989; Massey, 1992).

1.2 Sales Promotions

Sales promotions are an assortment of techniques designed to induce immediate sales growth. These techniques include product samples, coupons, cash-back offers, cents-off deals, competitions, point-of-purchase displays, and product premiums. They tend to be emphasised in-store, although some techniques, such as samples and coupons, can also be delivered to consumers' homes.

The overall objective of sales promotion is to generate incremental sales, which have been defined as the additional sales, beyond the normal level of sales, generated by a promotion (Bawa & Shoemaker,

1989). This may be accomplished by stimulating trial and purchase behaviour among non-users of a brand, and by increasing the repeat purchase rate among current users of a brand. The end-objective of encouraging long term purchase behaviour is largely contingent on the performance of other elements of the marketing mix, particularly the product itself (Schultz et al., 1984). Sales promotions are also used to reinforce advertising, satisfy trade requirements, and neutralise competitive activities (Shimp, 1989).

1.3 Product Sampling

Of all forms of sales promotion, product sampling is considered to generate the highest rates of trial among non-users of a brand (Meyer, 1982; Rossiter & Percy, 1987). It is also believed to have the greatest effect on switching between brands, product forms, and in some cases, product categories (Ailoni-Charas, 1984; Schultz & Robinson, 1982). Product sampling involves giving away a trial-size portion of a product to prospective consumers, thereby enabling them to experience the product with little risk and no obligation (Aillon-Charas 1984). Product samples can take numerous forms, such as small product replicas and foil-wrapped sachets, and can be distributed in a variety of ways, such as through mail-boxes, stores, and at other locations; the most appropriate form and distribution method depends on the product and promotional objectives. One of the most common methods for distributing samples of non-food products in New Zealand is mail-drop delivery, where special crews are contracted to deliver items to households in certain areas of selected cities. This method is claimed to generate high rates of sample trial for household products because they are delivered to their ultimate usage point, and the most likely users can be selectively targeted (Aillon-Charas, 1984).

1.4 Purchase Incentives

Purchase incentives are also believed to be effective in generating trial among non-users as they are presumed to make switching financially more attractive, and thus reduce the consumers' level of perceived risk associated with trial (Belch & Belch, 1990; Rossiter & Percy, 1987). Purchase incentives are also commonly used to reward and hold current users of a brand (Dommermuth, 1989; Kotler, 1990).

Purchase incentives include techniques such as coupons, cash-backs, special offers, and other price-deals. Coupons are credit vouchers entitling the holder to a relatively low value discount on the purchase of a particular brand. They are typically delivered to consumers in newspapers, magazines, direct mail pamphlets, coupon booklets, on packaging, and with other sales promotion material such as product samples; the most appropriate method again depends on the product and promotional objectives. Of all media distributed coupons, mail-drop coupons are considered to achieve one of the highest redemption rates as they can be selectively targeted at the most likely prospects of a brand (Belch & Belch, 1990; Schultz et al, 1984; Ward & Davis, 1978).

Cash-backs, also referred to as refund offers, are promotional vouchers that offer a cash refund of a specified sum to consumers if they buy the promoted product at the normal retail price. Consumers fill in the voucher and send it to the manufacturer or an agent, usually with some proof of purchase, for a refund by return mail. Cash-backs are usually attached to the promoted product in-store, but can also be distributed to consumers in print media or by direct mail. They are not as prevalent in New Zealand as coupons, presumably because of the higher administration costs involved.

1.5 Sample-Incentive Combinations

To increase the effectiveness of product sampling and purchase incentives, companies often use these techniques in combination (Ailoni-Charas, 1987; Freedman, 1986). This is based on the assumption that consumers who try and like a sample will supposedly purchase the product more readily if the price of the next purchase is discounted. It has been suggested, however, that purchase incentives may be redundant if consumers like a sample enough to buy the product without them (Haugh, 1979a). This issue is important because several studies have shown coupons are usually redeemed by current users for purchases that would have been made in any case (Neslin & Clark, 1987; Shoemaker & Tibrewala, 1985).

1.6 Summary

Several claims have been made about the effectiveness of sales promotion techniques in achieving trial and purchase among non-users, but little academic research has validated these claims empirically. Because most commercial research in sales promotion is confidential, and because most companies are too involved with other tasks to undertake detailed evaluation, it is difficult to assess whether the escalating expenditure on these techniques is justified.

The purpose of this study is to examine trial and purchase behaviour among non-users in the context of the two most commonly used sales promotion techniques used to achieve this: product sampling and purchase incentives. To place this study in perspective and provide a rationale for the hypotheses tested, the literature relevant to these issues is reviewed in the following chapter.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Generating new trial and purchase behaviour among non-users is an important objective for marketers of both new and established products. Non-users include those who have never tried the product before, or have not bought the product for an extended period (Shimp, 1989). Because non-users of a brand are often users of competing brands or alternative product forms, changing their purchase behaviour usually involves brand or product-form switching, and may also involve attracting consumers into a product category (Rossiter & Percy, 1987). The end-objective of most marketers is that non-users will switch to their brand, and continue to purchase it over the long term.

Reports of studies investigating the effectiveness of product sampling and purchase incentives in generating incremental trial and purchase behaviour are largely anecdotal and provide little empirical evidence to support the beliefs held. Theoretical work attempting to model these issues has well out-paced empirical efforts to verify the explanations advanced. The following review examines the relevant theoretical and empirical literature from which the hypotheses of this study will be derived.

2.2 Product Trial

Introduction

For consumers to change their purchase behaviour, it is generally considered advantageous to first directly encourage them to engage in trial behaviour. This is based on the assumption that a favourable trial experience will increase the likelihood of purchase. Directly encouraging trial is considered especially important to increase the penetration rate of new products where the rate of trial would otherwise be gradual (Ehrenberg, 1971), but is also important for

existing products, as previous buyers may need to be reminded of a product's benefits (Massey, 1992). To generate new product trial, product sampling is generally believed to be more effective than purchase incentives (Belch & Belch, 1990; Schultz and Robinson, 1982). However, the issues that need to be addressed are the extent to which sampling may be more effective, and why this may be the case.

Theory

The role and importance of product trial is a recurrent theme in the marketing literature, and several theories have been proposed to model its effects. The Direct Versus Indirect Experience (DVIE) model and the Low Involvement (LI) model are particularly relevant to this study because they can be used to make specific predictions about the effects of product sampling and purchase incentives.

The Direct Versus Indirect Experience (DVIE) model holds that the more direct experience consumers have with products, the more informed their purchase decisions will be. Fazio and Zanna (1981) linked the notion of confidence with DVIE by hypothesising that direct experience with a product "may produce an attitude that is better defined and more confidently held than an attitude formed through more indirect means" (p. 182).

DVIE was further developed and tested by Smith and Swinyard (1982, 1983), who concluded that direct experience, in the form of product sampling, is a considerably more influential source of brand information than indirect experience, namely advertising. They found that when attitudes are based on product trial they tend to predict purchase very well, but when attitudes are formed through advertising, attitude-behaviour consistency is significantly reduced. They reasoned that advertising may be perceived as an untrustworthy source of information, whereas people usually regard themselves as reliable information sources (Smith & Swinyard, 1983). Foxhall (1983) concurs: consumers who are exposed to advertising may try the brand "albeit in an atmosphere of ignorance and uncertainty, for no amount of

informative advertising or interpersonal communication can provide the experiential knowledge which only product trial can supply" (p. 54).

Marks and Kamins (1988) also provided some support for the model developed by Smith and Swinyard by alternating the sequence of advertising exposures and product samples. When advertising was followed by product sampling, subjects tended to update their beliefs to conform more to the samples, whereas their beliefs were relatively unaffected by subsequent advertising exposures. Research in this area suggests product trial gained through sampling will have a greater bearing on purchase behaviour than other promotions, such as purchase incentives, that stimulate trial less explicitly.

The Low Involvement (LI) model holds that the importance of product trial will differ according to the perceived importance of purchase decisions. The perceived importance of purchase decisions has been shown to include the subjective probability of making a mispurchase, the degree of pleasure associated with the product class, and the perceived sign value of the product class (Laurent and Kapferer, 1985). This would seem to suggest that detergent is a lower involvement product than coffee, for example.

The LI model proposes that consumers will first try low involvement products to develop attitudes towards them, rather than vice versa as assumed by the traditional advertising model (Krugman, 1965; Smith & Swinyard, 1982). Robinson (1976), referring to this notion as low commitment consumer behaviour, suggests many brand choice decisions are unimportant to consumers and require minimal learning before brand trial occurs. Generating trial with product sampling may therefore be expected to be more effective for low rather than high involvement products.

Empirical Evidence on the Effect of Sampling

Most studies in product sampling have measured trial by examining the proportion of samples that are tried (McGuinness, 1988; Meyer, 1982; Rossiter & Percy, 1987; Schultz & Robinson, 1982). However, this measure of trial is only useful for examining new products that have no current users. Few studies have distinguished between non-users and current users to measure the rate of new trial gained among non-users of established brands. Furthermore, sample trial rates reported in the literature are only based on the number of respondents who could remember receiving samples. No published studies have calculated trial based on the number of samples actually distributed, although this measure would be of most relevance to marketers of sampled brands.

Product sampling is generally regarded to be the best form of sales promotion in generating product trial (Belch & Belch, 1990; Rossiter & Percy, 1987). This is plausible since sampling is the only technique that directly invites product trial with no obligation. Typical reports have generally claimed between 70 and 80 percent of consumers will use the product samples they receive (Meyer, 1982; Rossiter & Percy, 1987; Schultz & Robinson, 1982). Unfortunately, few of these reports are validated by specific studies.

The rate at which samples are used tends to vary between product categories and methods of sample distribution. Few of these differences have been established, however, because the limited number of studies that have investigated sample usage have yielded conflicting results. For example, a mall-intercept survey of 100 shoppers conducted by a New Zealand company found samples of their new brand of shampoo generated a trial rate of only 45 percent (A. Finn, personal communication, 13 May 1988). On the other hand, a study of 430 household grocery shoppers found samples of a new shampoo were tried by 85% of the households that remembered receiving them, 77% tried samples of a new toothpaste, and 71% tried samples of a new dish-washing liquid (McGuinness, 1989). These findings suggest that other factors mitigate sample usage, but little research has investigated these determinants.

No published studies have examined the reasons why some consumers do not use samples, and what becomes of these samples. These questions are important because they may suggest current measures of product trial are too conservative if unused samples are saved for future use, or given away, for example.

Empirical Evidence on the Effect of Incentives

When non-users redeem purchase incentives to try products for the first time, new trial and short term purchase could be said to occur simultaneously. Although no literature has addressed this point, the primary objective achieved in this case is presumed to be new trial. The discounted purchase is secondary because it is hoped the trial purchase will induce subsequent full-revenue purchases.

Purchase incentives are generally acknowledged to be second only to sampling as a promotional technique for generating new trial among non-users. The effect of incentives on trial has attracted a variety of studies, most of which suggest they are better suited to encouraging repurchase after initial trial than generating new trial *per se* (Belch & Belch, 1990). For example, Rossiter and Percy (1987) report a study that found only one in three coupon redemptions represented new trial, and the remaining two redemptions were by current users. They argue that, even for new products, coupon redemption is often carried out by current users as consumers can often try the product through other means (e.g., sampling) before they redeem coupons.

Current users of a promoted brand were more likely to redeem coupons than non-users or occasional users in a study by Shoemaker and Tibrewala (1985) involving 280 shoppers and four product categories. These researchers also found higher coupon face values tended to attract a greater proportion of non-users than current users, suggesting that new trial will increase with higher coupon values. However, this research was only based on respondents' stated likelihood of coupon redemption, and actual redemption or purchase behaviour was not measured.

The work of Shoemaker and Tibrewala was extended by Neslin and Clarke (1987), who developed a multiple regression model to examine the effects of six factors on the 'brand-use profile' of coupon redeemers. The brand-use profile consisted of non-users, occasional users and current users, and was considered more favourable when coupons were redeemed by non-users and occasional users rather than by current users, as this would result in greater incremental sales. Subjects were given a coupon book containing 59 brands by either direct mail or customer-request distribution, and subsequent telephone interviews established who had redeemed coupons. The results showed that brand-use profiles were more favourable (i.e., skewed towards non-users) for brands with lower market shares and lower coupon redemption rates, for the customer-request method of distribution, and for coupons with no expiry date. The implication of this research is that the likelihood of gaining a relatively high proportion of redemption by non-users is greater when these four brand and coupon characteristics are present.

The finding that current users of promoted brands are more likely to redeem coupons suggests the redemption process is often carried out for purchases that would have occurred in any case (Bawa & Shoemaker, 1987; Neslin & Clark, 1987; Quester, 1990b; Shoemaker & Tibrewala, 1985). This implies that companies may forego mark-up on the discounted sales. In defence of couponing, it has been argued this at least maintains the loyalty of current users by effectively removing them from the market, because they are encouraged to stock-pile and increase their inter-purchase times (Neslin et al., 1985). However, this line of reasoning does not invalidate the assertion that coupons may only subsidise purchases that would have otherwise been made eventually at full retail prices.

2.3 Short Term Purchase Behaviour

Introduction

The success of a new or existing brand depends not only on generating new trial, but also on inducing a reasonable proportion of non-users to

purchase the brand at the full retail price (Belch & Belch, 1990). Product sampling and purchase incentives are believed to affect short term purchase in different ways. Because sampling essentially only presents consumers with an opportunity to try a product, the effect of sampling on purchase behaviour is heavily dependent on whether the trial experience is favourable, relative to the other brands available for consideration. Even if the trial experience is favourable, sampling *per se* does not directly encourage consumers to then purchase the product. On the other hand, purchase incentives directly encourage purchase by emphasising a financial incentive or special deal. The questions that remain are whether the high rates of new trial generated by samples translate into higher rates of purchase than incentives, and whether the effect of samples is enhanced by combining them with incentives.

Theory

Self Attribution Theory (SAT) has been used to explain the effects of sampling and incentives on short term purchase behaviour (Scott, 1976). In general terms, SAT suggests that individuals examine their own behaviour and the circumstances in which the behaviour occurs in order to formulate their attitude toward an object (Dodson et al, 1978). SAT holds that if behaviour is perceived to be caused by an external incentive it is less likely to continue than if perceived to be caused by a personal, positive disposition towards the object (Bem, 1972).

The predictions made by SAT for various price promotions have been elaborated by Dodson et al (1978). These researchers suggest when individuals redeem high-value coupons that require some effort to redeem (e.g., media delivered coupons), they will attribute their brand selection to the deal, and will be less likely to repurchase the brand than if no deal had been offered. On the other hand, redemption of low-value coupons that require a substantial effort to redeem (e.g., package coupons) is more likely to enhance loyalty after the deal is retracted because people are likely to observe that they exerted much effort to redeem the coupon despite the low incentive and to conclude that they must really like the promoted brand.

In terms of the effect of sampling and incentives on purchase behaviour, SAT predicts trial gained by using large incentives (e.g., free samples) is less likely to result in full-revenue purchase than trial gained with small or no incentives (e.g., coupons). However, this prediction does not consider that large trial-incentives usually generate higher levels of overall trial than small incentives. This being the case, it is possible that large trial-incentives will also generate higher levels of short term purchase than small trial-incentives, despite the fact that a relatively high proportion of new trialists may not subsequently purchase the promoted brand.

The Behaviour Modification Perspective (BMP) on marketing provides a less speculative explanation for the effects on purchase behaviour of product sampling. The central tenet of the BMP is that overt behaviour can be modified by manipulating external stimuli, without having to speculate on the psychological processes assumed to occur within the individual (Nord and Peter, 1980).

In operant conditioning, the most relevant theory from the BMP on marketing, behaviour is said to be modified by manipulating stimuli to reinforce a desired behaviour after the behaviour has occurred (Nord and Peter, 1980). This suggests that enjoying a product sample would reinforce trial behaviour, as would advertisements after a sample-drop that show product usage situations. Once trial behaviour is reinforced, consumers are more likely to seek additional reinforcement by engaging in purchase behaviour (Hawkins et al., 1989). Each subsequent purchase of the brand may further reinforce desired behaviour provided "the direct consequences of trial with the brand are positively reinforcing" (Foxhall, 1983, p. 54).

A specific principle of operant conditioning that attempts to explain the interactive effects on purchase of product sampling and couponing is behavioural shaping. Behaviour is said to be shaped when successive approximations to a desired behaviour are positively reinforced (Nord & Peter, 1980). This theory was applied to product sampling and couponing by Rothschild and Gaidis (1981), who illustrate behavioural shaping with the example of a manufacturer delivering samples with

coupons that offer a large discount on the first purchase, and then including in- or on-pack coupons with smaller discounts for subsequent purchases. Eventually, consumers are expected to purchase the sampled product at the full retail price without any consumer deals, which would establish the actual product as the primary reinforcer, rather than the deals. The implication of this model is that product samples, when combined with coupons, encourage behaviours that are closer to the desired end behaviour of full-revenue purchase than either samples and coupons distributed separately. In other words, sample-coupon combinations should be more effective as a means of generating short term purchases than either of the two techniques delivered alone.

Rothschild and Gaidis' (1981) interpretation of behavioural shaping has not been widely accepted. Peter and Nord (1982) argue shaping actually deals with a sequence of different responses, not the recurrence or maintenance of the same response. They believe that changing the net price of a product with purchase incentives is only changing the contingencies, not the terminal behaviour of purchase. These researchers suggest mail-drop product sampling does not reinforce a consumer response that is part of the normal purchasing chain; that is, looking in the mailbox is the act that will be reinforced. The implication of this interpretation is that mail-drop sampling would not increase purchase behaviour, but would increase mail-box checking behaviour!

To shape consumer behaviour, Peter and Nord (1982) argue the sampling exercise should require consumers to visit an in-store display, for example. However, it can be counter-argued that the act of trying a product sample can reinforce previous advertising or other exposure to a brand, which suggests sampling needs to be coordinated with other promotional activities for maximum effect. Similarly, if samples are accompanied by coupons, one could argue their redemption is contingent on a shopping trip, and since this is considered to be shaping desired behaviour, this theory suggests samples will be more effective in combination with coupons.

Measuring the Effects of Sampling and Incentives

The effectiveness of sales promotion techniques in generating short term purchases is often measured by examining the proportion of people who try the promoted brand (either by using a sample or making a discounted purchase with a coupon) and then proceed to purchase the product at the full retail price (Meyer, 1982; Schultz & Robinson, 1982). However, this measurement of purchase, referred to as the conversion rate, is misleading because it understates purchase rates for techniques that produce high rates of trial (e.g., sampling), and overstates purchase rates for techniques that generate low rates of trial (e.g., couponing). This point is well illustrated in the following scenario of separate mail-drops of samples and coupons on 100 households (Schultz and Robinson, 1982).

Table 1
SAMPLING AND COUPONING SCENARIO

	Sample	Mail Coupon
Total Households	100	100
Trial	80	20
Purchase	20	7
Conversion rate of trialists	25%	35%

In this scenario, 80 households tried the sample, and 25% of these converted to the product. This compares with a low 20% trial rate for couponing, but a relatively high 35% conversion rate. However, this conversion rate overlooks that the purchase rate produced by the samples was almost three times that produced by the coupons. For this reason, it would seem desirable to calculate the true purchase rate of a promotion by examining the overall proportion of new users that buy the promoted product, as this would be of greatest interest to the marketers of promoted brands.

The following studies investigating the effect of sampling on short term purchase behaviour have had varied results, but this is partly due to the different measurement bases used. In many cases, reports do not explicitly state whether the purchase rates are based only on non-users

who tried the sample (the conversion rate), or on all non-users regardless of whether they tried the sample or not (the true purchase rate).

Empirical Evidence on the Effect of Sampling

Several surveys monitoring the effectiveness of product sampling have investigated purchase intentions. For example, a survey of 15,000 London train commuters found 73% of new users stated they were likely to buy a new brand of instant tea after they sampled it (Massey, 1992). Furthermore, a New Zealand mall-intercept survey of 100 shoppers found 70% were likely or very likely to buy a new shampoo and conditioner after trying it (A. Finn, personal communication, 13 May 1988). However, these findings are of limited use because purchase intentions have been found to be poor predictors of actual purchases (Juster, 1966).

A survey of 300 American consumers by Costa (1983) found a conversion rate of almost 60% among households that received and tried samples. However, it was not clear whether this figure was based only on non-users of the sampled brands or on all respondents irrespective of whether the respondents were non-users. If it was the latter, this measure of conversion would include people who were already buying the brand, and would therefore overstate the level of short term purchase gained. Moreover, this finding is dubious because the author provided a sampling service.

A New Zealand study of 430 household grocery shoppers by McGuinness (1989) found 36% of the households that tried a sample of a new shampoo proceeded to 'convert' to the promoted brand by purchasing the brand at least once as a result of the sample; the conversion rate was 32% for a new toothpaste, and 20% for a new dish-washing liquid. These conversion rates were generally higher than the 20% rate estimated by Meyer (1982) and the 25% rate cited by Schultz and Robinson (1982). However, the possibility that different measures of conversion were used cannot be discounted because the latter authors provide insufficient information on whether one or more purchases constituted conversion.

Empirical Evidence on the Effect of Incentives

Coupons and cash-backs are generally considered to have a smaller effect on purchase behaviour than sampling, especially among non-users (Belch and Belch, 1990). Coupon redemption rates are often negligible because of various "response costs" associated with redeeming coupons, such as cutting, saving, remembering to take them to the store, locating the promoted brand, and eventually presenting them (Haugh, 1977).

Ward and Davis (1978) developed an econometric model to estimate the effect on coupon redemption of different distribution media, coupon face values, sizes of coupon drop, and time periods since the drops. Their model was found to accurately forecast coupon redemption for generic orange juice concentrate ($R^2 = .82$). The model showed coupon redemption rates were highest for the direct mail distribution method, higher coupon values, smaller coupon drops (that were presumably better targeted), and for up to two months following the drops, after which redemption rates tapered off.

The work of Ward and Davis (1978) was extended by Reibstein and Traver (1982), who developed a multiple regression model that predicted coupon redemption rates very accurately at the brand level ($R^2 = .92$). The model showed the highest coupon redemption rates were for the on-package distribution method followed by direct mail, higher coupon face values, promoted products with larger market shares, smaller coupon drops, and larger discounts offered by the coupons. Unfortunately, this model was only tested on one brand, and other variables, such as the differences between specific brands of media and coupon design, were not considered by the model.

The finding by Reibstein and Traver (1982) that direct mail coupons have relatively high redemption rates is consistent with most other reports that have cited rates between 10 and 12 percent (Rossiter & Percy, 1987; Schultz et al, 1984; Ward & Davis, 1978). This level of redemption has been generally found to be considerably higher than for coupons delivered through other print media, such as newspapers and magazines (ibid).

Empirical Evidence on the Effect of Sample-Incentive Combinations

Most of the literature reviewed gives token support to the use of purchase incentives as adjuncts to samples because of their supposedly positive influence on purchase behaviour (Belch & Belch, 1990). However, this issue has been the subject of little published research and is beset with some controversy.

The assumption underlying the use of both techniques together is that the combination of samples and coupons may cause an interaction effect that is greater than either promotion conducted separately. This proposition is supported by Rothschild and Gaidis (1987), who report the results of an American study that found samples that included coupons for the initial purchase had a 20% higher purchase rate than samples without coupons. However, no research methodology was reported so the validity of this finding cannot be ascertained.

The effect of samples and purchase incentives on purchase behaviour has been experimentally examined by Scott (1976). A sample of 430 participants was randomly assigned to five treatment groups, and asked to accept a two-week trial subscription to a new Chicago newspaper either at the regular price, half price, for free, or for free with a gift (50c coupon from a popular fast-food restaurant); a control group was not given any trial offer. The percentage of subjects in each treatment group who, two weeks later, agreed to subscribe to the newspaper on a regular basis, served as the dependent variable.

Scott found that increasing the incentive tended to enhance the likelihood of accepting the two-week trial subscription (Dodson et al, 1978). However, only the 50% discount treatment was significantly more effective than the control group in securing regular subscriptions, and the free trial treatment was the least effective. The finding that the free trial plus gift treatment was significantly more effective than the free trial treatment suggests samples may be more effective in combination with coupons.

Self Attribution Theory (SAT) was used by Scott (1976) to explain her findings. The 50% discount trial offer was considered the most effective because this was just enough to produce compliance with the trial request but not sufficient to result in the discounting of internal motivations. In other words, participants given large incentives for trial may have attributed their trial behaviour to the incentives, rather than to a positive disposition towards the product. However, SAT could not account for the finding that the free trial plus gift treatment was almost as effective as the 50% discount treatment. Although Scott suggested the popularity of the gift may have been a confounding factor, the predictions made by SAT about sample and coupon combinations are inconclusive. Moreover, the treatments used in this research, and the method used to measure purchase behaviour, cannot be readily applied to consumer packaged goods.

Scott (1976) also examined the conversion rate of subjects who actually accepted the trial offers. However, as discussed previously, the conversion rate of trialists who become purchasers misrepresents the true purchase rate. In this case, the conversion rate could also be interpreted as being tautologically true; subjects who were initially willing to make some monetary commitment to trial the newspaper would probably be more likely to subscribe than subjects who were not willing to pay for trial in the first place.

Other studies do not support the use of coupons in combination with product sampling. Haugh (1979a) cites several studies that suggest including coupons with samples does not generate appreciably more purchases or make consumers enter the market any sooner. Although no details of the studies are provided, Haugh maintains coupons only serve to delay consumers from facing up to the true retail price of promoted products for another purchasing cycle. Haugh suggests media delivered coupons should be avoided until the second or third purchasing cycle, in order to establish the product and price at the retail level, and encourage would-be laggards, who initially resist new products, to purchase the promoted product.

In conclusion, the question of whether or not to include purchase incentives with product samples remains largely unanswered. As Haugh (1979b) notes, "whether to include a coupon with a sample is one of those questions that is likely to be debated in promotion circles for some time to come".

2.4 Switching Behaviour

Introduction

When non-users purchase a brand, this indicates they have either switched from buying other brands, switched from buying alternative product forms, or were not buying within the product category before. Since product sampling and purchase incentives are believed to affect short term purchase in different ways, their specific effects on switching behaviour are also believed to differ.

Product sampling is considered to be more effective than purchase incentives in bringing about switching behaviour in markets characterised by high brand loyalty (Ailoni-Charas, 1984). This is plausible because loyal consumers of other brands are more likely to resist using coupons than resist using samples, as coupon redemption requires greater effort and commitment than sample usage.

Although some evidence exists on the switching effects of couponing, little published research has investigated the extent to which sampling influences switching, and no literature has examined sample-coupon combinations in this context. The question therefore remains as to how product sampling and purchase incentives differ with respect to their effects on switching behaviour.

Theory

The effects of sampling and of incentives on switching behaviour can be explained with reference to the Theory of Perceived Risk (TPR), which has been attributed to Bauer (1960). According to TPR, consumers who try a sample of a new product have greatly reduced the conceptual risk associated with switching to it because they have already tested the

performance of the brand (Berneman, 1990b). Coupons are less effective at encouraging switching behaviour because consumers may not know whether the promoted brand will perform better than their current brand, and the coupon discount may not sufficiently compensate for the risk involved with switching. However, if samples and coupons are combined, the risk of switching from a familiar brand is reduced even further than a sample or coupon alone; consumers can not only compare the performance of the promoted brand with their current brand, but are also financially encouraged to switch to the promoted brand rather than pay relatively more for their current brand (Massey, 1992). TPR provides further support for the hypothesis that samples plus coupons, samples only, and coupons only, will have a hierarchical effect on switching behaviour.

Empirical Evidence on the Effect of Sampling

Only one published study was found that provides empirical evidence for the effect of sampling on switching behaviour. Lawson et al (1990) examined the effect of instore sampling on the sales of six new food products. Sales of the promoted products increased substantially over the week of the promotions, and sales of competing products fell typically by about ten percent. The net effect of the promotions was an overall increase in sales for the product categories being promoted. These findings suggest the incremental purchases due to in-store sampling can at least be partially attributed to brand switching.

Empirical Evidence on the Effect of Incentives

The proportion of promotion-induced sales increases that can be attributed to brand switching has been investigated for instore displays, promotional flyers, and price discounting. Gupta (1988) found 84% of the sales increases during the sales promotions of a ground coffee brand were due to brand switching, 14% to purchase time acceleration and less than 2% to stock-piling. These findings suggest that non-users of a brand are responsible for most of the incremental sales due to sales promotion. However, it is not known whether these findings apply to coupons or cash-backs, as these forms of purchase incentives were not examined.

Certain forms of couponing have been found to induce considerable brand switching. In a study of 459 members of a consumer panel, Dodson et al (1978) found media distributed coupons induced much more switching to the promoted brands of flour and margarine than cents-off deals and package coupons. Similarly, in a study of 4887 members of a scanner panel, Bawa and Shoemaker (1987) found that redemption of a direct mail coupon increased the market share of a brand in a fast-moving product category. The implication of these findings is that media-distributed and direct mail coupons are an effective means of promoting brand switching.

2.5 Long Term Purchase Behaviour

Introduction

The end-objective of most companies is to encourage consumers to continue purchasing their products over the long term (Rothschild & Gaidis, 1981). Taken as a whole, however, sales promotions are considered to have a limited effect on long term purchase behaviour. They are generally regarded as short term tactics to encourage initial product trial, or to persuade initial trialists to purchase or even repurchase. After this, long term purchase is presumed to be based on continued satisfaction with the brand (Shimp, 1989; Schultz et al, 1984). Sales promotions are therefore believed to be capable of enhancing the success of worthwhile products, but to be incapable of compensating for elements of the marketing mix that are inadequate such as poor advertising, distribution, or packaging (Schultz & Robinson, 1982). Additionally, the interplay of other variables is believed to weaken the effect of any one-off sales promotion over time.

As a consequence, product sampling and purchase incentives are considered to have a limited effect on long term purchase behaviour. Freedman (1986) concurs: "Product sampling is not the most efficient way to ensure repeat business as it tends to wear itself out over the longer term". However, the literature tends to suggest that sampling will have a longer term effect on purchase behaviour than purchase behaviour. Several claims have been made to the effect that "in the

long run, it is wise for marketers to remember sampling works" (Bowman, 1989), and some theory also supports the use of sampling to encourage long term purchase behaviour. The literature relating to this issue will now be reviewed.

Theory

Sampling is well suited to encouraging long term purchase behaviour, according to a model of Consumer Franchise Building (CFB) proposed by Prentice (1977). Using this model, sales promotions can be classified as having the potential to build relatively permanent preference for a brand by influencing brand attitude (CFB tools), or to build only temporary preference for a brand by operating on brand purchase intention (Non-CFB tools). Rothschild and Gaidis (1981) suggest one of the most important CFB tools is product sampling because it emphasises the product itself, rather than the product's price, other goods, contests, and so on. Rossiter and Percy (1987) develop the CFB model by suggesting it is not a dichotomy but a continuum because promotional techniques can be made as CFB-inducing as possible. This could be achieved by incorporating selling messages with coupons, for example (Kotler, 1990).

Frequent price discounting and coupons with no selling messages are regarded as Non-CFB tools because they do not attempt to build brand attitude. Non-CFB tools may train consumers to buy only on deal, and thus erode rather than build the consumer franchise. According to Kotler (1990) purchase incentives "do not tend to yield new long term buyers in mature markets because they attract mainly deal-prone consumers who switch among brands as deals become available" (p. 632). Similarly, Otsmaa and Greenberg (1989) suggest coupons and other price deals do not offer a relationship, but only one-time trial.

The implications of the CFB model are that sampling will be more effective than couponing at promoting long term purchase behaviour, but the effectiveness of coupons can be improved by including a selling message. A point to note, however, is that the CFB model was originally only based on an industry report, and is not supported by a specific theoretical paradigm (Rothschild and Gaidis, 1981).

Empirical Evidence on the Effect of Sampling

Lawson et al (1990) found the average sales of six products that were sampled in-store tended to be lower four weeks after the promotions than before the promotions, whereas the sales of competing brands tended to resume to their original levels. This suggests that consumers may have stock-piled the promoted brand during the promotion and had extended their inter-purchase times. Although it was expected that the sales levels after the promotions would eventually be higher over the long term than the pre-promotion levels, it was not known whether the sampling exercises in this study had positive or negative effects beyond the four week period used in this study.

Samples were not found to encourage long term purchase behaviour in a study by McGuinness (1989), who found households that received samples of three new products and households that did not, were about as likely as each other to be regularly buying the sampled brands about six months after the sample drops.

Empirical Evidence on the Effect of Incentives

Several studies have found that switching caused by couponing is short-lived (Bawa and Shoemaker, 1987; Dodson et al, 1978; Shoemaker and Shoaf, 1977). Specifically, the probability of repeat-purchase for a brand has been found to be lower when the brand has been purchased with coupons in the past (Shoemaker and Shoaf, 1977). Using data from several diary panels on thirty brands within five product categories, these researchers also found that repeat-purchase rates tended to be higher for food rather than non-food products, and for brands with larger market shares. This suggests that couponing will have a greater effect on long term purchase behaviour under these circumstances.

Similarly, certain forms of couponing have been found to undermine repeat purchasing more than others. Dodson et al (1978) found that media distributed coupons resulted in less loyalty when retracted than if no deal was offered, and undermined repeat purchasing to a greater extent than either cents-off deals or package coupons. These findings were consistent with predictions from Self Attribution Theory (SAT)

that, because the media distributed coupons had the highest face value, individuals may have attributed their redemption to the incentive, and were therefore less likely to continue buying the brand when the incentive was retracted. However, the prediction based on SAT did not consider that the media delivered coupons generated higher levels of purchase than the other incentives, despite having relatively lower repeat purchase rates when retracted.

An alternative explanation for the findings of Dodson et al (1978) has been suggested by Neslin and Shoemaker (1989). These researchers propose that promotions temporarily attract a disproportionate number of consumers with low purchase probabilities, and most of these "new buyers" do not continue to purchase the brand after the promotion. They conclude that lower aggregate repeat purchase rates after promotional purchases do not demonstrate that any individual consumers have reduced their purchase probabilities, but that only the average repeat purchasing rate is lower. This conclusion is consistent with studies that have found that coupons only influence short term switching behaviour and do not have a long term effect.

Few new buyers continued to purchase promoted brands after the couponing promotions in a study by Bawa and Shoemaker (1987), who concluded that consumers tend to revert to their pre-promotion purchasing behaviour after a promotion. These researchers suggested that marketers should ensure that coupon redemption purchases are profitable because the added contribution due to long term purchasing appears to be very small.

2.6 Summary

New Zealand householders are now being exposed to an increasing number of product samples and purchase incentives, both for new and existing products. Manufacturers obviously perceive these techniques to be yielding more benefits than bother, given that many leading brands have been sampled, some of them more than once. However, the pressing issue of whether sampling and couponing have a significant

effect on purchase behaviour, either separately or in combination, has yet to empirically established, particularly in New Zealand. Importantly, it is not well known how these effects differ between current users and non-users of existing products, between new products and existing products, and between product categories.

No literature was found on whether sample usage is greater among current users or non-users of existing brands. Little academic research has investigated the rates of new product trial generated by sampling and purchase incentives, and no studies have examined whether more coupons are remembered or redeemed when delivered in combination with samples than when delivered alone. Moreover, no studies have examined the reasons why some consumers who receive samples do not use them, and what becomes of these samples.

Issues that have been addressed, such as whether coupon redemption is mainly carried out by current users of a brand, have not been satisfactorily resolved in a New Zealand context. Much theory from several research paradigms has been advanced to model the effects of trial and purchase behaviour, but few studies have been conducted to validate the inferences made.

Controlled experimentation under natural conditions would directly address these issues. This approach would enable the behavioural effects of various treatments of samples and incentives to be measured empirically, and would enable comparisons with a control group. Knowledge of the treatments applied would enable more accurate inferences about trial and purchase behaviour than previous studies conducted on an post-hoc basis.

The objectives of this study and the hypothesised relationships derived from the literature will now be presented. A detailed description of how this research was conducted will then follow.

2.7 Objectives and Hypotheses

Objectives

The overall objective of this research was to test the effectiveness of mail-drop product sampling and purchase incentives as means of promoting trial and purchase behaviour among non-users. Specific objectives were:

1. To compare sample usage and coupon redemption rates of current users and non-users.
2. To compare the new trial rates of samples and coupons/cash-backs.
3. To compare the redemption rate of coupons and cash-backs when they are accompanied by samples with when they are delivered separately.
4. To determine the reasons why some non-users do not try samples or redeem coupons and cash-backs.
5. To test the effects of samples and coupons/cash-backs, separately and in combination, on short term purchase, brand switching, product-form switching, category switching, and long term purchase behaviour among non-users.

Hypotheses

Eight specific hypotheses were derived from the literature that relate to the research objectives. They are as follows:

- H₁** The sample usage and coupon redemption rates will be higher among current users than among non-users.
- H₂** The new trial rate will be higher among non-users given samples than among non-users given coupons or cash-backs.

- H₃** The redemption rate of coupons and cash-backs will be higher among non-users when they are delivered in combination with samples than when they are delivered separately.
- H₄** The short term purchase rate will be higher among non-users given samples accompanied by coupons/cash-backs than non-users given samples only, followed by non-users given coupons/cash-backs only, and non-users given neither.
- H₅** The brand switching rate will be higher among non-users given samples accompanied by coupons/cash-backs than non-users given samples only, followed by non-users given coupons/cash-backs only, and non-users given neither.
- H₆** The product-form switching rate will be higher among non-users given samples accompanied by coupons/cash-backs than non-users given samples only, followed by non-users given coupons/cash-backs only, and non-users given neither.
- H₇** The category switching rate will be higher among non-users given samples accompanied by coupons/cash-backs than non-users given samples only, followed by non-users given coupons/cash-backs only, and non-users given neither.
- H₈** The long term purchase rate will be the same among non-users given samples accompanied by coupons/cash-backs, non-users given samples only, non-users given coupons/cash-backs only, and non-users given neither.

CHAPTER THREE: METHOD

3.1 Introduction

Three experiments involving three products were conducted to test the research hypotheses. Each experiment examined the effects of four treatments on the trial and purchase rates of a particular brand among 800 randomly selected households, with the treatments balanced across the experiments to offset interaction effects between the experiments. Two telephone interview waves were conducted to collect the data.

3.2 Products

Several considerations guided the selection of the products to be used in this study. The most important factor was the products had to be from categories that were normally sampled to enhance the external validity of the findings. Many product categories that have been sampled using the mail-drop method were considered, such as toothpaste, shampoo, hair conditioner, body lotion, cosmetics, perfume, dishwashing liquid, laundry detergent, soap, multi-purpose cleaner, fabric softener, newspapers, confectionery, coffee, herbal tea, and dried soup.

Four further considerations reduced the number of alternatives. It was considered the product had to belong to a category that:

- was frequently purchased by the population so purchase behaviour could be readily measured.
- was purchased by a wide cross-section of the population so most respondents would be familiar with it.

- was not characterised by frequent brand switching so the effects of sales promotion could be reliably attributed.
- contained few brands so information on competing brands would be manageable.

The final selection was largely governed by manufacturer co-operation. Of about a dozen companies approached, three agreed to provide samples and coupons. The three products obtained were from three distinct product categories: laundry detergent, coffee, and toothpaste.

The brand used in the laundry detergent experiment was Dynamo. Dynamo has about 50% share of the liquid forms in the laundry detergent market. However, liquid forms constitute only 15% of the total laundry detergent market that is dominated by powder forms. This has led to general concern in the industry over the lack of growth in the liquid market. Dynamo was launched by Colgate Palmolive (NZ) in 1980 as the first liquid brand in New Zealand, and it has remained the only liquid brand that is not available in powder form. Colgate Palmolive has since launched the Cold Power and Fab2 brands that are available in both liquid and powder forms. About half of the New Zealand population had tried Dynamo since its introduction, although trialists in the early 1980s may have forgotten it, and may not have tried the new formula introduced in 1989. Laundry detergent is a household product category that is frequently purchased by a wide cross-section of the population.

The brand used in the coffee experiment was International Roast. International Roast has about 8% share of the instant coffee market, which constitutes 85% of the total coffee market that also includes real coffee beans. International Roast was launched by Nestle (NZ) in 1981, and has been promoted extensively as their low-price brand. Nestle (NZ) has several brands of instant coffee in the market, including

variants of the leading Nescafe brand. Although a small proportion of households do not consume instant coffee, it is nonetheless purchased by a wide cross-section of the population.

The brand used in the toothpaste experiment was a children's variant of Macleans. Although many households had tried other variants of the Macleans brand, this particular variant was new. Macleans Bubblemint for Kids was launched by Reckitt and Colman (NZ) shortly before the toothpaste experiment commenced, and was aimed at families with children aged 6-12 years. The children's toothpaste market is relatively new but expanding rapidly, and is therefore a frequent purchase by a growing number of households with children.

3.3 Sample

An equal interval sample of 800 households from four census area units in Palmerston North city was drawn from the Manawatu telephone directory. Addresses that did not fall within the four census area units, or that were deemed non-residential, were excluded from the sample, and the next applicable address was selected from the same column in the directory. This procedure ensured the number of households selected from each census area was approximately proportional to the relative size of the area.

The four census area units selected for this research constituted most of the city south of Botanical Road, namely, Highbury, Westbrook, Awapuni, and Riverdale. These areas collectively contain a wide cross-section of the population, and are relatively homogeneous (Department of Statistics, 1986). Moreover, because these areas of the city contain little student flatting, this sampling frame largely avoided the student bias that Palmerston North is considered to have.

This study was geographically confined in order to reduce the cost of distributing the treatments. In any case, there was no need to obtain an exactly representative sample of Palmerston North city because the objective of this study was to compare the effects of different experimental treatments among respondents who shared similar characteristics. Furthermore, mail-drop sampling exercises are often conducted in particular areas to streamline distribution and selectively target the most likely prospects of a brand.

3.4 Treatments

Four treatments of product samples and coupons were allocated in each experiment, as follows:

- T1. Sample and a coupon
- T2. Sample only
- T3. Coupon only
- T4. Neither (control group)

The specific treatments allocated in each experiment are detailed in Table 2. The detergent samples were 200ml versions of Dynamo available at retail. The small three-panel promotional brochure incorporated dosage instructions for the sample, and the 50 cent tear-off coupon had no expiry date (see Appendix 1).

The coffee samples were contained in a pair of 1.4 gram foil sachets. The letter, from the Brand Manager, emphasised the samples and/or coupons, with appropriately modified wording for each treatment. The 30 cent coupon was separate, and had no expiry date. These items were placed in envelopes with the letter head and first-line salutation 'Dear Coffee Lover' appearing in the plastic window (see Appendix 2).

The toothpaste samples were in the same 90 gram tube-in-box packaging available at retail. The \$1 cash-back offer was on the reverse side of the promotional flyer, and had an expiry date coinciding with the end of the study (see Appendix 3).

Table 2
TREATMENTS APPLIED IN EACH EXPERIMENT

Treatment	Detergent	Coffee	Toothpaste
T1 (Sample and incentive)	200ml bottle; Promotional brochure with 50c coupon	Two 1.4g sachets; Letter; 30c coupon	90g tube; Promotional flyer with \$1 cash-back
T2 (Sample only)	200ml bottle; Promotional brochure with coupon removed	Two 1.4g sachets; Letter	90g tube; Promotional flyer without cash-back
T3 (Incentive only)	Promotional brochure with 50c coupon	Letter; 30c coupon	Promotional flyer with \$1 cash-back
T4 (Control)	Nothing	Nothing	Nothing

For each experiment, the coupons and cash-backs were stamped with a unique number, which was subsequently recorded beside the address that received it. The redeemed detergent coupons were collected by the manufacturer, and the redeemed coffee coupons by a coupon clearing house; provision was made to set aside the coupons designated for this research as it was considered useful to compare actual coupon redemption with self-reported redemption. For the toothpaste experiment, respondents sent the cash-back offers to an anonymous freepost number, and a \$1 coin was returned to them attached to a promotional card (see Appendix 3).

There were several other variables that would have affected the sales of the promoted products over the period of this study. The design of the Dynamo bottle was improved and a flashing emphasising economy was incorporated on the label. However, a report published by the Consumer magazine in June 1991 rated Dynamo relatively poorly in terms of soil removing performance ("Laundry Detergents," 1991). Intensive bursts of television advertising were used to launch Macleans Bubblemint, and a competition was run for International Roast coffee. However, since these variables would have presumably had the same effect across all treatment groups, they should not have effected the results of the experiments.

3.5 Procedure

This research involved three experiments conducted in two phases. The timing, activities, and sample sizes of each phase are summarised in Table 3. Breakdowns of these response rates are provided Appendix 7.

Table 3
SCHEDULE OF ACTIVITIES
AND PARTICIPATING HOUSEHOLDS

Phase	Date	Activity	Households	
			n	%
1	3 June	Detergent treatments distributed (T1-T4 x 200)	800	100
	1-7 July	First interview wave	609	76
		- Correct addresses	595	74
		- Agreed to be re-interviewed	577	72
2	14 Sept	Coffee treatments distributed (T1-T4 x 144)	577	100
		Toothpaste treatments distributed (T1-T4 x 60)	240	42
	11-17 Nov	Second interview wave	493	85
		- Correct addresses	487	84

Phase one

Within each census area, the 800 selected households were sorted by street names alphabetically and house numbers in ascending order. The households were then assigned alternately to one of the four experimental treatment groups (T1-T4). This procedure minimised differences between households exposed to different treatments, on the geo-demographic assumption that households in the same street share similar characteristics.

The detergent treatments were distributed to subjects on Queen's Birthday weekend, 3 June 1991, as this holiday was expected to aid respondent recall during the follow-up interviews. There were nine cases where the correct letter-box could not be located, and two cases where threatening dogs prevented delivery; in each case, randomly selected replacement addresses were used. A copy of the distributor notes is contained in Appendix 4.

The first wave of telephone interviews was conducted four to five weeks after the detergent mail-drop to allow households sufficient time to use, evaluate, and purchase the detergent. The main household shoppers were identified and asked to participate in the survey. They were asked whether their household had purchased Dynamo over the last year and the last four weeks, and whether they had bought it for the first time over the last four weeks. The same questions were also asked about competitive brands in order to disguise the purpose of the research, and to ask them for the brand(s) they normally bought. Respondents were also asked about their purchases of toothpaste and coffee to obtain historical purchasing data for the second phase of the research. Demographic information about the respondents and households was also collected, and respondents were asked whether they would agree to being re-interviewed later in the year. A copy of the first wave questionnaire is provided in Appendix 6.

Of the 609 households successfully interviewed, 14 had a different address to the one listed in the telephone directory so were dropped from the detergent analysis, since they were not part of the control group and had not received detergent samples and/or coupons¹. However, these households were included in the subsequent toothpaste and coffee experiments using corrected addresses. A further 53 households refused to provide their addresses, but since it was considered highly probable their addresses would be the same as in the telephone directory, they were retained in the analysis. Thirty two respondents did not wish to be interviewed again.

Phase two

Of the 577 households that agreed to be interviewed again, 240 with children under 15 years of age were selected as a sub-sample for the childrens' toothpaste experiment. The size of each treatment group in the toothpaste experiment was therefore 60 households. To counter any possible interaction effects of receiving promotions for laundry detergent and childrens' toothpaste, each treatment group from the detergent experiment was equally divided among the four toothpaste treatments.

All 577 households were allocated one of the four treatments of instant coffee, as this product was consumed by a wide cross-section of the population. The size of each treatment group for the coffee experiment was therefore close to 150 households. Possible interaction effects were again countered by allocating the four coffee treatments equally across the four toothpaste treatment groups, and across the four

¹ Most of these households had moved addresses before the treatments were distributed, but had retained their original telephone numbers; the remaining households had incorrectly recorded addresses in the telephone directory.

detergent treatment groups that were excluded from the toothpaste experiment (those without children).

The coffee and toothpaste treatments were distributed together a little over a month after the first interview wave, which was when the samples and coupons/cash-backs for these products were obtained. The second wave of telephone interviews was conducted eight to nine weeks after the mail-drops to allow respondents sufficient time to use, evaluate, and purchase the promoted brands of toothpaste and coffee. The same respondent who was interviewed in the first wave was interviewed in the second wave wherever possible, otherwise another main household shopper was identified and asked to participate.

Households were asked whether they had bought Dynamo since the last interview 18-20 weeks previously, and again whether this was for the first time. Similar questions were asked about toothpaste and coffee to follow up on the mail-drops two months prior to the interview, and information on the brand(s) of detergent, toothpaste, and coffee normally bought was obtained to assess the effects of the treatments over the longer term. Specific questions about the three experiments were also asked at the end of the interview to check whether respondents had received the correct treatments, to obtain sample trial and coupon redemption figures, and to identify the reasons why some households did not try the samples and/or use the purchase incentives. A copy of the interviewer notes is contained in Appendix 5, and a copy of the second wave questionnaire is provided in Appendix 6.

Of the 493 households that were successfully interviewed in the second interview wave, six had shifted addresses so were dropped from the toothpaste analysis since they were not part of the control group and were not given toothpaste treatments; five were dropped from the coffee analysis as one was in the coffee control group. The eventual

response rates were higher for the coffee and toothpaste experiments than the detergent experiment because the phase one interviews had identified 'willing' respondents for these experiments. The response rates for each experiment, broken down by the treatments applied, are shown in Table 3.

Table 3
TREATMENT RESPONSE RATES FOR EACH EXPERIMENT

Treatment	Detergent n = 800 (200 x 4)		Coffee n = 577 (144 x 4)		Toothpaste n = 240 (60 x 4)	
	n	%	n	%	n	%
1. Sample and incentive	125	63	117	81	51	85
2. Sample only	122	61	125	87	48	80
3. Incentive only	115	58	121	84	46	77
4. Control group	120	60	123	85	52	87
Total	482	60	486	84	197	82

3.6 Operational Definitions

A review of the marketing literature found trial and purchase behaviour have been measured in a variety of ways. The variables examined in this study were operationally defined as follows.

Non-users: Households that had never tried the promoted brand before, or had not bought the promoted brand for at least 12 months.

New trial rate: The proportion of non-users that tried samples or redeemed purchase incentives.

Short term purchase rate: The proportion of non-users that bought the promoted product at least once post-drop.

Brand switching rate: The proportion of non-users that had only bought competing brands of the same product form pre-drop, and had then bought the promoted brand post-drop.

Product-form switching rate: The proportion of non-users that had only bought alternative product forms pre-drop, and had then bought the same product form as the promoted product post-drop.

Category switching rate: The proportion of non-users that were not buying in the product category pre-drop, and had then bought in the product category post-drop.

Long term purchase rate: The proportion of non-users who were normally buying competing brands pre-drop, and had purchased the promoted brand enough times post-drop to consider they normally bought the promoted brand.

CHAPTER FOUR: RESULTS

4.1 Introduction

In this chapter, the eight hypothesised relationships of this study are tested, and several related issues are also investigated. After current users are compared with non-users, most of the analyses investigate the effects of the treatments among non-users only.

4.2 Current Users Vs. Non-Users

Hypothesis 1

H_1 predicts that the sample usage and coupon redemption rates will be higher among current users than among non-users. To test H_1 , the total proportions of samples used and coupons redeemed were broken down by current users and non-users, and Chi-square tests were used examine differences between them. Only the detergent and coffee data were used to test this hypothesis as all respondents were non-users of the new toothpaste variant.

Table 5 shows the rates of sample usage were significantly higher among current users at the .01 level for both detergent ($X^2 = 7.8430$, 1 d.f., $p = .0051$) and coffee ($X^2 = 12.6133$, 1 d.f., $p = .0004$). Coupon redemption rates were significantly higher among current users at the .01 level for detergent ($X^2 = 7.0884$, 1 d.f., $p = .0078$), but not for coffee ($X^2 = 1.6326$, 1 d.f., $p = .2013$). Although these results show sample usage and coupon redemption rates were clearly higher among current users than among non-users, the null hypothesis cannot be unequivocally rejected for coupons since the possibility that these effects were due to chance cannot be discounted.

Table 5
EFFECT ON PRODUCT TRIAL
OF PRODUCT SAMPLING AND PURCHASE INCENTIVES

Experiment	Samples			Incentives		
	Delivered n	Tried n	%	Delivered n	Redeemed n	%
Detergent						
Total	247	139	56	240	11	5
Non-users	178	90	51	181	4	2
Current users	69	49	71 ^a	59	7	12 ^a
Coffee						
Total	242	114	54	238	11	5
Non-users	195	80	41	171	7	4
Current users	47	34	72 ^a	41	4	10
Toothpaste						
Total	99	81	82	97	5	5
Non-users	99	81	82	97	5	5
Current users	-	-	-	-	-	-

^a Significantly greater than non-users, $p < .01$

Note: The incentives used in the detergent and coffee experiments were coupons. Cash-backs were used in the toothpaste experiment.

Table 5 shows the self-reported redemption rate of the detergent and coffee coupons were both five percent, but the proportion of coupons found to be actually redeemed was considerably less than this. The main reason for this mismatch was that problems were encountered in obtaining all the redeemed coupons used in this research from the manufacturer and clearing house. Another possible reason is inaccurate reporting, as respondents may have believed coupon redemption was the response desired by the interviewer. For the toothpaste cash-back offers, self-reported redemption matched actual redemption.

4.3 New Product Trial

Hypothesis 2

H₂ predicts that the new trial rate will be higher among non-users given samples than among non-users given coupons or cash-backs. Table 5 shows that sample usage rates among non-users ranged from 41 to 82 percent, whereas coupon and cash-back redemption rates among non-users ranged between only two and five percent. In other words, samples generated 10 to 25 times more new trial than the purchase incentives used in this study, which is sufficient evidence to reject the null hypothesis of equal new trial rates for product sampling and coupons/cash-backs.

4.4 Coupon and Cash-back Redemption

Hypothesis 3

H₃ predicts that the redemption rate of coupons and cash-backs will be higher among non-users when they are delivered in combination with samples than when they are delivered separately. H₃ was tested by comparing the redemption rates from the combination treatment (Treatment 1) with the incentive-only treatment (Treatment 3). Table 6 shows considerably more coupons and cash-backs tended to be redeemed when delivered in combination with samples than when delivered separately. This finding is most pronounced in the toothpaste experiment, where all five of the redeemed cash-backs were delivered with samples (T1).

Table 6
EFFECT OF TREATMENTS
ON NEW PRODUCT TRIAL AMONG NON-USERS

Treatments & experiments	Delivered		Remembered ^a		Tried	
	n		n	%	n	%
INCENTIVES						
T1 (Sample and incentive ^b)						
Detergent	87		23	26	3	3
Coffee	93		38	41	5	5
Toothpaste	46		26	56	5	11
T3 (Incentive only)						
Detergent	94		13	14	1	1
Coffee	104		18	17	2	2
Toothpaste	52		3	6	0	0
SAMPLES						
T1 (Sample and incentive)						
Detergent	87		64	74	47	54
Coffee	93		67	72	43	46
Toothpaste	51		46	90	43	84
T2 (Sample only)						
Detergent	91		63	69	43	47
Coffee	102		71	70	37	36
Toothpaste	48		39	81	38	79

^a Households were asked if they remembered receiving samples and incentives. Several households remembered receiving items they were not actually given, but these households were excluded from this analysis.

^b No new trial *per se* was gained by incentives in T1 as the accompanying samples in that treatment were tried first.

Although incentives delivered in combination with samples had consistently higher redemption rates than when delivered separately, the null hypothesis of H_3 cannot be rejected. The possibility that these effects were due to chance cannot be discounted because of the relatively small number of coupons redeemed.

Related Findings

Table 6 also shows that consistently more coupons and cash-backs were remembered by households when delivered in combination with a sample (T1) than when delivered separately. For instance, over half of the toothpaste cash-backs were remembered when accompanied by samples (T1), whereas only 6% were remembered when delivered without a sample (T3). It can also be seen in Table 6 that samples were consistently remembered and used more, albeit marginally, when accompanied by coupons and cash-backs (T1), than when delivered alone (T2).

The issue was raised in previous chapter that short term purchase and new trial occur simultaneously when non-users redeem purchase incentives, and it was suggested that trial purchases are hoped to induce subsequent full-revenue purchases. However, only one non-user redeemed coupons in the coupon-only treatments for detergent and only two redeemed coupons in the coupon-only treatment for coffee. Although all three non-users subsequently repurchased the promoted brands at least once at full retail prices, this issue cannot be adequately investigated by the available data because of the small number of coupons redeemed in these treatments.

4.5 Non-Usage of Samples

Non-users who did not try samples were asked for reasons why they did not try them. The reasons are summarised in Table 7, in order of the overall frequency of responses.

Table 7
REASONS WHY NON-USERS
DID NOT TRY SAMPLES

	Detergent		Coffee		Toothpaste	
	n	%	n	%	n	%
Dislike product/brand	7	19	19	33	-	-
Saved for special purpose	5	14	9	16	1	25
Not enough effort made	6	16	9	16	3	50
No need to use yet	5	14	5	9	1	25
Loyal to another brand	6	16	3	5	-	-
Forgot to use	4	11	3	5	-	-
Kept in case run out	1	3	1	2	-	-
No reason given	3	8	9	16	-	-
Total	37	100	58	100	4	100

Table 7 shows a substantial proportion of non-users who did not try the samples did not like the general product form ("I've never actually been a liquid detergent user"; "We're not coffee drinkers") or the particular brand promoted ("I have used Dynamo before and found it to be ineffective"). This was especially so for coffee as many households preferred other beverages. Several non-trialists saved the samples to use for special purposes, such as travelling and camping (detergent), tramping and for picnics (coffee). Other households had not made enough effort to use the sample ("I never bothered with it"; "I haven't got around to it") or felt there was no need to use the sample by that stage ("It's in the midst of everything else awaiting its turn"; "Still have a full bottle of Greggs"). Some households were loyal to another brand ("I just carried on with the Drive"; "I'm happy with Nescafe Classic"),

or simply had forgotten to use it ("I don't think about [the Dynamo sample] when I'm washing"; "We keep forgetting about [the coffee samples]").

By contrast, current users of the detergent and coffee brands that did not try samples tended to save them for special purposes, or felt there was no need to use them by the time of the interview.

Non-users who could remember receiving samples but had not tried them were also asked what they did with them (Table 8). Most non-users still had the samples for use at a later date, and others had given them away, usually to people more likely to use them than themselves (e.g., "I gave it to my sister who uses Dynamo"). A very small proportion of non-trialists threw the samples away.

Table 8
WHAT NON-USERS DID WITH UNTRIED SAMPLES

	Detergent		Coffee		Toothpaste	
	n	%	n	%	n	%
Still have it	25	68	35	60	3	75
Gave it away	10	27	12	21	-	-
Threw it away	-	-	3	5	1	25
Don't know	2	5	8	14	-	-
Total	37	100	58	100	4	100

The findings shown in Table 8 suggest samples may obtain greater trial and wider distribution than is at first evident. If potential trial (still have the sample for future use) and pass-along trial (gave the sample away) are included in the self-reported trial rates reported in Table 5, the following increases in possible trial rates among non-users are obtained: from 51% to 67% for detergent, from 41% to 65% for coffee, and from 82% to 85% for toothpaste.

4.6 Non-Redemption of Coupons and Cash-backs

Non-users that could remember receiving coupons and cash-backs but did not redeem them were asked why they did not (Table 9).

Table 9
REASONS WHY NON-USERS
DID NOT REDEEM INCENTIVES

	Detergent		Coffee		Toothpaste	
	n	%	n	%	n	%
Loyal to another brand	9	28	10	20	1	4
Dislike incentives	1	3	10	20	7	29
Dislike product-form	6	19	11	22	-	-
Forgot to use	5	16	4	8	5	21
No need to buy yet	6	19	4	8	2	8
Dislike brand	1	3	3	6	4	17
Cost of postage	-	-	-	-	5	21
Other brands cheaper	1	3	2	4	-	-
Sample not used yet	2	6	-	-	-	-
No reason given	1	3	5	10	-	-
Total	32	100	49	100	24	100

Table 9 shows a large proportion of non-users who did not redeem the coupon or cash-back incentives were loyal to the brand they were currently using ("I'm quite happy with the powder I'm using"; "I normally stick to the same brand - that's just the way I am"). Several non-redeemers did not like using coupons ("I don't bother with coupons"; "50c is not important enough to worry about") or cash-backs ("Don't do that sort of thing"; "Too busy to bother with it"). Other households did not like the general product form of liquid detergents ("I'm not sold on liquid detergents"; "I just have a personal preference for powder detergents") or instant coffee ("Don't drink much coffee"). Some households tended to forget coupons ("I meant to use it but forgot to

bring it with me when shopping"), or felt they had no need to buy the promoted product at the time ("I had plenty of powders on hand"; "I only buy coffee once every two months"). Other households did not like the promoted brand ("I wasn't overkeen on the Dynamo sample"; "Coffee sample wasn't good enough to make me buy it").

Several non-redeemers in the toothpaste experiment stated they were not prepared to pay for the postage to redeem the cash-back offer ("Wasn't worth paying for a 45c stamp for \$1). These households did not realise it was a free-post return address and that no stamp was required. Economy reasons were also cited for non-redemption ("I couldn't afford it - there's cheaper stuff available"), and some households had not used the sample by the time of the interview (I haven't used the sample yet, so I'm not going to buy it until I have").

By comparison, current users of the promoted detergent and coffee brands who did not redeem coupons stated it was because they generally did not like using coupons, forgot to use them, or felt there was no need to purchase the promoted brand by the time of the interview.

Although not asked directly, most non-users who did not redeem the coupons or cash-backs stated they threw them out with no intention to use them ("All junk mail gets fired into the rubbish without reading it"). Some households stated they still had the coupon or cash-back ("Probably kept it with all the other coupons for possible use at some time"), and others had given it away ("Gave it to someone who uses that brand"), or had misplaced it ("They're inclined to get lost - I'm not much good at using them"). These results suggest that the potential coupon and cash-back redemption rates among non-users were probably not much more than the stated redemption rates of between two and five percent (Table 5).

4.7 Short Term Purchase Behaviour

Hypothesis 4

H_4 predicts that the short term purchase rate will be higher among non-users given samples accompanied by coupons/cash-backs than non-users given samples only, followed by non-users given coupons/cash-backs only, and non-users given neither, i.e., that the treatments will have a hierarchical effect on short term purchase behaviour among non-users ($T1 > T2 > T3 > T4$). This hypothesis was tested by analysing all households that had not bought the promoted products during the 12 months pre-drop to see whether they bought the promoted product at least once after the treatments were applied.

Table 10 shows the differences in the effects of the four treatments on short term¹ purchase behaviour among non-users were significant for detergent ($X^2 = 9.1305$, 3 d.f., $p = .0276$), and toothpaste ($X^2 = 6.1125$, 3 d.f., $p = .1023$). Although the results for coffee did not achieve significance ($X^2 = 2.2434$, 3 d.f., $p = .5324$), the observed treatment effects were in the expected direction.

In the detergent experiment, the sample plus coupon treatment produced a significantly² higher short term purchase rate among non-users than the coupon-only treatment ($X^2 = 4.9113$, 1 d.f., $p = .0267$) and the control treatment ($X^2 = 3.4121$, 1 d.f., $p = .0647$). The sample-only treatment produced a significantly higher short term purchase rate

¹ For the detergent experiment, Dynamo purchases were measured over 24 weeks after the detergent mail-drop; the measurement period for the toothpaste and coffee experiments was eight weeks.

² All 2 X 2 contingency table analyses have been corrected for continuity with the Yates correction factor.

than the coupon-only treatment ($X^2 = 3.7464$, 1 d.f., $p = .0529$). The coupon-only treatment was no better than the control treatment³.

The treatments in the coffee experiment produced the predicted hierarchy of effects on short term purchase behaviour (i.e., $T1 > T2 > T3 > T4$). However, the differences between the coffee treatments were not significant at the .10 level.

All experimental treatments in the toothpaste experiment (T1, T2, & T3) had a significantly greater effect on short term purchase rates than the control treatment. The difference was most pronounced for the sample-only treatment ($X^2 = 4.1803$, 1 d.f., $p = .0409$), followed by the cash-back-only treatment ($X^2 = 3.6275$, 1 d.f., $p = .0568$), and the sample plus cash-back treatment ($X^2 = 2.9602$, 1 d.f., $p = .0853$). Although these effects were not in the hierarchical direction predicted, the differences between the experimental treatments (T1 - T3) were not significant at the .10 level.

The null hypothesis that the treatments will not have a hierarchical effect on the short term purchase rate among non-users cannot be unequivocally rejected, even though the small non-hierarchical variations observed were probably due to chance. However, the results tend to suggest, at least for the detergent and coffee experiments, that samples had a greater effect on short term purchase behaviour among non-users than coupons.

³ The coupon-only treatment actually produced a marginally lower short term purchase rate than the control treatment, but this was probably due to chance.

Table 10
EFFECT OF TREATMENTS
ON SHORT TERM PURCHASE BEHAVIOUR

Experiment & Treatment	Pre-drop		Post-drop			
	Did not buy promoted brand n	n	Did not buy promoted brand		Bought promoted brand	
			n	%	n	%
DETERGENT						
T1. Sample and coupon	87	71	82	16	18 ^{a,b}	
T2. Sample only	90	75	83	15	17 ^c	
T3. Coupon only	93	87	94	6	7	
T4. Control group	98	90	92	8	8	
Total (n = 482)	368	323	88	45	12	
Overall $X^2 = 9.1305$, 3 d.f., $p = .0276$						
COFFEE						
T1. Sample and coupon	90	81	90	9	10	
T2. Sample only	100	91	91	9	9	
T3. Coupon only	103	97	94	6	6	
T4. Control group	95	90	95	5	5	
Total (n = 486)	388	359	93	29	8	
Overall $X^2 = 2.2434$, 3 d.f., $p = .5324$						
TOOTHPASTE						
T1. Sample and cash-back	50	39	78	11	22 ^b	
T2. Sample only	48	36	75	12	25 ^d	
T3. Cash-back only	46	35	76	11	24 ^b	
T4. Control group	51	47	92	4	8	
Total (n = 195)	195	157	80	38	20	
Overall $X^2 = 6.1125$, 3 d.f., $p = .1023$						

^a Significantly greater than T3, $p < .05$

^b Significantly greater than T4, $p < .10$

^c Significantly greater than T3, $p \leq .05$

^d Significantly greater than T4, $p < .05$

There were number of factors that may have influenced the results in the toothpaste experiment. For example, it was discovered some supermarkets in the region had not stocked the promoted brand by the time the treatments were distributed. Households were therefore asked whether they had attempted to purchase it but found it was not stocked by their store. Of the seven households that had unsuccessfully tried to purchase the promoted brand, four eventually bought it within the eight weeks before being interviewed; the remaining three households were treated as non-purchasers as they too could have purchased it.

A further confounding factor in the toothpaste experiment was the design of the cash-back offers. Households were required to fill in the bar-code of their first purchase and return it for a \$1 refund. The intention was for respondents to purchase the promoted brand to obtain the bar-code, but it is possible some respondents may have written the bar-code from the toothpaste sample as it was a regular tube available at retail. The five respondents who returned cash backs were therefore analysed to see whether they had purchased the product before being interviewed, and three of them had not. Although the cash-back redemption rate is therefore misleading in terms of purchase, the fact that few households took advantage of a potentially free \$1 serves to reinforce the poor response rate gained by incentives.

4.8 Switching Behaviour

Non-users who bought a promoted brand were classified into one of three groups, depending on whether they had switched from competing brands of the same product form, switched from alternative product forms, or switched from outside the product category. The following analyses of brand, product-form, and category switching identify specific changes within the preceding overall analyses of short term purchase behaviour among non-users.

Hypothesis 5

H₅ predicts that the treatments will have a hierarchical effect on brand switching (i.e., T1 > T2 > T3 > T4). To test H₅, households that only bought competing brands of the same product form (and category) during the year pre-drop were analysed to see whether they bought the promoted brand at least once post-drop. Table 11 shows the differences in the effects of the four treatments on brand switching were not significant for detergent ($X^2 = 3.2482$, 3 d.f., $p = .3549$), coffee ($X^2 = 0.8349$, 3 d.f., $p = .8411$), or toothpaste ($X^2 = 4.1158$, 3 d.f., $p = .2492$).

In the detergent experiment, 162 households had bought liquid laundry detergent during the year prior to the detergent mail-drop. As can be seen in the first column in Table 11, only 43 households had bought liquid brands other than Dynamo. Among these households, the detergent samples and coupons appeared to have a limited effect on brand switching. However, the small sample sizes in this analysis limit comparisons between the treatments.

Of the 486 households in the coffee experiment, 404 had bought one or more brands of instant coffee during the year prior to the coffee mail-drop. Among the 315 households that had bought brands other than International Roast, the coffee samples and coupons had a roughly hierarchical effect on brand switching (i.e., T1 > T2 > T3 & T4). However, despite the relatively large sample sizes in this analysis, the differences between the treatments were not significant at the .10 level.

In the toothpaste experiment, the promoted brand variant was considered part of the family brand of Macleans in order to measure brand switching. Therefore, households that had bought any toothpaste other than the Macleans range over the 12 months pre-drop were analysed to see whether they had bought Macleans post-drop.

Table 11
EFFECT OF TREATMENTS
ON BRAND SWITCHING

Experiment & Treatment	Pre-drop		Post-drop		
	Only bought competing brands n	Only bought competing brands		Bought promoted brand	
		n	n	%	n
DETERGENT					
T1. Sample and coupon	8	5	63	3	37
T2. Sample only	11	9	82	2	18
T3. Coupon only	12	11	92	1	8
T4. Control group	12	8	67	4	33
Total (n = 162)	43	33	77	10	23
Overall $X^2 = 3.2482$, 3 d.f., $p = .3549$					
COFFEE					
T1. Sample and coupon	70	63	90	7	10
T2. Sample only	85	77	91	8	9
T3. Coupon only	88	82	93	6	7
T4. Control group	72	67	93	5	7
Total (n = 404)	315	289	92	26	8
Overall $X^2 = 0.8349$, 3 d.f., $p = .8411$					
TOOTHPASTE					
T1. Sample and cash-back	22	19	86	3	14
T2. Sample only	22	19	86	3	14
T3. Cash-back only	22	17	77	5	23 ^a
T4. Control group	28	27	96	1	4
Total (n = 190)	94	82	87	12	13
Overall $X^2 = 4.1158$, 3 d.f., $p = .2492$					

^a Significantly greater than T4, $p \leq .10$

Contrary to expectations, the cash-back-only treatment produced a significantly higher rate of switching to the Macleans brand than the control treatment ($X^2 = 2.6592$, 1 d.f., $p = .1030$). However, this result was also based on relatively small sample sizes, and may have been due to chance.

Taken as a whole, these results provide insufficient evidence to reject the null hypothesis that the treatments will not have a hierarchical effect on brand switching. However, the possibility that these results were due to chance cannot be discounted.

Hypothesis 6

H_6 predicts that the treatments will have a hierarchical effect on switching between product forms (i.e., $T1 > T2 > T3 > T4$). Only the detergent data were analysed to test this hypothesis as the coffee and toothpaste experiments did not involve different product forms. To test H_6 , households that only bought powder detergent brands over the year pre-drop were analysed to see whether they bought at least one liquid detergent brand over the 24 weeks post-drop.

Table 12 shows the differences in the effects of the four detergent treatments on product-form switching were not significant at the .10 level ($X^2 = 5.0361$, 3 d.f., $p > .15$). However, the sample plus coupon treatment produced a significantly higher rate of product-form switching at the .10 level than the control group ($X^2 = 3.2482$, 1 d.f., $p = .0715$). Both the sample-only and coupon-only treatments produced a higher rate of product-form switching than the control treatment, but the differences were not significant at the .10 level.

Although the sample plus coupon treatment produced a greater effect than the control treatment, these results provide insufficient evidence to reject the null hypothesis that the treatments will not have a hierarchical effect on product-form switching. The possibility that the

observed effects for the sample-only and coupon-only treatments were due to chance cannot be rejected.

Table 12
EFFECT OF DETERGENT TREATMENTS
ON PRODUCT-FORM SWITCHING

Detergent treatment	Pre-drop	Post-drop			
	Only bought powder brands n	Only bought powder brands		Bought one or more liquid brands	
		n	%	n	%
T1. Sample and coupon	79	63	80	16	20 ^a
T2. Sample only	87	67	84	13	16
T3. Coupon only	80	71	89	9	11
T4. Control group	87	79	91	8	9
Total (n = 477)	326	280	86	46	14

Overall $X^2 = 5.0361$, 3 d.f., $p = .1692$

^a Significantly greater than T4, $p < .10$

Hypothesis 7

H_7 predicts that the treatments will have a hierarchical effect on influencing non-users to switch product categories (i.e., $T1 > T2 > T3 > T4$). In the detergent and toothpaste experiments, switching from outside the product categories accounted for a very small proportion of changes in purchase behaviour, as almost all households already bought detergent and toothpaste. The treatment effects on category switching were therefore tested with the coffee data only. To test H_7 , households that bought no coffee pre-drop were analysed to see whether they bought any coffee post-drop (Table 13).

Table 13
EFFECT OF COFFEE TREATMENTS
ON CATEGORY SWITCHING

Coffee treatment	Pre-drop	Post-drop			
	Did not buy coffee n	Did not buy coffee		Bought at least one coffee brand	
		n	%	n	%
T1. Sample and coupon	14	12	86	2	14
T2. Sample only	11	5	46	6	54
T3. Coupon only	11	5	46	6	54
T4. Control group	17	10	59	7	41
Total (n = 487)	53	32	60	21	40

Overall $X^2 = 5.8319$, 3 d.f., $p = .1206$

Table 13 shows the differences in the effects of the four coffee treatments on influencing non-users into the coffee market were not in the expected direction. However, this finding is based on a small number of households that switched into the coffee category, since the decision not to buy coffee would probably be firmly entrenched (e.g., "We don't drink coffee"). This would suggest that coffee samples and coupons would have little effect on whether or not people drink coffee. If this is the case, some other factor such as inaccurate reporting may be responsible for the observed effects, and suggests that H₇ cannot be adequately tested with this data.

4.9 Long Term Purchase Behaviour

Hypothesis 8

H₈ predicts that the treatments will not affect long term purchase behaviour among non-users (i.e., T1 = T2 = T3 = T4). This hypothesis was tested with the detergent data only as the time-frame of the other

experiments (eight weeks) was too short to measure longer term changes. To test H_8 , households that normally bought only competing laundry detergents about the time of the detergent mail-drop⁴ were analysed to see if they normally bought Dynamo 24 weeks post-drop.

Table 14 shows that the differences in the effects of the four detergent treatments on the long term purchase behaviour of non-users were not significant at the .10 level ($X^2 = 1.3099$, 3 d.f., $p = .7268$). The few non-users that proceeded to regularly buy Dynamo post-drop were approximately evenly distributed across the treatments. These results provide some evidence to reject the null hypothesis that the treatments will have a hierarchical effect on the long term purchase behaviour among non-users, although these results may have been due to chance.

Table 14
EFFECT OF DETERGENT TREATMENTS
ON LONG TERM PURCHASE BEHAVIOUR

Detergent treatment	Pre-drop	Post-drop			
	Normally bought only competing brands n	Normally bought only competing brands n	%	Normally bought Dynamo n	%
T1. Sample and coupon	111	105	95	6	5
T2. Sample only	108	99	92	9	8
T3. Coupon only	104	99	95	5	5
T4. Control group	109	102	94	7	6
Total (n = 482)	432	280	86	27	6

Overall $X^2 = 1.3099$, 3 d.f., $p = .7268$

⁴ The detergent brands normally bought were measured four weeks after the detergent mail-drop. It could be argued the detergent treatments may have affected Dynamo purchases by this time, but it was considered too soon after the mail drop for the detergent treatments to initiate a normal purchasing pattern.

4.10 Summary

Non-users of the promoted brands were found to use fewer samples and redeem fewer coupons or cash-backs than current users. However, the new trial rate was higher among non-users given samples than among non-users given coupons or cash-backs, and it was found that sample usage and coupon/cash-back redemption rates were higher among non-users when the samples and incentives were delivered together than when they were delivered alone. Virtually no unused samples were discarded whereas most unredeemed coupons and cash-backs were, indicating that the potential new trial rate for samples was also higher than for the incentives.

Product samples and coupons/cash-backs were found to increase the short term purchase rates of the promoted products among non-users in each experiment, but at various levels of significance, and not necessarily in the hypothesised directions. The sample-incentive combinations generally performed better than samples alone, but the differences were marginal. The effects of the coupon-only treatments were barely different from the control groups, except for the toothpaste experiment where all the treatments performed significantly better than the control group.

There was little evidence of switching behaviour at the brand, product-form and category levels, although the possibility that these findings were observed by chance cannot be discounted. The differences between the treatments on long term purchase behaviour were also found to be minimal, but again, this finding may have been observed by chance.

The theoretical and managerial implications of these findings will be discussed in the following chapter.

CHAPTER FIVE: DISCUSSION

5.1 Introduction

The purpose of this study was to examine the effectiveness of product sampling and purchase incentives as means of promoting trial and purchase behaviour among non-users. To achieve this, a number of hypotheses regarding these issues were tested, and some related issues were investigated. While predictions based on the literature were largely supported by the data, some unforeseen results were found.

The following theoretical and managerial implications arise from differences between the trial and purchase behaviour of current users and non-users, between the treatments tested, and between the products examined in this study.

5.2 Differences Between User Groups

Current users of the promoted brands of detergent and coffee used more samples and purchase incentives than non-users. However, samples and coupons could not affect the new trial rate among current users, and were also unlikely to affect the short-term purchase rate among current users. Evidence from previous studies suggests coupons are more likely to subsidise purchases that would have been made in any case, rather than promote incremental purchases (Gupta, 1988; Shoemaker and Tibrewala, 1977).

Non-users of the promoted brands tried fewer samples than current users mainly because they disliked the promoted product category or brand, or were satisfied with their current brand and had not made

enough effort to try the samples (Table 7). This suggests some non-users of the promoted brands may have held pre-conceived biases about using these brands. This could account for the high rates of trial and short term purchase found for the new toothpaste variant, which no respondents had tried before. This suggests sampling and purchase incentives may be more effective in new product introductions than for existing products.

5.3 Treatment Differences

Effects on New Trial

In this study, product sampling was found to have a substantial effect on new trial, while the effect of incentives was negligible. This finding is entirely consistent with the results of previous studies (Belch and Belch, 1990; Scott, 1976).

The sample usage rates among non-users, which were as low as 41% for coffee, were lower than previous studies that have reported sample usage rates of up to 85 percent. This discrepancy may be partially explained by the fact that previous studies have calculated sample trial rates only from the number of samples remembered by respondents, rather than the number of samples actually distributed to them. This method of measuring trial was not used in this study as it was considered too dependent on respondent memory for information on sample receipt, and it ignores the fact that samples not remembered by respondents were also probably not used. Consequently, the measure used by previous studies probably overstates the level of actual trial gained. The most relevant measure to marketers of sampled brands would therefore seem to be the number of samples tried as a proportion of the number of samples distributed.

However, there were also problems with the measure of trial behaviour used in this study that may have effectively understated the level of actual trial gained by the treatments. For example, several non-users could not remember receiving the samples and most could not remember receiving the coupons, possibly because they were asked to recall the treatments quite a long time after receiving them (24 weeks for detergent and eight weeks for coffee and toothpaste). The low-involvement nature of the treatments, especially coupons, may have prevented recall even if the samples were used. Moreover, other household members may have received and used the treatments without the respondents' knowledge, or the treatments could have even been stolen from the mail-boxes.

Another confounding factor was that respondents were asked about the treatments in two distinct questions on samples and incentives, and interviewers did not suggest these promotions may have been delivered together. Some respondents may have therefore thought the coupon-brochure attached to the sample was an integral part of the sample, and that the interviewer was asking about another coupon. While the former problems may be inevitable, future research should attempt to redress this potential ambiguity.

The results also showed that standard measures of trial ("Did you use...") may be conservative because most untried samples in this study were either kept for future use or given away (Table 8). Although this could be partially compensated for by calculating trial only from the number of samples remembered, future measures of trial that incorporate measures of potential trial among sample recipients will probably be more accurate.

Effects on Short Term Purchase Behaviour

Sampling produced consistently higher levels of short term purchase among non-users than either cash-backs or coupons. However, the difference was significant in only one experiment, which suggests the effects of sampling and incentives on purchase behaviour are mitigated by other factors.

The short term purchase rates found in this study could not be readily compared with findings from previous studies. This is because previous studies have investigated the conversion rate of households that actually use samples and coupons, rather than the purchase rate of those known to be given these promotions. It would seem desirable that future studies adopt the method of purchase measurement used in this study because that marketers appear to have little control over whether recipients actually use samples and redeem coupons or not.

A prediction based on the results of previous studies was that direct mail coupons would achieve overall redemption rates of around ten percent. However, the direct mail coupons and the cash-back offer in this study achieved redemption rates of only five percent among current users and non-users alike. There are several possible explanations for this finding. For example, the coupons used in this study may have been for unpopular product forms (e.g., liquid laundry detergent and instant coffee). Moreover, the coupons were often forgotten by respondents when shopping (Table 9), which suggests some consumers may prefer to redeem several coupons at a time, either by clipping coupon pages or by using coupon books. The question of whether coupon redemption is affected by the presence of other coupons requires further research.

Previous studies have found that sample-coupon combinations produce considerably higher short term purchase rates than samples alone (Rothschild and Gaidis, 1981; Scott, 1976). However, including a coupon

produced only marginal if any increases in short term purchase rates. This finding suggests that the current industry practice of including coupons with samples may be unwarranted, especially since most coupons were found to be redeemed by current users of the promoted brand who were probably going to buy the brand in any case. The implication of this finding is that companies may be not only wasting promotional expenditure on producing coupons, but may also be forfeiting sales margin on the coupon purchases.

A further finding was that more coupons and cash-backs were remembered and redeemed when delivered with samples (7% - 11%) than when delivered alone (0% - 2%). This suggests coupon and cash-back promotions will be more successful when consumers have already tried the promoted product. This finding is consistent with another finding of this study that more coupons were redeemed by current users than by non-users of the promoted brands. The implication of these findings is that cash-backs and coupons delivered alone are an ineffective means of promoting purchase among non-users.

From a theoretical perspective, the results provide additional evidence for the importance of direct experience in promoting purchase behaviour; non-users given product samples were on the whole considerably more likely to purchase the promoted brand than those not given samples, regardless of whether they were given incentives. This finding also accords with the behaviourist prediction that when consumers try a product, their trial behaviour will be reinforced and they may seek additional reinforcement by purchasing the promoted brand (Foxhall, 1983; Nord and Peter, 1980; Rothschild and Gaidis, 1981).

On the other hand, the findings of this study were not predicted by self-attribution theory (SAT). In terms of SAT, one would expect that full-

revenue purchase would be less likely to occur if consumers perceived their trial behaviour was caused by a large external incentive, such as receiving a free sample, than by a small external incentive such as a coupon. However, the number of households that subsequently purchased the promoted products at their full retail prices was considerably higher among non-users given a large external incentive to try the product (samples) than among non-users only given a smaller incentive (purchase incentives).

This incongruity arises because SAT only examines behavioural attributions at the individual level. The prediction based on SAT therefore overlooked the prospect that sampling would probably produce higher levels of new trial than purchase incentives. Indeed, the sample-only treatments did produce much higher rates of new trial among non-users than coupons or cash-backs on their own (36% - 79% for sampling, compared with 1% - 2% for the incentives). The prediction also neglected that samples would probably produce higher levels of full-revenue purchase than incentives, which they did (9% - 25% for sampling, compared with 1% - 2% for the incentives).

Effects on Switching Behaviour

The specific effects of sampling and purchase incentives on brand switching were inconclusive. The main reason for this appeared to be that only a small number of households in each treatment had not bought the promoted brand over the previous year. Moreover, some brand switching may have been overlooked because the ranges of competing brands examined in this study were not exhaustive. Further research should redress these problems by using larger sample sizes and incorporating all possible brands.

Product-form switching was examined in the detergent experiment only, where it was found that a sample-plus-coupon combination produced a

significantly higher level of this kind of switching than the control group (i.e., switching from powder to liquid laundry detergent). Although the effects of the other treatments did not differ significantly from the control group, the results were consistent with the theory of perceived risk. That is, it could be argued that the samples reduced the conceptual risk associated with switching from powder to liquid detergent, and the inclusion of a coupon could be said to provide an added purchase incentive by reducing the financial risk associated with the switch.

It could also be argued that switching between different product forms is riskier than customary brand switching within the same product-form because it involves changes in consumption behaviour. If this is the case, the implication of this finding is that samples, especially when combined with coupons, will be most effective in promoting switching when the level of perceived risk is relatively high.

Effects on Long Term Purchase Behaviour

Both product sampling and purchase incentives were found to have a limited effect on long term purchase behaviour. This finding was consistent with most previous studies (McGuinness, 1989; Shoemaker and Tibrewala, 1989).

The lack of a long term effect for couponing is consistent with previous studies that have found coupons tend to only stimulate short term brand switching rather than long term repeat purchase (Bawa and Shoemaker, 1987; Dodson et al, 1978; Shoemaker and Shoaf, 1977). This suggests the main sales effect of a coupon promotion will be on the purchases made with the coupons, and since coupon redemption is extremely low, it is doubtful whether coupon promotions are cost-effective (Bawa and Shoemaker, 1987).