

Market Segmentation in Behavioral Perspective

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Abstract

A segmentation approach is presented using both traditional demographics segmentation bases (age, social class/occupation and working status) and a segmentation by benefits sought. The benefits sought in this case are utilitarian and informational reinforcement, variables developed from the Behavioral Perspective Model (the BPM). Using data from 1847 consumers and a total of 76,682 individual purchases brand choice and price and reinforcement responsiveness was assessed for each segment across the UK cookie (biscuits) market. Building on previous work the results suggest that the segmentation of brand choice using benefits sought is useful. This is especially the case alongside demographic variables. This paper provides a theoretical and practical segmentation approach to both the behavioral psychology literature and the wider marketing segmentation literature.

Keywords: Behavioral Perspective Model (BPM), Segmentation, Utilitarian Reinforcement, Informational Reinforcement, Price Elasticities

Author Biographies

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Introduction

Foxall, Oliveira-Castro and Schrezenmaier (2004) explored patterns of reinforcement and utility maximisation for consumers of fast moving consumer goods. By categorising brands using features of the Behavioral Perspective Model (specifically utilitarian and informational reinforcement) they were able to classify the purchasing behavior of consumers into six groups. They concluded that, “.....utilitarian and informational reinforcement have distinct effects on brand choice and may form the basis of the partitioning of markets and strategies of market segmentation.”

This paper seeks to further explore whether features of the Behavioral Perspective Model can be used successfully for market segmentation and in what way, by exploring the purchasing pattern of consumers in the UK cookies (known as biscuits in the UK) market. This will firstly segment by the six groups used above and also by consumer demographics.

Segmentation

Smith's (1956) idea of segmentation as the measurement and definition of market differences is as relevant today as when he first introduced it and is extensively taught in marketing courses worldwide and well as being an integral part of modern marketing management and marketing research (Wedel and Kamakura 2002). Three main segmentation approaches are available both to researchers and marketing practitioners. The first of these bases, segmentation by demographics, i.e. the age, gender, religion of consumers etc can also accommodate segmentation by geographic location. The second approach is based on psychographics where the consumer's lifestyle allows segmentation. The third is by benefits

sought by consumers which can be wide ranging including a range of lifestyle and product choice issues e.g. reliability, environmentally friendly etc. This paper will concentrate on two of these types of segmentation with regards the brand choice and purchasing patterns of consumers: demographics and benefits sought (in terms of the comparative benefits of utilitarian and informational reinforcement benefits received by consumers from brand they purchase).

Demographic segmentation is by far the most popular and prevalent form of segmentation as it allows consumers to be placed on definite, measurable scales which are easily understood (Beane and Ennis 1987) by both consumers and marketers alike. However there are, and have long been, mixed opinions in the literature as to whether demographic variables have predictive power with regard to brand choice (described by Uncles et al. (2006) as by far the most relevant level of analysis). The use of demographic variables as an explanation for product choice, category choice, brand loyalty and price responsiveness/elasticity have often been accused of over simplification.

Although some consumer behavior studies (Bearden et al. 1978, Sharpe et al. 1998 and Lin 2002) have suggested that demographics are useful in segmenting markets, the majority of evidence, especially at the brand choice level of analysis does not support this. For example, Fennell et al. (2003) were not successful in associating either demographic (e.g. age, social class¹) or psychographic variables with brand choice in their model but did conclude that demographics could successfully predict product category use, product use and frequency of use. Hammond et al. (1996) also suggested that demographics were not useful in segmenting

¹ The class grouping system used in the UK is based on occupation. Five groupings are used: A – Upper Middle Class: Managerial and Professional (typical occupations include: doctor, solicitor, barrister, accountant, company director), B – Middle Class: Managerial and Professional (typical occupations include: teacher, nurse, police officer, probation officer, librarian, middle manager) C1 – Lower Middle Class: Supervisory and clerical (typical occupations include: junior manager, student, clerical/office workers, supervisors), C2- Skilled working class: Skilled manual (typical occupations include: foreman, agricultural worker, plumber, bricklayer), D-Working Class: Unskilled manual (typical occupations include: manual workers, shop worker, fisherman, apprentices) and E- Underclass/unemployed (typical occupations include: casual labourers, state pensioners)

consumers in terms of the brands they purchase and this was more recently supported by Uncles et al. (2006) who also suggested that demographics could not be successfully used to predict brand choice behavior.

Within the area of demographic segmentation research, two of the most individually explored variables are age and social class. Age related segmentation has generally not been found useful. For example, Uncles et al. (2006) concluded brand purchasing was not age related and Simcock et al. (2006) suggested that more sophisticated age based segmentation was required before age had predictive capability. Additionally no consistent effects have been generally found for social class or income with regard to brand choice (Frank 1967, Hammond et al. 1996, Scriven et al. 1999) with social class often being used as a proxy measure for income. Some authors however do relate socio-economic variables to price sensitivity. Murphy (1978) found that upper social class women buy less expensive brands from which he concluded they were more price sensitive. In comparison Ainslie et al. (1998) supported by Mulhern et al. (1998) found that those with higher incomes (income again used as a surrogate for social class) were less price sensitive, as supported by a number of other authors (Ainslie and Rossi 1998; Estelami and Lehmann 2001; Jones and Mustafic 1996; Kalyanam and Putler 1997; Sirvanci 1993). Gabor and Granger (1961) also found that price sensitivity was negatively related to social class, although Murphy (1978) disagreed with their findings. Supporting Gabor and Granger, Kalyanam et al. (1997) concluded that there is a negative relationship between income and price sensitivity, whereas Tellis (1988) in his meta analysis described price elasticity as significantly negative but mentioned that there was a greater sensitivity to price in the latter stages of the life cycle, i.e. for older consumers. Scriven et al. (1999) concluded the opposite and found that the under 45's were consistently more sensitive to price change. A number of studies also showed insignificant or no

effect of demographics on consumer price responsiveness (Bell et al. 1999; Boatwright et al. 2004; George et al. 1996; Kim et al. 1999; Scriven and Ehrenberg 2004).

The obvious confusion and lack of consensus in the literature is made more difficult when price sensitivity is also said to differ across categories (Kim 1999) and that it is not constant across time anyway (George et al. 1996). It has also been suggested that the segments themselves may not be stable over time (see Fonseca and Cardoso 2007 for a discussion of stability in segmentation). Granzin (1981) suggests a simple solution to the problem linking in with Simcock et al.'s (2006) call for more sophisticated segmentation- choose other variables to work alongside demographics resulting in greater predictive power. This research attempts to use utilitarian reinforcement and informational reinforcement (concepts borrowed from the Behavioral Perspective Model or BPM) alongside demographic variables to explore brand choice and price sensitivity segmentation.

Segmentation by benefits sought is slightly more complicated than those segmentations based upon demographics. It involves aggregation of individuals in a market into groups that seek similar benefits when choosing a brand or product (Orth et al. 2004). Benefits sought for products can range from a car being reliable or practical to environmentally friendly or a status symbol. Fast moving consumer goods may be used for a variety of different purposes and circumstances and consumer may demand a range of different variables from even the simplest product. This type of segmentation has been used to explore, amongst many others, consumers purchases of beer (Orth et al. 2004), financial services (Chang and Chen 1995), cinema audiences (Cuadrado and Frisque 1999), on-line consumers (Wu 2001, Bhatnager, and Chose 2004) and tourists (Sarigollu and Huang 2005). However, benefits that consumers seek from fast-moving consumer goods are comparatively under-researched (Orth et al. 2004).

The Behavioral Perspective Model

The Behavioral Perspective Model (BPM), a model developed by Foxall (e.g. 1990) and based on behavioral psychology, suggests that the most important determinant of behavior is the environmental consequences it produces. Within the model the distinction is made between two types of reinforcement, utilitarian reinforcement and informational reinforcements both of which are expected to influence consumer choices. Utilitarian reinforcement is the more practical nature of products/services, the economic or material consequences derived from acquiring, owning and using a product. For example the utilitarian benefit of using a car is its capacity to get you from a to b and protect you from the poor weather etc. Informational reinforcement in comparison is socially driven and symbolic, depending above all on the actions and reactions of other people. Premium car brands (e.g. Bentley, Ferrari) will therefore afford the owner more informational reinforcement than less socially conspicuous brands (e.g. Hyundai, Lada). Therefore informational reinforcement is linked to a degree to the branding of a product and its differentiation from other products. A full exposition of all aspects of the BPM can be found in Foxall (1996, 2005, 2007) and Foxall, Oliveira-Castro, James and Schrezenmaier (2007). Orth et al. (2004), discussing benefits-sought segmentation, suggested that products as well as brand names are capable of contributing to several types of benefit to the consumer. The major difference between product and brand consists in that a product is “something that offers a functional benefit” (which is akin to utilitarian reinforcement) while the brand is “a name, symbol, design or mark that enhances the value of a product beyond its functional value” (which is akin to informational reinforcement).

Previous Research

Previous research has used both utilitarian and informational reinforcement to classify both brands, by the range of benefits they offer, and also consumers, by the benefits of the brands which they purchase most often (Foxall et al. 2004, Oliveira-Castro, Foxall and Schrezenmaier 2005). Foxall et al. (2004), utilizing a sample of 80 consumers, separated informational reinforcement into three levels and utilitarian reinforcement into two levels (detail of this methodology can be found in the paper with a short summary in the methodology section below). They found that the majority of consumers in the majority of product categories made the majority of their purchases within the same utilitarian level and the same informational level. It was also observed that consumers tended to buy brands at adjacent informational levels more than at more distinct levels (e.g. buying Levels 1 and 2 more than Levels 1 and 3). They also used price elasticities to explore consumers' price sensitivity to changes in utilitarian and informational reinforcement and found that utilitarian price elasticity was higher for consumers who purchased low utilitarian level brands than for those purchasing higher utilitarian level. They also found that when consumers were classified in six groups on the basis of the informational/utilitarian level of the brands they bought most, the groups showed distinctly different responses to changes in price. They concluded that "consumers choose their repertoire of brands on the basis of the informational and utilitarian level of reinforcement programmed by brands" and as stated earlier they suggested that these types of reinforcement could form a base for the portioning of markets and strategies of market segmentation.

Oliveira-Castro et al. (2005) took the research further concluding that consumers were in fact more responsive to utilitarian benefits than informational benefits. They suggested that this was not surprising due to the low prestige and, hence, low informational reinforcement related to supermarket or fast moving consumer good products. Although these previous studies began to

explore the possible benefit patterns consumers exhibited, they used small samples of consumers, which may limit conclusions stemming from them.

Based upon this previous line of research, the present paper investigates the possibility of using utilitarian and informational reinforcement as a base for consumer segmentation. This was done by examining the relations between consumers' brand choice patterns, their demographic characteristics and the levels of utilitarian and informational reinforcement, offered by brands, that they bought predominantly. Brand choice patterns were examined with respect to consumers' sensitivity to price, informational and utilitarian reinforcement. Thus, the present research investigates whether similar types of brands (in terms of the utilitarian/informational reinforcement they offer to consumers) have the same types of buyers (in terms of demographic and brand choice features), and whether consumers that buy the same types of brands have similar demographic characteristics and brand choice patterns. The study concentrates on one product class, biscuits as this provided the largest sample of data for a single product class.

Methodology

Data for the study was obtained from the ACNielsen Homescan™ panel and covered 52 weeks of purchases from July 2004 to July 2005 in four product categories Biscuits, Baked Beans, Fruit Juice and Yellow Fats (butter/margarine) although only the results for biscuits will be reported here. Basic data for the other three product categories can be found in James, Chang, Oliviera-Castro and Foxall (2008). The data included 1847 panelists who made a total of 76,682 purchases of biscuits. The data was a random sample from the approximately 14,000 households who contribute to the AC Nielsen Homescan™ panel. Panellists use hand-held barcode scanners to record details of purchases and the purchasing data from each household is delivered to ACNielsen's mainframe computer.

As well as brand purchased the dataset includes a panel ID number for each purchaser, the product subcategory purchased, brand specifics, the shopping trip by week, the store visited, the weight of the purchased item, package size, price per pack, the number of packs bought, the amount spent on each purchase and demographics. The demographics supplied information on age, household social class (AB, C1, C2, D, and E) and working status by working hours (30 or more hours per week, less than 30 hours per week and not working).

In order to eliminate the pack-size effect and obtain comparable results for the amount bought and the price paid of each brand, a general denominator was adopted in this study. The amount bought divided by 100 grams etc denoted the number of units. In the same way, the average price per unit for each brand was calculated as the money spent divided by the number of units for each brand.

Measures

Utilitarian and informational benefits

As noted earlier brands can be classified based on their levels of utilitarian and informational reinforcement. In line with earlier research (Foxall et al. 2004, Oliveira-Castro et al. 2005) utilitarian reinforcement was separated into two levels. Utilitarian level 2 is higher than utilitarian level 1 and the higher level represents the addition of supposedly desirable benefits and/or attributes. Plain versions of products and simpler types of products (such as plain biscuits, plain baked beans etc) were classified as belonging to Level 1 whereas more differentiated versions and those with more attributes (such as chocolate chip cookies or chocolate coated biscuits, baked beans with added sausages etc) were classified as level 2. More detail on this method is included in Oliveira-Castro et al. (2005).

Earlier research (Foxall et al. 2004, Oliveira-Castro et al. 2005) used a method of placing brands in three informational levels by price and brand value in terms of store versus premium brands (more detail can be found in Foxall et al. 2004). This approach is overly dependant on price so in the study the measure of informational reinforcement is based on the methodology first put forward by Oliveira-Castro, Foxall, James, Pohl, Dias and Chang (2008) which uses a simple questionnaire to estimate consumer perceptions of the degree of quality and knowledge of brands within any product class. Informational value was still measured on a three point scale with level 3 as the highest level of informational reinforcement available. The procedure involved a questionnaire that required groups of experienced consumers to evaluate how well known a brand is and its quality level, with both dimensions measured on a four point scale (0 to 3). By averaging the obtained values on both scales across consumers, an overall informational level (termed MKQ (Mean Knowledge and Quality)) was calculated for each brand (the full procedure, development and testing of this scaling is included in Oliveira-Castro, Foxall, James, Pohl, Dias and Chang (2008)).

The four questionnaires, one for each product class, were given out to 33 consumers in October 2006. The sample was chosen by convenience with the only criteria being that the respondents had sufficient experience of the British fast moving goods market. The respondents were considered as expert judges in this study and therefore the sample size was deemed appropriate. To assess the reliability of the MKQ analysis three split samples were analysed. Each groups average MKQ was correlated with the average MKQ across all groups and across the whole sample. Pearson correlations ranged from 0.917 to 0.981 indicating good reliability across the sample.

To aid data analysis, a similar number of data points were used for each level of informational benefits. The informational benefits were separated into 3 levels by dividing the

scores as follows: level 1, MKQ scores between 0 and 1.5, level 2, MKQ scores between 1.6 and 2.3 and level 3, MKQ scores above 2.3.

Considering that brands could be classified in one of two values of utilitarian level (1 or 2) and in one of three levels of informational level, it was then possible to group brands relating to their combination of utilitarian and informational levels and then to categorise consumers in terms of the group in which they made the majority of their purchases. Table 1 presents the groupings.

-- Insert Table 1 here --

Analyses

Only those consumers who purchased biscuits 7 or more times during the data collection period were included in the study. This resulted in 75151 purchases being analysed. Brand choice patterns of each consumer group, classified according to demographic variables and informational-utilitarian grouping (see table 1), were compared and explored using two regression equations. The first assessing overall price elasticity/sensitivity and the second in terms of demand elasticities based on price, informational level and utilitarian level of brands.

The first analysis used the following equation:

$$\text{Log Quantity} = a - b (\text{log Price}) \quad (1)$$

where:

Log Quantity = Log (the number of 100g or units bought of each brand)

Log Price = Log (the average price of each brand)

The second analysis used the following regression equation:

$$\text{Log Quantity} = a - b_1 (\text{log Intra-Brand price}) - b_2 (\text{log Utilitarian Level}) - b_3 (\text{log Informational Level}) \quad (2)$$

where:

| | |
|---------------------------|---|
| Log Quantity = | Log (the number of 100g or units bought on each shopping occasion) |
| Log Intra-Brand Price = | Log (the price paid for the purchased brand on each shopping occasion divided by the average price for that same brand across all consumers/purchase occasions in the sample) |
| Log Utilitarian Level= | Log (utilitarian Level of the brand purchased on each shopping occasion) |
| Log Informational Level = | Log (informational level of the brand purchase on each shopping occasion) |

Intra-brand price provides a ratio determining how similar the price paid on that day is to the average price of the brand and therefore takes into account levels of price fluctuation and price promotions. It also provides an extended measure of the consumers' price sensitivity (or elasticity of demand). If the value of this coefficient is negative this suggests that consumers are inversely sensitive to intra-brand price. That is, as the brand price increases consumers reduce the quantity they purchase. Logarithmic transformations are used throughout to obtain linearity. ANOVA analyses were also used to explore possible differences among consumer groups (social class, age group and working status) of mean brand values of utilitarian reinforcement, informational reinforcement, average price paid (per 100g or equivalent unit) and quantity purchased.

Results

Table 2 to 4 are included as Appendix One and contain a summary of the results based on Equation 1 (table 2) and Equation 2 (tables 3 and 4). Table 2, presenting the parameters of equation one is split into five sections, firstly data from the whole samples and two split samples (section 2.1), secondly an analysis based on the groupings presented in table 1 (section 2.2), thirdly an analysis based on social class (section 2.3), fourthly by age (section 2.4) and finally by

working status (section 2.5). Tables 3 and 4, present the parameters of equation 2. Table 3 contains the calculations for all consumers and two split samples. Table 4 contains calculations, in four sections, firstly using the groupings in table 1 (section 4.1), secondly an analysis based on social class groupings (section 4.2), thirdly by age groupings (table 4.3) and finally by working status (section 4.4).

In terms of results from the overall sample all the analyses are statistically significant all with negative coefficients suggesting that people are negatively sensitive to the prices of biscuits overall. The majority of regressions for the segments explored are statistically significant with adjusted R^2 s ranging from 0.281 to 0.412 (sections 2.2 to 2.5). Across the 6 groupings all the coefficients are negative suggesting a negative sensitivity to price changes (section 2.2). The absolute values of the elasticity coefficients tell us more about the different patterns across segments. Figure 1 shows these in more detail. Consumers who belong to groups where they buy a medium levels of brands with both utilitarian and informational reinforcement the higher their price sensitivity. The pattern for social class is less clear with classes C1 and D showing higher levels of sensitivity to prices. In terms of age, older consumers show less price sensitivity along with those not working.

When separated into social classes, all the regressions are statistically significant ($p < 0.000$) (section 4.2). The adjusted R^2 values are small and it may therefore be suggested that other significant variables may be useful in explaining the consumers' behavior. The Variance Inflation Factors (VIF) from all fifteen elasticity coefficients are less than 1.02, which indicates that no significant correlation exists among all explanatory variables and there is no problem with multicollinearity.

The intra-brand elasticity coefficients for these five social classes, ranges from -0.35 to -0.562 suggesting that consumers are inelastic to intra-brand prices. As can be seen in Figure 2 the

absolute values of the intra-brand elasticity coefficient for the households of social class D and E are smaller than the ones for the households of social class AB, C1 and C2.

-- Insert Figure 2 here --

In contrast all the informational inter-brand elasticities separated by social group are positive and vary from 0.024 to 0.095. Interestingly, the lower the social class of households the lower the informational inter-brand coefficient values. The utilitarian inter-brand elasticity coefficients for these five social groups are all positive except for those households segmented as social class E. Additionally, the utilitarian inter-brand coefficients for the households of social class AB, C1 and C2 are higher than the ones for the households of social class D and E.

Figure 3 summaries the ANOVA results which indicate that the households of higher social class, on average, spend more money buy more brands at higher informational levels. However, the mean values of utilitarian level for the households of social class C2 and D are significantly higher than the values for the households of social class AB, C1 and E exhibiting an inverse U-shape.

-- Insert Figure 3 here --

It is also interesting to note that the absolute values of the intra-brand elasticities for the households of the five social classes are larger than the values of the utilitarian and informational elasticities as a whole, indicating that all panellists of different social classes are more sensitive to price (although the lower social classes are least sensitive to price) than utilitarian and informational benefits (supporting Foxall et al. (2004) and Oliveira-Castro et al. (2005)).

With respect to the four age groups in which the consumers were separated, all regressions statistically significant ($p < 0.000$). The adjusted R^2 values differ from 0.028 to 0.03 which shows a similar pattern to when the consumers are separated by social class. In terms of

multicollinearity, the values of Variance Inflation Factor (VIF) from all twelve elasticity coefficients are smaller than 1.02, indicating that all independent variables are not related.

All elasticity coefficients (b1, b2 and b3) are significant except the utilitarian inter-brand elasticity coefficient of the oldest group aged over 70 years. The intra-brand elasticity coefficients for the four age groups, varying from -0.255 to -0.561, are all significantly negative and inelastic to the intra-brand prices. As displayed in figure 4, the absolute value of the intra-brand elasticity coefficient is lowest for oldest group aged over 70 years but largest for the middle-aged groups (31-50 years).

-- Insert Figure 4 here --

It appears that overall, the older groups are most responsive to increases in informational level of brands suggesting that the older people will be more likely to buy larger amounts of higher differentiated brands to obtain higher informational benefits. In comparison apart from the oldest group the utilitarian inter-brand elasticity coefficients are positive. Specifically, the utilitarian elasticity values reduce as the ages increase.

Figure 5 summarises the ANOVA results which demonstrate that younger people spend less overall, pay higher prices and purchase smaller quantities of higher utilitarian-level and lower informational-level brands, whereas older people spend more and buy larger amounts of lower utilitarian-level and higher informational-level brands.

-- Insert Figure 5 here --

With regards the working status of consumers, all regressions were statistically significant ($p < 0.000$). The adjusted R^2 values were again small and with earlier results, ranging between 0.032 and 0.063. Regarding multicollinearity, the values of Variance Inflation Factor (VIF) from all nine elasticity coefficients are smaller than 1.02, indicating that the independent variables are not significantly correlated.

All elasticity coefficients (b_1 , b_2 and b_3) are statistically significant except the utilitarian elasticity coefficients of groups working less than 30 hours per week and groups who are not working. The intra-brand elasticity coefficients in terms of working status, varying from -0.378 to -0.577, are all negative. As presented in figure 5, the absolute value of the intra-brand elasticity coefficient is lowest for the non-working group.

In comparison, the informational inter-brand elasticities for all working groups are all positive with the absolute values suggesting that those consumers who comprise the non-working group are more responsive to the changes in informational levels.

The utilitarian inter-brand elasticity coefficient for the group working at least 30 hours per week the largest. It is also worth noting that the working people are likely to buy larger amounts of higher utilitarian-level brands, while the non-working people tend to purchase more quantities of lower utilitarian-level brands. Interestingly, the utilitarian elasticity coefficients decrease as the amount of work decreases, whereas the informational elasticity coefficients increase as the amount of work decreases.

The results of one-way ANOVA, contained in Figure 6, indicate that the non-working group pay lower prices, buy larger quantities of higher informational-level and lower utilitarian-level brands.

-- Insert Figure 6 here --

Additionally, the absolute values of the intra-brand elasticities for all three working groups are larger than the values of the utilitarian and informational elasticities, suggesting all panellists are more sensitive to price than to the changes of the levels of utilitarian and informational benefits.

Discussion and Conclusions

In summary, all consumers are sensitive to price changes. Different social classes are approximately equally sensitive as are those of different working status. In term of age, younger consumers are more sensitive with those under 50 showing the greatest price sensitivity. In terms of brand benefits purchased there is little difference in price sensitivity. In general consumers are more sensitive to price changes (intra-brand) above changes in utilitarian and informational reinforcement or benefits. This is consistent with the results of Foxall et al. (2004) and Oliveira-Castro et al. (2005). In terms of intra-brand price consumers are increasing more sensitive the higher the levels of utilitarian and informational benefit which they purchase. Higher age groups and those not working are least sensitive to price changes, which is perhaps surprising. Lower age groups are most sensitive to changes in utilitarian reinforcement as well as those not working. Sensitivity to informational benefits increases as consumers favour products which contain more of these types of benefits, as social class increases, and as the number of hours consumers work decreases.

The study has added to the literature on demographic segmentation, suggesting that at least in terms of age, social class and working status demographic variables can be useful. Social class is perhaps the least useful of these variables in predicting sensitivity to prices and other benefits. The results support Scriven et al. (1995) who found that under 45's were more sensitive to price. The research has also extended the idea that benefits sought in terms of informational/utilitarian reinforcement is useful, especially when looking at the sensitivities of different demographic groups. This requires further refinement and exploration but is useful both to marketers and consumer researchers.

As in Foxall et al. (2004) groups of consumers (segmented by the brand benefits they purchased) showed different sensitivities to price although the reasons behind these differences require further exploration. In opposition to this work this research suggested that those

consumers who purchased at lower utilitarian levels were least sensitive to changes in these benefits (see table 4, section 4.1). This however may be a difference related to this specific product class (an idea put forward by James et al. 2008) and may be related to the difference in samples sizes as the earlier work used a smaller sample of 90 consumers' purchases. In support of Oliveira-Castro et al. (2005) this research also found that in general consumers were more responsive to utilitarian benefits than informational benefits, perhaps due to the expected low prestige of fmcgs² in general.

The adjusted R² values throughout range from approximately 0.2 to 0.45 suggesting that other variables than those studied affect the choice made by consumers. It was not the objective of this study to discover every variable affecting the consumers' behavior or to assume that the three variables studied, price, informational and utilitarian reinforcement, would explain all consumer behavior so this is not particularly a problem. However in future research it might be useful to explore what else, beyond the variables studied here might fill the remaining gap in explanation. As every segmentation model is "at best a workable approximation of reality" (Wedel and Kamakura 2002) it should not overly worry us that any particular segmentation model does not provide full explanation of the behavior in view.

Market segments are not real entities naturally occurring in the market place, but groupings created by managers of how managers view the market to help them develop strategies that better meet consumer needs at the highest expected profit for the firm (Wedel and Kamakura 2002). Segmentation strategies can help- managers look for new product opportunities, create improved advertising/promotional messages (Beane and Ennis 1987) and overall can provide a closer matching with consumers (Sharp, Romaniuk and Cierpicki 1998). The question therefore

² Fast Moving Consumer Goods are products sold quickly at relatively low cost. This includes many products found at supermarket and convenience stores such as bread, milk, tinned goods etc.

that should be asked is how useful would the types of segmentations discussed and explored above be for marketing managers. The utilitarian/informational segmentation approach might be useful in assessing gaps in the markets. How far do competitors go in providing consumers with informational/utilitarian benefits and what level do consumers want (and are willing to pay for). Tellis (1988) suggests that marketers can attempt to reduce price sensitivity through product differentiation and advertising. The analyses could provide information about specifically which benefits consumers are more sensitive about as well as providing a base for competitor analysis, positioning strategy and for a better allocation of resources between alternative strategies (Bearden et al. 1978).

Because the research into the effects on price is related to a comparison between prices this paper should also provide marketers with information on which to base price promotions which are very common in the UK biscuits market and across the fmcg sector overall. Marketers need to bear in mind that the repeated price-promotion may cause lower reference prices. It is also useful for marketers that it has been found consistently that consumers from all age groups and whatever brands they buy are more sensitive to price (intra-brand) than both utilitarian and informational reinforcement.

The limit of this particular paper is that it concentrates on only one product class. It is not assumed at any point that the results and exploration here would translate across product class directly and this will certainly require further research to determine. The UK biscuits market is a highly competitive fast moving industry and therefore will have different characteristics from not only other fast moving consumer goods but other types of goods. Early exploration extending the analyses across products classes (James et al. 2008) suggests there are observable differences across different fast moving consumer goods. It may be possible that choice patterns in action for certain types of products may be significantly different from other products around them. It

might be the case for example that consumers are more sensitive to informational reinforcement in certain products. This may be expected in status driven products but these differences could occur even between supermarket products. This is certainly an area which will require still further explanation, to ensure reliability in transference to other products.

Single demographic variables, although useful may provide more predictive accuracy and segmentation worth when combined. For example future research could combine the variables used in the analyses above. What are the age separations with each social class and working status etc and could these smaller sub-categorisations provide greater predictive strength etc. The addition of other variables may also be useful in further analyses, for example: income, family size etc.

The study has attempted to introduce and further test what could be a simple, yet robust technique for exploration and also act as a segmentation technique. It is not overly complicated although does need refinement, as with many segmentation models and allows managers flexibility in their use of the concepts employed. The brand benefits outlined are measurable, available and have the ability to uncover characteristics of market segments: the three areas emphasised by Lin (2002) as vital in segmentation.

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Table 1 Informational and Utilitarian Consumer Groupings

| <i>Group</i> | <i>Informational and Utilitarian level</i> |
|--------------|---|
| Group One | Informational Level 1 and Utilitarian level 1 |
| Group Two | Informational Level 1 and Utilitarian level 2 |
| Group Three | Informational Level 2 and Utilitarian level 1 |
| Group Four | Informational Level 2 and Utilitarian level 2 |
| Group Five | Informational Level 3 and Utilitarian level 1 |
| Group Six | Informational Level 3 and Utilitarian level 2 |

Appendix One

Table 2 Statistical summary of the whole data set, split samples and demographic/consumer group segments

Log Quantity = a-b (log Price)

Section 2.1

| Sample | Total panellists | Valid N | Adjusted R ² | F test | a | b | S.E. | T test | Durbin Watson |
|----------------|------------------|---------|-------------------------|---------|-------|--------|-------|---------|---------------|
| Whole Data Set | 1847 | 76682 | 0.377 | p<0.000 | 0.122 | -0.564 | 0.003 | p<0.000 | 1.159** |
| Split sample 1 | 887 | 38355 | 0.366 | p<0.000 | 0.118 | -0.561 | 0.004 | p<0.000 | 1.132** |
| Split Sample 2 | 960 | 38327 | 0.388 | p<0.000 | 0.126 | -0.567 | 0.004 | p<0.000 | 1.148** |

** p<0.01

Section 2.2

| Group | Total panellists | Valid N | Adjusted R ² | F test | a | b | S.E. | T test | Durbin Watson |
|-------|------------------|---------|-------------------------|---------|-------|--------|-------|---------|---------------|
| 1 | 304 | 10566 | 0.412 | p<0.000 | 0.104 | -0.529 | 0.006 | p<0.000 | 1.236** |
| 2 | 282 | 14132 | 0.404 | p<0.000 | 0.087 | -0.609 | 0.006 | p<0.000 | 1.038** |
| 3 | 301 | 10621 | 0.405 | p<0.000 | 0.126 | -0.527 | 0.006 | p<0.000 | 1.217** |
| 4 | 245 | 12327 | 0.369 | p<0.000 | 0.125 | -0.552 | 0.006 | p<0.000 | 1.148** |
| 5 | 295 | 10855 | 0.368 | p<0.000 | 0.111 | -0.591 | 0.007 | p<0.000 | 1.267** |
| 6 | 417 | 18166 | 0.365 | p<0.000 | 0.133 | -0.628 | 0.006 | p<0.000 | 1.187** |

** p<0.01

Section 2.3

| Social Class | Total panellists | Valid N | Adjusted R ² | F test | a | b | S.E. | T test | Durbin Watson |
|--------------|------------------|---------|-------------------------|---------|-------|--------|-------|---------|---------------|
| AB | 375 | 14671 | 0.358 | p<0.000 | 0.135 | -0.563 | 0.006 | p<0.000 | 1.175** |
| C1 | 584 | 22090 | 0.391 | p<0.000 | 0.116 | -0.575 | 0.005 | p<0.000 | 1.191** |
| C2 | 382 | 17367 | 0.379 | p<0.000 | 0.125 | -0.56 | 0.005 | p<0.000 | 1.182** |
| D | 261 | 12248 | 0.361 | p<0.000 | 0.106 | -0.571 | 0.007 | p<0.000 | 1.033** |
| E | 245 | 10306 | 0.385 | p<0.000 | 0.123 | -0.557 | 0.007 | p<0.000 | 1.198** |

** p<0.01

Section 2.4

| Age | Total panellists | Valid N | Adjusted R ² | F test | a | b | S.E. | T test | Durbin Watson |
|-------|------------------|---------|-------------------------|---------|-------|--------|-------|---------|---------------|
| <=30 | 210 | 5733 | 0.414 | p<0.000 | 0.083 | -0.592 | 0.009 | p<0.000 | 1.317** |
| 31-50 | 857 | 39458 | 0.398 | p<0.000 | 0.108 | -0.599 | 0.004 | p<0.000 | 1.12** |
| 51-70 | 620 | 24529 | 0.36 | p<0.000 | 0.14 | -0.53 | 0.005 | p<0.000 | 1.191** |

| | | | | | | | | | |
|------|-----|------|-------|---------|-------|--------|-------|---------|---------|
| >=71 | 160 | 6962 | 0.281 | p<0.000 | 0.175 | -0.463 | 0.009 | p<0.000 | 1.141** |
|------|-----|------|-------|---------|-------|--------|-------|---------|---------|

** p<0.01

Section 2.5

| Working Status | Total panellists | Valid N | Adjusted R ² | F test | a | b | S.E. | T test | Durbin Watson |
|----------------|------------------|---------|-------------------------|---------|-------|--------|-------|---------|---------------|
| 30+ hours/week | 759 | 26452 | 0.399 | p<0.000 | 0.117 | -0.588 | 0.004 | p<0.000 | 0.888** |
| <30 hours/week | 396 | 18976 | 0.397 | p<0.000 | 0.096 | -0.592 | 0.005 | p<0.000 | 0.814** |
| Not Working | 692 | 31254 | 0.345 | p<0.000 | 0.142 | -0.53 | 0.004 | p<0.000 | 0.822** |

** p<0.01