



WestminsterResearch

<http://www.wmin.ac.uk/westminsterresearch>

A structural equation model of customer satisfaction and future purchase of mail-order speciality food.

Li-Wei Mai¹
Mitchell R. Ness²

¹ Westminster Business School, University of Westminster

² School of Agriculture, Food and Rural Development, Newcastle University

This article was first published in the International Journal of Business Science and Applied Management, 1 (1). pp. 1-13, 2006, and is reproduced here with permission.

The original publication is available at

http://www.business-and-management.org/library/2006/1_1--1-13--Mai,Ness.pdf

The WestminsterResearch online digital archive at the University of Westminster aims to make the research output of the University available to a wider audience. Copyright and Moral Rights remain with the authors and/or copyright owners. Users are permitted to download and/or print one copy for non-commercial private study or research. Further distribution and any use of material from within this archive for profit-making enterprises or for commercial gain is strictly forbidden.

Whilst further distribution of specific materials from within this archive is forbidden, you may freely distribute the URL of WestminsterResearch. (<http://www.wmin.ac.uk/westminsterresearch>).

In case of abuse or copyright appearing without permission e-mail watts@wmin.ac.uk.

A Structural Equation Model of Customer Satisfaction and Future Purchase of Mail-Order Speciality Food

Li-Wei Mai, University of Westminster
Westminster Business School,
University of Westminster, 35 Marylebone Rd, London NW1 5LS, UK,
Tel: +44 (0)20 7911 5000 Ext. 3003
Fax: +44 (0)20 7911 5839
Email: d.l.mai@wmin.ac.uk

Mitchell R. Ness, Newcastle University
School of Agriculture Food and Rural Development
Newcastle University, Newcastle upon Tyne, NE1 7RU, UK,
Tel: +44 (0)191 2226928
Fax: +44 (0)191 2226720
Email: mitchell.ness@ncl.ac.uk

Abstract

Analyses the relationship between satisfaction with mail-order speciality food attributes, overall satisfaction, and likelihood of future purchase using a structural equation model. The results indicate that customer satisfaction is associated with both service and product features of mail order speciality food.

Keywords: customer satisfaction, re-purchase intentions, speciality mail order food, structural equation modelling

1 INTRODUCTION

In the UK the market for mail-order speciality foods has evolved in line with the growth of direct marketing in response to changes in modern lifestyles and customer expectations. These changes have paved the way for the exploitation of in-home shopping systems (The Economist, 1994; Victor, 1995). The issues faced by speciality food marketers concern the identification and satisfaction of customers' needs in the context of key elements of direct marketing such as targeting, interaction, continuity and control with an emphasis on customer retention (McCorkell, 1997).

In this context direct marketing emphasises the importance of building a long-term relationship with customers through quality, value and service. In this respect there is a shift in emphasis from pure transactions-based marketing to give at least equal attention to relationship marketing. Thus in the face of increasing competition firms pursue objectives of survival, prosperity and competitive advantage by building products and customers through the delivery of high value (Kotler et al., 1996).

The consumer is assumed to have an objective of maximising value; the difference between the benefits conferred in relation to the costs of acquisition, including costs of decision making, relative to alternative products or suppliers. According to Kotler et al. (1996), maximisation of customer value is translated into maximisation of customer satisfaction relative to expectations and product performance.

From the firm's perspective, delivery of value may be related to the notion of the value chain (Porter, 1985). Porter emphasises that value is not just delivered by products but through all primary activities (in-born logistics, operations, out-bound logistics, marketing and sales, and service) in association with support activities (infrastructure, human resources, technological development and procurement).

The problem facing mail-order speciality food companies is consistent with this particular area of research. Although, in what constitutes a relatively new sector, these firms face the traditional transactions-based task of recruiting new customers, they also need to engage customers in a long-term relationship; to encourage repeat business and loyalty through the delivery of value. Thus the focus of this paper is to identify whether and to what extent such firms deliver satisfaction across the transactions aspects of their operations and whether this creates a positive response in terms of overall satisfaction and intentions to repeat purchases.

The structure of the paper is as follows. It begins with a discussion of the background literature and is followed by an explanation and discussion of the research methodology. This is followed by the presentation of the empirical results. Finally the paper closes with some summary and concluding comments.

2 BACKGROUND ISSUES

According to Dick and Basu (1994), consumer loyalty plays a central role in marketing strategy, and marketing planning in the achievement of brand loyalty, vendor loyalty in industrial marketing, service loyalty in the service sector and store loyalty in the retail sector. The marketing literature defines loyalty as an attitude or a behavioural intention (Hallowell, 1996). Attitudinal loyalty reflects an individual's overall attachment to a product, service or organisation (Fornier, 1994). Behavioural loyalty is expressed in terms of intentions to re-purchase, to increase the scale and scope of a relationship, brand-switching or the act of recommendation (Yi, 1990; Selnes, 1993; Biong, 1993).

The widest perspective of behavioural loyalty is set within the context of the quality-value-satisfaction (Q-V-S) literature. In a review of this literature Cronin et al. (2000) report that research interest in Q-V-S has proceeded from a focus on perceived quality to satisfaction and hence to value according to national awards or paradigm shifts such as total quality management, customer satisfaction measurement, and customer value measurement. Research studies have paid attention to the measurement of the constructs (Dabolkar et al., 2000), the relationships between them (Cronin et al., 2000) and how they affect behavioural intentions (Bou-Llusar et al., 2001).

The elements within the Q-V-S framework tend to be defined as constructs with multiple measures. Typically a construct of 'Sacrifice' is specified to depict the sacrifice in terms of price, time and effort to accomplish the transaction. An independent construct of 'Perceived Quality' along with 'Sacrifice' is linked to a construct of 'Perceived Value'. 'Perceived Value' thus reflects the influence of the trade-off between 'Sacrifice' and 'Perceived Quality'. Three alternative forms of measurement have been applied to the perceived quality construct. One approach has been to address perceived quality (Very poor, Very good). Another has been to employ disconfirmation measures that are related to expectations (Much worse than expected, Much better than expected). A third approach employs

computed disconfirmation that employs measures of perceived quality and expectations and computes disconfirmation by subtraction. A further issue is whether disconfirmation is more suitable measured in a cross-section study or longitudinal study. In the latter approach expectations are measured prior to service delivery while service quality is measured afterwards.

The need for firms to measure customer satisfaction has led to the use of instruments such as customer satisfaction and purchase intentions surveys, analysis of complaints and suggestions, ghost shopping and lost customer analysis. A study by Wilson (2002) researched the use of customer satisfaction measurement within the retail sector. The research reveals a high degree of usage for monitoring customer attitudes, the overall performance of the firm and to identify problem areas. Yet more than two-thirds of firms indicated that satisfaction measures are most useful when combined with complementary measures. Hausknecht (1990), in a review of methods of measuring customer satisfaction/dissatisfaction, provides a taxonomy of measurement scales, which are classified as evaluative or cognitive, emotional or affective and, behavioural or conative approaches. However, Halstead (1989) makes the point that satisfaction is not desirable as an end but rather as a means to understand future customer responses. Hence interest in satisfaction is linked to customer loyalty and retention. However, satisfaction is regarded as a necessary but not a sufficient condition to lead to repeat purchase behaviour (Van Looy et al., 1998; Bloemer and Kasper, 1995).

Satisfaction is typically measured as an overall feeling or as satisfaction with elements of the transaction in terms of its ability to meet customers' needs and expectations (Fornell, 1992; Zeithaml and Bitner, 2000). Another approach employs a disconfirmation paradigm, which examines deviations of performance from customer expectations and norms (Bearden et al., 1981).

A series of studies has further elaborated the satisfaction-loyalty relationship for products and services, brands and retailers and considered the interaction between these (Bloemer and Lemmink, 1992). For example, Dabholkar and Thorpe (1994) employ multiple measures of both overall satisfaction and loyalty. Bloemer and Kasper (1995) distinguish between spurious and true (brand) loyalty and between manifest and latent satisfaction. They also provide explicit treatment of the situation in which purchase takes place. In a study of customers of a car dealership Bloemer and Lemmink (1992) distinguish between the satisfaction-loyalty relationship for both dealers and brands. La Barbera and Mazursky (1983) employ a longitudinal study, which enables them to consider the analysis of satisfaction over time, including brand-switching behaviour.

A further issue within the Q-V-S framework is the nature of the interactions between its component constructs including direct and indirect links to behavioural intentions. In their review of the applications Cronin et al. (2000) identify three broad approaches that reflect researchers' interests in different perspectives. The Value Model is typical of service value studies and specifies that behavioural intentions are directly influenced by service value and where service value is influenced independently by sacrifice, service quality and satisfaction or a subset of these constructs (Zeithaml, 1988; Cronin et al., 1997).

In the Satisfaction Model behavioural intentions are directly influenced by satisfaction and where this construct is simultaneously influenced by service value and service quality, and where service value is simultaneously influenced by sacrifice and service quality (Cronin and Taylor, 1992; Hallowell, 1996; Oliver 1999).

A third model, the Indirect Model reflects a focus on the interaction between service quality, value and satisfaction. Hence there are direct effects on behavioural intentions from value and satisfaction constructs. Value is influenced directly by quality and in turn, has a direct effect on satisfaction. Hence there are indirect effects on behavioural intentions by quality, via value and also via value and satisfaction, and value, via satisfaction (Ennew and Binks, 1999).

Anderson et al. (1994) provide a framework for the estimation of the economic returns arising from the delivery of consumer satisfaction. Evidence in support of the satisfaction-loyalty-profitability relationship is provided by Heskett et al. (1994) and Hallowell (1996). Apart from the application to individual firms, the concept has been extended, for example in the form of the American Consumer Satisfaction Index (ACSI), to industrial sectors or economies (Fornell, 1992). Subsequently, the ACSI inspired the development of the European Consumer Satisfaction Index (ECSI) in association with the European Foundation for Quality Management (EFQM) and the European Academic Network for Customer Oriented Quality Analysis (IFCF). In 1999 a pilot study was implemented in 12 European countries (Kristensen et al., 2001; Cassel and Eklöf, 2001).

A related development extends the satisfaction-loyalty relationship to include profitability. Loyalty enhances profitability through an increase in the scale and scope of the relationship with loyal customers, lower customer recruitment costs, reduced customer price sensitivity and lower customer servicing costs (Hallowell, 1996). However, Reinartz and Kumar (2002) warn against the assumption that loyalty automatically promotes greater profitability. These authors test four assertions from the

customer relationship marketing paradigm, that loyal customers: are more profitable, cost less to serve, pay higher prices; and, act as word-of-mouth marketers. They established that the respective associations between bivariate measures of loyalty with profit, costs, price and marketing activity were generally 'weak' to 'moderate'.

The authors attribute these results to the 'crude' nature of loyalty measurement that typically employs recency-frequency-monetary value criteria. Alternatively, they propose the use of event history modelling, which establishes the probability of purchase over future time periods and subsequently segments customers into four categories ('Butterflies': short term loyalty/high profitability; 'Strangers': short-term loyalty/low profitability; 'True-friends': long-term loyalty/high profitability; and 'Barnacles': long-term loyalty/low profitability) according to profitability (high/low) and loyalty (short-term/long-term). Hence they are able to propose management strategies for each segment.

3 METHODOLOGY

The research methodology employed a mail survey to investigate mail-order shoppers' characteristics, attitudes, preferences and behaviour. It was implemented as a national (UK) survey of (3,052) customer contacts supplied by five mail-order speciality food companies located in Cumbria, Northumberland and the Scottish Borders region. The sample frame consisted of names and addresses supplied by these companies. The sampling method employed a stratified random sample based upon the relative sizes of the firms' contact lists. Subsequently the survey yielded 1,639 valid responses, representing a response rate of 54 per cent.

It should be emphasised that the sample frame consisted of names and addresses of contacts, comprising existing customers and potential customer contacts from various sources such as exhibitions, trade fairs and from general enquiries. The firms did not have access to the type of customer databases that are recognised in the direct marketing literature as a key aspect of direct marketing and which would typically contain demographic, lifestyle and behavioural information to provide for detailed analysis (McCorkell, 1997).

The respondents were classified as "Active" or "Non-active" mail-order customers according to the recency of their last orders. The "Active" group comprised 1,030 respondents who had shopped for speciality food using mail-order during the previous 12 months whilst the "Non-active" group comprised 609 respondents who had not purchased food by mail-order during the same period. Whilst the questionnaire design incorporated questions addressed to both groups, the research reported within this study focuses only on the "Active" group, since this group had experience of speciality mail-order products and were thus equipped to express their evaluations on the various scales. This approach follows the notion that customer experience is an essential requirement in the analysis of satisfaction assessments (Bolton and Drew, 1991; Cronin and Taylor, 1994; Parasuraman et al., 1988).

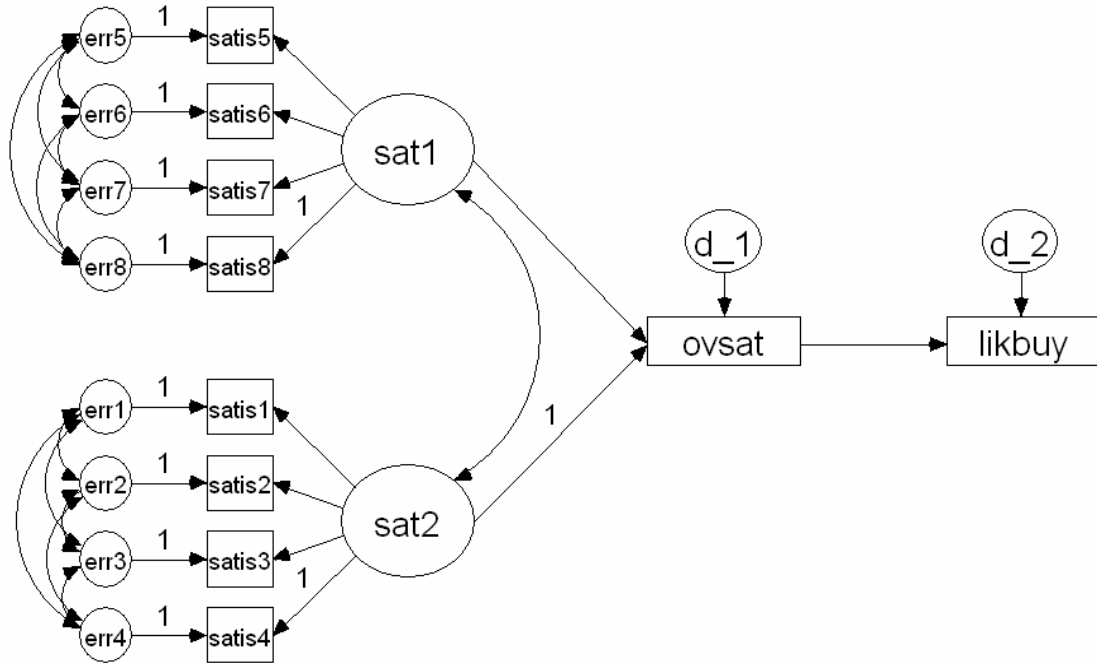
4 MEASURES

Although there are no directly comparable studies, this study is broadly consistent with existing satisfaction literature (Cronin and Taylor, 1992; Anderson and Fornell, 1994; Hallowell, 1996; Bolton, 1998; Oliver, 1999; Garbarino and Johnson, 1999; Bolton and Lemon, 1999; Bernhardt et al., 2000). Hence it takes a conventional approach in that re-purchase likelihood is directly influenced by a measure of overall satisfaction that in turn is influenced by a construct to represent transaction satisfaction associated with the attributes of mail order speciality foods. The measures of the attribute satisfaction construct were identified from in-depth discussions with managers and proprietors of mail-order firms and follow the approach of Biong (1993) in principle. The approach is parsimonious in that in likelihood of purchase can be traced to actionable attributes associated with mail-order speciality food and that are relevant to customers' encounters with mail-order transactions within the speciality food sector. The structural model is presented in Figure 1.

The eight effective indicators of the transaction satisfaction construct are concerned respectively with enquiry service (satis1), product selection (satis2), product quality (satis3), price (satis4), catalogue presentation (satis5), delivery service (satis6), ordering process (satis7) and payment terms (satis8). The response measures are defined as overall satisfaction (ovsat) with mail-order and the likelihood of future purchase (likbuy).

The levels of transaction satisfactions are measured as five-point scales (1 = Very satisfied, 5 = Very dissatisfied) for each of the eight satisfaction variables. Overall satisfaction is measured as a separate entity on the same basis. Likelihood of future purchase is measured on a 5 point scale (1 = Definitely would buy, 5 = Definitely would not buy).

Figure 1: Structural Equation Model



5 EMPIRICAL RESULTS

Each of the measures are analysed in the first instance using univariate analysis of the 10 measures in terms of frequencies and mean scores. Following this correlation analysis of the measures is presented. Exploratory factor analysis is applied to the eight measures that comprise the transactions satisfaction construct and the resulting factor structure is assessed using confirmatory factor analysis. Finally a structural equation model to analyse the relationships between the construct and measures is estimated. Univariate analysis, correlation analysis and exploratory factor analysis are conducted using SPSS (2003) while confirmatory factor analysis and structural equation modelling are conducted using AMOS (Amos, 2005).

Analysis of satisfaction attributes

The percentage distributions of responses for the eight satisfaction attributes are presented in Table 1. From the perspective of the proportion of customers who are very satisfied mail-order speciality food firms have been relatively more successful in delivering satisfaction with respect to product quality, delivery service, enquiry service and selection of products available. They have been least successful with respect to the order process, payment terms, catalogue presentation and price. Price is the least satisfactory aspect with only 10 per cent of customers who are very satisfied. However, this is not surprising, given the nature of these foods, which generally carry price premia, and with respect to the high levels of satisfaction with quality that indicates that it is value for money which customers evaluate.

Table 1: Frequencies and Means for Satisfaction and Purchase Likelihood Measures

| Satisfaction | Satisfaction (Percentage response) | | | | | | Mean rating |
|----------------------------|---|-----------|--------------------|--------------|-------------------|-------|-------------|
| | Very satisfied | Satisfied | Somewhat satisfied | Dissatisfied | Very dissatisfied | Total | |
| Enquiry service | 38.7 | 52.2 | 8.4 | 0.7 | 0.0 | 100 | 1.71 |
| Product selection | 37.6 | 55.1 | 6.9 | 0.4 | 0.0 | 100 | 1.70 |
| Product quality | 51.4 | 42.3 | 5.9 | 0.3 | 0.1 | 100 | 1.55 |
| Price | 10.0 | 52.8 | 29.4 | 7.2 | 0.6 | 100 | 2.36 |
| Catalogue presentation | 23.4 | 58.4 | 16.5 | 1.6 | 0.2 | 100 | 1.97 |
| Delivery service | 43.6 | 44.5 | 9.2 | 2.2 | 0.6 | 100 | 1.72 |
| Ordering process | 37.3 | 55.0 | 7.2 | 0.4 | 0.1 | 100 | 1.71 |
| Payment terms | 27.6 | 60.5 | 10.8 | 0.9 | 0.1 | 100 | 1.85 |
| Overall satisfaction | 36.5 | 56.3 | 6.6 | 0.3 | 0.3 | 100 | 1.72 |
| | Purchase likelihood (Percentage response) | | | | | | |
| Future purchase likelihood | Definitely | Likely | Not sure | Not likely | Definitely not | Total | Mean rating |
| Likelihood rating: | 58.5 | 35.0 | 4.7 | 1.7 | 0.1 | 100 | 1.50 |

Notes: Sample size (N) = 1028-1030 according to the presence of missing values in the data

Consideration of the two most favourable rating categories (Satisfied and Very satisfied) indicates that for each item the major proportion of customers are at least satisfied with all eight aspects of satisfaction. For example, 94 per cent of respondents are either satisfied or very satisfied with product quality and 93 per cent are at least satisfied with product selection. The least satisfactory aspect is associated with price where 63 per cent of respondents are at least satisfied but this still represents a majority attitude. On the basis of mean scores it is product quality, product selection and the order process which are more highly rated.

Analysis of overall satisfaction and likelihood of purchase

Following from this, consideration of overall satisfaction reveals that whilst a little more than one third of mail-order speciality food customers are very satisfied, 93 per cent are either satisfied or very satisfied (Table 1).

With respect to future purchase intentions, nearly 60 per cent of mail-order food shoppers definitely intend to repeat their purchases of mail order speciality food in the future while 35 per cent indicate they are likely to purchase again (Table 1). Consequently, the results indicate that mail-order appears to deliver high levels of satisfaction to match or exceed customers' expectations and that a high proportion of customers intend to repurchase.

Correlation analysis

The ultimate aim of the analysis is to examine the rationale of assuming that future purchase intentions can be associated with overall satisfaction and in turn, that overall satisfaction is associated with a satisfaction (with the features of mail-order) construct that is composed of eight indicators. Thus as a preliminary step the simple correlation coefficients for these sets of variables are examined (Table 2). Statistical tests, based upon the null hypothesis that the population correlation coefficient is equal to zero, indicate that all correlations are significantly different from zero at the 1 per cent significance level.

There is a significant positive association between overall satisfaction and purchase likelihood. Furthermore, there are significant correlations between overall satisfaction and all eight satisfaction attribute variables but, in descending order of magnitude, it is associated with the order process, product quality, deliver service, payment terms, product selection, enquiry service, price and catalogue presentation. The correlations between future purchase intentions and the satisfaction attributes are generally weaker, though significant, but it is more strongly associated with product quality, enquiry service, order process and price.

Table 2: Correlation Matrix

| Variable | Variable ¹ | | | | | | | | | |
|----------|-----------------------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| | satis1 | satis2 | satis3 | satis4 | satis5 | satis6 | satis7 | satis8 | ovsat | likbuy |
| satis1 | 1.000 | | | | | | | | | |
| satis2 | 0.480** | 1.000 | | | | | | | | |
| satis3 | 0.390** | 0.581** | 1.000 | | | | | | | |
| satis4 | 0.297** | 0.366** | 0.412** | 1.000 | | | | | | |
| satis5 | 0.363** | 0.348** | 0.257** | 0.363** | 1.000 | | | | | |
| satis6 | 0.318** | 0.254** | 0.317** | 0.304** | 0.340** | 1.000 | | | | |
| satis7 | 0.480** | 0.356** | 0.353** | 0.297** | 0.409** | 0.588** | 1.000 | | | |
| satis8 | 0.377** | 0.266** | 0.258** | 0.374** | 0.396** | 0.456** | 0.627** | 1.000 | | |
| ovsat | 0.465** | 0.466** | 0.517** | 0.437** | 0.425** | 0.500** | 0.550** | 0.492** | 1.000 | |
| likbuy | 0.309** | 0.286** | 0.376** | 0.299** | 0.235** | 0.217** | 0.298** | 0.208** | 0.452** | 1.000 |

Notes:

- Variables are defined as follows:
 satis1 = enquiry service; satis2 = product selection; satis3 = product quality; satis4 = price;
 satis5 = catalogue presentation; satis6 = delivery service; satis7 = ordering process; satis8 = payment terms
 ovsat = overall satisfaction; likbuy = likelihood of future purchase.
- ** Indicates correlation is significant at the 0.01 level (two-tailed test)
- Sample size (N) = 1028

Exploratory Factor Analysis of the Satisfaction Construct

Factor analysis of the eight-item satisfaction construct employed the extraction procedure of principal components with Varimax rotation. The criterion used to determine the number of factors was based upon the derivation of factors with an eigenvalue greater than unity.

A two-factor solution was derived (Table 3). Bartlett’s test of sphericity lead to a rejection of the null hypothesis, that the data are not correlated ($\chi^2(28) = 2225.463, p < .001$), while the KMO index of 0.827 is, according to Kaiser’s classification, ‘meritorious’ (Kaiser 1974). The two factors account for 59% of total variance and the communalities are generally respectable although those associated with catalogue presentation (0.410) and price (0.411) is rather low. The first factor (sat1) is associated with ordering process (0.819), payment terms (0.801), delivery service (0.762) and catalogue presentation (0.537) and is defined as service satisfaction. The second factor (sat2) is associated with product selection (0.833), product quality (0.827), price (0.553) and enquiry service (0.520) and is defined as product satisfaction.

Table 3: Satisfaction Construct: Exploratory Factor Analysis

| Attribute | Factor Number | | h2 |
|-------------------------|---------------|--------|------|
| | 1 | 2 | |
| Enquiry service | .442 | .520 | .466 |
| Product selection | .135 | .833 | .712 |
| Product quality | .124 | .827 | .699 |
| Price | .324 | .553 | .411 |
| Catalogue presentation | .537 | .350 | .410 |
| Delivery service | .762 | .121 | .596 |
| Ordering process | .819 | .252 | .734 |
| Payment terms | .801 | .161 | .667 |
| Eigenvalue | 2.514 | 2.180 | |
| Variance (%) | 31.429 | 27.253 | |
| Cumulative variance (%) | 31.249 | 58.682 | |

Notes:

- h2 refers to communality
- Sample size (N) = 1028

Confirmatory Factor Analysis of the Satisfaction Construct

The results of confirmatory factor analysis are presented in Table 4. The non-constrained regression weights linking the sub-constructs or factors and their associated measures are all statistically significant. The covariance between the two sub-constructs service satisfaction (sat1) and product satisfaction (sat2) is positive and significant and is associated with a correlation of 0.674.

Table 4: Satisfaction Construct: Confirmatory Factor Analysis

| Structural Relation | Regression Weight | Standard Error | Critical Ratio | Standard Weight | Squared Multiple Correlation |
|---------------------|-----------------------------------|----------------|----------------|-----------------|------------------------------|
| satis1 ← sat2 | 0.921 | 0.069 | 13.444 | 0.615 | 0.378 |
| satis2 ← sat2 | 1.027 | 0.070 | 14.761 | 0.727 | 0.528 |
| satis3 ← sat2 | 1.053 | 0.071 | 14.796 | 0.726 | 0.527 |
| satis4 ← sat2 | 1.000 | na | na | 0.554 | 0.307 |
| satis5 ← sat1 | 0.786 | 0.053 | 14.924 | 0.529 | 0.279 |
| satis6 ← sat1 | 1.113 | 0.058 | 19.034 | 0.673 | 0.453 |
| satis7 ← sat1 | 1.146 | 0.052 | 22.164 | 0.855 | 0.730 |
| satis8 ← sat1 | 1.000 | na | na | 0.727 | 0.528 |
| sat1 ↔ sat2 | 0.136 | 0.012 | 10.978 | 0.674 | na |
| Chi-Square | $\chi^2(19) = 216.179, P = 0.000$ | | | | |
| Model | RMSEA | TLI | IFI | CFI | |
| Default | 0.080 | 0.848 | 0.921 | 0.920 | |
| Saturated | na | na | 1.000 | 1.000 | |
| Independence | 0.205 | 0.000 | 0.000 | 0.000 | |

Notes:

- Variables are defined as follows:
 satis1 = enquiry service; satis2 = product selection; satis3 = product quality; satis4 = price;
 satis5 = catalogue presentation; satis6 = delivery service; satis7 = ordering process; satis8 = payment terms; sat1 = factor 1 (service satisfaction), sat2 = factor 2 (product satisfaction)
- Sample size (N) = 1028.

Structural Equation Model

The structural equation model follows conventional linkages between satisfaction constructs, overall satisfaction and likelihood of future purchase. The model employed maximum likelihood estimation because of the presence of missing values in the data. Two versions of the model were estimated. Version 1 revealed a significant covariance between service and product satisfaction constructs of 0.136 so that Version 2 imposed a constraint between them. The estimated relationships are presented in Table 5

Table 5: Estimated Structural Equation Model

| Structural Relation | Regression Weight | Standard Error | Critical Ratio | Standard Weight | Squared Multiple Correlation |
|---------------------------------|--------------------|----------------|----------------|-----------------|------------------------------|
| ovsat ← sat1 | 1.605 | 0.108 | 14.904 | 0.891 | 0.794 |
| ovsat ← sat2 | 1.000 | na | na | 0.608 | na |
| satis1 ← sat2 | 1.032 | 0.061 | 16.807 | 0.624 | 0.291 |
| satis2 ← sat2 | 1.089 | 0.058 | 18.645 | 0.697 | 0.279 |
| satis3 ← sat2 | 1.158 | 0.060 | 19.298 | 0.721 | 0.342 |
| satis4 ← sat2 | 1.000 | na | na | 0.517 | 0.254 |
| satis5 ← sat1 | 0.788 | 0.049 | 15.984 | 0.543 | 0.239 |
| satis6 ← sat1 | 1.111 | 0.054 | 20.745 | 0.688 | 0.322 |
| satis7 ← sat1 | 1.110 | 0.045 | 24.932 | 0.845 | 0.393 |
| satis8 ← sat1 | 1.000 | na | na | 0.739 | 0.464 |
| sat1 ← sat2 | 0.136 | na | na | 0.719 | na |
| likbuy ← ovsat | 0.497 | 0.029 | 16.950 | 0.473 | 0.215 |
| Goodness of Fit Measures | | | | | |
| Absolute | Incremental | | | | |
| Chi-Square | Model | RMSEA | TLI | IFI | CFI |
| $\chi^2 = 69.359$ | Def | 0.069 | 0.877 | 0.922 | 0.922 |
| df = 17 | Sat | na | na | 1.000 | 1.000 |
| P = 0.000 | Indep | 0.196 | 0.000 | 0.000 | 0.000 |

Notes:

1. Variables are defined as follows:
satis1 = enquiry service; satis2 = product selection; satis3 = product quality; satis4 = price;
satis5 = catalogue presentation; satis6 = delivery service; satis7 = ordering process;
satis8 = payment terms; ovsat = overall satisfaction; likbuy = likelihood of future purchase;
sat1 = service satisfaction; sat2 = product satisfaction.
2. Sample size (N) = 1028

The goodness of fit measures presented in the table generally follow the recommendations of Hoyle and Panter (1995) except for the inclusion of root mean square error of approximation (RMSEA). The chi-square measure of discrepancy tests how much the implied and sample covariance matrices differ under the null hypothesis that they do not. The results of the test indicate a rejection of the null hypothesis, which does not auger well for the proposed model. However, Hu and Bentler (1995: 78) suggest that the test may not be a good enough guide to model adequacy because of model mis-specification, the power of the test, or violation of some technical assumptions underlying the test (Hu and Bentler 1995: 77-8).

In the case of the model examined here it is highly likely that this is associated with the large sample size (1028). Hair et al. (1998) report that if the sample size becomes large enough significant differences will be found for any specified model. Hence they suggest that the test is not reliable outside the sample range of 100-200 observations. However, it is also likely that the technical assumptions underlying the test have been violated.

Given this situation, goodness of fit is also indicated by root mean square error of association (RMSEA) that is recommended as an alternative to the chi-square test in the case of large samples (Hair et al. 1998), and three type 2 indices suggested by Hoyle and Panter (1995); Tucker-Lewis index (TLI), incremental fit index (IFI), and comparative fit index (CFI). RMSEA lies below the upper threshold value of .080 regarded as 'reasonable' by Brown and Cudeck (1993) while values of TLI, IFI and CFI approximate to the lower threshold of 0.9 suggested by Hair et al. (1998).

For the measurement models, the reliability of the indicators of the satisfaction sub-constructs is conducted using the Reliability procedure within SPSS (SPSS, 2005). This yielded Cronbach alpha coefficients of 0.768 for service satisfaction (sat1) and 0.723 for product satisfaction' (sat2). Both coefficients exceed the acceptable threshold level of 0.7 suggested by Nunally (1978). The respective construct reliabilities (CR) of these sub-constructs are 0.801 and 0.737, which are above the threshold level of 0.7 suggested by Hair et al. (1998). The respective variances extracted (VE) are 0.507 and 0.416 compared to a threshold value 0.5 suggested by the same authors, so that the VE for product satisfaction is disappointing.

With respect to the structural model service satisfaction (sat1) and product satisfaction (sat2) have a strong positive effect on overall satisfaction (ovsat) and explain 79 per cent of the variance of this measure. The regression weight of product satisfaction (sat2) was constrained to unity to achieve identification of the model but the coefficient of service satisfaction (sat1) is highly significant. Overall satisfaction (ovsat) has a moderately positive effect on future purchase intentions (likbuy) but only manages to explain 22 per cent of the variance of this dependent measure. The coefficient is also highly significant. Examination of the standard coefficients reveals that service satisfaction (sat1) has a stronger impact on overall satisfaction (ovsat) compared to product satisfaction (sat2) and that overall satisfaction (ovsat) has a comparatively weaker impact on future purchase intentions (likbuy).

Examination of the relations between the two satisfaction constructs and their respective measures reveals that all non-constrained coefficients are highly significant. For service satisfaction (sat1) the relative importance of measure's coefficients indicates that the highest associations in descending order of importance are product quality, product selection, enquiry service, and price. For product satisfaction (sat2) the highest associations are ranked in descending order as ordering processes, payment terms, delivery service and, catalogue presentation.

6 SUMMARY AND CONCLUSIONS

The study set out to analyse customer satisfaction in terms of eight satisfaction attributes, a measure of overall satisfaction and likelihood of future purchase.

The initial analysis considered analysis of individual scale items. The implications of this analysis for mail-order speciality food businesses depend very much on the perspective that is taken. From the perspective of the proportion of customers who are very satisfied there is concern because only in the

case of product quality are a majority of customers very satisfied. Thus it appears that mail-order speciality food firms should pay attention to all other aspects of mail-order operations.

On the other hand, if the criterion is to consider customers who are at least satisfied, satisfied or very satisfied, there is more cause for an optimistic stance. Analysis of the eight-item satisfaction scale reveals high levels of satisfaction with the eight attributes, especially with respect to product quality, delivery service and enquiry service.

Thus it is not surprising that consideration of overall satisfaction reveals that 93 per cent of mail-order speciality food shoppers are either satisfied or very satisfied. With respect to future purchase intentions, nearly 60 per cent of mail-order food shoppers definitely intend to repeat their purchases in the future. Consequently, the results indicate that mail-order appears to deliver high levels of satisfaction that matches or exceeds customers' expectations and that a high proportion of customers intend to purchase in the future.

Simple correlation analysis reveals that there are significant correlations between overall satisfaction and likelihood of future purchase and that each of these variables are significantly correlated with each of the eight items of the satisfaction attributes.

The results of the SEM show that it is possible to establish credible inter-relationships between the sub-constructs of transaction satisfaction with mail order, overall satisfaction, and re-purchase intentions. The measures of fit are acceptable and all free parameters are strongly significant. Satisfaction with the transactions of mail order has a strong association with overall satisfaction. However, higher levels of overall satisfaction have a weaker association with intentions to re-purchase. The structural relations indicate that both product and service aspects of the mail-order transaction have strong associations with overall satisfaction, but satisfaction with the service transaction is more important. Consequently, the message to mail-order firms is that they need to expand their vision of their respective businesses beyond that of a food delivered by post. After all, some speciality food products are available in speciality stores but it is the high level of customer care and service that differentiates the mail-order product from the in-store equivalent. The most important message is that satisfaction and hence re-purchase likelihood are dependent on integrated features of both product and service aspects of the mail order business.

The results are consistent with current emphasis on building customer satisfaction and loyalty, which is envisaged as a goal and a key element in the achievement of company objectives, through service aspects of the marketing mix. They are broadly compatible with the results of other studies applied to other sectors that identify the positive link between satisfaction and response (Hallowell, 1996; Bolton, 1998; Oliver, 1999; Garbarino and Johnson, 1999; Bolton and Lemon, 1999; Bernhardt et al., 2000). Hence the most important aspects of customer satisfaction revealed in this study can be associated with those service marketing elements concerned with physical evidence (catalogue presentation, product quality, product selection), process (order process, delivery service, payment terms) and people (enquiry service).

The study reported here is regarded as an exploratory study which could be elaborated in further work that focuses uniquely on the issue of satisfaction and loyalty. The model is set in the context of the satisfaction literature rather than a more general Q-V-S framework. The model excluded constructs of sacrifice, quality, and value and so assumes that these issues are incorporated in the transactions and overall measures of satisfaction. Further extensions of this approach could employ multiple measures of both overall satisfaction and behavioural intentions.

There would appear to be some justification for the exclusion of the perceived quality and perceived value constructs. Some studies have questioned whether they are synonymous or distinct, since they tend to be highly correlated such that some studies have failed to establish discriminant validity between them (Dabholkar, 1993; Oliver, 1993). However it should be noted that Dabholkar et al. (2000) regard them as distinct but highly correlated.

According to Cronin et al. (2000), the omission of the constructs of sacrifice, quality and value excludes the possibility of exploring the impact that these constructs have on behavioural intentions, and more complex relations that emerge from both indirect and direct effects. Hence, a more ambitious extension in further work could employ a more comprehensive framework to include the constructs of sacrifice, perceived risk and perceived quality in addition to satisfaction.

REFERENCES

- Amos. 2005. Amos Version 6, (PA., USA: Amos Development Corporation)
- Anderson, E. W., Fornell, C. 1994. A customer satisfaction research prospectus. In Rust, R. T., and Oliver R. L. (Eds.), *Service quality: New directions in theory and practice*, 241-268 (Thousand Oaks, CA, Sage Publications).
- Anderson, E. W., Fornell, C., Lehmann, D. R. 1994. Customer satisfaction, market share, and profitability: findings from Sweden. *Journal of Marketing* 58 (3), 53-66.
- Beardon, W.O., Crockett, M., Teel, J. E. 1981. Disconfirmation of purchase expectations and subsequent consumer attitudes and patronage intentions. Paper delivered at the American Marketing Association conference on Retail Patronage, May 1981.
- Bernhardt, K. L., Donthu, N., Kennett, P. A. 2000. A longitudinal analysis of satisfaction and profitability. *Journal of Business Research*, 47, 161-171.
- Biong, H. 1993. Satisfaction and loyalty to suppliers within the grocery trade. *European Journal of Marketing* 27 (7), 21-38.
- Bloemer, J. M. M., Kasper, H. D. P. 1995. The complex relationship between customer satisfaction and brand loyalty. *Journal of Economic Psychology*, 16, 311-29.
- Bloemer, J. M. M., Lemmink, G. A. M. 1992. The importance of customer satisfaction in explaining brand and dealer loyalty. *Journal of Marketing Management*, 8, 351-364.
- Bolton, R. N. 1998. A dynamic model of the duration of the customer's relationship with a continuous service provider: the role of satisfaction. *Marketing Science* 17 (1), 45-65.
- Bolton, R. N., Drew, J. H. 1991. A longitudinal analysis of the impact of service changes on consumer attitudes. *Journal of Marketing*, 55 (1), 1-9.
- Bolton, R. N., Lemon, K. N. 1999. A dynamic model of customers' usage of services: usage as an antecedent and consequence of satisfaction. *Journal of Marketing Research*, 36 (May), 171-186.
- Bou-Llugar, J. C., Camisón-Zornoza, C., Escrig-Tena, A. B. 2001. Measuring the relationship between firm perceived quality and customer satisfaction and its influence on purchase intentions. *Total Quality Management*, 12 (6), 719-734.
- Browne, M. W., Cudeck, R. 1993. Alternative ways of assessing model fit. In K. A. Bollen, K. A., Long, J. S. (Eds.), *Testing structural equation models*, 136-162 (Newbury Park, CA, Sage Publications)
- Cassel, C., Eklöf, J. A. 2001. Modelling customer satisfaction and loyalty on aggregate levels: Experience from the ECSI pilot study. *Total Quality Management*, 12 (7-8), 834-841.
- Cronin, J. J., Brady, M. K., Brand, R. R., Hightower Jr., R., Shenwell, D. J. 1997. A cross-sectional test of the effect and conceptualization of service value. *The Journal of Service Marketing*, 11 (6), 375-391.
- Cronin, J. J., Brady, M. K., Hult, G. M. 2000. Assessing the effects of quality, value and customer satisfaction on consumer behavioural intentions in service environments. *Journal of Retailing*, 76 (2), 193-218.
- Cronin, J. J., Taylor, S. A. 1992. Measuring service quality: a re-examination and extension. *Journal of Marketing*, 56 (3), 55-68.

- Cronin, J. J., Taylor, S. A. 1994. SERVPERF versus SERVQUAL: reconciling performance based and perception based - minus - expectation measurements of service quality. *Journal of Marketing*, 58 (1), 125-31.
- Dabholkar, P. A. 1993. Customer Satisfaction and service quality: Two constructs or one? In Cravens, D. W. and Dickson, P. R. (Eds.), *Enhancing knowledge development in marketing*, 10-18 (Chicago, IL, American Marketing Association).
- Dabholkar, P. A., Shepherd, C. D., Thorpe, D. I. 2000. A comprehensive framework for service quality: an investigation of critical, conceptual and measurement issues through a longitudinal study. *Journal of Retailing*, 76 (2), 139-173.
- Dabholkar, P. A., Thorpe, D.I. 1994. Does customer satisfaction predict shopper intentions? *Journal of Consumer Satisfaction*, 7, 161-71.
- Dick, A. S., Basu, K. 1994. Customer loyalty: toward an integrated conceptual framework. *Journal of the Academy of Marketing Science*, 22 (2), 99-113.
- The Economist 1994. A survey of television-viewing for the future. February, 12-18.
- Ennew, C. T., Binks, M. R. 1999. Impact of participative service relationships on quality, satisfaction and retention: an exploratory study. *Journal of Business Research*, 46, 121-123.
- Food from Britain 1987. *Specialist foods study: market overview* (Watford, UK, Institute of Grocery Distribution)
- Fornell, C. 1992. A national customer satisfaction barometer: the Swedish experience. *Journal of Marketing*, 56 (1), 1-21.
- Fornier, S. 1994. A consumer-based relationship framework for strategic brand management, Unpublished PhD dissertation, University of Florida.
- Garbarino, E., Johnson, M. S. 1999. The different roles of satisfaction, trust and commitment in customer relationships. *Journal of Marketing*, 63 (April), 70-87.
- Hair, J. R., Anderson, R. E., Tatham, R. L., Black, W. C. (1998). *Multivariate data analysis* (5th edition) (New Jersey, Prentice Hall International Inc).
- Hallowell, R. 1996. The relationships of customer satisfaction, customer loyalty, and profitability: an empirical study. *International Journal of Service Industry Management*, 7 (1), 27-42.
- Halstead, D. 1989. Expectations and disconfirmation beliefs as predictors of consumer satisfaction, repurchase intention and complaining behaviour: an empirical study. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behaviour*, 5, 1-11.
- Hausknecht, D. R. 1990. Measurement scales in consumer satisfaction/dissatisfaction. *Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behaviour*, 3, 1-11.
- Heskett, J. I., Jones, T. O., Loveman, G. W., Sasser, W. E. Jr., Schlesinger, L. A. 1994. Putting the service profit chain to work. *Harvard Business Review*, March-April, 105-11.
- Hoyle, R. H., Panter, A. T. (1995). Writing about structural equation models. In Hoyle, R. H. (Ed.), *Structural equation modeling: Concepts issues and applications*, 158-176 (London, Sage Publications).
- Hu, Li-Tze., Bentler, P. M. 1995. Evaluating model fit. In Hoyle, R. H. (Ed.), *Structural equation modeling: Concepts issues and applications*, 76-90 (London: Sage Publications).

- Kaiser, H. F. 1974. An index of factorial simplicity. *Psychometrika*, 39, 31-36.
- Kondo, Y. 2001. Customer satisfaction: how can I measure it? *Total Quality Management*, 12 (7-8), 867-872.
- Kotler, P., Armstrong, G., Saunders, S., Wong, V. 1996. *Principles of marketing (European Edition)* (Hemel Hempstead: Prentice Hall).
- Kristensen, K., Juhl, H. J., Østergaard, P. 2001. Customer satisfaction: Some results for European retailing. *Total Quality Management*, 12 (7-8), 890-897.
- La Barbara, P. A., Mazursky, D. 1983. A longitudinal assessment of consumer satisfaction/dissatisfaction: the dynamic aspect of the cognitive process. *Journal of Marketing Research*, November, 393-404.
- McCorkell, G. 1997. *Direct and data base marketing* (London: Kogan Page).
- Nunnally, J. C. 1978. *Psychometric Theory* (2nd Edition) (New York: McGraw Hill).
- Oliver, R. L. 1999. Whence consumer loyalty? *Journal of Marketing*, 63 Special Issue, 33-44.
- Parasuraman, A. Zeithaml, V. A., Berry L. L. 1988. SERVQUAL: a multiple item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64 (1), 12-40.
- Porter, M. 1985. *Competitive advantage: creating and sustaining superior performance* (New York: Free Press).
- Reinartz, W., Kumar, V. 2002. Mis-customer loyalty. *Harvard Business Review*, 80 (7) July, 86-94.
- Selnes, F. 1993. An examination of the effect of product performance on brand reputation, satisfaction and loyalty. *European Journal of Marketing*, 27 (9), 19-23
- SPSS. 2003, *SPSS for Windows Version 12*, (Chicago, IL: SPSS Inc)
- Van Looy, B., Gemmel, P., Desmet S., Van Dierdonck. R, Serneels S. 1998. Dealing with productivity and quality indicators in a service environment: some field experiences. *International journal of service industry management* 9 (4): 359-376.
- Victor, P. 1995. Tele-shops to take 20 per cent of high street sales. Independent on Sunday, June 4th.
- Wilson, A. 2002. Attitudes towards customer satisfaction measurement in the retail sector. *International Journal of Marketing Research*, 44 (2), 213-222.
- Yi, Y. 1990. A critical review of consumer satisfaction. In Zeithaml, V. (Ed.), *Review of Marketing* 1990, 213-222 (Chicago, IL: American Marketing Association).
- Zeithaml, V. A. 1988. Consumer perceptions of price, quality and value: a means-end model and synthesis of evidence. *Journal of Marketing*, 52 (July), 2-22.
- Zeithaml, V. and Bitner, M. J. 2000. *Services marketing* (New York: McGraw-Hill).