

# **The relationship between retailers' targeting and e-commerce strategies: an empirical analysis**

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# **The relationship between retailers' targeting and e-commerce strategies: an empirical analysis**

**Abstract:** *The phenomenal growth of the Internet, witnessed in recent years, has had a significant impact on the way in which organisations interact and do business with their customers. Whilst, to date, there has been a strong focus in the literature upon the factors that affect the adoption of e-commerce, and the demographics of Internet users, there have been few attempts to link these two increasingly important bodies of knowledge. This empirical study seeks to bridge this gap by investigating the extent to which the adoption of e-commerce amongst retailers is influenced by the socio-demographic characteristics of their target customers, in terms of their age, gender and socio-economic profile. The questionnaire was mailed to senior marketing executives in the UK's largest retail organisations, and ultimately resulted in the receipt of 164 useable replies, giving an overall response rate of 18%. The results of a set of analyses demonstrate that organisations are most likely to adopt the Internet for information provision, marketing and direct sales purposes if their typical customer is male, young and a member of the professional / managerial classes. These results are not altogether surprising, as young, professional males are typically enthusiastic and competent users of information technologies.*

## **1. INTRODUCTION**

As global competition intensifies, an organisation's effective operational performance, and strategic positioning will become more dependent upon its ability to successfully exploit information technologies. Of particular importance, in this context, is the Internet, which through its high levels of connectivity, reach and adoption has already impacted upon most sectors of the economy, including defence, banking, retail, manufacturing, healthcare and education. Indeed, the scale of investments in e-commerce have already been substantial; recent figures from the Boston Consulting Group (2001) suggest that by the end of the year, the B2C economy will have grown to \$65 billion, in the USA alone. This growth of e-commerce is predicted to continue for many years to come. For example, a recent report by Ernst & Young (2001) anticipated that in the years to come, the online channel will become 'substantial'. More specifically, they predicted that 'by 2005 it will represent 10 to 12 percent of sales in categories such as apparel', and in 'consumer electronics it could represent as much as 20 to 25 per cent of sales'. Whilst these figures indicate a growing interest in e-commerce within the commercial world, by no means all organisations have been tempted to join the rush. For example, a recent study by Doherty et al (1999) concluded that only 10% of the UK's retailers had established a web-site, and only 3% had commenced on-line trading. Consequently, one research area of great interest to the academic community is to understand the factors that are motivating some

retail organisations to enthusiastically embrace e-commerce, whilst others are displaying far more caution (e.g. Teo *et al.* (1997); Vadapalli and Ramamurthy (1997); Doherty *et al.* (1999)). Whilst this body of research has identified a great many factors, such as the compatibility of the Internet with organisational culture and infrastructure, top management support and transaction costs, it has not explicitly sought to explore the link between an organisation's target customers and the adoption of e-commerce.

Given the heterogeneous nature of most markets, with customer requirements becoming increasingly diverse, it is no longer practical or desirable for organisations to simply adopt an unfocussed, mass-marketing approach (Dibb, 1998). Consequently, organisations must partition their broad customer base into distinct and homogenous groups, each of which comprises customers with similar requirements, characteristics or behaviour. It is then possible for an organisation to identify and target the company's offering and communications at just those segments that offer the most promising opportunities in relation to the organisation's strengths and situational determinants (Segal & Giacobbe, 1994). As Boone and Roehm (2002) note, segmentation is of particular importance within the retailer sector where *'retailers have long recognized the importance of tailoring their marketing mixes to suit the specific needs of different customer groups'*. For example, a retail organisation might segment its customer-base, through the use of *'profile variables'*, such as age, gender or socio-economic class (Jobber, 1998; p 174), and then target key groups of customers, such as the young, the affluent or families. Consequently, in the context of the Internet, it might be that an organisation's targeting strategy might influence its readiness to adopt electronic commerce. However, whilst previous research has highlighted the importance of market segmentation in the context of e-commerce (Louvieris & Driver, 2001) no research has empirically explored the link between an targeting strategies and Internet adoption.

Previous studies have concluded that the typical Internet user is young, male and generally well-off and well-educated (e.g. Teo, 2001). It might well, therefore, be envisaged that organisations that primarily target market segments that can also be characterised as young, male and relatively affluent and well-educated might be more likely to adopt the Internet. It is perhaps surprising that few, if any, previous studies have explicitly explored this question. To help fill this gap in the literature, a study was initiated that sought to critically evaluate whether the targeting strategies of retail organisations are influencing the extent to which they adopt the Internet. Given the Internet's significant potential within the retail sector, where it can be used to provide information, facilitate communication, collect market research data, promote goods and services and support on-line ordering (Hart et al, 2000), it provided an obvious focus for this study.

The following section of this paper discusses the adoption of Internet as it is portrayed in the literature, before establishing the research objectives for this project. The development,

validation, targeting and distribution of a postal questionnaire survey are described in section three. The research results are presented in a series of tables that are discussed in the fourth section, whilst their importance and strategic implications for the retail sector, is assessed in the concluding sections.

## **2 RESEARCH CONTEXT AND OBJECTIVES**

The aim of this section is to present a critical review of the literature with regard to the factors that influence adoption and the characteristics of Internet users, before the motivations and academic justification for this research are established.

### **2.1 Factors affecting the adoption of the Internet: current perspectives**

Many researchers have already started to explore the factors that are likely to influence an organisation to develop an e-commerce capability. For example, Vadapalli and Ramamurthy (1997) explored the underlying motivations of business adoption of the Internet. They concluded that organisational boundaries, transaction costs, economics and organisational cognition were key influences on business adoption, amongst large US-based, communications companies. Moreover, they found that the inherent self-fulfilling characteristics of the Internet affect levels of use: organisations that have positive perceptions regarding the potential value of the Internet are more likely to adopt. Riquelme's (2002) exploration of Internet adoption in China concluded that organisational size might also influence adoption, as large organisations were found to be best placed for realising benefits from e-commerce projects. Teo *et al.* (1997) conducted a study in Singapore, which examined the factors that had influenced large businesses to adopt the Internet. They concluded that organisational and technological factors, such as the compatibility of the Internet with organisational culture and infrastructure, a well-focused technology policy, and top management support, were the most significant factors affecting Internet adoption.

Specifically in the context of retailing, Doherty *et al* (1999) suggest that an organisation's decision to develop a web-site will be based on a variety of internal factors, such as strategic vision and resource availability, as well as environmental factors, such as competitive pressures. Moreover, they found that retailers are greatly influenced by their perceptions of the relative advantage that e-commerce might deliver, particularly in areas such as the opportunity to promote a wider range of products and target new markets. O'Keefe *et al*, (1998) suggest that organisations might be influenced by the *fit* between product and Internet demographics and Doherty *et al* (1999) note that retailers take account of the '*likelihood of their current customers using the Internet*'. However, no previous studies have been found that empirically test the influence of customer demographics on Internet adoption.

## 2.2 The impact of demographics on Internet usage

As Teo (2001) notes '*with the continued rapid growth of the Internet, it is vital to understand the demographic factors that are associated with Internet usage*'. Indeed, much research has already been conducted in this area. Most of the existing research on the demographic factors that affect Internet usage have concentrated on the age, the gender and, to a somewhat lesser extent, the socio-economic background of the potential or actual users, as witnessed in the following discussion:

- **The impact of age on Internet usage:** The vast majority of studies exploring the impact of age on Internet usage, over the past ten years, have concluded that younger adults are likely to be more regular users than the elderly. When it comes to the usage of computers, in general, Elder et al (1987) found that older workers are more likely to experience '*technostress*', than their younger colleagues. In particular, age has been found to have an impact on Internet usage, with both Teo (2001) and Katz and Aspden (1997) providing evidence to support the hypothesis that age is negatively related to Internet usage.
- **The impact of gender on Internet usage:** There has also been a great deal of research exploring how gender influences levels of Internet usage. In general these studies have concluded that males are likely to be more regular users of Internet services than females. For example, Katz and Aspden (1997) that both '*current long-time*' Internet users and '*current recent*' Internet users were more likely to be male than female. Similarly, Heimrath & Goulding (2001) found that whilst '*female use, interest and confidence in using the Internet is high but, in comparison with male respondents, the females had not taken to the Internet so rapidly*'. These findings might be a consequence of females generally being less interested, confident and competent, than males, in their use of computers (e.g. Harrison & Rainer, 1992; Elder et al, 1987).
- **The impact of socio-economic background on Internet usage:** Whilst there have been fewer studies explicitly investigating influence of socio-economic background on Internet usage, there have been many studies where this topic is implicitly addressed. Such studies have typically either explored what has become known as the '*digital divide*' or have investigated the impact of education on Internet usage. Taking the '*digital divide*' first, it is becoming clear, that a significant gap has developed, in terms of computer ownership, between the '*rich*' and the '*poor*' (Kraut et al, 1996). Moreover, there is evidence that this 'digital divide' is affecting Internet usage. For example, Katz and Aspden (1997) found that current '*long-time*' users of the Internet are likely to be well off, with household income exceeding \$50,000. There is also evidence to suggest that the education of the user has a significant impact upon computer usage, in general (Igbaria, 1993) and Internet usage in particular (Katz and Aspden (1997)).

In summary, the findings of the studies, reviewed above, suggest that the typical Internet user is a young, fairly affluent and well-educated male.

## **2.3 Summary of the literature and research objectives**

Whilst a great deal of work has been conducted into the factors that are encouraging organisations to adopt the Internet, there has been little explicit focus upon how the characteristics of an organisations customer base are affecting adoption levels. This is perhaps a surprising omission as there is also a large body of work that seeks to identify the demographic characteristics of Internet users. To help fill the identified gap in the literature, an extensive research study was initiated that sought to explore the characteristics of an organisation's customer base that affect its adoption of the Internet. To help focus the study the research was targeted at large retailers, operating within the United Kingdom. The specific objectives, and accompanying hypotheses [where appropriate] of this research were as follows:

- To explore the degree to which, of a number of important, web-site functions had been adopted by the UK's leading retailers.
- To investigate the degree to which the functionality of web-sites is influenced by the age of the retailer's customer base. More specifically, as the literature suggests Internet users are typically young, it is possible to propose the following hypothesis:  
H1 = Those organisations that have a younger target customer base are likely to have progressed further in their adoption of the Internet, than those with older customers.
- To investigate the degree to which the functionality of a web-site is influenced by the gender of the retailer's customer base. It is possible to construct the following specific hypothesis, based upon the finding that Internet users are more likely to be male:  
H2 = Those organisations with a target customer base that has a high proportion of males are more likely to have progressed further in their adoption of the Internet, than those with a low proportion of male customers.
- To investigate the degree to which the functionality of web-sites is influenced by the socio-economic characteristics of the retailer's customer base.  
H3 = Those organisations with an affluent and well educated target customer base are more likely to have progressed further in their adoption of the Internet, than those with poorer and less well educated customers.

Whilst it is recognised that a range of other factors, such as organisational size (Riquelme, 2002), might also affect levels of Internet adoption, the exploration of these is beyond the scope of this paper.

From a practitioner perspective, it was envisaged that the study would make an important contribution by delivering new insights into how retail organisations should approach the task of developing an Internet strategy might be generated. It was also anticipated that the study would be of interest to the research community, as it explicitly bridges the gap between the existing bodies of knowledge on factors affecting Internet adoption and the characteristics of Internet users. The following sections of this paper describe and discuss the primary research that was undertaken to explore the four research objectives.

### **3. RESEARCH METHOD**

The purpose of this section of the report is to review and present the methods by which the research instrument was designed, validated and ultimately distributed to senior managers within the UK's retail sector.

#### **3.1 Design and validation of data collection document**

Having decided that it was best to tackle the research objectives through a mail-based questionnaire, it was necessary to develop a series of measures that would adequately describe an organisation's level of Internet adoption and the demographic characteristics of its customer base. The questionnaire was initially based on issues highlighted in the literature, but was then enhanced through an iterative process of review and refinement. The final version of the questionnaire [see Appendix A] was divided into number of distinct sections; the three, which are of most relevance to this research, are briefly reviewed below:

- 1. Respondent classification:** The first section was designed to capture company details, in particular, product activity sector and organisational size, in terms of number of outlets.
- 2. Customer characteristics:** The second section of the questionnaire sought to create a profile of the typical characteristics of a retail organisation's customer base, in order to evaluate how their scale of Internet adoption was affected by their segmentation strategies. Accordingly, respondents were asked questions with respect to each of the following characteristics:
  - **Age:** A six item categorical scale was developed to determine the age profile of an organisation's target market segments. The categories were: under 20; 21-30; 31-40; 41-50; 51-60 and over 60. Respondents were invited to tick as many boxes as were appropriate, in order to provide an accurate profile of their organisation's customer base.
  - **Gender:** Respondents were asked to identify the proportion, in percentage terms, of their target customers who are typically female. Consequently, the respondent had to describe their target market segments on a continuum running from 0% female through to 100% female.

- **Social Class:** A six item categorical scale was used to determine the social classes that an organisation would typically target. The scale, which is widely used within the UK, starts at '*A -upper middle class*', and goes through categories B, C1, C2, and D, before finishing with '*E - those at the lowest subsistence level*' (Market Research Society, 1991; pp 8-9). Respondents were invited to tick as many boxes as were appropriate, in order to provide an accurate profile of their organisation's customer base.

**3. Level of Internet adoption:** The second section of the questionnaire was designed to explore current levels of Internet activity. Accordingly, respondents were asked to describe their progress in developing an active web-site, using a four-item scale ranging from '*no plans to develop a web-site*' through to '*active Web site in existence*'. These measures were derived from an earlier, exploratory piece of work by the same authors (Doherty et al, 1999). In total, respondents were asked to indicate their organisation's progress to date in adopting eight specific web-site functions, as highlighted in Appendix A.

Having designed a draft questionnaire, it was further refined through a rigorous process of pre-testing and piloting. The pre-testing was conducted in three distinct rounds and involved a total of twenty-four individuals, including retail managers, subject specialists and academic experts. The pre-testing, which focused on issues of instrument clarity, question wording and construct validity, resulted in a number of significant modifications to the questionnaire. Having successfully pre-tested and refined the research instrument, a pilot test was conducted to assess the likely response rates and to confirm the questionnaires reliability (Straub, 1989). The pilot study was targeted at 132 retailers who were randomly selected from the sampling frame, which is described in the following section. The piloting exercise generated a total of 29 replies (response rate: 22%) and did not highlight any significant problems. Consequently, the questionnaire design was not altered after the pilot study.

### 3.2 Targeting and execution of questionnaire

The primary objective of the targeting exercise was to derive a sampling frame that included all the UK's largest and most influential retailers. To this end the survey was primarily targeted at '*multiple*' retailers (at least ten branches), which The Business Monitor (1996; p 27) concludes accounts for 68% of the UK's retail sales. However, an additional selection criteria, namely those organisations with a turnover in excess of £5 million, was also used to ensure that influential single-store retailers, such as Harrods and Selfridges, and mail order companies were not excluded from the study. The Healy and Baker Retail Directory (1997) <sup>1</sup>, which contains a comprehensive list of the UK's retailers, was used as the primary reference source

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<sup>1</sup> It should be noted that the sampling frame was originally compiled, for another projected, using the 1997 version of the directory. The sample was then revised and updated using the 1998 and 1999 editions before the survey was ultimately distributed.



for compiling the sample. The sample was ultimately composed of 1099 retailers who operated in seventeen distinct retail activity sectors [see table 1].

**Table No 1** Breakdown of Sample by Retail Activity Sector

<b>Sector</b>	<b>No. of Retailers</b>	<b>Sector</b>	<b>No. of Retailers</b>
Clothing retailers	153	Sports goods retailers	39
Specialist retailers	133	Electrical retailers	36
Mail order retailers	119	Toys & hobby retailers	35
Mixed retailers	109	Jewellery retailers	25
Health & beauty retailers	97	Grocery retailers	24
Furnishing retailers	92	DIY retailers	23
Books, Music, Stationary & Video	71	Alcohol retailers	19
Footwear retailers	57	News retailers	17
Convenience retailers	50		

The questionnaire was targeted at the most senior marketing executive, as listed in the Healy and Baker Directories, as it was envisaged that these individuals would best be able to answer questions about their organisations customer targeting strategies and e-commerce activities. This individual was invited to either complete the questionnaire, if they were responsible for their organisation's Internet activities, or forward it to the manager who has the most direct responsibility. In the minority of cases where no marketing executive was listed in the Directory, a senior information systems manager was selected as an alternative. The mailing ultimately resulted in the receipt of 164 useable replies, and the return of 159 envelopes marked '*addressee not known*', giving an overall response rate of 17.5%.

### **3.3 Sample Characteristics and Evaluation of Non-response Bias**

The sample could be characterised in terms of both the size of the responding organisations and the sectors in which they are primarily operating. Of the valid responses, 41% were received from smaller organisations, which had less than 30 outlets, 36% were from organisations with between 30 and 199 outlets, whilst the remaining 23% came from larger organisations with over 200 outlets. Whilst the responses were also found to have come from a wide variety of retail sectors, four were particularly well represented; clothing [20% of sample], mixed stores [9%], furnishings [9%], and books and music [8%].

With any survey-based research it is important that active measures are taken to reduce the chances of bias having a dysfunctional affect on the validity of the results. In this research the possibility of non-respondent bias was evaluated through a set of follow-up telephone calls to a

random selection of 200 non-respondents. Each targeted non-respondent was asked to comment on whether they had received the questionnaire, and to explain their subsequent course of action. In the majority of cases (59%), the reason for non-response, such as: *'company policy'*, *'respondent too busy'* or *'personal policy'* did not indicate any systematic bias in attitude to the Internet. In a further 35% of the cases, the respondent was found to be *'ineligible'* (Churchill, 1995; p 662) because either: *'the organisation was no longer trading'*, *'the individual had left the company'* or *'the individual had moved within the company and not received the questionnaire'*. This finding is important because, used in conjunction with the response rate calculation proposed by Churchill (1995; p 663), it suggests that the underlying response rate is 25%, rather than 17.5%. Finally, in only 6% of the cases was there any potential for bias, as the respondent's personal or company attitude to the Internet was the stated reason for not responding. Consequently, given the limited numbers in this last group, it can be concluded that if there is any bias, it is minimal, and should not unduly affect the generalisability of the results, within the confines of the sampling frame.

## **4. RESEARCH RESULTS**

This section presents a discussion of the research results relating to each of the three specific research objectives proposed earlier.

### **4.1 The extent of Internet Adoption**

The first objective of the research was to gain an objective measure of the extent to which organisations had adopted a range of common web-based functions. Consequently, respondents were asked to describe their progress in developing an active web-site, using a four-item scale ranging from *'no plans to develop a web-site'* through to *'active Web site in existence'*, for each function. The results to this set of questions have been summarised in table 2. It can be seen that whilst significant numbers of retailers are either actively developing, or already operating, facilities for exchanging emails and providing product information, progress in other areas, particularly on-line ordering and payments has not been so impressive. This is not perhaps surprising, as it suggests that organisations are gaining confidence and experience in the use of simpler applications and functions before progressing to the more sophisticated aspects of web-based retailing.

**Table 2:** The Extent of Internet Adoption

Web site functionality	No Activity planned	Plans to include in Web site	Actively being developed	Already present in Web site	Missing cases
Email facility	24 (14.6%)	43 (26.2)	16 (9.8%)	66 (40.2%)	15 (9.1%)
Product information	26 (15.9%)	50 (30.5%)	15 (9.1%)	62 (37.8%)	11 (6.7%)
Promotion of goods and services	27 (16.5%)	53 (32.3%)	20 (12.2%)	50 (30.5%)	14 (8.55)
Other information	34 (20.7%)	37 (22.65)	18 (11%)	59 (36%)	16 (9.8%)
Merchandise ordering on-line	43(26.2%)	55 (33.5%)	20 (12.2%)	30 (18.3%)	16 (9.85)
Merchandise payment on-line	53 (32.3%)	47 (28.7%)	21 (12.8%)	25 (15.2%)	18 (11%)
Recruitment feature	76 (46.3%)	33 (20.1%)	10 (6.1%)	17 (10.45)	28 (17.1%)
Financial information	87 (53.0%)	24 (14.6%)	4 (2.4%)	22 (13.4%)	27 (16.55)

It should be noted that three of these functions, namely the provision of: product information, promotional facilities and an on-line ordering capability, are used to explore the relationship between retailers' targeting strategies and their willingness to adopt the Internet, as discussed in the following sections.

#### **4.2 The influence of the age of the retailer's customer base on web-site functionality.**

One of the key objectives of this study was to investigate the degree to which the functionality of web-sites is influenced by the age of the retailer's customer base. To facilitate the exploration of this objective, it was necessary to calculate the 'average age' for a responding organisation's customer base. This was achieved by calculating the mean of the mid-point for each of the age categories, as described in section 3.1, that the respondent had ticked. An ANOVA was then performed to explore whether there was any statistical association between the 'average age' of an organisation's customer base and the extent to which they had adopted three key web-site applications, namely web-based product information, interactive marketing facilities and an on-line sales order capability. The results of this analysis, which are presented in table 3, suggest that there is a highly significant association between 'average age' and web-site application adoption. More specifically, an inspection of the data indicates that for each of the three applications, the average age is significantly lower for those organisations that already have an operational application or are actively developing the application, than it is for those companies that have no plans to develop the function.

**Table 3:** One-way ANOVA between Internet Adoption and the age of the target market

Web functionality	No activity planned	Inclusion planned	Actively being developed	Already present in Web site	F ratio	F prob.	Significance
Provision of product information	44.6	40.12	37.47	36.7	4.06	.008	***
Provision of marketing facilities	44.1	40.8	38.5	36.6	3.51	.017	**
Implementation of sales ordering capability	43.5	40.1	37.9	35.3	4.16	.007	***

**Significance:** \*\*\* 1% level; \*\* 5% level; \* 1% level

These results provide important new evidence that those organisations that are actively targeting a younger customer base, are more likely to fully embrace e-commerce, than those organisations that have an older customer; hypothesis H1 is, therefore, fully supported.

#### 4.3 The influence of the gender of the retailer's customer base on web-site functionality.

To test the degree of association between the percentage of the retailer's customer base that was female and the extent to which they had adopted the three key web-site functions, an ANOVA was conducted. The results, as presented in table 4, indicate that for each of the three functions, the proportion of the customer base that is female is gradually reduces as an organisations move from the '*no planned activity*' category through to '*already present in web-site*'. However, while the differences between the four categories are significant for the provision of market information and the implementation of a sales ordering capability, they were not for the provision of marketing facilities. An inspection of the results for the provision of marketing facilities function suggests that there may be a significant difference between those organisations that had undertaken no action with regard to marketing as yet, as opposed to those who had initiated action. Consequently, it was decided to collapse the first two categories, '*no activity planned*' and '*inclusion planned*', into a new composite category '*inactive*', and also merge the remaining two categories, '*actively being developed*' and '*already present*', into an '*active*' category, and then repeat the ANOVA. The results of this analysis indicated that there is a significant difference between the '*inactive*' retailers, with an average of 64% females, and the '*active*' retailers, with an average of only 56% females [ $F = 5.73$ ;  $P = 0.018$ ]

**Table 4:** One-way ANOVA Internet Adoption and the gender of the target market

Web functionality	No Activity planned	Inclusion planned	Actively being developed	Already present in Web site	F ratio	F prob.	Significance
Provision of product information	64.4	66.6	55.0	54.42	4.48	.005	***
Provision of marketing facilities	62.8	64.53	54.0	57.34	2.08	.106	
Implementation of sales ordering capability	66.1	60.0	55.5	52.8	3.01	.032	**

**Significance:** \*\*\* 1% level; \*\* 5% level; \* 1% level

These results provide important new evidence that those organisations that are actively targeting a customer base that has a higher proportion of males, is more likely to fully embrace e-commerce, than those organisations that have a higher proportion of female customers. It can, therefore, be concluded that hypothesis H2 is fully supported.

#### **4.4 The influence of the socio-economic characteristics of the retailer's customer base on web-site functionality.**

The final objective of this study was to investigate the degree to which the functionality of web-sites is influenced by the socio-economic characteristics of the retailer's customer base. Respondents had been invited to select the mix of the six socio-economic categories, as described in section 3.1, that best reflected the socio-economic profile of their customer base. It was, therefore, necessary to use this mix of socio-economic categories to derive a simple measure of the organisation's customer base, which could then be used to explicitly test hypothesis 3. Accordingly, if an organisation's response had a higher proportion of the top three categories then it would be classed as '*high socio-economic status*'. For example, if a respondent indicated that their customers were typically in classes: B, C1 and C2, then the response would be categorised as '*high socio-economic status*'. Conversely, if an organisation's response had a higher proportion of the bottom three categories then it would be classed as '*low socio-economic status*'. For example, if a respondent indicated that their customers were typically in classes: C1, C2 and D then the response would be categorised as '*low socio-economic status*'. For the small number of cases where there were an equal number of selections in the top and bottom three categories, for example C1 and C2, then these were categorised as '*low socio-economic status*', as there were less responses in this category.

Having derived the two class '*socio-economic status*' measure, this was then used in a series of chi-squared tests to explore the relationship between the adoption of web-based functions and the socio-economic status of the responding organisation's target markets. For example, table 5 presents the results of a chi-squared analysis of the relationship between socio-economic

status and the provision of a web-based product information function. It can be seen that there is a mildly significant association between status and the provision of product information. Moreover, an inspection of the data suggests that there is a higher than expected chance of an organisation having no plans for the provision of product information if its target markets can be characterised as low status. By contrast, there is a higher than expected likelihood of organisations already providing product information on their web-site if its customers can be characterised as high status.

**Table 5:** Relationship between Socio-economic status and the provision of product information

Socio-economic Status		No Activity planned	Inclusion in web-site planned	Site actively being developed	Already present in Web site	Total Retailers
High status	socio-economic	8 (13.3)	25 (25.5)	7 (7.6)	38 (31.6)	78
Low status	socio-economic	18 (12.7)	25 (24.5)	8 (8.4)	24 (30.4)	75
<b>Totals</b>		<b>26</b>	<b>50</b>	<b>15</b>	<b>62</b>	<b>153</b>

Significant at the 0.10 % level;  $\chi^2 = 7.02$ ,  $P = 0.071$ , D of F = 3.

A chi-squared analysis was also conducted to detect the degree of association between socio-economic status and the provision of marketing facilities [see table 6]. The results of this analysis suggested that there was no significant relationship between socio-economic status of customers and the extent to which a retailer had provided web-based marketing facilities.

**Table 6:** Relationship between Socio-economic status and the provision of marketing facilities

Socio-economic Status		No Activity planned	Inclusion in web-site planned	Site actively being developed	Already present in Web site	Total Retailers
High status	socio-economic	10 (13.7)	25 (26.9)	11 (10.1)	30 (25.3)	76
Low status	socio-economic	17 (13.3)	28 (26.1)	9 (9.9)	20 (24.7)	74
<b>Totals</b>		<b>27</b>	<b>53</b>	<b>20</b>	<b>50</b>	<b>150</b>

Not significant;  $\chi^2 = 4.16$ ;  $P = 0.245$ , D of F = 3.

As no significant relationship could be detected between socio-economic status and the provision of marketing facilities, it was decided to repeat the analysis after collapsing the four

web function progress categories, into the two composite categories [*inactive* and *active*], as previously described in section 4.3. The results of this follow-up analysis detected a significant relationship, but only at the 10% level, between socio-economic status and the provision of marketing facilities [ $\chi^2 = 3.28$ ;  $P = 0.070$ , D of F = 1]. Moreover, an inspection of the data suggested that *active* retailers are more likely to have customers of a higher socio-economic status, whereas the *inactive* retailers are more likely to have customers of a lower socio-economic status.

The final chi-squared analysis sought to investigate the degree to which the socio-economic status of customers was associated with the extent to which a retailer had implemented a sales ordering capability [see table 7]. The results of this analysis detected a significant association, at the 5% level. Moreover, an inspection of the data suggests that there is a higher than expected chance of an organisation having no plans for implementing a sales ordering capability if its target markets can be characterised as low socio-economic status. By contrast, there is a higher than expected likelihood of organisations already implemented web-based ordering if its customers can be characterised as high socio-economic status.

**Table 7:** Relationship between Socio-economic status and ordering capability implementation

Socio-economic Status		No Activity planned	Inclusion in web-site planned	Site actively being developed	Already present in Web site	Total Retailers
High	socio-economic status	14 (21.8)	31 (27.9)	12 (10.1)	18 (15.2)	75
Low	socio-economic status	29 (21.2)	24 (27.1)	8 (9.9)	12 (14.8)	73
<b>Totals</b>		<b>26</b>	<b>50</b>	<b>15</b>	<b>62</b>	<b>148</b>

Significant at the 5 % level;  $\chi^2 = 8.1$ ,  $P = 0.044$ , D of F = 3.

Considering the results of all three chi-squared analyses, in their totality, it is fair to say that there is evidence that those retailers with a customer base that can be broadly characterised as high socio-economic status is more likely to be actively embracing e-commerce; hypothesis H3 is, therefore, supported. However, it should be noted that the evidence in support of this hypothesis isn't as strong as it was for hypotheses H1 and H2, as the results of the three chi-squared tests aren't as significant as the results of the analyses conducted when testing the other two hypotheses; consequently, this result should be treated with a little more caution.

## 6 CONCLUSIONS

Whilst the factors affecting the uptake of e-commerce and the demographics of Internet users are both topics that have been extensively covered in the research literature, there have been few attempts to link these two increasingly important bodies of knowledge. The contribution of this research, therefore, has been to explicitly bridge this gap by demonstrating that the fit between the characteristics of an organisation's customer base and the socio-demographic profile of Internet users is an important driver of Internet adoption. More specifically, the results suggest that retailers are aware of the typical profile of frequent Internet users and are, therefore, most likely to adopt the Internet for information provision, marketing and direct sales purposes if their typical customer is male, young and a member of the professional / managerial classes.

This research has a number of important implications for the retail practitioner. For organisations whose customers are typically young, male and affluent the implications are fairly clear, as the research highlights the dangers of not developing a web presence as there will be plenty of competitors who will be happy target their customers. By contrast, it is not possible to be so unequivocal for organisations whose customers are typically older, female or less affluent. One interpretation might be that such organisations need not rush to develop an e-commerce capability as their customers probably won't mind. However, a potentially more appropriate course of action might be to develop a web-site but accept that they will have to work harder to encourage their customers to trade on-line. This study should also be of interest to the research community, as not only does it explicitly bridge the gap between the two existing bodies of knowledge, but it also provides a number of measures and scales that can be modified for use in further studies.

Whilst every effort has been made to ensure that this study has been conducted in a thorough and systematic manner, like all forms of social inquiry, it suffers from a number of weaknesses. More specifically, the adoption of the questionnaire format limits the range and depth of questions that can be addressed. Moreover, with survey research there is always the potential for bias associated with the targeting of a single informant and bias that might accrue from targeted organisations failing to respond. Consequently, whilst this research presents many interesting new insights, it by no means answers all the questions in this increasingly important research domain. Potentially rewarding avenues for follow-up studies would include the use of in-depth case studies to explore retailers' decision-making processes with respect to Internet adoption and determine exactly how they undertake segmentation analyses, in the context of e-commerce. It would also be interesting to explore the use of richer measures of Internet adoption that would allow the complexity, as well as the scope, of web-sites to be assessed.



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## Appendix 1: Copy of the Relevant Aspects of the Questionnaire

### The Importance of the Internet *Market Place* to UK Retailers

This survey forms parts of a research study examining how UK Retailers are using the Internet. If you would like to receive a copy of the summary report of the findings of this survey please refer to the details below. All responses will be treated confidentially.

#### Section A: Respondent Characteristics

**Q.1** Which of the following categories **best** describes your organisation's **main retail** activity.

Please tick **one** box only.

- |                             |                          |   |                          |                           |                          |
|-----------------------------|--------------------------|---|--------------------------|---------------------------|--------------------------|
| Alcohol Retailer            | <input type="checkbox"/> | Footwear Retailer   | <input type="checkbox"/> | Mail Order & Direct Sales | <input type="checkbox"/> |
| Books & Stationery Retailer | <input type="checkbox"/> | Furnishing ( <i>hard &amp; soft</i> ) Retailer                | <input type="checkbox"/> | Music & Video Retailer    | <input type="checkbox"/> |
| Clothing Retailer           | <input type="checkbox"/> | Grocery including Supermarkets                                | <input type="checkbox"/> | Newsagents & CTN.'s       | <input type="checkbox"/> |
| Convenience Grocery Store   | <input type="checkbox"/> | Health & Beauty ( <i>including Opticians &amp; Chemists</i> ) | <input type="checkbox"/> | Specialist Food Retailer  | <input type="checkbox"/> |
| DIY & Gardening Retailer    | <input type="checkbox"/> | Jewellery Retailer  | <input type="checkbox"/> | Sports Goods Retailer     | <input type="checkbox"/> |
| Electrical Goods Retailer   | <input type="checkbox"/> | Mixed Stores ( <i>Department &amp; variety stores</i> )       | <input type="checkbox"/> | Toy & Hobby Retailer      | <input type="checkbox"/> |

Other. Please specify .....

**Q.2** How **many** retail outlets does your company operate? Please tick **one** box only.

- |                          |                          |                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <b>10-29</b>             | <b>30-49</b>             | <b>50-99</b>             | <b>100-199</b>           | <b>200-499</b>           | <b>500-1000</b>          | <b>1000+</b>             |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

**Q.3** In which of the following functions of the organisation are you **most closely** involved?

Please tick **one** box only.

- |                          |                          |                          |                        |
|--------------------------|--------------------------|--------------------------|------------------------|
| Marketing                | Information Systems      | Internet Development     | Other - Please specify |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | .....                  |

**Q.4** Which of the following **best** describes your position within the organisation? Please tick **one** box only.

- |                              |                          |                   |                          |                 |                          |
|------------------------------|--------------------------|-------------------|--------------------------|-----------------|--------------------------|
| No management responsibility | <input type="checkbox"/> | Middle Management | <input type="checkbox"/> | Director        | <input type="checkbox"/> |
| Junior Management            | <input type="checkbox"/> | Senior Management | <input type="checkbox"/> | Chief Executive | <input type="checkbox"/> |

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#### Section B: Customer Characteristics

**Q.5** Which of the following categories **best** describes the **occupational grouping** of your company's **primary** target customers: the Alphabetic-grading scheme relates to the occupation of the chief income earner in the consumer household? Please tick **as many** boxes as are appropriate.

- |                           |                          |                                     |                          |   |                          |
|---------------------------|--------------------------|-------------------------------------|--------------------------|---|--------------------------|
| A's - mainly professional | <input type="checkbox"/> | C1's - mainly junior management     | <input type="checkbox"/> | D's - mainly semi & unskilled           | <input type="checkbox"/> |
| B's - middle management   | <input type="checkbox"/> | C2's - mainly skilled manual worker | <input type="checkbox"/> | E's - mainly dependant on state benefit | <input type="checkbox"/> |

**Q.6** Which of the following categories **best** describes the **age** of the company's **primary** target customers.  
Please tick **as many** boxes as are appropriate.

Age	Under 20	21 – 30	31 – 40	41-50	51-60	Over 60
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Q.7** Please indicate the **sex** of your company's target customers using the percentage scale.  
Please circle an appropriate **pair** of percentages

<b>Female</b>	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
<b>Male</b>	100%	90%	80%	70%	60%	50%	40%	30%	20%	10%	0%

## Section B: Level of Internet Uptake

**Q.8** Please indicate which statement **best** describes your company's current level of adoption of the Internet.  
Please tick **one** box only.

- a) The company **has decided not to** take any steps, as yet, towards developing an Internet presence. ☐
- b) The company **has registered a Uniform resource locator but has not developed** a retail Web-site. ☐
- c) The company **has a URL and is actively planning to develop** a retail Web-site ☐
- d) The company **has a URL and is actively developing** a retail Web-site ☐
- e) The company **has a URL and has developed** a retail Web-site which can be accessed by on-line consumers ☐

**Q.9** For each statement please indicate the **extent of development** of Web site features which are or may be included in the company's retail Web site. Please circle **one** number for each statement

Web site features:	No Internet activity planned	Planned to be included in Web Site	Actively being developed for Web site	Already present in Web site
a) Product information	1	2	3	4
b) Financial information	1	2	3	4
c) Other types of information	1	2	3	4
d) Promotions for goods and services	1	2	3	4
e) Recruitment features	1	2	3	4
f) Facility to communicate by Email	1	2	3	4
g) Ordering of goods on-line	1	2	3	4
h) Payment of goods on-line	1	2	3	4