
Web-shoppers and non-shoppers: compatibility, relative advantage and demographics

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Abstract

This study investigated differences between Web-shoppers and non-shoppers, in terms of compatibility, relative advantage and demographics. Stepwise discriminant analysis was applied on a sample of 165 personally interviewed consumers, which showed that compatibility and relative advantage were overall successful, whereas, demographics were unsuccessful, in distinguishing Web-shoppers from non-shoppers. Significant variables included three factors of compatibility (use of direct shopping; use of Web browsing activities at home; and use of Web browsing activities at the office), and two factors of relative advantage (motives; and impediments). Managerial implications for targeting prospective Web-shoppers and designing better-grounded consumer Web-marketing strategies are also discussed, together with study limitations and directions for future research.

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Introduction

A growing stream of marketing literature deals with the prospects regarding the World Wide Web (WWW) as an effective outlet for retail businesses (Alba *et al.*, 1997; Ward and Lee, 2000; Doherty *et al.*, 1999; Doherty and Ellis-Chadwick, 2000; Sussman and Pollack, 1995; Deighton, 1996; Armstrong and Hagel, 1995). A few researchers foresee that although remote shopping has been existing for many decades, there are now strong signs that electronic shopping (i.e. Web-shopping) may soon start to claim significant market shares (Keeling and McGoldrick, 1997). Indeed, a Forrester research foresees a dramatic increase in Internet retailing as it estimates online sales in the USA at \$108 billion by 2003. Similarly optimistic are the forecasts for the UK retail market, as they assess online shopping at 0.2 percent of the total, with the projection to multiply by 15 times over the next three years (Verdict Research Ltd, 1999). As far as the Greek consumer market is concerned, estimations for the future of Web-shopping are practically non-existent. Notwithstanding, a few researchers characterize such future estimations as highly speculative, since existing data about the Internet commerce are not reliable enough to be based upon (Whinston, 1997).

Independently of the level that the future online sales will reach, pertinent literature seems to converge in that we may be on the brink of a new era bearing major changes for retail business. For example, some researchers foretell that the proliferation of WWW commerce will result in reengineering of business strategies, transformation of value-chains and in redistribution of market shares, profit margins and total profits. These futuristic proclamations have begun to materialize in the form of one-to-one marketing, database marketing, interactive marketing, just-in-time production and pursuit of economies of scope, rather than economies of scale (Armstrong and Hagel, 1995; Glazer, 1991; Benjamin and Wigand, 1995; Webster, 1996).

Due to the strategic importance of the aforementioned major changes accounted to the Internet commerce, there is a growing interest on behalf of the academic community

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to focus their research efforts upon it. However, in the narrower context of consumer Web-shopping, systematic empirical research has fallen behind with the exploration of the driving forces that may precipitate, or delay its diffusion among the critical mass of consumers, with the exception of some sparse examples (Mathwick *et al.*, 2001; Hart *et al.*, 2000; Ward and Lee, 2000).

With this survey we focus on the Greek consumers and make an attempt to examine differences between Web-shoppers and non-shoppers, thus identifying determinants of Web-shopping adoption. The Web-shopping determinants provide an outline of the early Web-shoppers' profile, allowing both marketers to design better-grounded consumer Web-marketing strategies and academics to insightfully address future research.

To this end, we consider that it may be more beneficial to classify consumers on the basis of "driving forces" and "impediments" rather than simply describe Web-shoppers demographically. First, we lay the groundwork upon which we build a research framework, together with a number of hypotheses on differences between Web-shoppers and non-shoppers. Next, we present empirical analysis, followed by a discussion on the findings and the resulting managerial implications. The last part of this paper is concerned with the limitations of the study and directions for future research.

Background

Web-shopping is a direct marketing innovation, which is still in its infancy. As such, it involves changes in current patterns of production or consumption (Robertson, 1971). These changes may range from minor (i.e. continuous innovations) to major (i.e. discontinuous innovations). We consider that Web-shopping is a discontinuous innovation of a "consumption process" type (Engel *et al.*, 1989; Eastlick, 1993).

Marketing literature enumerates several conceptual frameworks examining adoption factors of consumption innovations that are mediated by electronic environments (i.e. Web-shopping). To name a few, the Theory of Planned Behavior (TPB) (Ajzen, 1988), the Theory of Reasoned Action (TORA) (Fishbein and Ajzen, 1975), the Technology

Acceptance Model (TAM) (Davis, 1986) and the model of Diffusion of Innovations (Rogers, 1995), are dealing with this subject matter. The latter is broad enough to include not only consumers' characteristics, but also specific attributes of the innovation, *per se*. Rogers (1995) argues that, apart from studying people's characteristics, which seem to determine the differences among various adopter categories, we should also focus on the properties of the innovations, *per se*. This is because the perceived attributes of an innovation are one important explanation of the rate of adoption of an innovation. Indeed, empirical evidence indicates that from 49 per cent to 87 per cent of the variance in the rate of adoption may be explained by five innovation attributes, articulated by Rogers (1995) as relative advantage, compatibility, trialability, observability and complexity.

Based on the above views, we select a number of variables that seem to be relevant to the attributes of the Web, together with some typical consumers' characteristics, to be examined as determinants of Web-shopping.

Research framework and hypotheses

Drawing on the literature that is pertinent to consumption innovations and the Internet, a research framework was formulated, together with a set of hypotheses regarding differences between Web-shoppers and non-shoppers. This included the following variables:

- the Internet users' characteristics, in terms of age, income and education;
- compatibility with Web-shopping, which encapsulates both the use of direct shopping and the use of Web browsing activities (i.e. either at home, or at the office);
- relative advantage of Web-shopping which combines two sets of contradicting forces, articulated as motives and impediments of Web-shopping, respectively; and
- Web-shopping adoption, regarded as the dependent variable.

It remains to be seen how the above independent variables may discriminate between Web-shoppers and non-shoppers and which of them are particularly effective, as discussed along the following hypotheses.

Consumers' characteristics

Consumers' characteristics are very crucial in explaining innovative behavior, particularly with respect to interactive communication technologies and services (i.e. Web-shopping) (Rogers, 1991). Since the Internet is the technology medium of the consumption innovation under study, Web-shoppers should have many similarities to Internet users. There is a growing body of marketing research which focuses on the examination of the characteristics of the early Internet adopters, both static (at a fixed point in time) and dynamic (comparative surveys). The findings of these studies seem to converge in that the adoption of the Internet should be related to age, gender, educational level, income and marital status, among others. For instance, current research indicates that Internet users are more likely to be young, affluent and highly educated (CommerceNet/Nielsen, 2001; GVU, 2000). Yet, in the context of teleshopping, some more recent surveys report that online shoppers may not differ from the average consumers (Cyr, 2000; Mathwick *et al.*, 2001). Due to the exploratory character of this research we follow the first, more conservative view for the Greek Web-shoppers' characteristics and we put forward the following hypothesis:

H1. Web-shoppers will be younger, more highly educated and more affluent, than non-shoppers.

Compatibility with Web-shopping

Compatibility is defined as "the degree to which an innovation is perceived as consistent with the existing values, past experiences and needs of potential adopters" (Rogers, 1995). If Web-shopping fits with the consumer's life-situation and needs, it would be compatible and, therefore, it would be preferred over alternative shopping modes. In this study, we treat compatibility with Web-shopping as a twofold concern, comprising use of direct shopping, and use of Web browsing activities. Thus, we delve into two streams of research, i.e. direct shopping adoption and the World Wide Web, respectively, as discussed below.

Use of direct shopping

First, use of direct shopping reflects compatibility of consumers' past experiences and needs with Web-shopping behavior, thus it should be related to consumers' receptiveness/repulsiveness to it. For

example, some researchers argue that the use of any direct shopping mode (i.e. Web-shopping), should be compatible with lifestyle and previous consumption experiences (i.e. direct shopping) (Bolton, 1982; Korgaonkar and Smith, 1986). Similarly, others state that past behavior and experience with direct shopping may influence future intentions towards teleshopping (i.e. Web-shopping) (Keeling and McGoldrick, 1997). Indeed, Mehta and Sivadas (1995) have found that prior customer attitudes on direct marketing are related to direct marketing behavior on the Internet.

Use of browsing activities either at home, or at the office

From another point of view, Web browsing activities reflect compatibility of consumers' lifestyle with Web-shopping behavior. In principle, the term "browsing" means the ongoing search activity that may be independent of specific purchase needs, or decisions. The triggers of browsing activities can be also recreation and search for information (e.g. enjoyment and search for information and products) (Bloch *et al.*, 1989). By this token, shopping behavior need not be solely evaluated in terms of the goods or services acquired, since it may involve both experiential and utilitarian outcomes (Babin *et al.*, 1994; Baumgartner and Steenkamp, 1996). This is because consumers use various strategies to navigate through a shopping environment, depending upon the purpose, or task of a particular shopping trip (Hirschman and Holbrook, 1982). If the purpose of a shopping trip is to locate a particular item, then the search process tends to be of utilitarian (problem-solving) nature; if the main purpose of the trip is more fun oriented, then the search strategy involves more experiential behavior (Titus and Everett, 1995). This perspective also infers to the concept of hedonic consumption, which views shopping behavior as a recreational experience that may provide satisfaction beyond the one experienced by the actual purchase of products, or services (Burnett and McCollough, 1994). Indeed, a large stream of marketing research supports that enjoyment derived from using various direct shopping means (i.e. browsing through the World Wide Web for entertainment, or for information research about products/services) may be a major driving force of their actual use (Blakey

and Sekely, 1994; Davis *et al.*, 1989; Forman and Sriram, 1991; Langeard *et al.*, 1981; McKay and Fletcher, 1988; Shim and Drake, 1990; Mast *et al.*, 1991). For example, Burnett and McCollough (1994) found that browsing electronically is a possible diversion leading to purchase. Similarly, Dabholkar (1996) found that control and enjoyment had consistent effects on intention to use technology-based teleshopping. Thus, browsing activities may be characterized as shopping activities that may end up as direct shopping behavior. If these relationships hold also in the environment of the Internet, then the findings of a Hermes survey on Web users, which showed that gathering purchasing-related information was the most preferred Web activity, would be very promising for the future of Web-shopping (Gupta, 1995).

Use of the Web browsing activities may also facilitate trialability and observability in the context of the Internet, as described by Rogers (1995). Trialability is defined as the degree to which an innovation may be experimented with, on a limited basis. For example, if a consumer may retrieve detailed information about products/services, she/he would increase her/his knowledge and skills required for the shopping function. In this spirit, some researchers have pointed out that the World Wide Web facilitates trial and provides instant gratification, enabling customers to test products online which may stimulate purchase (Hoffman *et al.*, 1995).

Along similar lines, observability has been articulated as the degree to which the results of an innovation are visible to others. In the context of the Internet, some researchers have noticed that when consumers surf over the WWW in search for information, or just entertainment, they may evaluate the success of specific Web sites (e.g. by observing the visiting rates of Web sites, shown on built-in counters). At the same time, consumers may evaluate the result of an online order via the Web, through interactive real-time feedback with the selling organization's marketing department (e.g. www.amazon.com, www.cdnw.com). Such Web browsing activities incarnate the concepts of compatibility, observability and trialability, as described by Rogers (1995).

In regard to place of access, prior empirical research provides evidence that home is a more frequent access point to the Web than

the office (CommerceNet/Nielsen, 2001; IRIS Research, 1995). Due to the exploratory character of this research, we discriminate Web browsing activities according to the place of access, i.e. home, *vis-à-vis* the office. Stated formally:

H2. Web-shoppers will more likely use direct shopping (e.g. via the telephone, catalogues, brochures and the TV), than non-shoppers.

H3. Web-shoppers will more likely perform Web browsing activities at home (i.e. for entertainment, information and news research, software/products/services research and product purchases), than non-shoppers.

H4. Web-shoppers will more likely perform Web browsing activities at the office (i.e. for entertainment, information and news research, software/products/services research and product purchases), than non-shoppers.

Relative advantage of Web-shopping

The concept of relative advantage refers to the degree to which an innovation is perceived to be better than the idea it supersedes (Rogers, 1995). For example, the relative advantage of direct Web shopping mirrors the customers' acknowledgement that this new shopping method provides certain advantages over alternative shopping formats (e.g. traditional shopping, other direct shopping means). If a customer believes that she/he will gain a greater benefit by shopping through the Web than shopping through a physical store, she/he would prefer this shopping option for her/his purchases. In this spirit, the relative advantage may be paralleled to the balance of contradicting forces, articulated as motives and impediments, respectively, as discussed along the following.

Web-shopping motives

Direct shopping motives reflect broad factors of adoption that have emerged from psychographic studies. Teleshoppers have invariably been found to possess greater self-confidence and to be less risk averse, more time-conscious, and more active information seekers, than their counterparts (Blakey and Sekely, 1994; Cox and Rich, 1964; Cunningham and Cunningham, 1973; Korgaonkar and Smith, 1986; Paksoy, 1975; Reynolds, 1974; Shamdasani and Yeow, 1995). More specifically, time efficiency,

availability of shopping on a 24 hours basis and convenience (i.e. queues avoidance) have been found to be significant explanatory factors of direct shopping adoption (Bagozzi, 1990; Blakey and Sekely, 1994; Cox and Rich, 1964; Davis *et al.*, 1989; Ledingham, 1985; McKay and Fletcher, 1988; Shamdasani and Yeow, 1995). Testing the explanatory powers of the aforementioned direct shopping motives in the context of the World Wide Web, we make the following hypothesis:

H5. Web-shoppers will be more likely concerned with Web-shopping motives (i.e. time efficiency, availability of shopping on a 24 hours basis and queues avoidance), than non-shoppers.

Web-shopping impediments

Drawing on the pertinent direct marketing literature, we select three major inhibitors of direct shopping, adopted for the purposes of this research as lack of trust to Web-shopping, enjoyment of traditional shopping and Web-shopping complexity.

First, enjoyment derived from shopping through physical stores should be negatively related to Web-shopping. Indeed, if consumers enjoy their visit on the store premises, they may have no intent to use alternative (i.e. out of store) shopping formats (i.e. Web-shopping). This may be because liking of traditional shopping is integrated with people's general lifestyles, implying the existence of social exchanges and performing many more functions than simply the act of replacing and buying goods (Keeling and McGoldrick, 1997). Indeed, McKay and Fletcher (1988) found enjoyment for traditional shopping to be an impediment for the diffusion of teleshopping.

Lack of trust should be another crucial barrier for the adoption of Web-shopping. This variable has been also treated as a risk and control issue in the marketing discipline (Keeling and McGoldrick, 1997; Burnett and McCollough, 1994; Cox and Rich, 1964). Lundstedt (1966) vividly articulates this by stating that trust is related to the consumers' perceived risk stemming from limited information which is relative to a decision (i.e. making direct purchases). When relevant information regarding a specific decision is inadequate (e.g. information which enables performance evaluation of an online ordered product), then the implementation of this

decision (i.e. to make purchases via the Web) should be entirely dependent upon consumers' willingness to trust this new shopping format (i.e. thus exposing oneself to higher rates of risk). In the same spirit, trust is also regarded as a control mechanism that is alternative to monitoring performance. In other words, we have either to be able to monitor performance, or to trust our counterparts, in order to make transactions with them (Ouchi, 1980). As a matter of course, if a consumer cannot inspect product performance before purchase, she/he will have to trust the Web selling intermediaries. Therefore, trust is a *sine qua non* for making product purchases over the Web.

Another Web-shopping impediment included in this research is complexity that was defined by Rogers (1995) as "the degree to which an innovation is perceived as relatively difficult to understand and use". By this token, if consumers find it difficult either to locate, or to handle these shopping services on the Web, they would be put off from using it for their purchases. Although that complexity is discussed as an impediment in the research fields of technology adoption and interactive technologies adoption (Gatignon and Robertson, 1989; Rogers, 1991), yet, it is met less often in the direct shopping literature. In this research we examine its negative role upon Web-shopping adoption, together with lack of trust and enjoyment of traditional shopping. Thus, we put forward the following hypothesis:

H6. Web-shoppers will be less concerned with Web-shopping impediments (i.e. enjoyment of traditional shopping, lack of trust, and perceived difficulty in locating, or using Web-shopping services), than non-shoppers.

Methodology

Sample and data collection

This consumer survey was based on personal interviews with consumers which took place on the premises of 15 different stores of a large supermarket chain, and is part of a larger research project conducted in Greece, examining consumers' attitudes and behavior on Web-shopping. A total of 165 individuals were interviewed. The sampling frame was filtered through certain demographic variables that were used as prescreening

criteria, following the practice used in similar studies worldwide. Specifically, the sampling frame comprised consumers who were up to 45 years of age and Internet users, as this is the technology medium of the subject matter.

A first draft of the research instrument was pre-tested with 20 individuals, in order to assure comprehensiveness and accuracy of questions. Fieldwork, which lasted three weeks, was completed by the end of January 2001. The demographic characteristics of the sample are shown on Table I.

Measures

Web-shoppers and non-shoppers

This dependent variable was measured by asking the respondents to indicate whether or not they had purchased any merchandise through the World Wide Web, during the last six months. This question was measured by having respondents indicate either a “yes” or “no” response. Those who indicated “yes” were categorized as Web-shoppers ($n = 38$), while those who stated “no” were classified as non-shoppers ($n = 127$).

Determinants of Web-shopping

Given the exploratory character of this research, all items were measured using nominal variables, that is, we asked the respondents to answer each question with a “yes” or “no”. The use of such low order scales (i.e. nominal and ordinal) allows for low, if any, subjectivity in measurement interpretation of attitudinal and behavioral

aspects (i.e. the variables of the study) (Kinnear and Taylor, 1996; Churchill, 1999). Furthermore, Churchill and Peter (1984) found that there is no a priori prediction that one scale type is superior over the other types, and there is no relationship between scale types and the reliability of the measures.

The first group of potential determinants concerns compatibility with Web-shopping and was tapped by two subsets of variables:

(1) *Use of direct shopping*. This variable was tapped by a four-item nominal scale, as we asked respondents to report whether or not they had purchased any merchandise through each one of the following direct shopping means: shopping-catalogues; brochures; the telephone; and the television, during the past 12 months.

(2) *Use of Web browsing activities*. This variable concerns two similar nominal scales, each one comprising five items, discriminating browsing activities according to the place of access to the Web. Specifically, in this set of questions respondents were asked to indicate whether or not they were using the Web for each one of the following activities: entertainment; information and news research; software research; product research; and product purchases, either at home, or at the office, respectively, during the last six months.

The second group of Web adoption determinants deals with the relative advantage of Web-shopping over alternative consumer shopping modes and reflects the balance of contradicting motives and impediments. These may be drawn from the contemporary literature pertaining to direct marketing and the Internet (Mathwick *et al.*, 2001; Keeling and McGoldrick, 1997; Burnett and McCollough, 1994).

Specifically, relative advantage of Web-shopping refers to:

- *Web-shopping motives*. This was tapped by a three-item nominal scale. Specifically, the respondents were asked to cite whether, or not, each one of the following issues - time efficiency, availability of shopping on a 24 hours basis, and avoidance of queues - were reasons for preferring the Web for their purchases, *vis-à-vis* shopping through physical stores.

Table I Demographic characteristics of the sample

| Variables | % |
|-------------------------------|----|
| <i>Educational level</i> | |
| Low to medium | 21 |
| College degree owners | 20 |
| University degree owners | 50 |
| Post-graduates | 9 |
| <i>Monthly family income</i> | |
| Up to \$1,500 | 11 |
| \$1501,-2,500 | 35 |
| \$2,501-4,000 | 37 |
| \$4,001-8,000 | 6 |
| More than \$8,000 | 4 |
| <i>Age</i> | |
| 18-24 | 23 |
| 25-34 | 40 |
| 35-44 | 37 |
| Note: Sample of 165 consumers | |

- *Web-shopping impediments.* This was measured using a four-item nominal scale. We asked respondents to indicate whether, or not, each one of the following issues: enjoyment derived from shopping through physical stores; lack of trust; complexity in locating shopping services on the Web; and complexity in using shopping services on the Web, were reasons for *not* preferring the Web for their purchases.

The above two categories of 22 variables were factor analyzed and factor scores were extracted using the principal components' method and orthogonal rotation (i.e. VARIMAX). This type of rotation (i.e. VARIMAX) attempts to minimize the number of variables that have high loadings on a factor, enhancing the interpretability of the factors (Norusis, 1994). Following standard practice, we selected factors with eigenvalues greater than unity for further analysis. As shown on the pertinent Table II, the factor analysis results supported all but one of the multiple-item variables. Specifically, the performed factor

analysis produced one factor for each one of the variables labeled as F1: use of direct shopping, F2: use of Web browsing activities at home, F3: use of Web browsing activities at the office, and F4: Web-shopping motives, while it produced two factors for the Web-shopping impediments, which were labeled as F5: advantage of traditional shopping, and F6: Web-shopping complexity, respectively.

Analysis and results

Stepwise multiple discriminant analysis was performed to compare Web-shoppers with non-shoppers on the aforementioned six factors of Web-shopping adoption and the three consumers' variables (i.e. age, education and income), with the grouping variable being Web-shopping adoption and non-adoption. Table III presents the results of the stepwise multiple discriminant analysis, including significant variables, standardized canonical discriminant function coefficients, mean scores of both groups and pertinent statistics.

Table II Factor analysis summary

| Factor | Item | Coefficients | Eigenvalue |
|--------|--|--------------|------------|
| F1 | Use of direct shopping | | |
| | Catalogues | 0.69 | |
| | Telephone | 0.74 | 1.9 |
| | Television | 0.52 | |
| F2 | Brochures | 0.65 | |
| | Use of Web browsing activities at home | | |
| | Entertainment | 0.72 | |
| | Information and news research | 0.68 | |
| | Product research | 0.81 | 2.4 |
| F3 | Software research | 0.74 | |
| | Product purchases | 0.82 | |
| | Use of Web browsing activities at the office | | |
| | Entertainment | 0.58 | |
| | Information and news research | 0.82 | |
| F4 | Product research | 0.76 | 2.0 |
| | Software research | 0.64 | |
| | Product purchases | 0.74 | |
| | Web-shopping motives | | |
| | Time efficiency | 0.84 | |
| F5 | Shopping on a 24 hours basis | 0.79 | 1.81 |
| | Queues avoidance | 0.70 | |
| | Advantage of traditional shopping | | |
| F6 | Enjoyment of traditional shopping | 0.78 | |
| | Lack of trust in Web-shopping | 0.74 | 1.2 |
| | Web-shopping complexity | | |
| F6 | Complexity in using Web-shopping services | 0.78 | 1.2 |
| | Difficulty in locating Web-shopping services | 0.74 | |

Table III Discriminant coefficients, means and standard deviations of discriminating variables between Web-shoppers and non-shoppers, and classification results

| Step No. | Predictor variables | Standardized canonical discriminant function coefficients | Means (SD) | |
|----------|--|---|-----------------------------|------------------------------|
| | | | Group 1 (Web-shoppers) n=38 | Group 2 (non-shoppers) n=127 |
| 1 | F5: Advantage of traditional shopping | -0.56*** | -1.17 (0.49) | -0.18 (1.02) |
| 2 | F3: Use of Web browsing activities at the office | 0.57*** | 1.03 (2.03) | -0.05 (0.88) |
| 3 | F2: Use of Web browsing activities at home | 0.33*** | 0.73 (1.73) | 0.05 (1.12) |
| 4 | F4: Web-shopping motives | 0.62*** | 1.45 (1.31) | 0.19 (1.13) |
| 5 | F1: Use of direct shopping | 0.52*** | 0.58 (1.39) | 0.29 (1.31) |
| | Centroid of the groups | Group 1 (Web-shoppers) | 1.43 | |
| | | Group 2 (non-shoppers) | -0.39 | |
| | Canonical correlation | | 0.60 | |
| | Wilks' lambda | | 0.64 | |
| | Chi-square | | 0.68*** | |

| Discriminant analysis Classification results | Actual group | No. of cases | Predicted group membership | |
|--|---|--------------|----------------------------|------------------------|
| | | | Group 1 Web-shoppers % | Group 2 Non-shoppers % |
| | Group 1 (Web-shoppers) | 38 | 76.3 | 23.7 |
| | Group 2 (non-shoppers) | 127 | 15.0 | 85.0 |
| | Percent of grouped cases correctly classified | | | 83.0 |

Note: *** $p < 0.001$

On the whole, the discriminant analysis statistics revealed that the function was significant (chi-square = 0.68, $p < 0.0001$) in discriminating between adopters and non-adopters of Web-shopping. The canonical correlation of 0.60 indicated that the function coefficients and the groups were highly correlated, whereas the value of Wilk's lambda of 0.64 indicated that there was a good degree of the total variance in the discriminant scores not explained by differences among means. The standardized canonical function coefficients showed the discriminating contribution of the respective factors. Five out of nine variables appeared to have discriminating powers between Web-shoppers and non-shoppers. Use of browsing activities at home, use of browsing activities at the office, Web-shopping motives and use of direct shopping had positive coefficients, whereas

advantage of traditional shopping produced a negative coefficient. All three demographic variables, as well as Web-shopping complexity, were removed from the final discriminant model, thus indicating no discriminating powers upon Web-shopping adoption. The overall proportion of correct classifications was 83 percent, which is a strong indication that the discriminant function was quite successful in predicting group membership. Indeed, this percentage can be compared favorably with the proportional chance criterion (50.3 percent) advocated by Morrison (1969) as the most relevant reference point in cases of unequal cell sizes.

An examination of group means for each variable permitted the profiling of the differences in each group. Research results indicate that, in descending order, Web-shoppers were more likely:

- (1) to be more concerned with time efficiency, availability of shopping on a 24 hours basis and avoidance of queues (*H5*);
- (2) to perform Web browsing activities at the office (*H4*);
- (3) to be less concerned with entertainment derived from, or trust shown towards shopping through physical stores (*H6*);
- (4) to be direct shopping prone (*H2*); and
- (5) to perform Web browsing activities at home (*H3*).

Discussion and implications

The literature on Web-shopping is expanding but still lacking in empirical work. The purpose of this study was to examine the discriminating powers of potential determinants (i.e. direct shopping; Web browsing activities at home and at the office; Web-shopping motives; Web-shopping impediments; and demographics) between Web-shoppers and non-shoppers. This first outline of the Greek Web-shopper's profile would enable designing of better-grounded consumer Web-marketing strategies, providing insightful directions for future marketing research, at the same time.

The most powerful discriminant variable between Web-shoppers and non-shoppers was found to be Web-shopping motives, concerning time efficiency, availability of shopping on 24 hours basis and queues avoidance. Marketers may need to stress such themes in their communication messages, as time saving, convenience shopping hours, rapid service through the Web, together with inconvenience aspects of traditional shopping, as these seem to be strong attractions to the potential adopters.

Moreover, the factor advantage of traditional shopping, which encapsulates enjoyment of shopping through physical stores and lack of trust to Web-shopping, appears to affect negatively Web-shopping behavior. Such findings were similarly valid in the context of direct shopping (McKay and Fletcher, 1988; Quelch and Takeuchi, 1981). Web-shoppers seem to be less concerned with enjoyment derived from traditional shopping, which may be due to limited time they may afford for visiting the physical store premises, as a result of the long hours that they may have to spend at place of work.

Another powerful discriminant variable between Web-shoppers and non-shoppers was use of direct shopping, which places additional support to prior research (Mehta and Sivadas, 1995; Shim and Drake, 1990). It appears that the direct shopping prone are the most potential Web-shoppers, thus marketers need to target this market segment.

All the aforementioned three relationships, when shown in chorus, seem to portray Web-shoppers as time-conscious consumers, to whom time saving and shopping convenience is of paramount importance. This interpretation seems to be also advocated by the stronger discriminating effects of Web browsing activities performed at the office rather than at home. Thus, marketers should consider Web-shopping not as competitive, but rather as complementary to traditional shopping, as it primarily responds to the needs of a specific market segment, i.e. the time-pressured consumers. The emerging strategic window for marketers is to design differentiated consumer marketing strategies targeting to different consumer market segments, i.e. the traditional shoppers and the time-conscious Web-shoppers, respectively. Thus, a company should design time-saving and convenience-offering shopping Web site applications, e.g. through built-in memory storage scripts which enable keeping track of a consumer's common purchases, known as the consumer's basket, which would be available every time the customer enters the virtual store. Another suitable Web site application may be the use of online databases that would make automatically available (i.e. through data-mining scripts) lists of products that match with a buyer's most favorable purchases, or/and demographic and psychographic characteristics (e.g. the Amazon online bookstore). Indeed, the Web may be the ultimate direct shopping means that may offer time-saving, convenience-shopping and cost-effective solutions, implying win-win effects for both the marketers and the consumers. The critical point here for marketers is to communicate these unique shopping solutions to their target consumer groups and to educate them how to make best use of them to their greatest benefit.

As evident, Web-shoppers are browsing the Web more frequently than non-shoppers. It appears that browsing activities express recreational shopping behavior representing

the first step for making online purchases. As such, marketers should focus their marketing strategies on enhancing consumers' learning to browse through their virtual shopping malls, having in mind that work premises may be a more popular place of access for making online purchases, than home. Thus, it might be prudent for marketers to use hyperlinks to connect their Web sites to other sites that are popular in the business world, in order to increase awareness within the office-bounded Web-shoppers' target group. Furthermore, they might emphasize recreational aspects of this shopping mode and educate consumers about the potential fun of entering their virtual stores. To this end, they might use subtle communication cues and interactive shopping elements to attract Web site visitors' attention, trigger browsing activities and reinforce their trust to the Web, at the same time. For example, through the Web, a manager may retrieve and transmit interactive and dynamic (i.e. comparative) information, customize selling offerings and even inspect a product online (i.e. depending on the information content of the product/service). Such Web site interactive options might be critical in getting surfers involved in the marketing communication process, converting site visitors from passive prospects into interactive customers (Berthon *et al.*, 1996).

Finally, neither perceived complexity in locating and using such online shopping services, nor consumer characteristics showed any discriminating powers between Web-shoppers and non-shoppers, indicating that Web-shopping is user-friendly and compatible to the Internet users, for at least this stage of the Internet's diffusion in Greece. This finding gives us the base to support that Web-shoppers do not form a narrow caste among the Internet users, implying that they should all be invariably considered as good candidates for Web-shopping. Indeed, another recent international survey pointed out that about half of all online shoppers were women, 40 years of age on average, college educated and married (Cyr, 2000).

All others being equal, the future of Web-shopping is inextricably entwined with the diffusion of the Internet, which is the technology platform of this new shopping mode. In this respect, because critical mass for interactive technologies (i.e. the Web) is "all-or-none" (Markus, 1987; Rogers, 1991),

Web-shopping will not be successful until the use of the Internet (i.e. the Web) achieves critical mass in Greece, as well as the rest of the world.

Limitations and directions for future research

A word of caution should be in order. The present findings are mainly exploratory and it would be inappropriate to generalize too far from a single study. In particular, this study provides some preliminary results regarding discriminating variables (i.e. direct shopping, WWW browsing activities and motives) between Web-shoppers and non-shoppers, in order to identify potential target groups among Internet users. Future research should focus on the Web site technical characteristics and interactive marketing communication cues that may affect consumers' browsing behavior and building of trust in using the WWW as a direct shopping encounter. Similarly, it should provide a greater intuition on the wide range of social and psychological motives that may trigger shopping behavior through the WWW, paving the way for retail business in Greece, as well as for international marketers.

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