

The Consumer and the Web: a critical review of the contributions made by marketing and the consumer behaviour discipline to Web Science

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1 Introduction: interconnecting Web science with marketing and the consumer behaviour discipline

Web science, the new area of knowledge proposed by Sir Tim Berners-Lee and fellow collaborators (2006), aims to explain the Web as a complex phenomenon with its own ecology (Hendler *et al.*, 2008; Riera, 2008). Given that the growth and development of the Web is largely explained by this technological innovation being put to commercial use, it is vital that Web science incorporates contributions made by marketing and, in particular, by the consumer behaviour discipline. For their part, distinguished authors in marketing (Deighton, 1997; Hoffman, 2000; Mahajan and Venkatesh, 2000; Sharma and Sheth, 2004; etc.) declare that the Web poses a real revolution for the discipline. That the Web provokes and will continue to provoke large and radical changes in the virtual markets is a consideration, however, that must be taken into account not only in the marketing arena. Marketing modelling for the Web can also enrich the Web science field in terms of new theories, data and methods.

2 Main research lines in the Web/consumer behaviour interface

The contributions made by marketing and, in particular, by the discipline of consumer behaviour to the study of the Web are evident in the development of studies that aid the understanding of people's activities in their experiences as consumers on the Web.

Early research into the Web/consumer behaviour interface concentrated on the obtaining of user profiles and on the segmentation of consumers who used the Web. However, as use of the Web as a marketing channel increased, resulting in its wider use as a purchasing medium, subsequent research became centred on questions directly related to consumer behaviour. In accordance with the structure proposed by Kınılıoğlu (2004), it is possible to group this later research into four different lots: study of the variables in purchase intentions, analysis of the purchasing process on the Web, consumer satisfaction and loyalty on the Web, and adoption of models and theories to the electronic markets.

In addition to the four lines of investigation indicated above, there is a fifth line, which analyzes the extent to which the Web empowers consumers. This line has commanded more attention in the last few years, especially after the emergence of the so-called Web 2.0 and the applications of the social web, which allow consumers to benefit from a collective intelligence and to acquire greater control over information.

Determinants in making purchases on the Web

The identification and analysis of the factors involved in explaining the consumer's predisposition/intention to buy on the Web – as well as explaining the actual purchase - figure prominently in much of the latest research. Apart from the models used to this end, in which the variable of intention to buy is usually integrated as a terminal element, several different variables have been deployed in an effort to understand what it is that influences purchases on the Web: perceived safety in the transaction (Attaran and Vanlaar, 1999; Iyengar, 2004; Miyazaki and Fernandez, 2001; Phillips, 2002; Udo, 2001), quality of service on the Web (Liu and Arnett, 2000; Long and McMellon, 2004; Surjadaja *et al.*, 2003; Trocchia and Janda, 2003; Yang and Jun, 2002; Yang *et al.*, 2003; Zeithaml *et al.*, 2002), questions related to product price or service acquired (Garbarino and Lee, 2003; Grewal *et al.*, 2003; Jiang, 2002; Miyazaki, 2003), invasion of privacy risks (Aljifri *et al.*, 2003; Ashrafi and Kuilboer, 2005; Attaran and Vanlaar, 1999; Gritzalis, 2004; Hoffman *et al.*, 1999a; Kruck *et al.*, 2002; Larson *et al.*, 2003; Martínez-López *et al.*, 2005; Miyazaki and Fernandez, 2001; Nakra, 2001; Phillips, 2002; Udo, 2001; Wang *et al.*, 1998), beliefs and attitude towards Web (Alreck and Settle, 2002; Bhatnagar *et al.*, 2000; George, 2002; Goldsmith and Bridges, 2000; Helander and Khalid, 2000; Kim *et al.*, 2003; Sorce *et al.*, 2005; Shim *et al.*, 2001; Vellido *et al.*, 2000; Yoh *et al.*, 2003), purchasing confidence in the Web as a purchasing channel (Aljifri *et al.*, 2003; Jarvenpaa and Todd, 1997; Grabner-Kraeuter, 2002; Hoffman *et al.*, 1996; Hoffman *et al.*, 1999b; Lee and Turban, 2001; Limayem *et al.*, 2000; Lynch *et al.*, 2001; Martínez-López *et al.*, 2005; McKnight and Chervany, 2001; McKnight *et al.*, 2002; Shankar *et al.*, 2002; Urban *et al.*, 2000; Vijayasathay and Jones, 2000), confidence in the vendor on the Web (Castelfranchi and Tan, 2002; Chen and Dhillon, 2003; Ha, 2004; Jarvenpaa *et al.*, 1999 & 2000; Koehn, 2003; Lee and Turban, 2001; Tan and Thoen, 2000; Wakefield and Whitten, 2006), the consumer's experience in the use of the Web to obtain information and to make purchases

(Balabanis and Vassileiou, 1999; Helander and Khalid, 2000; Hoffman *et al.*, 1996; Hoffman *et al.*, 1999b; Liao and Cheung, 2001; Maignan and Lukas, 1997; Montoya-Weiss *et al.*, 2003; Novak *et al.*, 2000), the hedonistic value associated with Web purchases (Childers *et al.*, 2001; Mathwick *et al.*, 2001& 2002; Martínez-López *et al.*, 2006; Wolfinbarger and Gilly, 2001), the consumer's perceived control over the process of navigating the Web and over electronic transactions, and, in general, the degree of facility perceived regarding the process of electronic exchanges with businesses on the Web (Hoffman and Novak, 1996; George, 2004; Goldsmith and Goldsmith, 2002; Johnson *et al.*, 2003; O'Cass and Fenech, 2003; Pavlou, 2003; Shih and Fang, 2004; Shim *et al.*, 2001), and situational factors that can moderate the relationship among variables considered previously and purchasing on the Web (Avery, 1996; Perea y Monsuwé *et al.*, 2004; Wolfinbarger and Gilly, 2001).

Analysis of the purchasing process on the Web

Another important line of investigation, though one followed less intensely, is the analysis of the purchasing process on the Web. Among the questions examined are: the identification of the reasons that discourage and inhibit purchasing on the Web (Betts, 2001; Mayer, 2002), the identification of the reasons the shopping cart is abandoned after an item is selected (Donthu, 2001; Plant *et al.*, 2003; Scullin *et al.*, 2004; Van Iwaarden *et al.*, 2003), and why a consumer who visits a particular commercial website finally decides to go ahead with an electronic transaction (Swaminathan, Lepkowska-White and Rao, 1999; etc.).

Satisfaction and loyalty on the Web

The study of a consumer's satisfaction with a Web purchase, as well as users' loyalty and fidelity to virtual establishments with regards to the purchase (what is typically referred to as e-loyalty) has aroused researchers' interest in recent times. The relationship between these concepts has materialized in many studies that have taken consumer behaviour in physical establishments as their framework, although in studies of consumer behaviour on the Web it is necessary to consider other factors which moderate this relationship (Bigné *et al.*, 2005).

One of the principal conclusions which can be drawn from studies centred on consumer e-satisfaction is that the adequate identification and understanding of the principal satisfaction determinants is crucial to the success of every business on the Web (McKinney *et al.*, 2002). In addition, and in accordance with the conceptual model proposed by Schaupp and Bélanger (2005), it is important to emphasize the following factors as principle antecedents of e-satisfaction: technological factors that ensure website functionality, such as security, privacy and usability/site design; factors that influence consumer perceptions during and after the purchase, such as convenience, confidence in the virtual establishment and, finally, the delivery of the purchased items; and factors associated with the quality of the product and service being offered, such as the presentation of the selection of products (merchandising), product value and the adaptation of the same to the concrete needs of the individual.

The concept of e-loyalty, in line with the postulates of similar studies focused on brand loyalty in the physical markets (for example: Day, 1969; Jacoby, 1971; Jacoby and Chestnut, 1978), is understood as something more than just the consumer's repeated tendency to buy in a specific web establishment, since this behaviour could be the consequence of other spurious factors. Thus, it is not the mere repetition of purchases that defines a consumer's loyalty to a web space, but, rather, it is his or her preference and positive attitude towards that site over all others. In this way, the observed behaviour would be consistent with the preferences and attitudes on the part of the consumer towards the website. The fact that businesses on the Web count on a tranche of loyal customers has led academics to take an interest in discovering the factors that determine loyalty (see, for example: Srinivassan *et al.*, 2002).

Consumer confidence in purchasing on the Web

Another important line of research is that of aspects related to confidence in purchasing on the Web. Various studies (e.g.: Butler and Peppard, 1998; Reynolds, 2000; Rowley, 2000) have highlighted that, due to the special characteristics of Web transactions, companies with a Web presence feel the need to generate confidence and brand image in such a way that consumers show a greater predisposition towards carrying out purchasing processes on their sites. So, a lack of consumer confidence in this medium is one of the main factors that inhibit electronic transactions (Hoffman *et al.*, 1999b). Furthermore, it is to be expected that consumers will not carry out a Web transaction unless the perceived level of confidence exceeds a minimum level of acceptability to the consumer (Castelfranchi and Tan, 2002; Tan and Thoen, 2000).

Specifically, Urban *et al.* (2000) define confidence in the Web as a channel for purchases, in terms of consumers' opinions regarding safety, evident transparency in the transaction entered into with companies on the Web, and the companies' commitment to respect what has been transacted with the consumer. On the other hand, Lee and Turban (2001) indicate that confidence in purchases made on the Web is a two-dimensional concept articulated by confidence in the support/infrastructure of the market and in the companies that operate within this support, i.e.: (1) confidence in the Web as medium of purchase; and (2) confidence in the companies that operate on the Web. Likewise, McKnight *et al.* (2002) begin with a holistic philosophy to give shape to what

they term the “model of confidence in the Web”, a model which contemplates various facets: consumer predisposition towards confidence in the generic sense, confidence in the Web as a medium for purchase and, particularly, confidence in the website of a specific company.

Adoption of classic theories and models to explain consumer behaviour on the Web

Another noteworthy line of investigation refers to the adaptation of classical theories and models relating to consumer behaviour – specifically attitude models – to explain the adoption of the Web and electronic commerce. The contributions to this area of study are many and varied, but they can be generally classified in the following manner (Kımlıoğlu, 2004; Rodríguez del Bosque and Herrero, 2005):

- Adaptation of the theory of reasoned action (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980) and planned behaviour (Schifter and Ajzen, 1985). See, for example: George (2004).
- Adaptation of the Technology Acceptance Model (TAM) proposed by Davis (1989). See, for example: Chen and Tan (2004).
- Adaptation of the adoption-diffusion of innovations model (Gatignon and Robertson, 1985). See, for example: Herrero and Rodríguez del Bosque (2008).
- Application of the decomposed theory of planned behaviour (Taylor and Todd, 1995). See, for example: Shih and Fang (2004).
- Application of the flow state concept (Csikszentmihalyi, 1975) to explain the adoption and use of commercial electronic systems. We highlight the seminal work of Hoffman and Novak (1996), whose conceptual model subsequently was validated empirically in Novak *et al.* (2000).
- Integration of the TAM model with the flow condition to explain Web surfing and the use of the Web and of individual sites. See, for example: Sánchez-Franco and Roldán, 2005.

Consumer empowerment on the Web

Finally, we wish to note a line of investigation which is beginning to gain importance and which considers the Web to be an instrument to empower consumers (e.g., Harrison *et al.*, 2006; Pires *et al.*, 2006; Pitt *et al.*, 2002; Rezabakhsh *et al.*, 2006; Rodríguez-Ardura and Martínez-López, 2008). Typically this question is tackled by considering and analyzing the different sources of empowerment on the Web (Rezabakhsh *et al.*, 2006; Rodríguez-Ardura and Martínez-López, 2008). Frequently, this class of studies tends to derive from a notable current of opinion which has taken shape following the pioneering work of Alba *et al.* (1997), Bakos (1997) and Brynjolfsson and Smith, (2000), and which has laid the foundations for greater power on the part of online consumers, thanks to greater informative transparency regarding electronic exchanges. However, the consumer behaviour discipline takes additional sources of empowerment into consideration, such as the online consumers’ increased capacity to intervene directly in the shaping of a value proposition adapted to their individual needs (Pires *et al.*, 2006), as well as their greater capacity to “sanction” firms (Rezabakhsh *et al.*, 2006).

Nonetheless, the evidence obtained reveals different behaviour patterns as far as empowerment is concerned. While a relevant segment of online consumers shows themselves to be little inclined to increase their levels of empowerment, there are others who use the Web to enhance their empowerment. This second group of consumers are better informed and more active: they use advanced tools to make the most efficient and effective searches for products (Deck and Wilson, 2006; Sen *et al.*, 2006), they are ready to defend against intrusive or discriminatory marketing initiatives (Acquisti and Varian, 2005) and to propagate their opinions and recommendations among many other consumers (Carl, 2006), and they are more likely to participate in the design of a value proposition that satisfies their preferences (Kamali and Loker, 2002).

3 Discussion and conclusions

In accordance with the principles of Web science, the agenda of this new area of knowledge requires contributions from multiple disciplines, which must be adequately integrated in order to articulate a doctrinal body (Schneiderman, 2007). To be precise, the emergence of the Web in the commerce arena is opening up new challenges and opportunities for greater communication and interdisciplinary interaction between researchers and specialists in computer science – the reference discipline – and those whose work is carried out in the economic and social realms, such as marketing. Moreover, the agenda of Web science demands it embrace the phenomenon of electronic commerce from a range of integrally applied multidisciplinary capacities.

Drawing on an illustrative pool of studies done on the Web/consumer behaviour interface, we seek to convey three points. Firstly, we propose that Web users in the electronic commerce context are not seen as users of information systems but as consumers (Kauffman and Walden, 2001) who, in the search to satisfy needs, resort to this system of electronic commercialization. Coherently, those contributions arising initially from a marketing perspective should be incorporated. These enable the understanding of internal (personal and psychological) and external (relative to the marketing strategy of companies in the market, and to social groups that reference the individual) factors that influence purchase and consumption experiences and the processes by which they are carried out.

Secondly, we propose that in the development of Web science, special emphasis should be placed on the importance of thinking in terms of the insights that marketing and consumer behaviour discipline can offer. With the adoption of this perspective based on the knowledge of the consumer, the integrated base required by the theoretical and methodological developments and that will come from the understanding of the phenomenon of consumption on the Web can be created.

Thirdly, as is evident from the review undertaken, the Web has become a new path for examining many of the traditional concepts, theories and models of marketing and of the consumer behaviour discipline. As we can see, the future of Web science and marketing sciences are interconnected.

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