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Building better causal models to measure the relationship between attitudes and customer loyalty

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Perceived quality, satisfaction and brand/corporate image/reputation are probably the most widely used variables to investigate customer attitudes in market research. Several models have been proposed to analyse the relationships between these variables and customer loyalty. All these models have a similar focus: to study the causal mechanism that relates customers' evaluations with their future expected behaviour. In this paper, we propose that all these models are not useful for applied market research because they are not proper representations of causal processes and do not provide relevant information about the effects of managerial actions. Two main reasons are the basis for our postulation: (1) in cross-sectional designs, attitudinal variables should not be unidirectionally linked; (2) attitudes can not be manipulated by companies. Finally, we offer guidelines for building more useful models to satisfy the requirements of practitioners investigating the effect of management policies.

Market research is inherently concerned with customers' attitudes towards product/services/brand/companies because these subjective evaluations are indicators of company performance and a key determinant of the customer's future repurchase behaviour. Perceived quality, satisfaction and brand/corporate image/reputation are probably the most widely used variables in investigating these attitudes, and several models have been proposed for analysing the relationships between these variables and customer loyalty (see Figure 1). The focus of all these models is similar:

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to study the *causal* mechanism that relates customers' evaluations with their future expected behaviour, using the structural equation modelling methodology.

Researchers are often very careful in their use of the word *cause*, because this concept is one of most controversial terms in philosophy and science (Pedhazur & Schmelkin 1991). However, the proposed models have a causal meaning since models are composed of structural equations that represent research hypothesis about the relationships among variables. Therefore, although some researchers use the words *determine* or *affect*, trying to elude the term *causation*, they reason in a causal fashion.

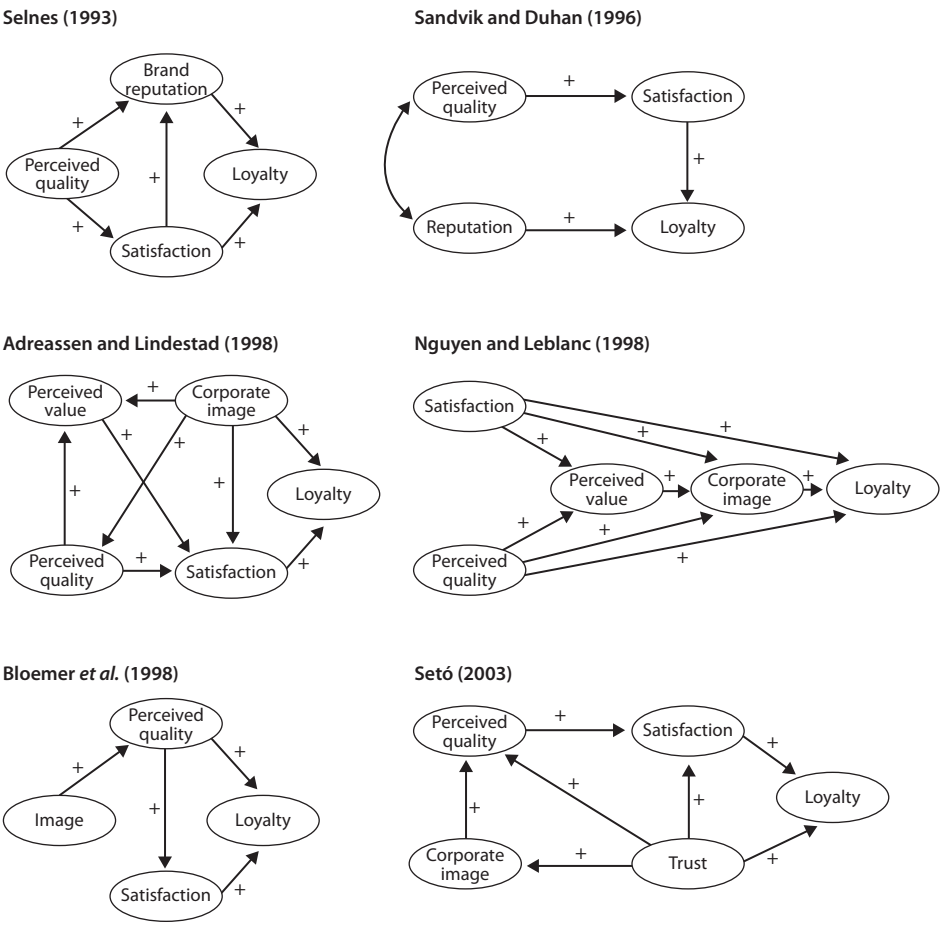

Figure 1 Example of causal models of performance variables and customer loyalty

In this paper, we propose that all these models are not useful for applied market research because they are not proper representations of causal processes. There are two main reasons for our postulation:

1. In cross-sectional designs, attitudinal variables should not be unidirectionally linked.
2. Attitudes can not be manipulated by companies.

We will explain both arguments, which are central topics in the context of causal modelling, and we will propose a more useful form to understand *causes* and *effects* in this area of market research.

Theoretical relationships between perceived quality, satisfaction and image

There are multiple definitions of these important variables. Here, we outline some of the most representative definitions:

- Perceived quality is 'the consumer's overall impression of the relative inferiority/superiority of the organisation and its services' (Bitner & Hubbert 1994, p.77).
- Satisfaction is 'the consumer's fulfillment response. It is a judgment that the product or service feature, or the product or service itself, provided (or is providing) a pleasurable level of consumption-related fulfillment, including levels under- or overfulfillment' (Oliver 1997, p. 13).
- Corporate image is defined as the 'perceptions about a brand as reflected by the brand associations held in memory' (Keller 1993, p. 3).

These three variables are attitudes towards the product/service/brand/company, and they are different forms of measuring the consumer subjective perceptions.

There are a number of contradictions in the literature regarding the causal relationships among these variables. Several authors propose that service quality perception is a determinant of corporate image evaluation, (e.g. Bhattacharya *et al.* 1995; Andreassen & Lindestad 1998), and other researchers propose that just the converse is true (e.g. Bitner 1992; Nguyen & Leblanc 1998). At the same time, some researchers argue that quality is a cause of satisfaction (e.g. Cronin & Taylor 1992; Rust & Oliver 1994)

and other authors propose the opposite (e.g. Bitner 1990; Bolton & Drew 1991). And finally, there are researchers who consider that satisfaction is a determinant of corporate image (e.g. Low & Lamb 2000; Grace & O'Cass 2005), while others consider that corporate image is a determinant of satisfaction (e.g. Andreassen & Lindestad 1998; Beerli & Díaz 2003).

It is obvious that these three variables are related, but we think that the discussion about their causal order originates from a misleading conception of the nature of the underlying relationships. Therefore, we defend that the linkage between them is mediated by expectations, arguing there is a cyclic process in the consumer's mind after the first service encounter ($t + 1$) (see Figure 2). Dynamic models are not a novelty in this area of research (although they are not widely implemented), and they require the use of longitudinal studies (e.g. Boulding *et al.* 1993) or system dynamics approaches (e.g. Martínez & Martínez 2007). However, cross-sectional designs are not capable of representing the ongoing process, being more adequate to characterise the relationships as reciprocal. In reality, we could argue that asymmetric, and not reciprocal, relationships relate these variables in a Markovian process with a quasi-instantaneous lag period. This is consistent with the notion of causality of Pearl (2000) and Spirtes *et al.* (2000), authors who defend the asymmetry in causal relationships.

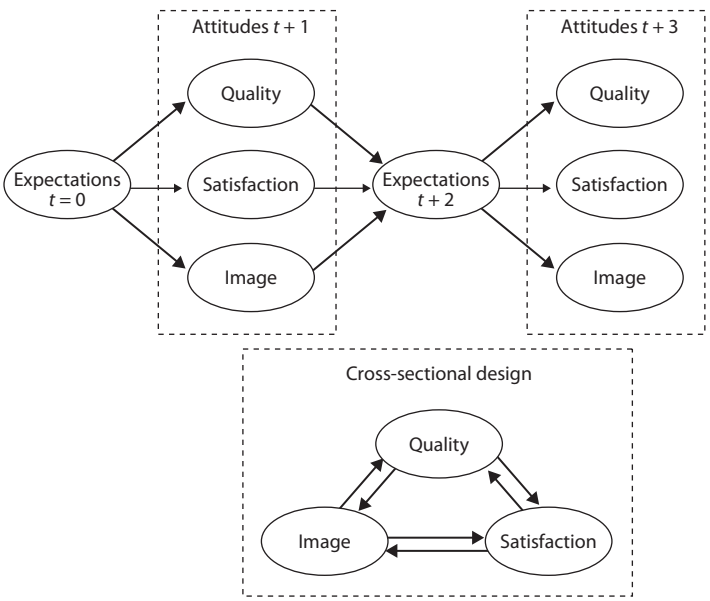

Figure 2 Causal relationships between attitudinal variables

In addition, it is worth acknowledging that, as some authors claim (e.g. Carman 1990; Babakus & Boller 1992), when customers evaluate a product/service/brand/company, they are making an implicit comparison between expectations and performance in their subjective performance judgments. Thus, measuring expectations yields redundancy as well as other methodological problems.

It seems clear that the attitudinal character of these variables implies that, among the variables, no unidirectional path can be proposed when using cross-sectional designs. The counterfactual theory of causation (Pearl 2000) and the presence of equivalent models (Hershberger 2004) can help to understand why unidirectional links between them are not adequate.

Attitudes should not be modelled as exogenous variables

What a manager wants to know is, 'If I do x, how will that change y?' (Rigdon 2002). This single statement fits with the causal mechanisms that represent structural equations. Following Pearl (2000), an equation $y = \beta x + \varepsilon$ is structural if it is interpreted as follows: in an ideal experiment where we control X to x and any other set Z of variables (not containing X or Y) to z, the y of Y is given by $\beta x + \varepsilon$, where ε is not a function of the settings x and z. Thus, coefficient β is interpreted as the change of $E(y)$ when x changes one unit. Pearl stresses the word 'change', discarding the term 'conditional expectation', and proposes the operator $do(x)$ to define this interventional interpretation that distinguishes structural equations from algebraic equations. Thus, the next question is: 'Can managers intervene on attitudes?'

We strongly believe that straightforward reasoning explains why this is not possible. Consumer attitudes are the result of companies' conduct and strategies, being a 'private property' of customers. Obviously, companies can change consumer attitudes through implementing actions, and changes in attitudes are the result of the variations in the actions. For example, attitude towards a product can be changed by changing the company customer relationship (CCR) strategy, by adopting a total quality management (TQM) system, or by enhancing the mass media advertisement budget, etc. All these factors are areas in which companies can intervene in order to modify customer attitudes. We mean that customers have ownership of their attitudes and companies have ownership of their actions. Certainly, there are other factors outside total company control that also cause variations in attitudes, such as non-controlled communications, or

situational and personal factors (Dabholkar & Bagozzi 2002), but these factors are not likely to be easy for management to handle effectively.

Proposing attitudinal variables as exogenous variables in a causal model does not give any information about the causes of these variables, which is precisely what companies are interested in. We argue that the relevant question is: 'How will company actions change consumer attitudes?' The aim is to look for sources of variation in consumer evaluations in order to explain the variance of these variables. Therefore, we can reformulate the manager's query, mentioned in the first paragraph of this section, as the following question: 'If I $do(x)$, how will that change y?' This is a more formal statement about causation that must necessarily move academic researchers towards a more useful form for proposing causal models that are likely to provide more relevant information for practitioners.

Examples of models and extension to other attitudinal variables

Multiple creative models can be proposed following the line of reasoning that we defend. The aim is to find relevant exogenous variables that can explain variations in attitudes. We have already commented that variables related to management decisions, such as adopting a CCR or TQM system or changing the advertising budget, can be examples of interesting exogenous variables, but in reality any strategic or operative marketing decision could be viewed as exogenous. For example, price policy can be an interesting exogenous variable that can be manipulated by a company analysing its effect on consumer attitudes. Similarly, the effect of price policies can be analysed across companies by collecting data from the entire market. In addition, several exogenous variables can be combined in a model, in order to explain more variance of consumer attitudes.

Researchers and practitioners are free to use any other attitudinal variable that they believe is relevant for evaluating performance. Therefore, perceived value, trust, or disconfirmation are variables that can also be considered as consumer subjective evaluations and can be modelled in the same way as perceived quality, satisfaction, and image.

The complexity of the models can be increased by including consequences of attitudes and causes of strategies. In addition, moderating variables can be useful to study the heterogeneity in causal relationships. For example, future repurchase intentions can be modelled as consequences of consumer evaluations, as is commonly done in research about consumer loyalty (e.g. Johnson *et al.* 2006; Chandrashekaran *et al.* 2007). At the same time,

causes of companies' decisions can be included, such as marketing budget, managers' leadership, managers' risk aversion, etc. Finally, contextual and situational variables can moderate the causal relationships. Examples would be age, sex, income, education (Mittal & Kamakura 2001), and legal restrictions to supplier choice, time pressure or temporary budget restrictions (Hennig-Thurau & Klee 1997).

Nevertheless, we recommend researchers and practitioners propose simpler models that emphasise parsimony, identification, and ease of interpretation. In addition, they should take care when including attitudinal variables in their models as similitude and correlations between these variables could lead to redundancy. For example, consumers might consider, under certain circumstances, that quality and satisfaction are the same concept (Iacobucci *et al.* 1994).

Finally, we provide a schematic example about how to build useful causal models using perceived quality, satisfaction and corporate image (see Figure 3). The simplest option would be to study the effect of management policies on consumer attitudes (basic model). For example, it would be very interesting to analyse if the adoption of ISO certification by companies yields positive variations in perceived quality (or satisfaction and image). Furthermore, lag period (period of time since a company has

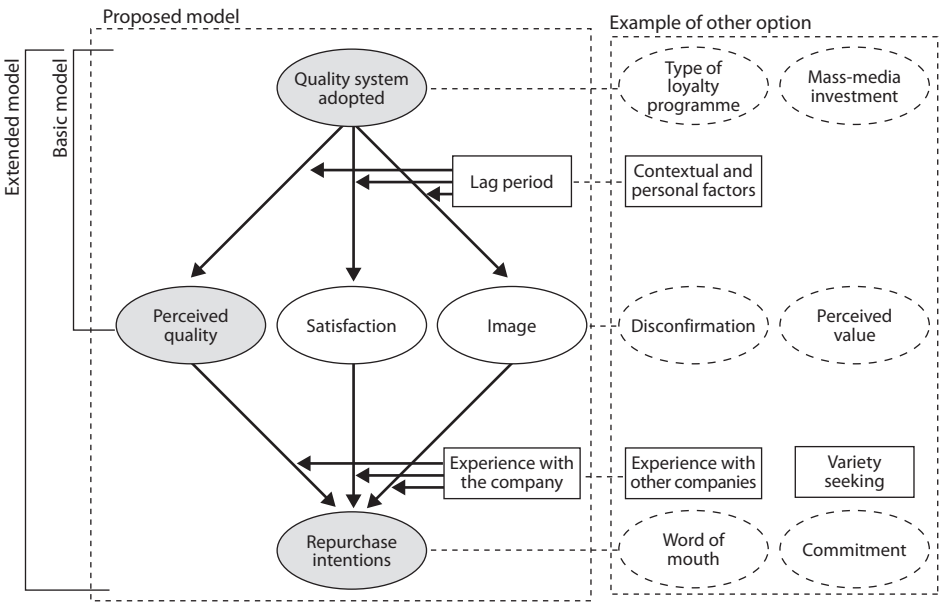

Figure 3 Example of model building

been certified) could be considered as a moderating variable, because time delays in the relationships between changes in quality policy and perceived quality may be important (Mitra & Golder 2006). This basic model can be extended to a more comprehensive model, analysing the effect of attitudes on, for example, repurchase intentions. In the case of using several attitudinal variables, multi-collinearity should be taken into consideration before testing the model. Therefore, attitudes act as mediating variables between management policies and consumer intentions. Moreover, some moderating variables between attitudes and intentions may be considered, such as experience with the company (Rust *et al.* 1999), since less experienced customers could be more sensitive to variations in attitudes than the more experienced ones.

We also show in Figure 3 that other exogenous, endogenous and moderators variables can be used, depending on the research objectives. This schematic representation should serve as a basis for proposing causal models in cross-sectional research using these types of attitudinal variables.

Conclusion

We suggest that market research has to propose useful models to understand how actions yield variations in outcomes. Consumer judgments of perceived quality, satisfaction, and image are considered performance variables because they are the intangible result of company operations. However, many academic models fail to represent the causes of these variations because they focus on modelling unidirectional paths between attitudinal variables. We have shown that this is a mistaken practice that does not respond to practitioners' need to understand the effect of management policies on consumer attitudes. Therefore, for practitioners who want to know the effects of their actions and changes in markets on consumer responses, the single form of building models proposed in this paper could be a more valid way to satisfy managers' queries.

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