

Consumer confusion proneness: scale development, validation, and application

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Abstract With ever increasing amounts of marketplace information, confusion is becoming a problem for consumers and marketers, yet the topic remains under researched. This paper explores the dimensions of consumers' general tendency to become confused and its relevance for marketing practitioners. A three component conceptual model of confusion is developed, operationalised and validated using a sample of 264 consumers. Using structural equation modelling, the results support the three dimensions of similarity, overload and ambiguity which have a significant impact on decision postponement and loyalty behaviour. Implications for marketing management and theory are discussed.

Keywords Consumer confusion, Proneness, Stimulus similarity, Stimulus overload, Stimulus ambiguity.

INTRODUCTION

At the beginning of the third millennium, in a competitive environment characterised by; a plethora of choice, a surge of marketing communications, decreasing inter-brand differences, increasing complexity of information and its sources which increase search costs, it is no wonder that some consumers find information processing for some tasks confusing. Snider (1993) contends that confusion pervades almost every decision that consumers make and incidences of consumer confusion have been

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reported in many different countries¹ and in a host of product markets (Cohen 1999; Clancy and Trout 2002) such as; watches (Mitchell and Papavassiliou 1997), fashion (Cheary 1997), telecommunications (e.g., Nanji and Parsons 1997; Turnbull, Leek, and Ying 2000), washing powder (Harrison 1995), health and travel insurance (Canniffe and McMannus 1993; Brierley 1995) and own-label brands (e.g., Balabanis and Craven 1997; Murphy 1997).

Despite its importance, no consistent approach has been taken to defining and measuring consumers' proneness to confusion. Although situation specific confusion has been linked to information overload (e.g., Jacoby, Speller, and Kohn 1974) and ambiguous and misleading information (e.g., Keisser and Krum 1976; Golodner 1993), most situation specific studies on consumer confusion have focused on stimulus similarity (e.g., Miaoulis and D'Amato 1978; Foxman, Muehling, and Berger 1990; Balabanis and Craven 1997) and are predominantly concerned with *trademark infringement issues* revolving around the question of whether one brand resembles another. But this *brand confusion* perspective (e.g., Levy and Rook 1981; Simonson 1994; Morrin and Jacoby 2000; Mitchell and Kearney 2002) "*fails to capture the multidimensionality of consumer confusion*" (Mitchell and Papavassiliou 1999, p. 320) and is highly situation specific and stimulus dependent. In particular, it does not deal with the issue of consumers' general tendency to be susceptible to these kinds of confusing stimuli, i.e., consumer confusion proneness.

Awareness and knowledge of consumer confusion is relevant to successful marketing because confused consumers are less likely to make rational buying decisions and to choose products offering the best quality or best value for money (Huffman and Kahn 1998; Jacoby and Morrin 1998; Mitchell and Papavassiliou 1999). The importance of consumer confusion to companies is ultimately assessed on the basis of its consequences and their economic relevance. Consequences such as, dissatisfaction (Foxman et al. 1990), negative word-of-mouth (e.g., Turnbull et al. 2000), cognitive dissonance (Mitchell and Papavassiliou 1999), decision postponement (Mitchell and Papavassiliou 1997; Jacoby and Morrin 1998; Huffman and Kahn 1998) and decreased loyalty (e.g., Foxman et al. 1990; Mitchell and Papavassiliou 1999), have been mentioned and all can negatively affect company profits. Although research has identified some confusion antecedents (e.g., Foxman, Berger, and Cote 1992; Balabanis and Craven 1997), our understanding of the relationships between the dimensions of consumer confusion and *potential outcomes* is limited. Decision postponement and decreased brand/store loyalty are among the most frequently mentioned and most damaging outcomes and are therefore considered in the proposed model and empirical study. With regard to decision postponement and in the context of overload confusion Huffman and Kahn (1998, p. 491) note, "(...) *information overload such that a customer feels overwhelmed and dissatisfied, or chooses not to make a choice at all*". Moreover, conventional managerial wisdom holds that reducing customer attrition rates and attending to customer loyalty makes good business sense because customer retention is less costly than acquisition (Reichheld and Sasser 1990).

This article examines the problem by developing definitions for the three dimensions of consumer confusion proneness and multidimensional conceptualisation

¹ Those countries include; the US (e.g., Miaoulis and D'Amato 1978; Loken et al. 1986; Sproles and Kendall 1986; Foxman et al. 1990), Netherlands (Poiesz and Verhallen 1989), Korea (Hafstrom, Chae, and Chung 1992), India (Lysonski, Durvasula, and Zotos 1996) the UK (e.g., Rafiq and Collins 1996; Balabanis and Craven 1997; Mitchell and Bates 1998), France (Kapferer 1995a; 1995b), and Germany (Walsh, Mitchell, and Hennig-Thurau 2001).

of consumer confusion proneness which encompasses similarity, overload and ambiguity. Based on this conceptualisation, a model of confusion proneness and consequences is proposed and tested against empirical data. This involves providing a new multidimensional confusion-proneness scale, which is subsequently validated and applied. By applying the scale and examining how well our confusion-proneness scale relates to the outcome variables, we can test the scale's nomological validity. The results are discussed with reference to their implications for marketing management and research.

A CONSUMER CONFUSION PRONENESS MODEL AND HYPOTHESES

A review of the extant consumer behaviour literature reveals few formal definitions of confusion. This is probably due to the fact that the term 'consumer confusion' is used in numerous specific contexts where it has not been treated as a potential consumer trait, but often used synonymously with, or to explain, other notions. For example, Foxman et al. (1990, p. 172) argue that, "*consumers who are misled clearly are confused*". From a linguistic perspective, the term confusion (or *confusio mentalis*) has its origins in the psycho-medical literature where it is used to describe a disturbance of consciousness that can cause an individual to be restless and scatty, to misjudge the environment and to act futilely. From this characterisation, consumer confusion can be viewed as a condition that individuals may be prone to and which causes them to act differently and/or affects their decision making behaviour.

Table 1 lists the definitions and quasi-definitions of consumer confusion found in the marketing and consumer research literatures.² In comparing definitions, they appear to stress specific aspects of confusion, such as similarity, overload and the conscious/unconscious nature of confusion. Our review of the literature also shows that occasionally 'consumer confusion' is discussed without relating it with stimulus similarity and overload, suggesting that the two dimensions stimulus similarity and stimulus overload need to be complemented by a third dimension, which we label 'ambiguity confusion' (see later section).

Finally, awareness can be seen as an important aspect of the definitions because it relates to consumers' abilities to take measures to reduce confusion. However, there is little agreement as to whether consumers are, or should be, *aware* or *unaware* of being confused with many suggesting consumers are unaware of their confusion (e.g., Miaoulis and D'Amato 1978; Foxman et al. 1992; Turnbull et al. 2000). When talking to consumers, it is possible for them to describe episodes of confusion of which they are clearly conscious. Furthermore, consumers are often aware of their own predisposition of being confused in the sense that they have an awareness of their own propensity to become confused in some situations. Our view, which agrees with Mitchell and Papavassiliou (1999), is therefore to link confusion proneness to original linguistic definitions and to assume consumers must be aware of it. The review of previous studies helped to develop our conceptualisation of confusion proneness. Our view is that confusion proneness can be seen as a consumers' general tolerance for processing similarity, overload or ambiguity information, which negatively affects consumers' information processing and decision-making abilities.

We now present a conceptual model of the three confusion dimensions and discuss

² Although quasi-definitions are descriptive rather than definitional, they have been considered here since descriptive approaches help us to understand how confusion has hitherto been viewed in the literature.

TABLE 1 Definitions of consumer confusion and their classification

Author(s)	Definition	Quasi-Definition	stimulus similarity	stimulus overload	conscious	non- conscious
Miaoulis and D'Amato (1978, p. 49)	"We take the position here that 'confusion' is in effect stimulus generalisation."		+			+
Diamond (1981, p. 52)	"[...] so resembles the mark in appearance, sound, or meaning that a prospective purchaser is likely to be confused or misled."		+			
Sproles and Kendall (1986, p. 274)		"[consumers] perceive many brands and stores from which to choose and have difficulty making choices. Furthermore, they experience information overload."		+		
Loken, Ross, and Hinkle (1986, p. 196)		"[...] physical similarities between products may result in the misattribution of source of origin or identity by the consumer."	+			
Poiesz and Verhallen (1989, p. 233)	"Brand confusion is a phenomenon that occurs at the individual level (...) and is predominantly non-conscious in nature."		+		+	+
Foxman, Muehling, and Berger (1990, p. 172)		"[...] consumers who are misled clearly are confused."	+			+
Foxman, Berger, and Cote (1992, p. 125)	"[...] consists of one or more errors in inferential processing that lead a consumer to unknowingly form inaccurate beliefs about the attributes or performance of a less-known brand based on a more familiar brand's attributes or performance."		+			+

Author(s)	Definition	Quasi-Definition	stimulus similarity	stimulus overload	conscious	non- conscious
Kapferer (1995a, p. 101)	"(...) arises from an incorrect attribution of distinctive markings."		+			
Kohli and Thakor (1997, p. 213)		"(...) confusion, when respondents may pick confusingly similar names, instead of the target names."	+			+
Huffman and Kahn (1998, p. 492; 493)		"the huge number of potential options (...) may be confusing" and "The confusion a consumer experiences with a wide assortment of options, however, is due to the <i>perceived</i> complexity, not necessarily to the actual complexity or variety."		+		
Jacoby and Morrin (1998, p. 97)		"If someone other than the owner were to use a trademark, there would be the possibility that such use (by the second or junior user) could cause consumers to be confused regarding who actually makes the product."	+			
Mitchell and Papavassiliou (1999, p. 327)	"Confusion (...) is a state of mind which affects information processing and decision making. The consumer may therefore be aware or unaware of confusion."				+	+
Turnbull, Leek, and Ying (2000, p. 145)	"(...) consumer confusion is defined as consumer failure to develop a correct interpretation of various facets of a product/service, during the information processing procedure."					+

some antecedents and consequences of consumer confusion proneness. For the sake of focus, the study concentrates on empirically testing the proposed three dimensions of confusion proneness and their impact on two consequences.

Similarity confusion proneness and related outcomes

Similarity confusion itself results from a *set of stimuli* (e.g., advertisements, interpersonal communications, the store environment or products), which are so similar in nature as to be easily confused with each other. Depending on the channel through which such similar stimuli reach the consumer, stimuli can be marketer dominated (e.g., through the store environment, advertisements) or consumer dominated (e.g., through interpersonal communication). Consumers prone to brand similarity stimuli will potentially alter their choice because of the perceived physical similarity of products. The implicit assumption is that consumers prone to similarity confusion rely on visual cues to locate and distinguish brands and when presented with similar brands, can buy a fake or a retailer own-label brand thinking it is the original. Moreover, similarity in advertisements and commercial messages could also lead similarity confusion prone consumers to make mistakes (e.g., Burke and Srull 1988; Poiesz and Verhallen 1989; Keller 1991; Kent and Allen 1994; Walsh and Mitchell 2005). We define similarity confusion proneness as consumers' *propensity to think that different products in a product category are visually and functionally similar*.

Similarity confusion is likely to lead to a delay or abandonment of decision making because when consumers are aware that there is at least a possibility that they are about to buy a brand they did not intend to, they are likely to take more time to find out whether the (two or more) alternatives are actually the same (Jacoby and Morrin 1998; Mitchell and Papavassiliou 1999). Consumers may also abandon a purchase altogether ('no-choice option') because they want to avoid making difficult trade-offs (Tversky and Shafir 1992; Dhar 1997). Although Tversky and Shafir's (1992) research was not concerned with products that were similar in appearance, it was concerned with similarity in terms of their attributes. They demonstrated that providing two equally desirable options produces choice conflict, which in turn leads to postponement of choice to a different occasion (see also Dhar 1997). For example, often consumers encounter inexpensive retailer own brands that emulate well-known national brands. In such situations, consumers need to trade off the financial advantages (i.e., lower price) of the copy brand for the disadvantage of not knowing if both brands are similar in terms of quality and/or origin.

However, we challenge this original view because consumers are often unable or unwilling to delay buying. Moreover, it seems reasonable to assume that if consumers perceive different brands to be similar and comparable in many ways, functional and symbolic, they may see no reason to postpone the decision because they see the brands as substitutable (i.e., generalisation of quality assumption). Indeed, Warlop et al. (2005) demonstrate that some consumers have difficulties to learn and remember quality differences between well-established (manufacturer) brands and lower-priced look-a-likes. When consumers are confronted with (lower-priced) look-a-like brands they may mistakenly think they had a satisfactory prior consumption experience with that brand, when in fact that particular experience occurred with the manufacturer brand. It is also conceivable that consumers prone to similarity confusion employ decision heuristics (e.g., buy the lowest priced offering) to avoid extensive decision making and to short-circuit the shopping process. This suggests that consumers either mistake one brand for another, thus buy immediately, or that they see no reason for a

decision delay because they perceive brands similar. This leads us to propose that:

H₁: As similarity confusion proneness increases, decision postponement decreases.

Previous empirical research suggests that consumers experience higher levels of perceived risk when buying retailer own-label brands than with manufacturer-branded products (Broadbridge and Morgan 2001). Moreover, it is widely accepted that as perceived risk increases, the preference for branded products increases (e.g., Cunningham 1956). We argue that when consumers who are prone to perceive brands as similar see a look-a-like brand they will not automatically perceive higher risk simply because they see the brands as similar. If they see no greater risk then they will see no reason to use brand loyalty towards the manufacturer brand as a risk reducing strategy. Moreover, when consumers buy retailer brands their perceived risk might actually be low because of an increased quality of retailers' own-brands and their competitive prices (Burt 1992) which again will not motivate brand loyalty to the manufacturer brands. Other research suggests that when the decision situation offers many equally acceptable alternatives and none can be easily verified as best, as in the case of similarity confusion proneness, it may create feelings of confusion which leads to a reluctance to commit an action (Scholnick and Wing 1998). Dhar (1997) echoed this idea that not knowing which alternative is preferred, while not being certain that one wants them equally, may result in indecision and a tendency to avoid commitment. This appears a logical approach, because when consumers are unable to differentiate products there is little reason, other than habit, for them to become brand loyal. Therefore we propose;

H₂: As similarity confusion proneness increases, brand loyalty decreases.

Overload confusion proneness and related outcomes

In most developed countries consumers enjoy important basic rights, including the right to; safety, be heard, seek redress, consumer education as well as the right to be informed and choose. These rights, especially the latter two, together with increasingly sophisticated information technologies are commonly thought of as means of *consumer empowerment*. Empowerment suggests that corresponding practices lead to (empowered) consumers creating greater benefits for the company and themselves (e.g., MacDonald and Tobin 1998). For example, when consumers book their own flights through the Internet this benefits the firm because of lower transaction costs and consumers who feel a sense of increased control. However, Wathieu et al. (2002) argue that empowerment is often coupled with more choice which can lead to overload and result in *less* consumer control. In a similar vein, Schwartz et al. (2002) show that some consumers can feel worse off with too many options.

Sproles and Kendall (1986) link confusion to information overload. Since consumers have limited cognitive abilities, their capacity for choice is not infinitely expandable, and once the amount of stimuli passes a certain threshold, it overloads and confuses consumers (e.g., Lurie 2004). The logical basis of the view that brand proliferation and too many information causes confusion is, implicitly, the 'bounded-rationality' of individuals in relation to the volume and diversity of the information generated by a large number of brands (Miller 1956; Simon 1962). Simon's concept of bounded rationality recognises that it is impossible for consumers to comprehend and analyse all of the potentially relevant information in making choices. In addition,

it suggest that increasing the size of the information set on which buying decisions are made will motivate consumers (who have limits to their cognitive abilities) to use simplifying non-utility maximising choice strategies or decision heuristics (see also Kahneman 2003). Consistent with Simon's notion of bounded rationality, the effort-accuracy framework argues that decision makers exploit environmental structure in order to attain reasonable decision accuracy subject to the constraints of limited cognitive resources. Huffman and Kahn (1998) contend that confusion is due to the *perceived complexity*, which they explicitly differentiate from the 'actual' complexity or variety; suggesting that some consumers can perceive confusion even if the actual number of stimuli is small. This fits with our view of confusion as a consumer trait.

Consumers' proneness to being confused from information overload and over choice, "*is used to describe the situation in which more information is received than can be processed in short-term memory*" (Mowen 1995, p. 115) and can affect consumers' brand choice (Malhotra 1982; Best and Ursic 1987). When consumers are faced with a sufficiently rich information environment, they can feel information anxiety (Wurman 1990)³, but may be unable to stop short of information overloading themselves (Malhotra 1984; Keller and Staelin 1987). We define overload confusion proneness as *consumers' difficulty when confronted with more product information and alternatives than they can process in order to get to know, to compare and to comprehend alternatives*.

Previous research suggests that overload leads to delayed decision making (e.g., Settle and Alreck 1988). Overloaded consumers are likely to *interrupt decision making* in order to take measures that allow them to deal with the information load by separating important from less important information, narrowing down the choice set or reducing the number of attributes on which the decision is based (e.g., Iyengar and Lepper 2000). When consumers have more options to choose from it can also decrease their confidence in their own choices which can result in decision postponement (e.g., Chernev 2003). Consumers also postpone purchase decisions because of lack of time to search for and compare alternatives and wanting to know more about different brands or models, as well as involving others in the purchase decision to get other people to agree on the choice (Greenleaf and Lehmann 1995). Delaying the purchase decision allows consumers to narrow down the choice set or search for additional information, or new alternatives which helps them clarify or simplify their buying goals, as long as the information is not ambiguous, conflicting or too extensive (Corbin 1980; Bettman et al. 1993). This reasoning leads to the following hypothesis:

H₃: *As overload confusion proneness increases, decision postponement increases.*

Overload is believed to trigger decision heuristics such as brand loyalty (Loudon and Della Bitta 1993), because brand loyalty and habitual purchasing requires less decision making, information seeking and brand evaluation. The prospect of having to do less information processing and comparison is likely to be appreciated by those consumers who are prone to stimulus overload. Therefore, loyalty can be viewed as a strategic (conscious or non-conscious) reaction to overload confusion. Thus, we propose that:

H₄: *As overload confusion proneness increases, brand loyalty increases.*

³ Wurman (1990) defines information anxiety as strong feeling one gets from having too much stimuli or being unable to find or interpret data.

Ambiguity confusion proneness and related outcomes

Some authors refer to 'consumer confusion' without associating it with similarity and overload (e.g., Mitchell and Papavassiliou 1999; Turnbull et al. 2000; Olsen, Pracejus and Brown 2003), while others stress different aspects, such as; stimulus and product complexity (e.g., Berlyne 1960; Boxer and Lloyd 1994; Cahill 1995), ambiguous information or false product claims (e.g., Reece and Ducoffe 1987; Golodner 1993; Kangun and Polonsky 1995; Cohen 1999; Chrysochoidis 2000), non-transparent pricing (e.g., Berry and Yadav 1996) or poor product manuals (e.g., Glasse 1992), all of which present consumers with multiple interpretations of product quality and cause problems of understanding on part of the consumer (e.g., Eagly 1974; Hoch and Ha 1986) and are related to the concept of cognitive unclarity (see Cox 1967). According to Cox (1967), consumers perceive unclarity when they feel uncomfortable from information ambiguity and incongruity. Ambiguity confusion prone consumers are likely to infer, or be unclear about, product characteristics that are different than the actual product characteristics. Therefore, ambiguity-confusion proneness can be largely attributed to consumers' response to dubious product claims or conflicting information on the same product from different sources. Marketer dominated stimuli are more likely to prompt confusion because they are more likely to be inconsistent with the consumer's prior beliefs and knowledge, which can cause ambiguity.

Consequently, to represent the concept of confusion proneness more fully, the two traits of similarity and overload confusion proneness need to be complemented by a third, ambiguity confusion proneness, which is *consumers' tolerance for processing unclear, misleading, or ambiguous products, product-related information or advertisements*.

The impact of the ambiguity confusion dimension on outcome variables has not been previously addressed in consumer research. However, when consumers compare two or more complex products and experience ambiguity confusion, it could lead to choice deferral because the consumer tries to cope with what seems as a non-comparability of alternatives (Dhar 1997). Indeed, Dhar (1997) showed that consumers who expressed more thoughts or made more comparisons (and found the choice more difficult) were more likely to postpone a decision. However, consumers prone to being confused by ambiguous stimuli are likely to try to find information that will help them clarify their choice environment, for example, by trying to establish which information is more credible. This will inevitably involve suspending the decision-making process. Consequently, we hypothesise that:

H₅: *As ambiguity confusion proneness increases, decision postponement increases.*

Similar to overload confusion proneness, ambiguity is likely to cause consumers to seek easier ways to make satisfactory decisions on a more permanent basis. When consumers perceive high levels of ambiguity, they are uncertain and may cope with this by favouring products that have the most attractive attributes (MacDonald 1970; Hoch and Ha 1986). Chrysochoidis (2000) found that ambiguity triggers decision heuristics such as brand loyalty. For the consumer, becoming brand loyal equates to making fewer comparisons, which means consumers are confronted with less ambiguous or conflicting stimuli. However, this will only hold if there is a brand in which the consumer is able to have confidence. If all brand information is ambiguous and uncertain, then ambiguity confusion proneness could have a negative impact on loyalty. However, in most cases we propose that:

H₆: As ambiguity confusion proneness increases, brand loyalty increases.

In theory, we have a spectrum of degrees of intensity of these types of confusion which result from the interaction of an individual's predisposition or proneness and information processing style and the marketer using environmental stimuli in specific situations. It is likely that each consumer has an individual confusion proneness threshold, which, when exceeded, will lead to a decrease in the consumer's ability to process the available number of alternatives and to make rational buying decisions. As with other multidimensional constructs such as retail service quality (Dabholkar Thorpe, and Rentz 1996), involvement (Jain and Srinivasan 1990), and consumer perceived value (Sweeney and Soutar 2001), which have been found to have separate but correlated dimensions, the confusion proneness traits identified in the present study were expected to interrelate because ambiguity confusion proneness is likely to increase with a growing number of alternatives (Lloyd and Jankowski 1999), and similarity often coincides with a lack of clarity (Clement 1996). Consumers can also be confused when confronted with too many and too similar stimuli, for example, when buying a product from a highly competitive category where brand imitation is common. We now present how the confusion-proneness scale was developed and the model was operationalised and tested.

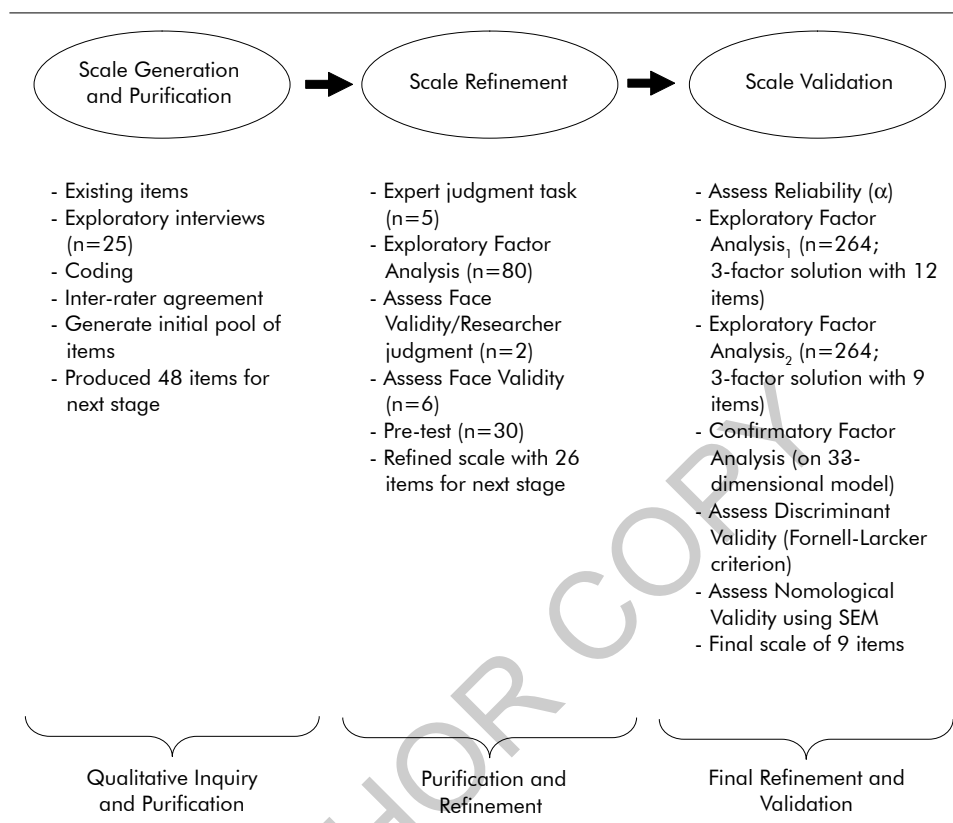
TESTING THE CONFUSION PRONENESS MODEL

Scale generation and refinement

In the present study, confusion proneness is not measured in a specific context and at a point-in-time, but as a general trait or individual difference characteristic such as found in personality research. Following Churchill's (1979) paradigm for developing measures, an instrument was developed from a mix of original and adapted scale items derived from other confusion studies to provide an overall assessment of consumers' confusion proneness and its three dimensions (i.e., similarity, overload, and ambiguity). Figure 1 summarises the scale-development procedures employed. The initial measure of overload confusion proneness included four items from the work of Sproles and Kendall (1986), which were used to measure a 'confused from over choice' trait. Some items are taken from empirical work by Hafstrom et al. (1992), Loken et al. (1986) and Miaoulis and D'Amato (1978). In addition, 25 exploratory interviews were conducted with students and non-students who were asked what traits or behaviours they associated with the words, 'similarity', 'overload', 'over choice', 'stimulus overload', 'ambiguity', 'unclarity' and 'confusion'. Overall, individuals had no difficulty articulating their associations with the concept of confusion and they were consistent with our preconceived view of confusion proneness. Two researchers then coded the responses independently by themes as they emerged from the responses. Their coding showed a high level of agreement (Hughes and Garrett 1990). The responses were transcribed and scrutinised by two other researchers. Based on these responses, 48 items were generated that seemed to capture the essence of the points made by our informants.

The initial pool of items was generated to be used in the item-reduction process.

FIGURE 1 Scale development process



First, the total pool was reduced to around 40 through researcher judgment driven by face-validity considerations.⁴ An initial sample of eighty subjects then rated these items on a 5-point scale (1 = strongly disagree, 5 = strongly agree), which were then factor analysed, using principal components analysis. With 40 items, a sample size of 80 at this stage of the scale-development process is sufficient and consistent with previous scale-development studies (e.g., Netemeyer, Burton, and Lichtenstein 1995). No restrictions were placed on the components to be extracted as the primary aim was not to determine the percentage of variation each factor solution accounted for, but to identify dimensions as well as weak items. Items that exhibited low loadings (below .40) onto the factors extracted were scrutinised, and those that appeared redundant, meaningless or relatively unimportant were dropped. For example, the item, “*After a commercial break, often I cannot remember individual brands [e.g., Beck’s beer] but only the product category [i.e., beer]*”, was dropped because it was not clear which type of confusion proneness it was measuring, i.e., too many brands/advertisements or the similarity of the latter. As a result of this process, the final questionnaire

⁴ Some of the original items focused on a specific aspect of confusion (e.g., implicitly or explicitly revolved around the consequences or antecedents of confusion). As the focus of this part of the analysis was on conceptualisation of confusion proneness itself and not on consequences, these items were excluded.

contained 6 items measuring consumers' proneness to similarity confusion, 9 measuring the overload confusion, and 11 items measuring the ambiguity confusion trait. The face validity of these factors and items was then further established by a panel of six marketing professors and Ph.D. students whose primary research interest was consumer behaviour. The final questionnaire also included items measuring the two confusion proneness outcomes of decision postponement and brand loyalty, as well as a set of socio-demographic questions. The questionnaire was then pre-tested with a small sample of consumers ($n = 30$).

The sample

In this study, a qualified convenience sample of male and female and different aged consumers was drawn to represent the shopping public from a major northern German metropolitan city and given an on-street interview. Respondents with higher education and in the 20-29 age bracket were over-represented. The on-street interviews were carried out from Monday to Saturday and conducted by students majoring in marketing as a requirement of their senior field experience. The average interview length was 28 minutes. A total of 264 interviews were conducted.

Measurement and factor structure

The appropriateness of the 26 items for explaining the three consumer confusion proneness traits was tested in several steps. First, Cronbach's Alphas were computed for each of the three traits. Initial reliabilities of and below .55 for all three traits of confusion led to the elimination of three similarity, five overload and six ambiguity items. The selection/elimination process was based on (a) the output of the reliability analyses, and (b) plausibility considerations. Second, principal axis factoring was performed on the remaining 12 statements to identify dimensions; a minimum eigenvalue of 1 was selected as the criterion for inclusion. The result was a three-factor solution that accounted for 56% of variation. The three factors clearly represented the three postulated traits of consumer confusion (i.e., similarity, overload, ambiguity). All but three items had high factor loadings, which led to the additional elimination of these three indicators in the next step of analysis (one from each of the dimensions). A second exploratory factor analysis was then performed with the remaining nine items, which again resulted in a final three-factor solution accounting for 64% of the variation. The overload and the ambiguity trait had good reliabilities (.70 and .75, respectively), but the alpha value for the stimulus similarity factor was lower than the value of .60 recommended by Nunnally (1967, p. 226) for exploratory research (see Table 2).

The two postulated outcomes of consumer confusion proneness, i.e., decision postponement and brand loyalty, were operationalised with four and three items, respectively. We conceptualise brand loyalty as a customer's repeat purchase behaviour.⁵ Two of the three items to measure brand loyalty were borrowed from Sproles and Kendall (1986); the indicators pertaining to decision postponement were generated by the authors based on existing knowledge in this area (e.g., Greenleaf and

⁵ We acknowledge that brand loyalty can be more than repeat purchasing or the consumer's decision, expressed through intention or behaviour, to repurchase a brand continually because he/she perceives that the brand offers the right product features, image, or level of quality at the right price. Brand loyalty can also involve a positive attitude towards a brand (Oliver 1999). We focused on the former in the measurement process for the sake of simplicity because attitudinal loyalty is more difficult to measure.

Lehmann 1995; Dhar and Nowlis 1999). These scales showed good reliabilities.

In the next step of the measurement procedure, the three-factor structure was tested using confirmatory factor analysis (Kelloway 1998). Model identification was achieved, and the global fit indices suggested that the model adequately represented the input data, with GFI being .963, AGFI being .934, an RMR of .087, RMSEA being .091, and a comparative fit of CFI of .943.⁶ The local fit of the model was also acceptable, with average explained variances of .74 (for similarity), .51 (overload), and .48 (ambiguity); one indicator was fixed to 1. For all but one indicator (ambiguity), the coefficients of determination were higher than .35 (Bagozzi and Yi 1988). Finally, the three-factor structure was tested for discriminant validity using the criterion suggested by Fornell and Larcker (1981). Here, discriminant validity between two factors is shown if the average variance explained is higher for both factors than the common variance of the two factors. In this study, discriminant validity was found for all possible pairs of factors, with squared correlations being .14 for similarity and overload, .05 for similarity/ambiguity, and .31 for overload/ambiguity, respectively. The correlations can be interpreted as confirmation of the postulated interrelations between the three traits of consumer confusion proneness. Results of the principal axis analyses, the reliability analysis and the confirmatory factor analysis are summarised in Table 2 and Table 3 contains the correlation coefficients, means, standard deviations, and Cronbach's α s for all variables of the model as finally operationalised in the structural equation modelling procedure.

TESTING THE PROPOSED MODEL – RESULTS AND DISCUSSION

The examination of the hypothesised relationships between the three dimensions of the confusion-proneness scale and the two outcome variables can provide evidence for nomological validity when, overall, the measures correlated in a manner predicted by theory.

The conceptual model was tested simultaneously with LISREL 8.52. The global fit statistics indicated that the model represents the data well, with GFI = .944, AGFI = .921, RMR = .092, RMSEA = .085, CFI = .934, and $\chi^2/df = 3.17$. In addition, the local fit indices were also acceptable (see Table 2) and again only one item had a coefficient of determination of below .35. By explaining 54 percent of decision postponement and 32 percent of the brand loyalty construct, the relevance

⁶ The Goodness-of-Fit (GFI) index represents a measure of the data's variance explained by the model and is somewhat similar to the multiple R value of regression analysis; it has a lower bound of 0 (i.e. no variance explained by the model) and an upper bound of 1 (all variance explained by the model). The Adjusted-Goodness-of-Fit (AGFI) index is based on the GFI, but in addition considers the degrees of freedom of the model. The Root-Mean-Squared-Residual (RMR) is the square root of the mean of the squared discrepancies between the implied and observed correlation matrices; the lower bound is 0, with low values indicating a good fit of the model. The Root-Mean-Squared-Error-of-Approximation (RMSEA) as an index recently introduced is based on the analysis of residuals, with again a lower bound of 0 representing an optimal (but in practice never gained) fit. It also provides a test of significance. Different from the other indices considered here (which measure the 'absolute' fit), the Comparative-Fit-Index (CFI) is an indicator of the comparative fit of a structural model. It is based on the χ^2 values and the degrees of freedom of the postulated model and the independent model; with values ranging from 0 to 1, higher values representing a better model fit (for a more detailed description of the fit indices mentioned here, see Kelloway 1998).

TABLE 2 Item listing, factor structure and reliability for stimulus similarity, stimulus overload and stimulus ambiguity confusion proneness dimensions

Factors and Items	PAA 1 α	PAA 2 α	Items retained for CFA	Coefficient of Determination (from CFA)	Average Variance Extracted
Factor 1: Similarity confusion	.49	.55			.74
Due to the great similarity of many products it is often difficult to detect new products. ^a	.79	.85	yes	.485	
Some brands look so similar that it is uncertain whether they are made by the same manufacturer or not. ^b	.76	.72	yes	1.000*	
Sometimes I want to buy a product seen in an advertisement, but cannot identify it clearly between scores of similar products.	.40		no		
Factor 2: Overload confusion	.52	.70			.51
I do not always know exactly which products meet my needs best.	.79	.79	yes	.387	
There are so many brands to choose from that I sometime feel confused. ^d	.75	.78	yes	.640	
Due to the host of stores it is sometimes difficult to decide where to shop. ^d	.68	.67	yes	.460	
Most brands are very similar and are therefore hard to distinguish.	.54		no		
Factor 3: Ambiguity confusion	.54	.75			.48
Products such as CD players or VCR often have so many features that a comparison of different brands is barely possible.	.78	.80	yes	.605	
The information I get from advertising often are so vague that it is hard to know what a product can actually perform.	.71	.69	yes	.253	
When buying a product I rarely feel sufficiently informed.	.69	.76	yes	.473	
When purchasing certain products, such as a computer or hifi, I feel uncertain as to product features that are particularly important for me.	.63	.68	yes	.558	
When purchasing certain products, I need the help of sales personnel to understand differences between products. ^c	.54		no		
Items used to operationalise Consequences of Confusion					
Decision Postponement		.78			.56
Sometimes it is difficult to arrive at a decision when making a purchase.				.48	
Sometimes when making a purchase I delay the decision.				.49	
Sometimes one postpones a planned purchase.				.58	
Sometimes the choice in a store is so large that a purchase takes longer than expected.				.68	

Cont'd...

Factors and Items	PAA 1	α	PAA 2	α	Items retained for CFA	Coefficient of Determination (from CFA)	Average Variance Extracted
Brand Loyalty							
Once I find a brand I like, I stick with it. ¹				.89		.61	.65
I usually buy the same brands. ^d						.96	
I change brands I buy regularly. ^d						.40	

* = Fixed parameter; ^a = based on item from Loken et al. (1986, p. 199; "We want you to tell us whether or not the two products look alike in appearance"); ^b = based on item from Miaoulis and D'Amato (1978, p. 52; "Do you believe these two products are made by the same company"); ^c = based on item from Hafstrom et al. (1992, p. 152; "I cannot choose products by myself"); ^d = adapted from Sproles and Kendall (1986)

TABLE 3 Correlation coefficients, means, standard deviations, and Cronbach's Alphas of model variables

	Means	Standard deviations	No. of items	Similarity	Overload	Ambiguity	Postponement	Loyalty
Similarity	3.296	.989	2	<i>.550</i>				
Overload	2.772	.948	3	.310	<i>.701</i>			
Ambiguity	3.289	.877	4	.141	.441	<i>.751</i>		
Postponement	3.389	.962	4	.124	.504	.352	<i>.783</i>	
Loyalty	3.811	1.152	3	-.197	.195	.325	.257	<i>.893</i>

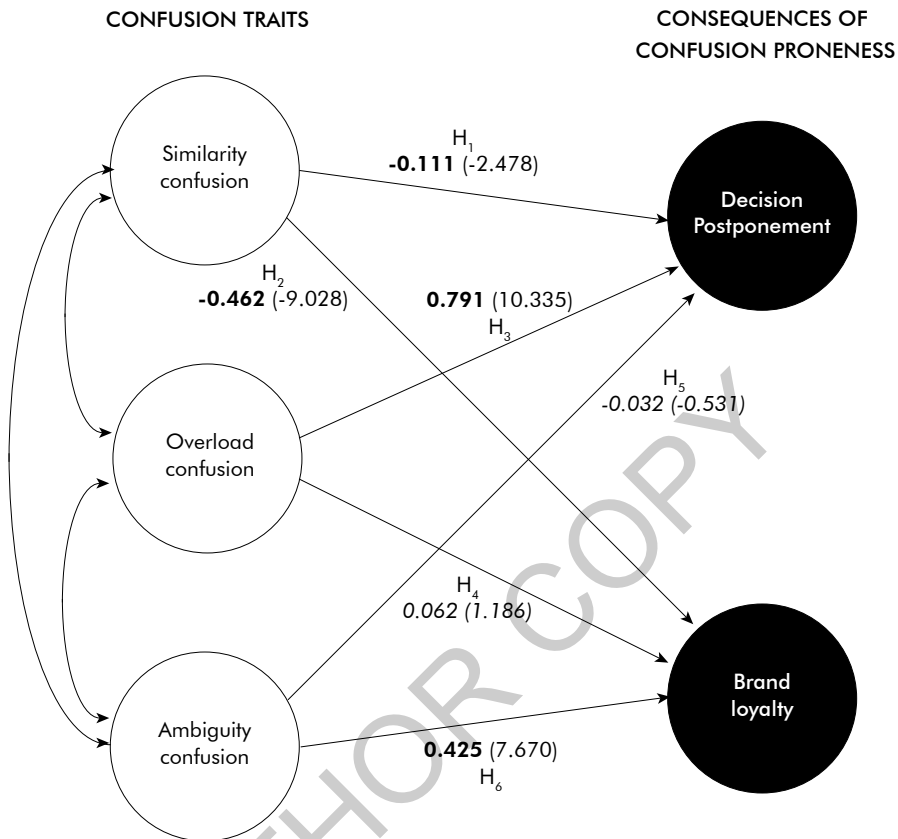
Note: Values in italics in the main diagonal are Cronbach's α s.

of consumer confusion proneness for decision-making procedures is clearly demonstrated. In Figure 2, the path coefficients and t-values for each of the six hypotheses can be seen. The strongest relationship between the three confusion traits was between overload and ambiguity (.441), followed by similarity/overload (.310) and similarity/ambiguity (.141).

Four of the six hypotheses are confirmed by the data (see Figure 2). Contrary to previous related research (Tversky and Shafir 1992; Dhar 1997), the impact of similarity confusion proneness on postponement is significant and negative, hence supporting H_1 . In addition, the similarity confusion trait has a strong negative impact on customers' loyalty as suggested in H_2 , indicating that high degrees of perceived similarity proneness are associated with low levels of loyalty, and vice versa. One explanation is that consumers may perceive brands in a category as being commodities with little differentiation, thus they exhibit little loyalty and do not take the time to learn about brand differences making them prone to similarity confusion. This suggests that similarity-confusion prone consumers may not know which product to trust and be loyal to.

The impact of overload confusion proneness on decision postponement is positive as proposed in the third hypothesis and is by far the strongest of all paths in the model.

FIGURE 2 Proposed model of traits and consequences of consumer confusion proneness



It therefore can be seen as having a major effect on decision postponement. Since the overload confusion trait can be attributed to a lack of processing time, delaying the purchase decision can be interpreted as an attempt to gain more processing time. As proposed in H_6 , ambiguity confused consumers view loyalty as a means of ambiguity reduction, since visiting the same stores and using the same brands helps consumers to avoid potentially conflicting information and products.

H_4 and H_5 were not supported, with the relationships of overload confusion proneness to loyalty and the ambiguity confusion trait to postponement not being significant. The lack of a relationship between overload confusion proneness and loyalty (H_4) suggests that despite loyalty providing cognitive relief through simplification of the buying alternatives, it may not be the most effective strategy for consumers prone to information overload. This might be because to develop a stable and trusting relationship with a single brand, loyal consumers need to have done some additional processing and usage in order to decide to which brand they should be loyal. Thus, this strategy does not offer instant cognitive relief and indeed could result in more confusion as more information is sought before a final loyalty evaluation takes place. Overload confusion prone consumers may also employ other

means to reduce overload confusion, for example, narrowing down the choice set or involving others in the decision-making. Indeed, in the context of greater choice, Beattie et al. (1994) report some consumers prefer others make the choices for them.

Finally, several explanations are possible for why the ambiguity confusion trait has the weakest relationship with decision postponement (H_3) of all three types of confusion, with a path coefficient of close to zero. It is conceivable that consumers who are prone to ambiguity confusion do not delay decision making because they fear being confronted with further conflicting and ambiguous information. Ambiguity confused consumers also could be reluctant to suspend decision making and seek help because they feel vulnerable and fear exposing their ignorance or misunderstanding to others may cause them embarrassment. Another explanation could be the moderating effect of the consumers' motivation to reduce confusion. When consumers are not highly motivated to make rational decisions, they may not postpone decision making and may simply choose any of the alternatives as they are all perceived as very similar.

CONCLUSION AND IMPLICATIONS

Since the term consumer confusion is used frequently as a generic label for phenomena that cannot be explained with existing constructs, it is not surprising that no generally accepted conceptualisation of consumer confusion proneness is available. Although the confusion construct has sometimes been broadened from a single focus (i.e., brand confusion) to include other relevant characteristics (e.g., advertisements), it remains limited to individual causes, e.g., brand or message similarity. In fact, no research has considered consumers' proneness to these stimuli.⁷ The purpose of this paper was to conceptualise consumer confusion proneness, provide a new scale to measure it, and provide empirical evidence on how it affects consumer behaviour. The research contributes to a more sophisticated understanding of the dimensions and outcomes of consumer confusion proneness and builds on previous work which has focused on specific situations of either stimulus similarity or overload. The results support the proposition that consumer confusion proneness is a multidimensional phenomenon that has a significant impact on purchase postponement and loyalty behaviour. The findings have implications for marketing management and research, which should be treated as indicative and not definitive.

Marketing management implications

Reducing consumer confusion proneness and conversely increasing cognitive clarity could be a major source of competitive advantage in any market, but particularly in those markets where confusion has already been shown to exist, e.g., telecommunications, financial services. The conceptual model gives marketers guidance on what to look for and the areas where attention may be required. In view of finite firm resource firms need to consider how best to deploy resources to assess and reduce confusion causing activities. Distinguishing between existing and prospective customers is one way to do this which helps to focus attention on the retention and loyalty aspects

⁷ Foxman et al. (1992), who proposed a definition related to brand similarity, did acknowledge that there might be a link from confusion to over choice which causes a conceptual overlap with the concept of *information overload* (Jacoby et al. 1974).

of consumer behaviour of existing customers who should have their confusion proneness assessed first.

Secondly, our proposed confusion-proneness scale is also suited to gathering benchmark data regarding current levels of customer confusion as well as conduct periodic 'checks' to measure reductions in confusion. In addition, our scale enables marketers to study and measure confusion proneness at different levels of abstraction. To create an overall scale without considering the individual dimensions of confusion proneness would be to lose the ability to see how these different dimensions work. Practitioners, brand manufacturers and retailers can determine overall confusion proneness as well as dimensions of confusion proneness. Researchers, brand manufacturers and retailers can both consider individual confusion-proneness dimensions (lower level of abstraction) and their effects on important outcomes, as well as look at the overall confusion-proneness score (higher level of abstraction) to learn something about overall confusion in relation to their offerings. The confusion-proneness scale could serve as a diagnostic tool that will allow marketers to determine confusion of their own and competing brands and even industry norms.

Thirdly, marketers could use our confusion-proneness dimensions to examine their impact on important consequences which should yield rich managerial insights for firms. The fact that the similarity confusion trait does not positively influence decision postponement, may be indicative of consumers seeing little substantive difference between similarly-looking brands and hence see no need for additional decision time. This needs to be examined more closely by marketers in their respective markets to see if consumers actually perceive very little difference between their brands and competing brands. If this is the case, marketers should seriously reconsider their brand positioning and product differentiation policies.

One implication of overload confusion proneness leading to delayed decision making, which could motivate some consumers to abandon planned purchases altogether, is that manufacturers and retailers need to recognise when this is happening and engage strategies to help the consumer in that situation. For example, this could be as easy as in-store signs saying 'are you confused by all the cameras we have? If so, speak to Mr./Mrs. X our camera expert' or as complicated as producing in-store computer or website decision making aids, which takes the consumer through a series of steps to identify their performance preferences and ends with recommending the best alternative.

Loyalty is a primary marketing goal, but can wane quickly if consumers feel confused about the company or its product which they no longer trust. Since loyalty is an important goal of brand management and relationship marketing, avoiding losing consumers to imitators is likely to be important. Brand owners could increase attempts to get trademark protection for as many of their brands as possible so as to make them more difficult, and risky in financial terms, for imitators to copy. At the same time, the results show that similarity confusion proneness has a significant negative impact on loyalty, which may lead to loss of future sales and should be of concern to marketers in highly competitive markets where there is little difference between brands (Clancy and Trout 2002).

The results also show that the ambiguity confusion trait has no effect on decision postponement, but may lead to increased brand loyalty, however, for the wrong reasons. Without doubt, marketers appreciate brand loyalty that stems from satisfaction and a perception of high quality, as those consumers are likely to engage in positive word-of-mouth, but it is uncertain how attractive spuriously loyal consumers are, who are loyal for the sake of cognitive relief. One implication of ambiguity confusion

proneness is that marketers need to systematically identify sources of perceived stimulus ambiguity and to rectify them. Consumers might avoid misunderstandings if store personnel were clearer and more helpful and usage instructions and package information were less ambiguous and easier to understand. Another implication could be to attempt to establish official definitions for the use of potentially confusing terms particularly on food products and cosmetics, e.g., 'alcohol free', 'hypoallergenic', 'healthy' and 'natural'. As one example, the American FDA made efforts towards this end, but its regulations were reversed in court. This is concerning because in the US, cosmetics and their ingredients are not required to undergo approval before they are released to the marketplace and because companies are not required to substantiate performance claims.

Limitations and further research

As with all empirical studies, our study suffers limitations. When examining the impact of the three confusion-proneness dimensions on the two consequences we did not consider moderator variables. This is both a limitation as well as a direction of future research. Future research could examine the role of moderators of the confusion-outcomes link such as education level, perceived risk and involvement, time pressure, and other factors related to the shopping environment, which may relate to how careful consumers are likely to be prior to purchasing, e.g., are college graduates buying expensive products likely to be more discriminating and less likely to be confused? In this context, Morrin (1999) suggests that the speed with which consumers recognise a particular brand on a store shelf depends, among other things, on contextual factors. For example, what she terms 'category crowdedness', or the number of competitor brands in a given category competing for consumers' attention, is likely to reduce brand recognition.

In addition, consumer confusion proneness was conceptualised here as a construct of which consumers were conscious. More demanding would be to understand (and measure) confusion which is unconscious to consumers, e.g., in mistaken purchases. In addition, further research might investigate consumers' emotions associated with confusion such as, anger at herself or the retailer, frustration, and self reproach, which could be an important response driver.

Given its importance, it seems obvious that marketers would want to know how to manage and reduce confusion effectively. Further testing should be conducted in expanded settings to assess the dimensions and the scales presented here. We see the scale as a generalised confusion-proneness scale that can be adapted to specific circumstances and product categories.

In order to gain a broader understanding of confusion proneness a confusion-proneness typology would be desirable. From a managerial perspective, a confusion-proneness typology or classification scheme could provide the basis for understanding and targeting different confusion-prone groups of consumers. Based upon Bunn (1993), future researchers could employ a five-step procedure for empirical confusion-proneness typology development. Hence, another extension of the confusion-proneness scale would be to use it for market segmentation. The three confusion-proneness dimensions could be taken one step further to identify differences within populations and to explore the existence of confusion-proneness segments which would represent a contribution to current literature. Identifying the characteristics of the confusion prone segments (e.g., the elderly, immigrants, cognitively impaired, partially sighted and less well educated consumers) would be useful. We also only

measured two of the potential consequences of confusion proneness. Further research might examine its effects on other consequences such as; negative word-of-mouth, dissatisfaction, shopping fatigue, cognitive dissonance, buying decision delegation and reactance.

It is also possible that our measure is sensitive to product category experience and future research could test our scale in a specific product context. Indeed the scale could be adapted and distributed to consumers for them to complete not only to ascertain their own confusion proneness score, but also what to do about it, e.g., delay, ask a friend, buy the one you know. This is an area in need of additional research to identify confusion reduction strategies. Although Mitchell and Papavassiliou (1999) suggest a comprehensive list of potential confusion reduction strategies, their ability to help consumers prone to the confusion types presented here has not been assessed so far. Before this can be done, however, the scale needs calibrating on random samples of consumers to establish benchmark scores. Our framework offers three traits of consumer confusion proneness that can be interpreted as the focal point of future research.

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