Measuring consumer vulnerability to perceived product-similarity problems and its consequences

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Abstract The brand clutter in many product categories and increasing numbers of similar products, some of which are deliberate look-alikes, make it more difficult for consumers to distinguish between brands, which can lead to more mistaken and misinformed purchases. Moreover, increasing brand similarity is likely to influence important consumer outcomes. To examine this phenomenon, a perceived product-similarity scale developed in Germany was administered to 220 consumers in the United Kingdom. Following the formulation of testable hypotheses and assessments of the scale’s reliability and validity, the scale was used to measure perceived product similarity (PPS) across three different product categories, while examining the impact of PPS on brand loyalty and word of mouth. Structural equation modelling revealed that PPS significantly affects word of mouth but not brand loyalty. In addition, cluster analysis identified three meaningful and distinct PPS groups. Implications for marketing managers, consumer policy makers, and marketing research are discussed.

Keywords cognitive vulnerability; perceived product similarity; structural equation modelling

Introduction

Following Levitt’s (1966) portentous comment that most of what we see as new in the US marketplace is not new at all but rather ‘innovative imitation’, the past few decades have seen major European retailers beginning to feature private-label packages that look very much like national brands (ACNielsen, 2001; Kapferer, 1995a, 1995b; PLMA International, 2002). In terms of share, private labels in the UK have gained 28% of the market, making the UK the third biggest market for private labels worldwide. This means that UK consumers have private labels in their shopping baskets on 82% of their shopping trips (ACNielsen 2005). Usually, these pioneer and follower brands show a high degree of brand similarity and overall sameness between the two brands (Kamins & Alpert, 1997; Walsh & Mitchell, 2005). Walsh and
Mitchell (2005, p. 143) define this perceived product similarity (PPS) as ‘the consumer’s self-rated propensity to see products within the same category as similar’.

This tendency to perceive products as similar can result from four scenarios: (1) the pioneer manufacturer brand is emulated by a retailer brand; (2) the pioneer manufacturer brand is emulated by another manufacturer brand; (3) the pioneer retailer brand is emulated by a manufacturer brand; (4) the pioneer retailer brand is emulated by another retailer. From a consumer standpoint, all emulations can cause a problem if consumers are not vigilant and have an orientation to see all brands as similar. In these contexts, consumers often believe they are already familiar with the emulator brand and able to assess it with regard to its attributes and quality and are thus vulnerable to making mistakes (e.g. Loken, Ross, & Hinckle, 1986; Warlop & Alba, 2004). Walsh and Mitchell (2005, p. 143) argue ‘that when consumers think that all or many products are similar within a category, this can result in mistaken purchases, product misuse, product misunderstanding or misattribution of various product attributes which result in a non-maximisation of utility and consumer vulnerability’. The ability to discriminate between brands has recently been discussed as an aspect of consumers’ ‘cognitive vulnerability’, which Walsh and Mitchell (2005) conceptualise as the consumer’s own cognitive limitations to effectively execute a marketing exchange (see also Brenkert, 1998). They developed and tested a PPS scale that could point a new direction in consumer vulnerability research. This study furthers their work and aims to make three contributions.

First, Walsh and Mitchell (2005) acknowledge that the scale’s generalisability needs to be tested further by administering it to different populations in other countries in accordance with Hunter’s (2001) call for more replication studies in consumer-behaviour research. As a result, this study tests the PPS scale on a sample of 220 British consumers to see if the psychometric properties of the PPS scale (i.e. dimensionality and reliability) vary between samples. In addition, we extend their study by drawing on the consumer-behaviour literature to hypothesise how PPS is related to the relevant consumer-behaviour related constructs of brand loyalty and word of mouth, which help to establish the scale’s nomological validity. Loyalty and word of mouth have been reported to be important correlates of perceived similarity confusion (e.g. Foxman, Berger, & Cote, 1992; Turnbull, Leek, & Ying, 2000) and are considered two of the most important marketing outcomes (Hennig-Thurau, Gwinner, & Gremler, 2002). Indeed, loyalty has become the key component measured by most companies (Ambler, 2003), while word of mouth continues to be pursued as one of the key promotional variables because of its influence on customers’ decision making (Kumar, Petersen & Leone, 2007).

Second, previous research suggests that consumers’ likelihood of perceiving products as similar varies with the importance of the purchase and the care with which they evaluate product alternatives (e.g. Howard, Kerin, & Gengler, 2000). Prior studies on PPS have concentrated on either similarity between different brands of the same product or product categories of the same general importance level (e.g. Balabanis & Craven, 1997), and have not considered how the importance of the purchase may affect the ability to distinguish between products. In addition, extant empirical research has tended to focus on low-involvement products, such as soft drinks, ketchup, washing-up liquid, and rice (e.g. Kapferer, 1995a, 1995b; Lomax, Sherski, & Todd, 1999). Although Walsh and Mitchell (2005) propose that the scale will be valid in all product categories, they did not examine this assumption in their research. The present study examines this assumption by encompassing three product categories representing high- and low-importance products.
Third, some consumers may be more vulnerable to perceiving products as similar due to personal characteristics such as age, gender, education, race, and physical and mental health (Andreasen, 1993), and previous vulnerability research has focused on factors such as age (e.g. Benet, Pitts, & LaTour, 1993; Langenderfer & Shimp, 2001) and consumers’ limited economic power (e.g. Andreasen, 1993; Goodin, 1985; Hill, 2002). This raises the question of whether segments of consumers exist that differ in regards to how vulnerable they are to perceiving products as similar.

This study therefore attempts to contribute to the literature on consumer cognitive vulnerability by replicating and extending the study by Walsh and Mitchell (2005) in the UK. In doing so, we discuss how such a scale would be useful for marketing managers and consumer policy makers to identify how widespread the perceived product-similarity problem is and those consumers who are prone to it.

**Background and hypotheses**

**PPS and its relation to consumer outcomes**

Previous research suggests that consumers experience higher levels of perceived risk when buying retailer own-label brands than with manufacturer-branded products (Broadbridge & Morgan, 2001), and that as perceived risk increases, the preference for branded products increases (e.g. Cunningham, 1956). It can be argue that when consumers who are PPS prone see a look-alike 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 consumers’ attitude towards private-label brands is negatively correlated with brand loyalty (Burton, Lichtenstein, Netemeyer, & Garretson, 1998). A reason for this could be 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 (Dhar, 1997).

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:

\[ H1: \text{As PPS proneness increases, brand loyalty decreases.} \]

Drawing on attribution theory, PPS-prone consumers may be as likely to seek as they are to give word of mouth. Attribution theory suggests that consumers assign causality to an outside factor (i.e. external attribution) or they assign causality to an inside factor (i.e. internal attribution) (Folkes, 1984; Heider, 1958). A PPS-prone consumer will either attribute her proneness to herself or to firms that sell similar brands. We argue that, depending on the attribution, the PPS-prone consumers will seek (internal attribution) or give (external attribution) word of mouth. Consumers who are prone to PPS are more likely to have negative consumption experiences, which lead to dissatisfaction and a desire to share their dissatisfying experiences with others. Although the differences between manufacturer and retailer brands in terms of quality are fewer (e.g. Jary & Wileman, 1998), when consumers buy the wrong brand,
they will suffer forgone utility because they do not get the brand they had a satisfactory
prior consumption experience with. In order to avoid buying the wrong brand, PPS-
prone consumers are more likely to engage in strategies that prevent this, such as to ask
others to help them or for their experiences (i.e. seeking word of mouth). In the case of
external attribution, the consumer will feel it is the marketplace’s fault that PPS occurs
and therefore will want to warn others. Buying the wrong brand could also motivate
consumers to want to warn others (i.e. giving word of mouth). This line of reasoning is
in agreement with the word-of-mouth literature. Sundaram, Mitra, and Webster
(1998) identified eight motives of word of mouth, four of which refer to positive
(‘altruism’, ‘product involvement’, ‘self-enhancement’, ‘helping the company’) and
four to negative word of mouth (‘altruism’, ‘anxiety reduction’, ‘vengeance’, ‘advice
seeking’). Consistent with attribution theory, we believe that PPS-prone consumers
engage in positive and negative word of mouth to essentially help others (‘altruism’)
and to make more-informed choices (‘advice seeking’). Hence:

H2: As PPS proneness increases, word of mouth increases.

Product importance, involvement, and PPS
The importance of products and the consequent consumer involvement has been well
researched in previous years (e.g. Bloch & Richins, 1983; Rothschild, 1984;
Zaichkowsky, 1985), and it is generally suggested that perceived risk is positively
correlated with product involvement, which results in consumers being more
vigilant (Bloch & Richins, 1983). Walsh and Mitchell (2005) argue that when
consumers see products as more important, this added vigilance can give protection
against PPS because involved consumers may be better at recognising the differences
between brands. Consumers who have high involvement with a product class are
expected to possess a fuller knowledge base of the brands in the product category
and are therefore less likely to experience PPS from those brands that are imitators
(Foxman et al., 1992). However, high-involvement product categories tend to be very
competitive, and manufacturers tend to emphasise and communicate a large number
of product attributes and benefits, exposing the consumer to a large number of
potentially similar messages and products. More-complex products are seen to be
those products that have many attributes and numerous attribute levels such as colour
and size (Huffman & Kahn, 1998). For example, mobile phones, which come with
numerous services and different technology devices, are typically considered a high-
involvement product. When faced with overwhelming amounts of information to
process, consumers can often switch off and begin to simplify the decision and not
process all the brand-difference information. Therefore, even consumers in high-
involvement categories may be more prone to PPS because they cannot process or
understand all the relevant information. In contrast, for low-involvement goods with
lower prices that tend to be quickly purchased products, there is generally less
information to process and consumers can appreciate the fewer differences in these
less-complicated goods more easily. Thus, they can discriminate between brands more
easily. Even though they may devote less time, the features are fewer and much less
complicated. Given these considerations we hypothesise that:

H3: Consumers’ PPS scores will be higher for high-, and lower for low-involvement
products.
Method

The questionnaire
The questionnaire used in this study contained 10 PPS items (Walsh & Mitchell, 2005) as well as items measuring two constructs posited to be related to PPS, namely consumers’ brand loyalty and word of mouth. Subjects rated most items on a five-point scale (1 = strongly disagree, 5 = strongly agree). The two related variables were operationalised with three (brand loyalty) and five (word of mouth) items, respectively. The brand-loyalty measure was adapted from Sproles and Kendall (1986), and word of mouth was measured with a five-item measure from Feick and Price (1987).

The questionnaire was pre-tested to detect problematic items and ensure reliability. Eleven respondents, students and non-students, completed the questionnaire. One researcher was present at each pilot test to take note of any problems that may have occurred from any of the questions. The general feedback on the questionnaire was positive, being completed in just over 10 minutes. One research aim was to assess if consumers’ PPS score differed amongst low- to high-involvement products. Accordingly, prior to the data collection, 10 marketing students were asked to group 25 different products as either ‘low-involvement product’, ‘moderate-involvement product’, or ‘high-involvement product’. Three products (chocolate bars, beauty products, and mobile telephones) were classified most consistently by the subjects and were hence chosen for the survey. Respondents completing the questionnaire in this research had to have the purchasing of one of these three products in mind, namely chocolate bars (low involvement), beauty products (moderate involvement), or mobile (cellular) telephones (high-involvement product).

The sample
To assess the reliability and validity of the PPS scale, a survey was carried out in two major UK cities, using a qualified convenience sample of male and female and different-aged consumers. The questionnaire was distributed by marketing students from a major northern UK university. Students majoring in marketing were instructed to recruit four people to fill out the survey. Three of the four people had to be non-students and represent a range of ages, genders, and professions. The data collection process lasted two weeks. A total of 220 people answered the questionnaire, representing approximately a 40% response rate of those individuals asked to respond. A sample size of 220 was deemed sufficient and is consistent with Bryant and Yarnold’s (1995) recommendation that the subjects-to-variables ratio should be no lower than five. Appendix 1 provides a description of the sample characteristics.

Before completing the questionnaire, respondents were instructed to have the purchasing of one of three products in mind, namely chocolate bars, beauty products, or mobile (cellular) telephones. These products represent product categories that are usually bought with low, moderate, and high levels of involvement. Respondents were asked to choose the most recently purchased product. Most respondents chose chocolate bars (36%), followed by cellular phones (33%), and beauty products (31%).
Results

Analysis

Walsh and Mitchell (2005) initially proposed a 10-item scale with reasonable reliability (see column 1, Table 1). However, further validation procedures led to a more parsimonious six-item scale. In this study, both the 10- and 6-item version of the PPS scale were tested. The 10-item scale was subjected to a confirmatory factor analysis (maximum likelihood technique). The overall fit was acceptable and most fit indices met the recommended thresholds. The Goodness of Fit Statistics were: GFI = .93, AGFI = .90, CFI = .90, NNFI = .88, RMSEA = .08, and $\chi^2/df = 2.19$ ($p < .000$). However, the average variance explained was well below the threshold of .50

Table 1 Summary results of confirmatory factor analyses.

<table>
<thead>
<tr>
<th>Coefficient of determination (from Walsh &amp; Mitchell, 2005)</th>
<th>Coefficient of determination (from CFA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVE = .56 A = .73</td>
<td></td>
</tr>
<tr>
<td>1 Sometimes I want to buy a product seen in an advertisement, but I can’t clearly identify it in the store among the variety of similar products.</td>
<td>.58</td>
</tr>
<tr>
<td>2 Most brands are very similar, making it difficult to distinguish them.</td>
<td>.69</td>
</tr>
<tr>
<td>3 After watching a series of commercials on TV, it often happens that I cannot remember the brand but only the product.</td>
<td>.57</td>
</tr>
<tr>
<td>4 Some brands look so similar that I don’t know if they are made by the same manufacturer.</td>
<td>.49</td>
</tr>
<tr>
<td>5 Because of the great similarity of brands, it is difficult to detect differences.</td>
<td>.56</td>
</tr>
<tr>
<td>6 Because of the great similarity of brands, it is often difficult to detect new products.</td>
<td>.47</td>
</tr>
<tr>
<td>7 Inside a store I immediately recognize my favourite brands.</td>
<td>.28</td>
</tr>
<tr>
<td>8 Brands are unmistakable.</td>
<td>.33</td>
</tr>
<tr>
<td>9 One knows that when brands are similar, the more expensive one is better.</td>
<td>.31</td>
</tr>
<tr>
<td>10 After watching a series of commercials on TV, it often happens that I cannot remember the product (category) but only the brand.</td>
<td>.30</td>
</tr>
</tbody>
</table>

AVE = Average Variance Extracted. Items that appear in italics were part of Walsh and Mitchell’s (2005) 10-item PPS scale but not the more parsimonious six-item scale.
Two indicators had coefficients of determination below .35 (Bagozzi & Yi, 1988), which led to their elimination from the scale. The starred items in Table 1 are the two deleted items from the scale. Following this, another confirmatory factor analysis was calculated for the remaining eight items, and model identification was achieved. This eight-item scale included all six items from Walsh and Mitchell’s (2005) final PPS scale. The fit of the model (eight-item scale) was satisfying, and all but two indicators had a coefficient of determination equal to or larger than .50. The average variance explained exceeds the threshold of .50 and the Goodness of Fit Statistics were: GFI = .95, AGFI = .91, CFI = .94, NFI = .90, RMSEA = .07, and $\chi^2$/df = 2.36 ($p < .001$). The results of the confirmatory factor analysis are summarised in column 2, Table 1. The Cronbach alpha of the eight-item scale was .80.

A confirmatory factor analysis for the six-item model (Walsh and Mitchell’s final scale), which is not reported here, resulted in a good overall fit. The Cronbach alpha for the six-item PPS scale proposed by Walsh and Mitchell (2005) was also calculated and was .78.

**Nomological validity of the PPS scale**

To establish nomological validity and to test the first two hypotheses, we examined the impact of the PPS scale on consumer brand loyalty and general word-of-mouth propensity. These measures have been postulated to be an outcome and correlate of PPS (Walsh & Mitchell, 2005). To show a measure has nomological validity, the correlation between the measure and other related constructs should behave as expected in theory (Churchill, 1995). We hypothesised that consumers who are prone to PPS are likely to become less brand loyal and more likely to engage in word of mouth. PPS-prone consumers are likely to share their mistaken experiences with others, as well as asking others for advice prior to purchasing. Hence, a positive PPS-word-of-mouth relationship can be expected. Items for the two outcome measures were based on prior items in the literature, as noted in Appendix 2.

Two separate confirmatory factor analyses were performed to test the appropriateness of the items measuring the two constructs. The overall fit for the brand loyalty model was very good. The average variance extracted exceeds the threshold of .50 and the Goodness of Fit Statistics were: GFI = .99, AGFI = .97, CFI = .99, NFI = .99, RMR = .044, RMSEA = .056, and $\chi^2$/df = 1.68 ($p < .027$). The Cronbach alpha of the three-item scale was .76. The overall fit for the word-of-mouth model was sound. The average variance explained exceeds the threshold of .50 and the Goodness of Fit Statistics were: GFI = .98, AGFI = .92, CFI = .98, NFI = .98, RMSEA = .09, and $\chi^2$/df = 3.07 ($p < .027$). The RMSEA value is a little too high. Browne and Cudeck (1993) suggest RMSEA < .05 as close fit and values beyond .10 as poor. The Cronbach alpha of the eight-item scale was .87.

The examination of the hypothesised relationships between PPS and the two consumer outcomes was tested simultaneously with AMOS 6.0. The global fit statistics indicated that the model represents the data well, with GFI = .91, AGFI = .87, RMR = .08, RMSEA = .06, CFI = .94, and $\chi^2$/df = 1.84. PPS had the predicted negative impact on brand loyalty. However, the path is not significant, leading to a rejection of H1. The PPS word-of-mouth relationship is positive and strong, supporting H2. The $R^2$ values indicate that PPS explains 3% of the brand-loyalty construct, and 9% of word of mouth. In Figure 1, the path coefficients for two of the three hypotheses can be seen.
PPS across product types and multi-group analysis

A major objective of the research was to examine to what extent PPS levels may vary across different products categories. The results in Table 2 show that the different product categories varied considerably in their PPS means, with chocolate bars having a PPS mean of 2.92 compared to mobile telephones with a mean of 3.35. It was found that the PPS mean for chocolate bars differed significantly from beauty products ($p = .019$) and mobile telephones ($p = .001$). Only the mean difference between beauty products and cellular phones is not significant. Overall, the results largely support H3.

Further, we conducted a multi-group analysis on the moderating effect of product category, using AMOS 6.0. As expected, the comparison of the three models produced interesting insights into how the relationship of PPS to loyalty and general word-of-mouth propensity is moderated by product category. Only in the case of mobile phones was the path from PPS to loyalty significant ($C0.308$; $p < .05$). However, this path coefficient is nearly double the value in the aggregate model shown in Figure 1. This result suggests that when PPS-prone consumers buy high-involvement complex products, they try to rely on simplifying heuristics, which allow them to make sound buying decisions, with brand loyalty being one such heuristic.

For the relationship between PPS and word of mouth, the paths for chocolate bars (.382) and beauty products (.381) are significant ($p < .05$), with nearly identical path coefficients to those in the aggregate model. However, in the case of mobile phones, the PPS–word-of-mouth relationship was not significant.

### Table 2 ANOVA results for PPS by product category.

<table>
<thead>
<tr>
<th>Product</th>
<th>PPS mean</th>
<th>Product</th>
<th>Mean difference</th>
<th>Std. error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chocolate bars</td>
<td>2.92</td>
<td>Beauty products</td>
<td>$-.294^*$</td>
<td>.124</td>
<td>.019</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mobile telephones</td>
<td>$-.430^*$</td>
<td>.122</td>
<td>.001</td>
</tr>
<tr>
<td>Beauty products</td>
<td>3.21</td>
<td>Chocolate bars</td>
<td>$.294^*$</td>
<td>.124</td>
<td>.019</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mobile telephones</td>
<td>$-.137$</td>
<td>.126</td>
<td>.279</td>
</tr>
<tr>
<td>Mobile telephone</td>
<td>3.35</td>
<td>Chocolate bars</td>
<td>$.430^*$</td>
<td>.122</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Beauty products</td>
<td>$.137</td>
<td>.126</td>
<td>.279</td>
</tr>
</tbody>
</table>

*The mean difference is significant at $p < .05$. 

**Figure 1** A model of the relationship between PPS and consequences.
Identifying PPS groups

Walsh and Mitchell (2005) argue that one way to better target cognitively vulnerable consumers is to use a segmentation approach that combines traditional segmentation (e.g. demographic variables) with PPS scores. To identify PPS segments, a hierarchical cluster analysis followed by a k-means analysis was conducted. The PPS items shown in Table 1 (column 2), representing the one-dimensional PPS scale, and the items measuring brand loyalty and word of mouth were used as cluster variables in step 1. After aggregating the eight items of the PPS scale, as well as the items measuring brand loyalty and word of mouth, we used the respective mean values as input variables for clustering. Distances between the clusters were calculated with the Euclidean distance measure, and aggregation of clusters was conducted with Ward’s procedure. To reflect the true structure of the data set, we used the elbow criterion to decide on the number of clusters. Thresholds existed at three and four clusters, and to decide on the appropriateness of each of the two alternative solutions, a multiple discriminant analysis was performed. As the hit rate, or proportion of customers correctly classified, was highest for the three-cluster solution, it was considered the most adequate representation of existing consumer PPS segments (see Table 3). In the next step, the identified clusters were described in greater detail using demographic data. We now briefly describe these results.

Cluster 1 is the largest cluster. Members of this PPS prone, brand loyal cluster score second highest on the PPS and brand-loyalty scale, indicating that they are relatively vulnerable to not being able to distinguish between brands and therefore most interesting from our point of view. Also, this is the least-educated cluster and the one with the lowest income.

Cluster 2 is the smallest group, which scores lowly on the PPS scale and may be labelled PPS immune. This group exhibits the second highest brand loyalty and lowest word of mouth score, suggesting that they do not rely on others when choosing brands. This cluster is the ‘oldest’, predominantly female, and the one with the highest income.

Cluster 3 members score highest on the PPS scale compared with the first two clusters, and may be viewed the most vulnerable group in terms of distinguishing similar brands, which is why they were labelled PPS prone. This group is significantly less brand loyal than consumers in the other two groups.

Discussion and implications

This article describes the validation of a one-dimensional PPS scale. The motivation for our research is derived largely from the acknowledged limitations of Walsh and Mitchell’s (2005) study on cognitive vulnerability. This study had three objectives relating to: testing the PPS scale’s reliability and validity in the UK; applying it to measure PPS in three different product categories; and identifying whether a PPS-prone segment of consumers exists. The most important finding is that there is an indication of generality of most scale items. Given this finding, there is reason to believe that the PPS scale has elements of construct validity and has potential use across international populations. The non-significant results for brand loyalty might be explained by considering a familiarity effect or by re-evaluating the proposed link between risk and brand loyalty. When
all brands are seen as similar and therefore substitutable, why would the consumer be brand loyal? One possible explanation might be habit. Even if no perceived differences exist, some consumers might still purchase the same product to reduce mental effort or for convenience. If some consumers do and some do not, the net effect is no effect, which is the relationship we see. This explanation fits well with...
the results we see from our segmentation analysis, where one PPS-prone group is brand loyal while the highest PPS-prone group is not. As predicted on the basis of attribution theory, which refers to the way consumers make inferences as to the value and cause of things such as brands and their utility, PPS is found to affect word of mouth behaviour positively. This is likely to be because consumers attribute the ‘cause’ of seeing products as similar to manufacturers and are motivated to either warn others about these similarities to avoid them purchasing the wrong brand in the case of look-alike products or to advise them that most products are similar and substitutable and therefore they can buy the cheapest product thus saving them money.

When comparing our cluster-analysis results with those of Walsh and Mitchell (2005), we see some differences. First, with regard to PPS, the German data shows greater variation than the UK data. In the German sample, the highest PPS average is 4.5 for Cluster 1 (on a five-point scale ranging from 1 to 5), the lowest PPS average is 1.94 (Cluster 3). For our sample, the highest average is 3.5 (Cluster 3: PPS prone) and the lowest average is 2.7 (Cluster 2: PPS immune).

Moreover, the PPS-prone clusters in Germany (Cluster 1) and the UK (Cluster 3) differ in regards to their brand loyalty and word-of-mouth behaviour. In Germany, PPS-prone consumers have a moderate brand loyalty with the second highest mean (3.2) of the three clusters (highest mean: 3.5), whereas in the UK, the PPS prone have the lowest mean (2.7) of the three clusters (highest mean: 4.3). In terms of word-of-mouth behaviour, German PPS-prone consumers are moderately likely to use it (mean 2.8; highest mean: 2.9). UK PPS-prone consumers appear only slightly more likely to engage in word of mouth (mean 3.2; highest mean: 3.8).

With a mean age of 40 years, German PPS-prone consumers are the oldest of all three clusters (youngest cluster: 30.6 years). In the UK, PPS-prone consumers do not appear to differ from the other two clusters in terms of age (mean age: 29.3). One reason for this difference could be that the UK sample is skewed towards younger consumers.

Our findings further show that the different product categories varied considerably in their PPS means, with chocolate bars having the lowest and mobile telephones the highest mean. One explanation for there being no difference between beauty products and mobile phones is the role of frequency of purchase and brand knowledge. If a consumer is purchasing beauty products weekly, even if he/she is not involved with the category, he/she will eventually build up a repertoire of experience that allows him/her to discriminate between products and brands. While for mobile phones, these are only usually purchased once a year and therefore brand knowledge is limited and all products thus seem more similar. It could also be that for this group of consumers, beauty products were a more involving category and mobile phones a slightly less involving category than was anticipated from the initial consumer panel results.

An alternative explanation is that consumers have more difficulty perceiving products as different within the mobile-telephone market. Consumers’ difficulty in distinguishing between the brands could be a result of their cognitive inability to effectively process the information obtained during the decision-making process. Turnbull et al.’s (2000) study showed consumers exhibited signs of brand-similarity confusion, leading them to become vulnerable to perceiving all the mobile phones as similar. This would suggest that in some categories, higher product involvement may not be an effective protection against PPS because consumers cannot process all the information to reduce their perception of all products being similar.
Regarding the PPS–word-of-mouth link, the results also suggest that the more people see mobile phones as similar, they do not talk about them, and highlights product category variations within our general framework. It might be that, unlike chocolate and beauty products, mobile phones are not products that are talked about much. It is also interesting to note that the significance of the paths were reversed compared with the other two product categories, perhaps suggesting that consumers either use other people and word of mouth to help them decide when they see all brands as similar or they use brand loyalty. This explanation fits with the mobile-phone market, which is complicated and changes so quickly, and therefore it is unlikely that other consumers have the knowledge to advise properly. Thus, the only effective strategy is brand loyalty.

The results have implications for marketing practitioners and consumer policy on how to deal with these vulnerable consumers, as well as marketing research.

**Managerial and consumer-policy implications**

Reducing consumer PPS proneness could be a major source of competitive advantage in any market, but particularly in those markets where product similarity has already been shown to exist. The PPS scale gives marketers and consumer policy makers guidance on what to look for and the areas where attention may be required. There are two generic strategies. One is to change the way brands are produced and marketed. The other is to look towards educating consumers to be more brand savvy and brand discriminating.

On changing the way brands are produced and marketed, several findings are important. The PPS–brand-loyalty relationship was negative but non-significant. Nonetheless, this result is concerning because a negative relationship between the two constructs could equate to a loss of business for brand manufacturers. One of the study’s key findings is that PPS proneness affects consumer word of mouth, suggesting that PPS-prone consumers need to engage in word of mouth when making buying decisions. This could be to help them reduce their perceptions that all brands are similar or it could be to complain and alert other customers to the problems of similar products. The latter is more worrying because much of the word of mouth is likely to be negative or at least create negative perceptions. However, to avoid negative outcomes of PPS, firms need to avoid PPS first. Towards that end, firms can employ different product- and communications-related strategies. Marketing communications that acknowledge and deal with similarity perceptions, either through promotional material of personal selling, can help to reduce PPS. In undertaking their ongoing market research, companies need to be alerted to this possibility and attempt to find out if it is a problem for them, as these PPS-prone consumers have higher transaction costs and relative utility.

Marketers could look at their communications and those of their competitors and identify where they are insufficiently different and likely to be perceived by some consumers as similar. They could also look at their products, product instructions, and promotions to examine the amount of (similar) information they give and the possibility of it leading to perceived similarity and whether all their information is clear and unambiguous.

The results of the cluster analysis also have implications for marketers on how to deal with these vulnerable consumers, in particular with respect to engendering brand loyalty. The PPS measurement tool is suited to gathering benchmark data in retailing firms regarding current levels of customers’ PPS, as well as conducting periodic checks to measure PPS improvements. Practitioners can determine overall PPS, and the PPS scale could serve as a diagnostic tool that will allow retailers to determine PPS-relevant areas and product categories that are weakly differentiated and in need of attention.
PPS can also be tackled from the consumer side through consumer education and policy. Knowing that many consumers feel that all the products within a category are similar should enable consumer policy makers to impress upon marketers to develop strategies to avoid the problem by making more effort to ensure that packaging and visual appearance are more distinct and do not follow category norms, for example white yoghurt cartons or red-and-white cola bottles. The difference between levels of PPS between the product categories can provide policy makers with information on which categories are most affected and can help them to prioritise their efforts on which markets to focus on first.

Finally, the PPS scale was chosen for investigation because it can be a useful tool to alert consumers to their susceptibility to see brands as similar. Being aware of this proneness may help consumers avoid mistakes and become more effective shoppers. From a consumer-protection perspective, it is not sufficient to know that some consumers have a propensity for PPS; we need to know of whom this group consists. For example, our results show that the PPS-prone group (Cluster 3) is significantly less brand loyal than the other two PPS groups. However, before consumer policy makers can use the scale, more work is needed, not least because the present study suffers from limitations that could be addressed in future research.

**Conclusion and further research**

The PPS measure was tested in the UK, and contributes to a more sophisticated understanding of how consumers are affected by product similarity and builds on previous work by focusing on scale replication and extension into different product categories. The paper makes three contributions. First, product similarity has always been investigated in specific product contexts. Here, we have measured PPS proneness in three product categories. Second, the reliability and validity tests on the new scale suggest that the UK eight-item PPS scale has sound and stable psychometric properties. However, more research is necessary to establish the PPS scale in the literature. We agree with Flynn and Pearcy (2001, p. 413) who argue that ‘we must be careful of claims of a scale’s performance when there have not been replications’. Third, we identified three groups that differ in terms of PPS proneness. Thus, our study provides further evidence of the high relevance of cognitive vulnerability and PPS.

However, there are several limitations and areas for further research. First, PPS segments were examined in relation to demographic variables, and future studies could consider psychographic and a larger number of demographic variables. Second, the three product categories selected for this study were intended to represent low- to high-involvement product categories. However, involvement was not measured at an individual level. It is conceivable that buying a cellular phone is a low-involvement decision for some consumers as much as buying a shampoo is a high-involvement decision for others. Future studies can address this limitation by measuring PPS as well as consumer involvement. Third, the extent to which our findings may be extended to a greater number of product categories remains to be explored. Fourth, more research is needed on outcomes and correlates of PPS. Fifth, future studies could assess if the PPS scale is applicable to brand-related buying purchases made over the Internet. As the Internet is becoming an increasingly popular medium to deliver products, online retailers need to gain an understanding of the consumers’ uncertainties that are involved with buying branded products through the Internet and the role of PPS in (not) making those buying decisions.
Acknowledgements

The authors wish to thank the editor and anonymous reviewers for numerous valuable comments.

References


Appendix 1. Demographic profile of the sample

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>UK sample (n = 220)</th>
</tr>
</thead>
<tbody>
<tr>
<td>16–26</td>
<td>125 (56.8%)</td>
</tr>
<tr>
<td>27–37</td>
<td>30 (13.6%)</td>
</tr>
<tr>
<td>38–48</td>
<td>31 (14.1%)</td>
</tr>
<tr>
<td>49–59</td>
<td>31 (14.1%)</td>
</tr>
<tr>
<td>60+</td>
<td>3 (1.4%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>46.4%</td>
</tr>
<tr>
<td>Female</td>
<td>53.5%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Education</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Some high school or less</td>
<td>26 (11.8%)</td>
</tr>
<tr>
<td>High-school graduate</td>
<td>50 (22.7%)</td>
</tr>
<tr>
<td>Vocational school/some college</td>
<td>41 (18.6%)</td>
</tr>
<tr>
<td>College graduate/graduate school</td>
<td>101 (46.4%)</td>
</tr>
<tr>
<td>No formal education</td>
<td>2 (0.5%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Income</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;£10,000 ($18,800)</td>
<td>117 (53.2%)</td>
</tr>
<tr>
<td>£10,001–£20,000 ($18,801–$37,600)</td>
<td>48 (21.8%)</td>
</tr>
<tr>
<td>£20,001–£30,000 ($37,601–$56,400)</td>
<td>35 (15.9%)</td>
</tr>
<tr>
<td>£30,001–£40,000 ($56,401–$75,200)</td>
<td>16 (7.3%)</td>
</tr>
<tr>
<td>&gt;£40,000 ($75,200)</td>
<td>4 (1.8%)</td>
</tr>
</tbody>
</table>

Appendix 2. Customer outcome variables of PPS

<table>
<thead>
<tr>
<th>Source/adapted from</th>
<th>Factor: Brand loyalty/α = .76</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sproles and Kendall (1986)</td>
</tr>
<tr>
<td>I have favourite brands I buy over and over again.</td>
<td></td>
</tr>
<tr>
<td>I change brands I buy regularly.</td>
<td></td>
</tr>
<tr>
<td>Once I find a product or brand that I like, I stick with it.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source/adapted from</th>
<th>Factor: Word of mouth/α = .87</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Feick and Price (1987)</td>
</tr>
<tr>
<td>I like introducing new brands and products to my friends.</td>
<td></td>
</tr>
<tr>
<td>My friends think of me as a good source of information when it comes to new products or sales.</td>
<td></td>
</tr>
<tr>
<td>I like helping people by providing them with information when it comes to new products.</td>
<td></td>
</tr>
<tr>
<td>If someone asked me where to get the best buy on several types of products, I can tell them where to shop.</td>
<td></td>
</tr>
<tr>
<td>People ask me for information about products places to shop, or sales.</td>
<td></td>
</tr>
</tbody>
</table>
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