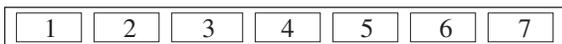


Product-Concept Fits

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Background: The extent to which a product matches a concept plays a critical role in the success of new product introductions. For instance, if a new fragrance is to be introduced under a brand name with supporting imagery, it would be useful to know whether the fragrance itself is compatible with the concept. A fragrance that smells like freshly cut wood might not match particularly well with imagery built around an ocean breeze. Or it might, depending on the imagination and experience of an individual consumer. Differences among individuals as they relate products to concepts should be considered in order to study possible consumer clusters. In this report we discuss a method that simultaneously locates individual, concept, and product perceptions in a perceptual space obtained from the analysis of commonly used product-concept fit tests.

Scenario: You are responsible for developing insights into consumer behavior for your company. Several projects which require your attention involve linking current and new spray aerosol fragrance products to prospective names to ensure optimum product/name fits. You have a set of 10 products available with fragrances from several fragrance types, such as fruity, floral and spicy. You also have 8 potential names (N_1 through N_8) available to describe them. You recruit one hundred (100) consumers who satisfy various demographic and usage screening criteria. Each of the consumers evaluates the fragrances in condition-controlled chambers over a period of several days. Each fragrance is rated by each consumer on the degree (1-7 point scale) to which the fragrance name is appropriate to the fragrance. From these tests, you obtain a data matrix for 100 consumers \times 10 products \times 8 statements. Alternatively, you could use an incomplete block approach in which each consumer is exposed to a limited number of fragrances if you were under time and/or budget constraints.



Disagree Completely

Agree Completely

Figure 1. Consumers respond to: "This name is very appropriate to this fragrance"

Basis for Product-Concept Maps: When a consumer evaluates the appropriateness of a possible name for a product, one interpretation of the process is that he compares the actual product perception to that created by the suggested name. This idea is identical to that used in previous reports where we showed how liking ratings could be interpreted as similarity ratings between ideal and product perceptions^{1,2} and how motivations for product consumption could be similarly interpreted^{3,4}. The theory for this method, Landscape Segmentation Analysis[®] (LSA), allows us to construct maps of individual and product perceptions and has been published^{5,6}. Software to conduct the analyses is available in *IFPrograms™*

LSA offers an approach which allows the simultaneous presentation of individual consumers, products, and statements on a single map. Each consumer is represented by points, one for each of the products. Each consumer point represents a consumer's perception of a particular product. The centroid of the consumer points for a given product indicates the location of the product as perceived by the consumers. Names are also placed on the map, and proximity between product centroids and names indicate good product/name fits, while greater distance indicates a less acceptable fit between the name and the product. Figure 2 shows a simplified map illustrating this concept.

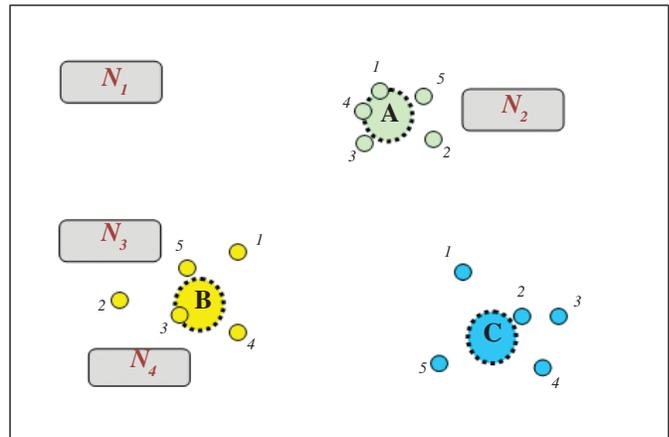


Figure 2. Simplified LSA showing name/product fit where product names N_1 to N_4 are plotted along with individual product perceptions 1-5 and three product centroids A, B, and C

From Figure 2, it can be seen that product A is closest to N_2 , that product B and N_3 or N_4 are similarly located, that product C does not appear too close to any name, while N_1 is not located relatively near any product. For each of the products, a larger spread of the individual consumers indicates that they tend to disagree on where a product should be placed (product C), while a tighter cluster of points shows better agreement among consumers (product A.)

LSA Mapping of Ten Fragrances and Eight Names: Figure 3 shows a contour plot of the location of individual consumers' product perceptions. There were 100 consumers and each one evaluated ten fragrances. This figure shows how the consumers' product perceptions are distributed in a sensory space in which lighter areas in the contour plot represent greater density. Inspection of this figure reveals that there are large areas corresponding to the product perceptions and some areas seem to have sub-clusters.

Figure 4 shows the locations of the 8 product names N_1 - N_8 , along with the centroids of each cluster of product percepts from Figure 3 as fragrance dispensers. From this map we can see that although consumers disagree somewhat in their perceptions of each product, they are closely clustered in about equally sized groups around each centroid. Some products, such as 6 and 7, are more similar than others. Product 9, lo-

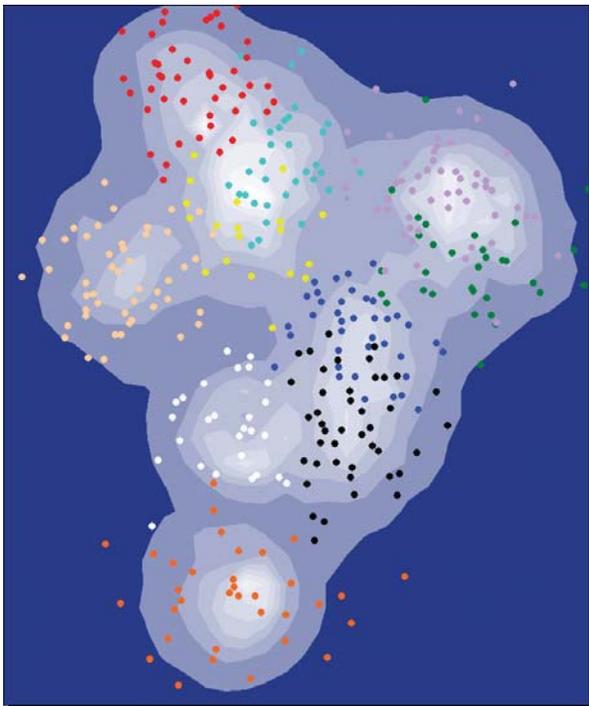


Figure 3. LSA map showing the location of individual consumer product perceptions (dots) and a contour plot of their densities. Some of the dots may represent the perceptions of more than one consumer

cated at the base of the map, does not overlap very much with the other product groups. It appears that product names are appropriate to only a subset of the fragrances. For instance, products 6 and 7 are not placed relatively close to any of the names evaluated while products 2, 4, 5, and 10 are well described by one or more names. N_5 is most closely associated with fragrances 8 and 9, but does not correspond optimally to either of them. From this research, you conclude that the selection of fragrance names for the tested fragrances has been only partially successful. More research will be needed to find appropriate names for products placed on the eastern and southern parts of the map.

Conclusion: In this report it is shown how consumers cluster with respect to their perception of fragrances and how these fragrances are placed relative to product names. This allows us to see that some names are simply inappropriate to all fragrances and that several fragrances occupy similar perceptual positions. In a series of reports^{1,2,3,4} it has been shown that the reactions of consumers to products, concepts and motivators can be treated as similarity judgments. This interpretation leads to the ability to create useful maps to interpret individual consumer perceptions and to predict consumer behavior. The application of LSA to product–concept fits further extends the range of applications for this method and should prove useful in the selection of advertising and imagery appropriate to new product introductions.

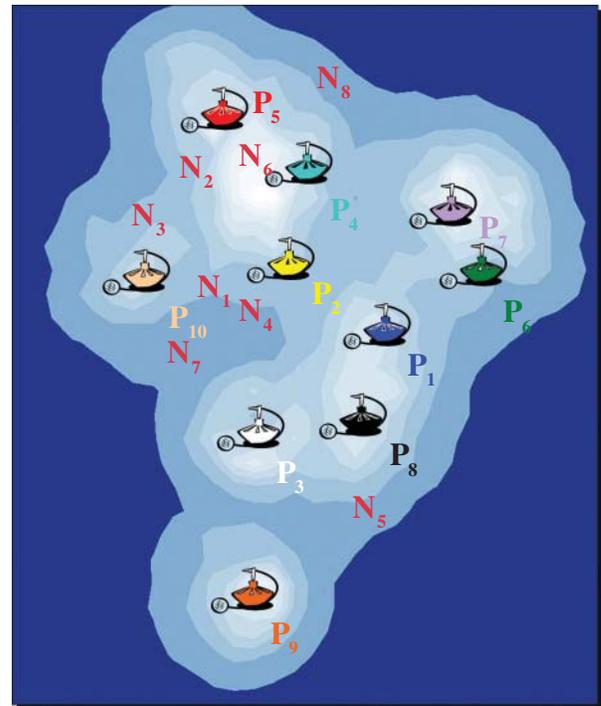


Figure 4. LSA map showing product and concept fit. Products (fragrances) are shown as dispensers. Product names are N_1 - N_8

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