Available online at www.sciencedirect.com
SCIENCE DIRECT®
Food Quality and Preference 16 (2005) 203–205
Food Quality and Preference
www.elsevier.com/locate/foodqual

Terminology, reliability, validity, and subjectivity in the search for the "voice of the consumer"

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Received 10 August 2004; received in revised form 15 August 2004; accepted 15 August 2004

1. Introduction

Authors van Kleef, van Trijp, and Luning must be congratulated for an excellent review of consumer research methods that can be applied in the early stages of new product development. Such a review has been lacking in the literature and the authors' well-organized review of these diverse methods serves as an invaluable aid to product developers in their efforts to create new products that address the evolving needs of today's consumers. The authors' lucid discussion of the available methods, the nature of the data that each seeks to acquire, their functional characteristics, and the important operational and response-based factors that differentiate them raise numerous issues that are worthy of further comment and analysis. Among these issues, three that I view to be important as reasons why some of these techniques may not have attained more widespread adoption by product developers are (1) the language barrier created by the novel disciplinary terminology associated with these techniques, (2) the lack of well documented support for the reliability and validity of several of the techniques, and (3) the subjective/qualitative nature of certain of the techniques, that places them at odds with the more quantitative, physical sciences perspectives of product developers, and that can create a situation in which data collection and interpretation are subject to the idiosyncrasies of the individual researcher.

2. The problem of disciplinary terminology

In the Abstract and Introduction, van Kleef et al. cite the problems of disciplinary terminology and poor communication between consumer researchers and product developers as potential reasons why many of the consumer techniques described in their review are not more commonly used in new product development. A likely contributing factor to this poor communication is that most product developers in the food and consumer products industry have backgrounds in the physical sciences or in product technology areas. Typically they are chemists, engineers, food or material scientists, or commodity technologists. Rarely do they possess backgrounds in psychology, marketing, economics or other disciplines commonly associated with consumer science. Many have only recently become familiar and comfortable with the more advanced techniques of product testing and sensory analysis, even though the end products of these techniques are framed in terms of actionable product attributes that the product developer can easily understand and relate back to material and processing variables under his/her control. The problem with certain of the consumer techniques described by van Kleef et al. is that the conceptual bases, theoretical constructs, and descriptive terminology associated with them are foreign to product developers. Some examples of this disciplinary terminology include terms like "need elicitation" and "product elaboration", and even extend to the names applied to the techniques, for example "emphatic design", "information acceleration", "laddering", and "metaphor elicitation." Such seemingly abstract terminology, while having highly defined meaning to consumer and marketing researchers, has so little semblance to the language of physical scientists, product

0950-3293/$ - see front matter Published by Elsevier Ltd.
doi:10.1016/j.foodqual.2004.08.005

technologists or laypeople, that, at best, it evokes images of a complex, higher-order, analysis that has little in common with the day-to-day realities of developing new products. At worst, it could evoke images of unsubstantiated, pseudo-objective approaches to knowledge that may be dismissed as too speculative to be actionable.

Confusion related to terminology can occur even among scientists who possess similar backgrounds within the broad area of behavioral and consumer sciences. For example, many of the reviewed techniques refer to consumer "needs" and "values". Such terms are far from well defined or agreed upon by psychologists of different theoretical persuasions, for example bio-behaviorally oriented versus cognitively- or clinically-oriented psychologists. Each can have widely different views of what constitutes a need or a value, whether such needs or values are truly open to scientific observation and analysis, and if so, how they may be operationally addressed.

The problem posed by idiosyncratic disciplinary terminology can only be overcome through better communication between market researchers and product developers concerning these new consumer-based concept generation methods. Market researchers will need to minimize the use of abstract terminology, and instead, to describe in plain language what these techniques can do and how they can provide direct benefits to the new product developer.

3. The problem of reliability and validity

Establishing the reliability and validity of new consumer methods for product development is often difficult and time consuming. However, if reliability and validity are not firmly established, product developers are unlikely to adopt the methods, regardless of how novel or "insightful" they appear to be. While van Kleef et al. have provided an extensive reference list as part of their review, it is not clear which or how many of these publications provide sound demonstrations of the reliability and/or validity of the methods being discussed.

Although validity can often be a complex issue, reliability is much easier to assess, using even simple test–retest paradigms. Of course, direct approaches to establishing reliability apply best to quantitative techniques. Establishing the reliability of qualitative techniques is significantly more difficult, because the results often depend greatly on the data collection and interpretation skills of the experimenter. The conceptual difficulty associated with establishing the reliability of even well worn qualitative techniques, for example focus groups, is reflective of this general problem.

Although reliability is an important pre-requisite for the adoption of any new research method, establishing the validity of the method is even more critical. Since the main purpose of the majority of the techniques described by van Kleef et al. is to provide data for guidance in *future* product development, the *predictive* validity of the methods are critical to their adoption by product developers. However, we are faced with the fact that few studies have addressed the predictive validity of many of the methods outlined by van Kleef et al. Interestingly, while the authors cite the fact that the continued use of certain older approaches to consumer research and the failure to use newer techniques is "one of the reasons for the relatively low new product success rates (Wind and Mahajan, 1997)", they do not address the issue of the predictive validity of the newer methods that they review. For example, it is reasonable to ask what is the predictive validity of the emphatic design approach, in which observation of consumer behavior is the primary source of information. Although the authors cite evidence (Leonard, 1995) that a breakfast cereal developer happened upon a new idea (presumably successful) for a cereal snack for children by observing that parents carried around bagged cereal for their children, they do not address the potential for false positives when using this technique. Indeed, how many new product ideas were generated by application of the emphatic design in other studies, but which resulted in new product *failures*? Without the latter information it is impossible to determine whether the emphatic design method is a useful one, or if it may actually lead product developers astray.

Although establishing the predictive validity of the reviewed methods is essential for their adoption by product developers, certain of the methods appear to lack even construct or face validity. Perhaps the most obvious example is the Zaltman metaphor elicitation technique. As pointed out by van Kleef et al., this is a "projective" technique, meaning that the underlying thoughts of the consumer are supposedly "projected" through their drawings, montages, etc. and that these thought processes can be decoded by an experienced researcher. Although similar projective techniques have been used in clinical psychology for over 100 years, modern psychology has, for the most part, rejected these techniques, due precisely to their lack of reliability and validity, as well as their cultural determinism (Wood, Nezworski, & Stejskal, 1996; Lilienfeld, Wood, & Garb, 2000; Lilienfeld, Lynn, & Lohr, 2001). The mere act of including such unsubstantiated methods beside those that have more scientifically sound underpinnings diminishes, by association, the stature and potential appeal of the latter techniques to objectively-oriented food product developers.

One solution to the reliability/validity issue is to identify and present to product developers those studies in the literature that incontrovertibly establish the reliability and validity of the proposed techniques. While,

van Kleef et al. have made a valuable contribution in summarizing and categorizing the methods, the challenge is now to adequately document the scientific reliability and validity of each method—a task which will be much easier for some of the methods than for others.

4. The problems of subjectivity and the interpretive role of the researcher

Many of the techniques that van Kleef et al. categorize as less actionable for product development and/or more geared to (really) new product development are either qualitative in nature or depend greatly on the interview and/or interpretation skills of the researcher or other "experts". Among these techniques are focus groups, emphatic design, free elicitation, repertory grid, laddering, lead user, and ZMET. While I certainly would not indict the utility of qualitative methods, especially for the purpose of generating new product ideas, the subjective nature of qualitative techniques places them at odds with the more objective, physical-science orientation of many product developers, whose training has led them to be more comfortable with making important product decisions on the basis of numerical or, otherwise, quantifiable data. In this sense, the qualitative/subjective nature of some of the new techniques, like the problem of disciplinary terminology, is rooted more in the sociology of science than in the philosophy of science. However, unlike the terminology problem, which can be addressed through greater emphasis on linguistic linkages between disciplines, the problem posed by the dichotomy of qualitative vs. quantitative data is deeply ingrained in the way that researchers learn to address scientific problems and the epistemological views that they adopt during their early career years. Changing these epistemological views takes time and usually only occurs after successful first hand experiences using the alternative methods. The challenge to proponents of these techniques is to set up the circumstances by which new product developers who are unfamiliar with the utility of qualitative techniques can learn to utilize them with success within their product development programs.

As a logical consequence of the use of qualitative techniques, the data generated by these methods often require significant involvement by a trained researcher in either the data collection phase (through knowledge and experience required to ask the right questions at the right time) or in the data interpretation phase (through interpretation of the meaning of consumer-generated words, phrases, or pictures or by categorizing these units of data into interpretive clusters). This reliance of the data on the methodological and/or interpretive skills of the researcher also serves as a reason why product developers may be slow to adopt these techniques.

In many consumer product industries, product developers have only recently come to appreciate the problems associated with over reliance on the use of in-house experts and other presumed authorities of what consumers desire. Instead, they have come to rely on objective data derived from quantitative analysis of consumer opinions/ratings/evaluations. Thus, there is some conviction among product developers to resist undue influences in new product decisions by one or a small number of researchers or experts who are deemed "eminently capable" in the new methods and techniques. The psychologist, Paul Meehl, has expressed this problem of over reliance on professional experience (in clinical psychology) this way: "It is absurd, as well as arrogant, to pretend that acquiring a Ph.D somehow immunizes me from the errors of sampling, perception, recording, retention, retrieval, and inference to which the human mind is subject" (Gaudiano, 2003). The same can be said about the reliance on professional experience in acquiring and interpreting qualitative consumer data. For any new consumer method to attain wide acceptance in industry, the data acquired by the method should be independent of individual researcher "skills" and the interpretation of the data should be consistent from one researcher to the next. Otherwise, one risks the possibility that the data tell us more about the personal views and perspectives of the researcher than they do about the views and perspectives of the consumer.

In summary, the paper by van Kleef, van Trijp, and Luning is an exceptional summary and comparison of methods that are available for uncovering the "voice of the consumer" during early stages of new product development. However, the wide-spread adoption by industry of these methods, as is sought by van Kleef et al., may well have to await similarly illustrative expositions of the reliability, validity, and objectivity of these methods, using clear and precise language that transcends the disciplinary boundaries between marketing researchers and the product developers charged with translating the "voice of the consumer" into the design of successful new food products.

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