Reverse and Questionable Responses Using the Kano Method in International Surveys

Michael Latta
Coastal Carolina University

ABSTRACT

New product development has become an international exercise. One method of designing products is the Kano Method. Although not as popular as discrete choice or conjoint, the Kano Method is being used internationally to design products and services. The question process is not as straight forward as discrete choice or conjoint, and that raises questions of utility of the Kano Method when used internationally. This study shows results vary across countries dramatically.

INTRODUCTION

Quantitative new product design surveys are used to answer the following types of questions:

•   What need does the customer desire the product to fill?
•   What problem does the customer want the product to solve?
•   What attributes does the customer want the product to have?
•   What features does the customer want the product to have?
•   What benefits does the customer want the product to provide?

The Kano method has been used in a variety of preference study types including the popular customer satisfaction survey. It has also started to be used in new product development surveys. The basic approach involves a version of paired-comparisons. Paired-comparisons have been around since 1927 when Louis Leon Thurstone proposed his law of comparative judgment which needed a method of measurement. The method of paired-comparisons was used to operationalize the definition of psychological value differences expressed in a product attribute, feature or benefit.

Each product attribute, feature or benefit is expressed both in a present or positive way and in an absent or negative way. This approach to measuring product preferences has a theoretical orientation based on determining what new product features are expected to be included, what attributes add psychological value as they increase, and what attributes are deal breakers if absent and exceed expectations if included.

The Kano Method was developed by Noriaki Kano. He was an expert in product quality design and described the complexities of customer needs and their relationship to customer satisfaction as the most important design issue. Users of the Kano method have identified six basic types of psychological values defining product attributes, features or benefits relating to customer needs, problems or benefits. These values go by various names but are most often expressed as follows:

1.   Attractive
2.   One-Dimensional
3.   Must-Be
4.   Indifferent
5.   Reverse
6.   Questionable

Attractive Value: Attributes, features or benefits that elicit product acceptance when completely present, but do not cause rejection of the product when not present. These values are not typically expected in a new product. An example is the button-less iPhone when first launched.

One-Dimensional Desired Value: These are attributes, features, or benefits that everyone is aware of and are the basis of direct competition. These features, attributes or benefits result in product acceptance when present and product rejection when absent.

Must-Be Value: These values are taken for granted when present but result in rejection of the product when absent.

Indifferent Value: These values are neither good nor bad, and have no effect on the customer's preference for the product.

Reverse Value: When these values are absent, the customer is accepting of the product. If the value is present the customer rejects the product. These values show that not all customers are alike on certain attributes, features or benefits. One customer segment may strongly prefer an attribute and another may be strongly opposed to an attribute.

Questionable Value: Response patterns show ambivalence, misunderstanding of the questions or make errors in answering questions. The result is the same answer is given to both expressions of the same attribute feature or benefit. In other words, the respondent both likes and dislikes the product and the value expressed.

When designing a survey using the Kano Method, there are pitfalls that may occur when using the Kano approach. The unusual structure of a Kano questionnaire is a potential problem in surveys. Threats to the reliability and validity of results come from Reverse and Questionable

Values which signal respondents have given answers that are not internally consistent or are contradictory. The pattern of responses indicates straight-lining, confusion, had no opinion but did not check neutral or that the respondent simply did not read the questions. It is also hard to tell if certain questions should be discarded, or if respondents need to be discarded, or if respondent reading ability just is not up to the complicated Kano task.

This last issue may be a particular problem with international studies in technology areas where translations are problematic and comprehension may be an issue.   Internationally, Kano may or may not work best. Kano requires that the respondent have expertise and experience in the product area and be allowed to go back and forth among the statement pairs as often as he or she needs to. This atypical survey need results from the paired comparisons approach requiring a lot of thought. However, whether the method gets 'lost in translation' is an empirical question answered in a study summarized below.

METHODOLOGY

An international survey of medical specialties was conducted in North America (two countries), South America (two countries), Europe (four countries), and in the Far East (four countries). In total, 1,114 respondents were surveyed using the Kano method. The research-on-research objective was to determine the incidence of Reverse and Questionable responses in the various countries to see if Kano is equally reliable in all cases or if it works in some countries and regions better than others.

RESULTS

The results indicate that questionable responses occurred in all 12 countries. The incidence of Reverse and Questionable responses are presented in Table 1 for each of the 12 countries and aggregated by the four regions. As can be seen in Table 1 these incidences vary between regions and between countries within regions. For example in the Far East the values range from 11% as a low to 53% as a high suggesting at least one Far East country is not a good option for Kano. In addition, North America shows much lower values compared to South America. Overall, Europe, Far East and South America all show twice the incidence of Reverses and Questionable Responses compared to North America.

Table 1
Incidence of Reverse and Questionable Responses in Twelve Countries and Four Regions

Region/Country	%
Far East 1	11%

Far East 2	38%
Far East 3	53%
Far East 4	22%
Europe 1	8%
Europe 2	21%
Europe 3	15%
Europe 4	28%
North America 1	13%
North America 2	2%
South America 1	39%
South America 2	45%
Far East	33%
Europe	33%
North America	15%
South America	33%

CONCLUSIONS

Although this pattern of Questionable and Reverse responses may not be surprising to those who use the Kano Method, it does suggest that marketing research field services need to take this information into account when planning international panel survey research projects involving Kano. There is no rule-of-thumb in widespread use for discarding respondents with Reverse or Questionable response patterns. One might reasonably set 20% as a threshold.

The complexity of the Kano method of paired-comparisons results in inconsistent patterns of responses leading to some problems in application; especially in international studies where translations are involved. High percentages of Reverse and Questionable Value responses make the data difficult to use in technical or medical new product design studies. The question addressed here is: Do the percentages of Reverse and Questionable Value responses from internal panels vary across countries indicating the utility of the Kano Method vary from country to country? The answer is, yes it does.

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ABOUT THE AUTHOR

Michael Latta (PhD Iowa State University) is the former Associate Dean and Associate currently Professor of Marketing in the Wall College of Business at Coastal Carolina University. He has also held business positions in sales, marketing research, product management, strategic planning, and forecasting with AstraZeneca, Boehringer Mannheim, DuPont, and Wyeth. He is also Executive Director of YTMBA, a research and strategy consulting firm specializing in Predictive Analytics.