

On: 25 October 2011, At: 06:04  
Publisher: Taylor & Francis  
Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



## Ergonomics

Publication details, including instructions for authors and subscription information:  
<http://www.tandfonline.com/loi/terg20>

### How the Kano model contributes to Kansei engineering in services

Markus Hartono<sup>a b</sup> & Tan Kay Chuan<sup>a</sup>

<sup>a</sup> Department of Industrial and Systems Engineering, National University of Singapore, Singapore

<sup>b</sup> Department of Industrial Engineering, University of Surabaya, Indonesia

Available online: 25 Oct 2011

**To cite this article:** Markus Hartono & Tan Kay Chuan (2011): How the Kano model contributes to Kansei engineering in services, *Ergonomics*, 54:11, 987-1004

**To link to this article:** <http://dx.doi.org/10.1080/00140139.2011.616229>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.tandfonline.com/page/terms-and-conditions>

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae, and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand, or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

## How the Kano model contributes to Kansei engineering in services

Markus Hartono<sup>a,b\*</sup> and Tan Kay Chuan<sup>a</sup>

<sup>a</sup>Department of Industrial and Systems Engineering, National University of Singapore, Singapore; <sup>b</sup>Department of Industrial Engineering, University of Surabaya, Indonesia

(Received 18 November 2010; final version received 16 August 2011)

Recent studies show that products and services hold great appeal if they are attractively designed to elicit emotional feelings from customers. Kansei engineering (KE) has good potential to provide a competitive advantage to those able to read and translate customer affect and emotion in actual product and services. This study introduces an integrative framework of the Kano model and KE, applied to services. The Kano model was used and inserted into KE to exhibit the relationship between service attribute performance and customer emotional response. Essentially, the Kano model categorises service attribute quality into three major groups (must-be [M], one-dimensional [O] and attractive [A]). The findings of a case study that involved 100 tourists who stayed in luxury 4- and 5-star hotels are presented. As a practical matter, this research provides insight on which service attributes deserve more attention with regard to their significant impact on customer emotional needs.

**Statement of Relevance:** Apart from cognitive evaluation, emotions and hedonism play a big role in service encounters. Through a focus on delighting qualities of service attributes, this research enables service providers and managers to establish the extent to which they prioritise their improvement efforts and to always satisfy their customer emotions beyond expectation.

**Keywords:** Kansei engineering; emotional feelings; Kano model; services

### 1. Introduction

Humans exhibit strong interest in products through emotion. Despite emotion being highly subjective and individualistic, Desmet (2008) was able to identify the relationship between product elements and customer expression. Products advantageous to consumers evoke pleasant emotions. As products or services are of equivalent quality in the market place, a subjective evaluation of aesthetics becomes a critical precursor to customer satisfaction. Apart from cognitive evaluation, emotions also play a big role in product interaction and service encounters.

Today's customers are highly dynamic and quite demanding. They tend to be disloyal to particular products and services. Compared with their first launch, the sales of many products tend to decrease over time. This situation forces companies to reconsider their product design and development strategies (Shimizu *et al.* 2004). Companies must listen closely and carefully to the voices of their customers, especially their latent needs. Latent needs are the unspoken emotional needs that customers seek in products and services.

The development of products involving customer emotional needs was initially proposed by Nagamachi (1995). Nagamachi introduced Kansei engineering

(KE) as a powerful product development method, which takes into account the customer emotional needs (Kansei in Japanese). This method has been successfully adopted by Mazda Motor Corporation for developing their Miyata model (MX5 in Europe). It symbolised 'Human–Machine Unity' (*Jinba-Ittai* in Japanese) (Nagamachi 1995). The eminence of this method lies in its abilities to quantify customers' Kansei needs and to build a quantitative relationship between these emotional needs and the design features of a product.

In many cases, the voice of customer is an important component for new product/service development and the innovation process. A great deal of resources (working hours, methods and tools) is involved during the complex process. Since a few decades ago, the focus of business management and research has been intensively on customer satisfaction. In today's competitive business environment, however, to satisfy customers is not sufficient. Rather, how to delight our customers has become a prominent issue for long-term business success (Yang 2011). Hence, companies must intensively strive for total customer satisfaction and loyalty to win over the competition (Schneider and Bowen 1999). In other words, there

\*Corresponding author. Email: markushartono@nus.edu.sg