Analysing E-Services and Mobile Applications with Companied Conjoint Analysis and fMRI Technique

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ABSTRACT

Previous research has shown that neuromarketing and conjoint analysis have been used in many areas of consumer research, and to provide for further understanding of consumer behaviour. Together these two methods may reveal more information about hidden desires, expectations and restraints of consumers’ brain. This paper attempts to examine these two research methods together as a conpanied analysis. More specifically this study utilizes fMRI and conjoint analysis as a tool for analysing consumer’s preferences and decision making in e-health and ITC products. This paper provides theoretical background with short history of conjoint analysis and contributions for the audience of consumer research: 1. how conjoint evaluation models works; 2. different conjoint models; 3. counting attribute interactions in conjoint analysis; and 4. brain activation triggers in fMRI and connection to conjoint analysis. Researchers of consumer behaviour may learn a new method for understanding user’s preferences and decision making from e-services and mobile applications. E-services and mobile applications need to be successfully analysed for various marketing segments of new products. An application might appeal well to consumer, but what is known about the attributes that makes consumer act? The customer might orally request other than her brain will inform. Needs could be derived from product parts or attribute bundles of mobile applications. The knowledge will help the producer to target new applications to relevant marketing segments.

Keywords: Blood Oxygen Level Dependent (BOLD), Buying Behaviour, Conjoint Analysis, fMRI, Neuromarketing

INTRODUCTION

Neuromarketing aids in discovering desires, expectations and hidden restraints regarding consumers’ choices, by applying the technology of medical imagery. Neuromarketing originates from neurosciences, with an objective to understand the functioning of the human mind. On the contrary neuroeconomy and neurofinances focus on the decision making processes of the

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economic agents and particularly in the study of the role and the emotions and the knowledge. These branches are connected to economy and behavioural finances (Boricean, 2009). In this article we are going to link neuromarketing with one of its methods, namely functional magnetic resonance imaging (fMRI) with conjoint analysis.

Using Finn’s (1985) terminology, benefit refers to an individual’s estimation of the amount of utility which will be supplied by a particular product. The amount of attribute depends on the individual’s prior product experience, the ability to estimate the desirability of different aspects of the new product, and on declining marginal utility. In addition, imagery which depends on society’s association with the product and is a function of price, place and promotions, also influences the amount of benefit. By obtaining, preparing, using, and disposing products, consumers have developed a frame of reference for evaluating the benefits of new products, like new e-health applications. According to Reynolds and Gutmann (1984), consumers are capable of inferring both the functional and psychophysical consequences of particular product-attributes (Bont, 1992), such as mobile applications’ software or the physical product.

CONSUMER PERSPECTIVE

The Attractiveness of a Product

The attractiveness of a product for a consumer, or how much utility it supplies, depends on its constituent attributes. To supply the maximum amount of utility to the consumers, one is advised to construct a product which is as possible to the optimal combination of attributes (De Bont, 1992). Gestalt principles aim to formulate the regularities according to which the perceptual input is organized into unitary forms, also referred to as sub-wholes, groups, groupings, or Gestalten (the plural form of Gestalt). These principles mainly apply to vision, but there are also analogous aspects in auditory and somatosensory perception. In visual perception, such forms are the regions of the visual field whose portions are perceived as grouped or joined together, and are thus segregated from the rest of the visual field (Todorovic, 2008). Gestalt principles are well known in neuromarketing and in fMRI studies.

The gestaltists tended to favour the notion that these principles are among the fundamental properties of the perceptual system, providing the basis of our ability to make sense of the sensory signals. An opposed view is that the Gestalt principles are heuristics derived from some general features of the external world, based on our experience with things and their properties (Blake & Rock, 1975). There is a connection between gestaltists principles from neuromarketers and fMRI studies but also Lancaster’s (1966) bundle of attributes from conjoint analysis. With combining conjoint analysis and fMRI it is possible to study products as a whole and with its sub-wholes in same time. With e-health applications sub-wholes could be consuming time, colours, figures, voices, pictures etc. which will closely show principles of these scenes seen on mobile applications.

According to Finn (1985, p.37): “For the prediction to have value, the stimulus presented at the time of the concept test must convey to the subjects the same meaning that they would extract from a marketplace exposure to the product at a later time of launch.” Product concepts should be presented as realistically as possible. When consumers are confronted with concepts containing only limited product information, they may face major difficulties in evaluating the specific product concepts (De Bont, 1992, 20). Triesscheijn (1982) states that sometimes consumers lack abilities to imagine how the new product will appear. The detection of specific poorly fulfilled needs can be the basis for a program of requirements for the new product (Roozenburg & Eekels, 1991) or for the new application. Crawford and Benedetto (2010) asserts as a major
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