

## Chapter 2

# Measuring Consumer Behavior Using Neuroscience Methods in Marketing

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### ABSTRACT

*Neuromarketing is providing the leverage for marketers to delve into consumers' subconscious minds to determine behavior. Marketers, economists, and other consumer-related disciplines are looking to science to accurately determine consumer behavior. The purpose of this chapter is to provide insight into a burgeoning field of study, neuromarketing, documenting various research studies and applications of mechanisms in determining brain activities and other uses of science to benefit marketing research. Data for the study is derived from impartial cross-referencing of conceptual and empirical articles published in major journals. The application of neuroimaging technique in research have provided marketers with concrete evidence of brain activation that signal increased activities during stimulation. Further, the implication and causes of concern in using neuroscience methods in marketing are highlighted. Developing country studies on neuromarketing are examined to determine its application and use as a marketing research tool.*

### INTRODUCTION

The medical environment and its numerous usage of imaging have found its way in marketing. Medical imaging basically provides a visual scan (still pictures) or video of any part of the body for analysis. It noninvasively reproduces image of the internal aspects of the human body. Moreover, this aspect of science research applied in neuroscience, behavioural economics, human psychology (to mentions a few)

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have brought to the fore methods that marketers can explore to arrive at reliable conclusions on human behaviour and reactions to products and services. Marketers have to deal with consumer behaviour especially the decision making process and activities of the human brain.

Neuromarketing is a discipline that applies a purely scientific process to measure and analyse consumer brain activity to determine decisions and choices made in buying products and services. It is a synthesis of neuroimaging techniques in neuroscience and marketing. The transdisciplinary nature of neuroscience provides a platform that allows marketers to better understand consumer decision making process and personal choices. Marketers are making use of this scientific process in monitoring and analysing consumers. Clinical information and observations about the functions and movements in the brain facilitates explanation of the human mind and thought process to explain consumer behaviour. It is all about reactions of neurons in our brain and other parts of our human body. Neurons are cells that form part of the human nervous system whose chief function is to send messages to and from the brain. Marketing stimuli is transferred through or along the neurons by means of electrical impulse.

The nervous system is made up of the brain, spinal cord and other peripheral nerves. These are nerve cells named neurons and other supporting cells called glial cells. The neurons are nerve cells that act in unison in transferring electrical and chemical stimuli in or to the brain. Neurons are complex cells that are the pathway for transmitting information in the nervous system. There are three main neurons – the sensory neurons, the motor neurons and interneurons. The sensory neurons are attached to receptors that detect and respond to various stimuli internally and externally. The receptors are very sensitive to stimuli and other internal and external changes. For instance, variations in sound, light, and other chemical and mechanical stimuli affect hearing, vision, touch, skin responses (pain), smell and taste. The motor neurons are the chief controllers of human muscles and therefore are responsible for movements and behaviour (even speech). The interneurons are cells that particularly populate the human brain (almost 80%). Interneurons are responsible for the highest functions of the brain and support optimal processing of information of any stimulus (Rawlins, 2005; Bear, Connors & Paradisco, 1996). This preamble provides a basic understanding of activities and functions of aspects of neuroscience that play a role in consumer research and methods applied in marketing studies.

Consumer behaviour is embodied in the “dynamic interaction of affect and cognition, behaviour and the environment” that influences human decisions and choice (Schiffman & Kanuk, 2007). These reactions and interactions are a function of the brain (neurons in the nervous system) responding to internal and external stimuli. Marketing researchers are now looking to clinical information and measurement of brain functions and its mechanisms to explain behaviour and decision making. Although the method involves imaging and scanning equipment that may hinder frequent usage, the rise of neuromarketing firms like Neurofocus, Brighthouse, EmSense, SalesBrain, Sands Research, Beckley Cali, Mindlab International and Neurosense (now Nielson) are contributing to its popularity as a more reliable and concise technique of data collection especially on consumer behaviour. There is a platform online - Neuromarketing Business Association - that encourages research, research firms and others interested in this discipline to network.

Research interest in neuromarketing has grown exponentially and the potential application of such scientific methods in measuring consumer behaviour is a positive and necessary endeavour. Neuromarketing as a field has the potential of showing consumer behaviour that can be tapped in advertising, target/profit branding, and consumer influencing communications. The purpose of this chapter is to provide insight and document various research studies and application of mechanisms in determining brain activities and other uses of science to benefit consumer research. Selected studies are analysed accord-

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