

## Chapter 13

# Neuromarketing Perspective of Consumer Choice

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### ABSTRACT

*Behavioural research attempts to study how individuals make decisions and interact and influence other individuals, organizations, markets and society. In this regard, applied neuroscience in human decision-making has gained an increasing attention in recent decades with emergence of two disciplines; namely neuroeconomics and neuromarketing. Indeed, neuroeconomics has emerged as a multidisciplinary research area that integrates knowledge from neuroscience, psychology, and economics to better understand economic decision making and to specify more accurate models of choice and decision. In particular, neuroeconomics is becoming an attractive area of study and research in financial decision making with particular emphasis on understanding investor sentiment and fear when faced to different investment opportunities characterized by various scenarios. In particular, it aims to understand and explain consumer decision process and influence of marketing key factors on consumer choice. As a result, companies may define appropriate marketing strategies based on neuromarketing studies.*

### INTRODUCTION

Behavioural research attempts to study how individuals make decisions and interact and influence other individuals, organizations, markets and society (Birnberg & Ganguly, 2012). In this regard, applied neuroscience in human decision-making has gained an increasing attention in recent decades with emergence of two disciplines; namely neuroeconomics and neuromarketing. Indeed, neuroeconomics has emerged as a multidisciplinary research area that integrates knowledge from neuroscience, psychology, and economics to better understand economic decision making and to specify more accurate models of choice and decision. In particular, neuroeconomics is becoming an attractive area of study and research in financial decision making with particular emphasis on understanding investor sentiment and fear when faced to different investment opportunities characterized by various scenarios. Indeed, a rich and abundant a literature has been devoted to such exciting field of study in behavioural financial economics.

DOI: 10.4018/978-1-5225-5478-3.ch013

Besides, neuromarketing combines neuroscience and marketing studies to understand marketing-relevant human behaviour by using particularly the advantages of physiological measurement modalities such as functional magnetic resonance imaging (fMRI), magneto-encephalography (MEG), and electroencephalography (EEG). In particular, these neuroimaging modalities are used in conjunction with relevant variables in marketing theories to study problems in consumer behaviour, and response to brands and advertisements (Stewart, 1984, 1985).

In particular, it aims to understand and explain consumer decision process and influence of marketing key factors on consumer choice. As a result, companies may define appropriate marketing strategies and techniques based on neuromarketing studies major findings. This interest continues to grow with more research works in the subject. For instance, Young (2002) used EEG signals to examine whether specific moments within advertising are primarily responsible for brand development and attention. Rossiter et al. (2001) used EEG signals to investigate memory and information processing in the context of visual scene recognition. Ioannides et al. (2000) and Ambler et al. (2000) used MEG signals to study the effectiveness of cognitive and affective advertisements on cortical centers. Lusk et al. (2015) used fMRI to examine consumer choice and associated brain activation.

With the increase of using marketing research in business strategy, some topics have attracted a large attention in neuromarketing; including consumer choice (Khan et al, 2011; Lusk, 2012; Lusk et al, (2015), advertising (Kenning et al, 2007; Plassmann et al, 2007; Mostafa, 2012), and branding (Ma, Wang, Shu, & Dai, 2008). The purpose of this chapter is to present recent works in neuromarketing with applications in consumer choice and related brain activated areas. The purpose is to shed light on brain activated areas as a response to specific marketing stimuli to better understand consumer choice from a physiological point of view.

The chapter will be organized as follows. In Section 1, we present a general view of consumer choice based on economic theory and its limits. In Section 2, we present recent works in neuromarketing which are related to consumer choice. This section will also shed light on the effect of advertising and branding on consumer choice from a physiological point of view. Then, future directions will be provided in Section 3. Finally, we conclude in Section 4.

## **CONSUMER DECISION-MAKING: A BACKGROUND**

Traditionally, marketing research is essentially about understanding, explaining, and predicting individual, group, and organisational behaviour relevant to markets (Lee et al, 2007). However, with the development of technologies used by neuroscientists to directly study cortical activity, psychological and physiological sciences have adopted such techniques to improve understanding of the brain and cognition (Lee et al, 2007). In this regard, marketing science is starting adopting neuroimaging techniques to understand consumer decision-making process and preferences. Indeed, the benefits of physiological measurement for marketing have been pointed out since 1980s (Petty & Cacioppo, 1983; Weinstein et al., 1984). For instance, physiological responses can be obtained when customers are directly participating in the consumer behaviour and choice studies. In such studies, the interest is always about understanding the consumer choice-making by using advanced neuroimaging-based research methods. For instance, Braeutigam et al. (2001, 2004) investigated the difference between predictable and unpredictable choices and found that different brain regions are activated according to choice predictability. In addition, unpredictable choices eliciting activity in brain regions were associated with silent vocalisation and judgement of rewards.

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