ANALYSIS OF CONSUMER BEHAVIOUR AS AN EFFECT OF NEUROMARKETING ACTION

ANALIZA COMPORTAMENTULUI CONSUMATORILOR CA EFECT AL ACȚIUNII DE NEUROMARKETING

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Sumar. *Lucrarea își propune să analizeze influența neuromarketingului asupra comportamentului consumatorilor, având următoarele obiective: investigarea mecanismelor neuropsihologice implicate în procesul de luare a deciziilor de cumpărare, evaluarea avantajelor teoretice ale neuromarketingului față de metodele tradiționale de cercetare și explorarea modului în care companiile digitale integrează aceste instrumente în strategiile lor. Metodologia aplicată este de natură exploratorie și teoretică, bazată pe analiza literaturii de specialitate, studii de caz secundare și sinteza celor mai recente contribuții științifice în domeniu. Principalele rezultate evidențiază faptul că neuromarketingul oferă o perspectivă complementară asupra comportamentului consumatorilor, concentrându-se pe reacțiile inconștiente și emoționale care sunt dificil de surprins prin sondaje tradiționale. Integrarea sa în economia digitală contribuie la creșterea eficacității campaniilor publicitare, la optimizarea designului produselor și la personalizarea experienței de cumpărare, în special în mediile online.*

Cuvinte-cheie: *neuromarketing; comportamentul consumatorilor; decizia de cumpărare; neuroștiințe aplicate; economia digitală; cercetare de piață.*

INTRODUCTION

Neuromarketing is a cutting-edge interdisciplinary approach that combines neuroscience with marketing to gain a deeper understanding of how consumers react (consciously and subconsciously) to marketing stimuli. The term was introduced in 2002 by Professor Ale Smidts in the context of neuroeconomics. The emergence of neuromarketing was motivated by the finding that consumers' purchasing decisions are largely influenced by subconscious and emotional processes that are difficult to capture using traditional market research methods [1, 187-188]. According to research by Gerald Zaltman at Harvard, approximately 95% of purchasing decisions take place in the subconscious. This fact is often illustrated by the iceberg metaphor: the consumer's conscious mind is

only the visible tip, while most of the decision-making factors are below the water, at the unconscious level [2, 73-74].

The importance of neuromarketing has grown with the development of the digital economy and intensified global competition. Transnational companies focused on the digital economy – such as Google, Amazon, Meta (Facebook) and Netflix – are investing heavily in neuromarketing and consumer psychology research to personalise the user experience and increase the effectiveness of marketing campaigns. Internationally, many top brands have quickly embraced neuromarketing techniques and reported notable successes [3, 165-177]. Companies such as Coca-Cola, Nestlé, Procter & Gamble and General Motors were among the pioneers, integrating neuroscientific methods into advertising and packaging testing, which allowed them to create campaigns with strong emotional resonance and consolidate their elite image in the market.

In the Republic of Moldova, the concept of neuromarketing is relatively new and, for the time being, insufficiently exploited in practice [4, 230-233; 5]. Although the term is known in academic and business circles, its effective application is very limited – the success of local brands is based mainly on imitating the practices of foreign brands, not on their own neuromarketing research [6, 145-152]. This indicates significant untapped potential: the development of the neuromarketing segment in Moldova could give local companies a competitive advantage and a better understanding of domestic consumers [7, 32-26; 8, 144-148].

In view of the above, this paper aims to analyse consumer behaviour under the influence of neuromarketing, highlighting the subconscious mechanisms of purchasing decisions and how companies integrate neuromarketing into their strategies.

RESEARCH METHODOLOGY

This paper was based on exploratory qualitative research, relying on a critical analysis of the literature and illustrative case studies. First, a documentary analysis of relevant academic sources was carried out – recent articles and scientific papers dealing with neuromarketing and consumer behaviour, including user-provided materials. Both international literature (to capture the evolution of the concept and notable examples from practice) and local works from the Republic of Moldova (to identify the stage of development and particularities of neuromarketing application on the domestic market) were taken into account. The methods used in processing the information included the comparative method, logical methods of analysis and synthesis, and indirect observation of consumer behaviour. We also included documentation of practical cases from companies (Google, Amazon, Meta, Netflix, etc.), based on market analysis articles and public reports, to illustrate how neuromarketing is integrated into corporate strategy.

RESULTS AND DISCUSSIONS

Traditionally, marketing theories and consumer decision models emphasised the rational and conscious components of choice: the consumer was seen as an agent who

lucidly evaluates options (prices, features, quality) and makes informed decisions. Classic market research methods – questionnaires, interviews, focus groups – were implicitly based on the premise that respondents know and can verbalise their purchasing motivations. In practice, however, these methods have proven to have major limitations: consumers are either unaware of their true motivations or express them in a distorted way (often giving 'socially acceptable' answers instead of authentic ones). Numerous studies in psychology and neuroscience have overturned the paradigm of purely rational decision-making – Kahneman and Tversky, through their theory of perspective and the concept of duality of cognitive systems, have shown that two systems operate in our brain: System 1 – fast, automatic, emotional, and System 2 – slow, deliberative, logical. Most consumer decisions (including in seemingly 'rational' areas such as financial products) are initially influenced by System 1, before System 2 consciously intervenes. This explains, for example, why a customer may reject an objectively advantageous banking offer – due to emotional biases such as fear or mistrust, triggered subconsciously by peripheral elements (colour, tone, faces in the advertisement). In addition, according to loss aversion theory, people feel losses more intensely than equivalent gains, which makes them cautious and irrational about risky offers. All these findings emphasise that without considering subconscious influences, marketing cannot fully explain or predict consumer behaviour.

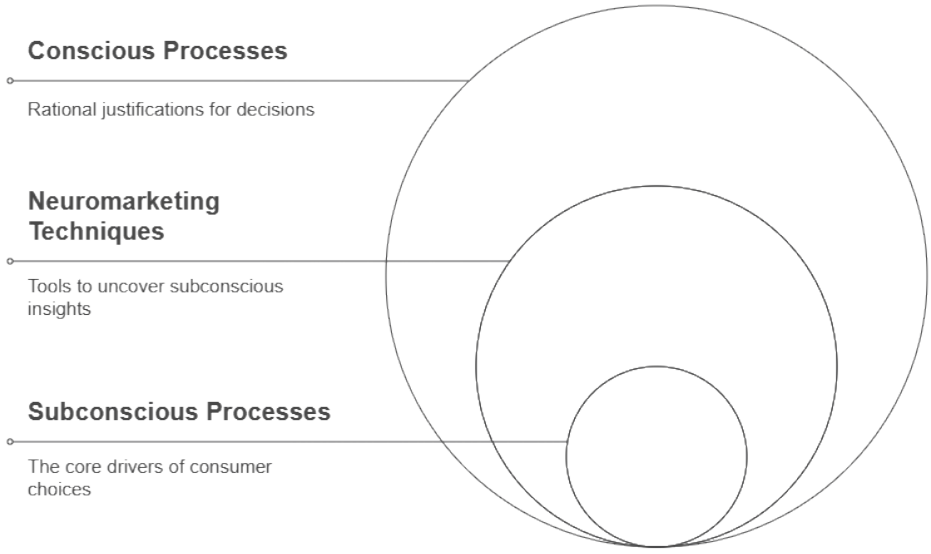


Figure 1. Neuromarketing and consumer decision-making

Source: Author's interpretation according to literature research

In this context, neuromarketing proves its relevance by providing tools to investigate the 'invisible part of the iceberg' – the emotions, impulses and subliminal asso-

ciations that guide decision-making. Figure 1 above illustrates this model: the visible (conscious) part of the mind represents approximately 5% of processes, while the submerged (subconscious) part represents the remaining 95%. Neuromarketing targets precisely these subconscious processes, attempting to bring them to light through objective measurements. An early proponent of the idea that marketing must take the subconscious into account is Gerald Zaltman, who stated that '95% of the thinking behind purchasing decisions takes place in the subconscious mind.' Therefore, if we want to truly understand why a consumer prefers brand X over Y, it is not enough to ask them directly (the rational System 2 can give us a justifiable answer, but not necessarily a truthful one). We need to observe the involuntary reactions of their brain and body to marketing stimuli – which is possible with neuromarketing techniques.

Neuromarketing can be defined as the practical application of neuroscience in the field of marketing, with the aim of investigating how and why consumers make decisions, how they feel about brands and what motivates them, beyond what they explicitly state. In other words, neuromarketing studies the biological basis of consumer behaviour, using theories and methods from neuroscience to measure brain and nervous system activity in real time in relation to various marketing stimuli (advertisements, packaging, prices, retail environments, etc.). This discipline is, by its nature, highly interdisciplinary: it brings together knowledge from cognitive and social psychology, neurophysiology, behavioural economics, marketing and even artificial intelligence. The ultimate goal is to obtain objective data about consumer reactions, rather than subjective declarative data, and to inform marketing strategies to make them more effective and better adapted to the way the human mind actually works.

The methods used in neuromarketing can be broadly divided into two complementary categories:

- Neurophysiological (neuroimaging) methods: these aim to measure brain activity itself, either by recording electrical neural activity or cerebral blood flow.
- Biometric and peripheral psychophysiology methods: these track the responses of the autonomic nervous system and the body to stimuli, which are correlated with internal emotional states.

Used together or separately, these tools allow researchers to obtain a complete picture of the consumer's reaction: what they see (through eye-tracking), what they feel (through GSR, heart rate, facial expressions) and what they think/remember (through EEG/fMRI) in relation to a marketing stimulus. An essential point highlighted by Plassmann and colleagues (2012) is that neuromarketing does not replace traditional market research, but complements it by providing data from the subconscious that would otherwise be missing [9]. Attention, emotion and memory are the three key pillars investigated by neuromarketing, as they largely determine the effectiveness of a promotional message. If an advertisement does not capture attention (e.g. the consumer's gaze quickly passes over it without fixation, according to eye-tracking), or if it does not generate positive emotion (e.g. a low level of EEG excitation waves or the absence of a facial smile)

and is not retained in memory (absence of waves associated with mnemonic encoding on EEG), the chances of that advertisement influencing behaviour are minimal [10]. On the contrary, an advertisement optimised through neuromarketing will use tested elements that we know trigger strong involuntary reactions – colours, sounds, images or words carefully chosen based on these studies.

It is also worth mentioning an alternative classification of neuromarketing types, from a sensory perspective, found in the literature: visual, auditory and kinesthetic neuromarketing. Visual neuromarketing focuses on everything related to stimulating the eye – visual design, colour, product appearance, shelf placement and advertising images. For example, the technique of pricing ending in .99 is an application of visual psychology: the consumer perceives the 'lowest price' when they see 4.99 instead of 5.00, because the eye and brain quickly process the first digit and associate it with a cheaper category. In Moldova, this tactic is widely used in supermarkets and shops, where cut-price signs and visual highlighting (bright yellow and red) emphasise the perception of a bargain. Auditory neuromarketing refers to the use of sounds and music to influence the consumer's subconscious. For example, the lively, loud music in fast-food restaurants (McDonald's, etc.) is no accident – the fast tempo encourages customers to eat quickly and vacate their tables, in line with the concept of speed specific to these establishments. On the other hand, in a youth fashion store, cool music creates the right atmosphere for young customers to associate the brand with a fun and modern lifestyle. Even audio messages in advertising can use insights from neuromarketing – for example, it has been shown that negative wording ('Don't miss out on this offer!') captures attention better than positive wording, as the brain is predisposed to prioritise information that signals a possible danger or loss (thus exploiting the negativity bias). Finally, kinesthetic neuromarketing relates to the senses of touch, smell and taste – basically everything that the consumer physically "feels". This includes, for example, the ambient smell in shops: some supermarkets (Kaufland, etc.) diffuse the smell of freshly baked bread on the premises, knowing that this triggers appetite and good mood, increasing sales of bakery products. Similarly, snack food packaging is deliberately made to rustle and crunch under the hand – the tactile sound of crispy bags anticipates the crunchy texture of the product and stimulates the appetite. Luxury brands also use kinesthetic elements: a subtle fragrance in stores, velvety packaging materials, the pleasant weight of a perfume bottle – all to create a premium sensory experience that reinforces the brand's positioning. These sensory tactics, although they do not involve direct neurological measurements, are based on knowledge of consumers' neuropsychological reactions (the smell of bread – activation of reward centres, the crunchy sound – reflex salivation, etc.) and can thus be considered an integral part of the practical application of neuromarketing.

Summarising the above, we can say that neuromarketing gives companies a better understanding More effective advertising campaigns – thanks to optimisation based on real brain responses, increasing emotional impact and memorability.

- Innovation in product development – consumer-centric design, neuroscientifically validated prior to launch (reducing failures and rejection rates).
- Improved user experience – whether in stores or online, the experience is adjusted to be intuitive and enjoyable, eliminating friction points identified through biometrics (e.g. long queues that increase stress, overly complicated online forms).
- Increased personalisation – combined with big data and AI, neuromarketing allows offers to be increasingly tailored to the individual (e.g. Netflix personalises not only movie recommendations, but also the image displayed for the same movie based on each user's detected preferences – using A/B tests that are essentially micro-studies of digital neuromarketing).
- Competitive advantage – companies that have access to these insights can act ahead of those that rely solely on traditional methods, gaining a market advantage through more relevant communication and products tailored to the customer's preferences.
- Increased loyalty and satisfaction – by creating a stronger emotional connection between the brand and the consumer. When advertisements and experiences strike the right emotional chords, consumers develop attachment and trust (the affective component of loyalty).

Deep understanding of consumers, translating into multiple practical benefits (Genco, 2013; Lee et al., 2007):

Of course, the implementation of neuromarketing also comes with challenges: the high costs of equipment and expertise (an fMRI session can cost thousands of euros) – which is one reason why its practical application is limited in small markets such as Moldova for the time being. However, the technological trend is towards democratisation – much cheaper portable EEG devices are appearing, as well as eye-tracking software using standard computer cameras, etc., which will make neuromarketing accessible to smaller companies.

CONCLUSIONS

Neuromarketing has emerged over the last decade as an innovative field at the intersection of science and business, bringing a new perspective on consumer behaviour. The present analysis has shown that purchasing decisions are not purely rational, but rather the result of a complex dynamic between the conscious and subconscious minds of consumers – with the latter playing an overwhelming role in triggering preferences and actions. Neuromarketing, with its arsenal of technologies (EEG, fMRI, eye-tracking, GSR, etc.), allows us to 'measure' the subconscious, revealing consumers' hidden emotions, attention and motivations. This knowledge has profound implications: companies can design more appealing products, formulate more persuasive marketing messages, and create memorable brand experiences aligned with the authentic expectations and reactions of their target audience. The examples discussed (from how Google optimises its

ads to how Netflix retains its subscribers) demonstrate that organisations that adopt neuromarketing gain significant advantages – from increases in conversion rates to strengthening customer loyalty.

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