

Assessing the applicability of neuromarketing tools in online social networks from a business perspective

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Abstract

Online migration characterizes both consumers and the business environment, which makes us see the integration of new technologies in this virtual environment as a natural development. User behavior requires additional efforts for technology adaptability, so integration does not seem to be forced, but the usefulness of such an immersion is felt by all companies, that want to have as much information about consumers as possible and monetize it in their strategy, by building up the most relevant products/services and communication campaigns. This is also the purpose of this article, which includes the results of a quantitative research among business representatives to assess their perception of the use of neuromarketing applications in online social networks. Although several apps were evaluated individually, the study indicates a high degree of utility for eye tracking and face coding, two methods through which companies can see the network users' direct and unaltered response to incoming messages.

Keywords: marketing research, consumer behavior, neuromarketing..

JEL classification: M31

1. Introduction

In the nowadays digital world, online migration characterizes both consumers and the business environment, which makes us see the integration of new technologies in this virtual environment as a natural development. User behavior requires additional efforts for technology adaptability, so integration does not seem to be forced, but the usefulness of such an immersion is felt by all companies, that want to have as much information about consumers as possible and monetize it in their strategy, by building up the most relevant products/services and communication campaigns.

Among the new technologies that emerge from the synergy of marketing, neuropsychology, digital and ITC, neuromarketing stands out due to its multidiscipline character and its unaltered results when it comes to consumer behavior. Having so many advantages, but also so many barriers that still affect the decision-making process, it's very important to analyze the market perception on using neuromarketing technologies in business activities.

The present paper presents the results of a quantitative research among business representatives, assessing their perception of the use of neuromarketing applications in online social networks.

2. Literature review on neuromarketing and its use in social networks

Being a relatively new concept in the scientific world, neuromarketing doesn't have a long-established literature, as the world's first use of this concept was in June 2002, in a press release by BrightHouse, an advertising firm from Atlanta, announcing the creation of a business division using functional magnetic resonance imaging for marketing research (Fisher, Chin & Klitzman, 2010). Despite the fact that is a new marketing area of expertise, the last 10 years are abundant in papers presenting the results of neuromarketing studies about behavior research, testing/evaluating promotional campaigns, evaluating website design or analyzing package design decisions (Berčík et al., 2015; Agarwal & Dutta, 2015; de Oliveira et al., 2015; Horst, 2016).

Lee, Broderick and Chamberlain (2007) define neuromarketing as “the application of neuroscientific methods to analyze and understand human behavior in relation to markets and marketing exchanges”.

Reimann et al. (2011) make a more detailed definition of neuromarketing, highlighting its use for better understanding the psychological phenomena and emotions in purchase decisions, as well as providing a more comprehensive assessment of the efficacy of marketing phenomena like advertising, consumer competitions, and product placement, by analyzing the underlying neurobiology (Javor et al., 2013).

The importance of neuromarketing can be seen also in practice, as some of its techniques are soaring on the adoption scale of marketing research methods. According to the 2018 Greenbook Industry Trends Report, based on a survey of 1260 market research suppliers and clients, eye tracking is used 38% of companies on the market, facial analysis by 24%, applied neuroscience by 20%, biometric response by 16% and wearables-based research by 9% (Marketing Charts, 2019).

The neuromarketing techniques are various and have different functionalities, depending on the devices and soft skills involved in the process. Bitbrain (2019) makes a classification based on the manner in which body response is registered, presenting two categories:

- techniques that register the activity of the central nervous system (CNS) – where we have Electroencephalogram (EEG), Functional Magnetic Resonance (fMRI), Magnetoencephalography (MEG), Positron-emission tomography (PET) and Steady State Topography (SST);
- techniques that register the activity of the peripheral nervous system (PNS) – here we include Electrocardiogram (ECG), Galvanic skin response (GSR), Eye-tracking, Electromyogram (EMG) and Facial Coding.

Out of all these techniques, some are more efficient in marketing researches and campaigns, as they allow an easier data collection process, such as eye tracking and face coding, which are using web cameras or the integrated cameras of laptops and smartphones, or voice recognition, which is based on access to the build-in microphones from our devices.

Using these neuromarketing techniques in social networks comes as a natural step towards accessibility and adaptability to each user's behavior. We can see this change in important business decisions, such as acquisitions or partnerships between big ITC companies and neuromarketing providers. For example, Google has acquired in 2016 the startup Eyefluence, offering users the possibility to use eye tracking glasses instead of their mouse (Techcrunch, a, 2016). Facebook followed shortly with the acquisition of Danish Eye Tribe (Forbes, 2016), a company that allows the integration of eye tracking technique in businesses'

apps. Apple also joined the neuromarketing game and acquired the German company SensoMotoric Instruments (SMI) (Techcrunch. b, 2016).

In order to test the level of acceptance and usefulness for neuromarketing techniques, we have designed and implemented a quantitative research among business representants. Besides identifying the perception on neuromarketing use in social media, we have evaluated the opinion for four of the most used neuromarketing techniques – eye tracking, face coding, voice recognition and EEG.

4. Research

4.1. Research methodology

The scope of the present research is to identify companies' perception of the use of neuromarketing applications in online social networks.

The main objectives were as follows: Determining mental associations with the term of social media; Identify online social networks where companies have business accounts; Establish the usefulness of social media for the company; Identify the degree of familiarity of the business environment with the concept of neuromarketing; Evaluate the perception on usefulness for each neuromarketing application in social media; Identify the purposes for which these techniques could be used in online social networks.

Information sources: the researched collectivity is represented by companies operating on the Romanian market (business environment). NGOs and government bodies are excluded, having a different organizational behavior.

The sample size was 150 companies, chosen based on form of capital, area of activity and organization size.

The research method used for this study was the survey, more precisely the online survey, through which respondents could be reached in a shorter time. For the construction and hosting of the questionnaire, the Lime Survey platform was used. Respondents were sent the link to the questionnaire location, and their responses were automatically stored in the database available on the platform.

4.2. Research results

4.2.1. Online social networks use

Before going into details about the use of neuromarketing in social networks, we wanted to better understand the context, thus we asked participants to mention which are the online social networks where they have business accounts. As it can be seen from Table 1, the most used platform is Facebook (87.93%), followed by LinkedIn (58.62%). Despite its growing level of use within the individuals, Instagram convinced only half of the business environment.

Table 1. Online social networks where companies have a business account (%)

Online social networking	%	Online social networking	%
Facebook	87.93	YouTube	46.55
LinkedIn	58.62	Twitter	25.86
Instagram	53.45	Google+	25.86

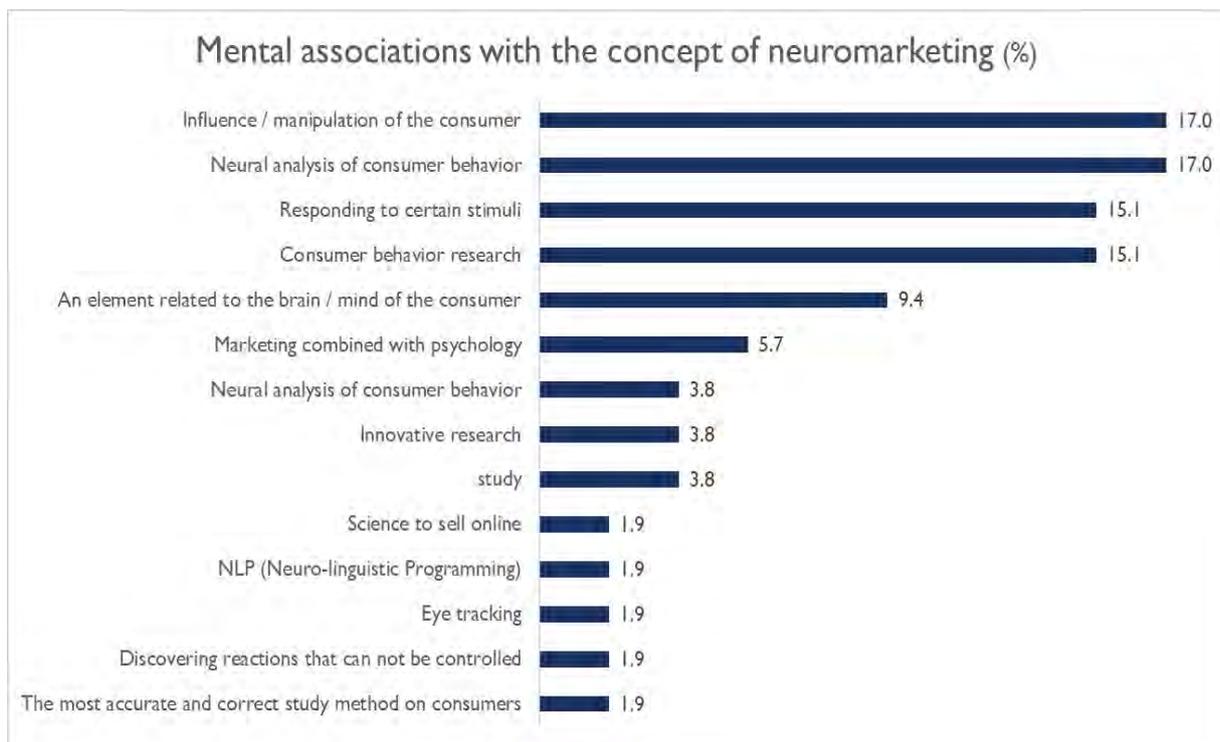
The decision of using online social platforms relies on the company's purposes and business objectives. As it can be observed in Table 2, Facebook is mainly used for products and services promotion, together with a general public information activity about the company. Instagram is seen also as a promotional tool, whereas Twitter is all about information. The main purposes for LinkedIn are staff recruitment and finding business partners.

Table 2. The purpose for which companies use social network (%)

Purpose	Facebook	Instagram	Twitter	Linkedin
Staff recruitment	11.7	1.3	6.5	23.2
Finding business partners	4.6	2.6	3.2	19.2
Promoting products and services	23.4	33.8	22.6	15.9
Communication with customers	16.8	16.9	16.1	9.8
General public information about the company	23.4	20.8	38.7	17.0
Collecting information about our market	8.6	7.8	9.7	10.7
Monitoring Competition Activity	11.2	14.3	3.2	6.3

4.2.2. Perception on neuromarketing

The next step of our research was to discuss about neuromarketing studies, in order to have a better grasp on the level of familiarity that the business environment has with regard to this concept. When asked if they have ever ordered/done neuromarketing studies, only 3.6% said yes. Understanding such a small percentage requires an in-depth analysis into what neuromarketing means for companies. As it can be seen from Figure 1, the main associations that companies are making with this concept are influence/manipulation of the consumer, neural analysis of consumer behavior, the evaluation of responses to certain stimuli and consumer behavior research in general.

*Figure 1. Mental associations with the concept of neuromarketing (%)*

4.2.3. Assessment of the utility of the eye tracking in social media

On a scale from 1 to 5, where 5 means ‘very useful’, the average score of perceived utility for eye tracking in social media was 4.02, with more that 70% of the respondents seeing it as ‘useful’ or ‘very useful’.

Companies would use this neuromarketing technique in order to find the area of interest, the area that attracts the attentions of users (30.6%), but also in order to test different

ideas of visual promotions (19.4%) and, thus, identifying the right choice of advertisement positioning (16.7%), as it can be seen in Figure 2.

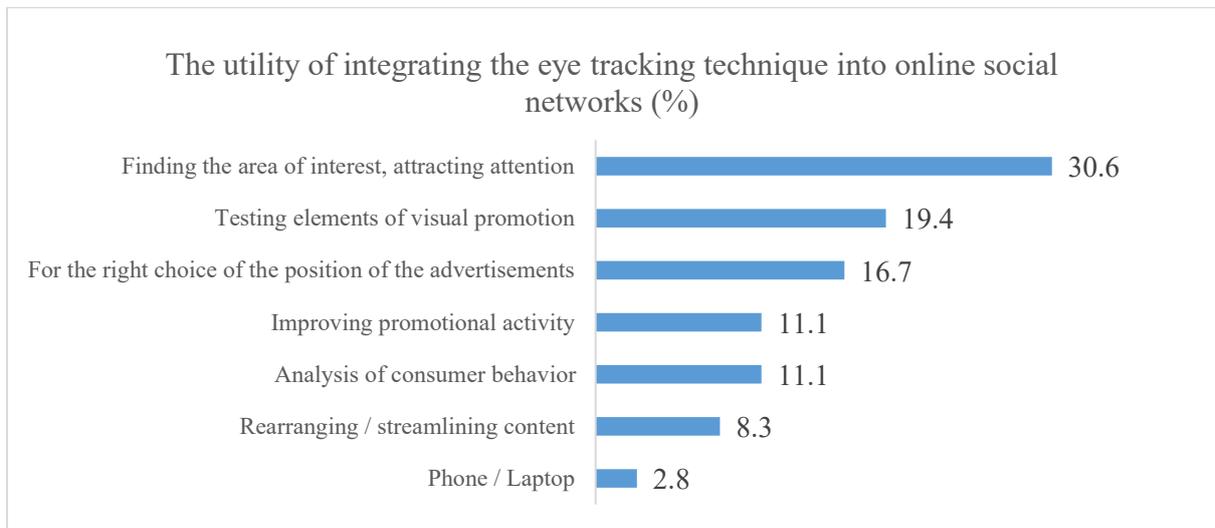


Figure 2. The utility of integrating the eye tracking technique into online social networks (%)

4.2.4. Assessment of the utility of the face coding in social media

Being also a well-known neuromarketing technique, face coding received, as well, a good score on level of acceptance, with more that 75% of respondents finding it ‘useful’ of ‘very useful’. In Figure 3 we can see the most mentioned purposes that a company may have for using face coding in social media – determination of reactions to posted content (25.7%), test campaign’s components (25.7%), which actually leads to improving the promotional activity (14.3%).

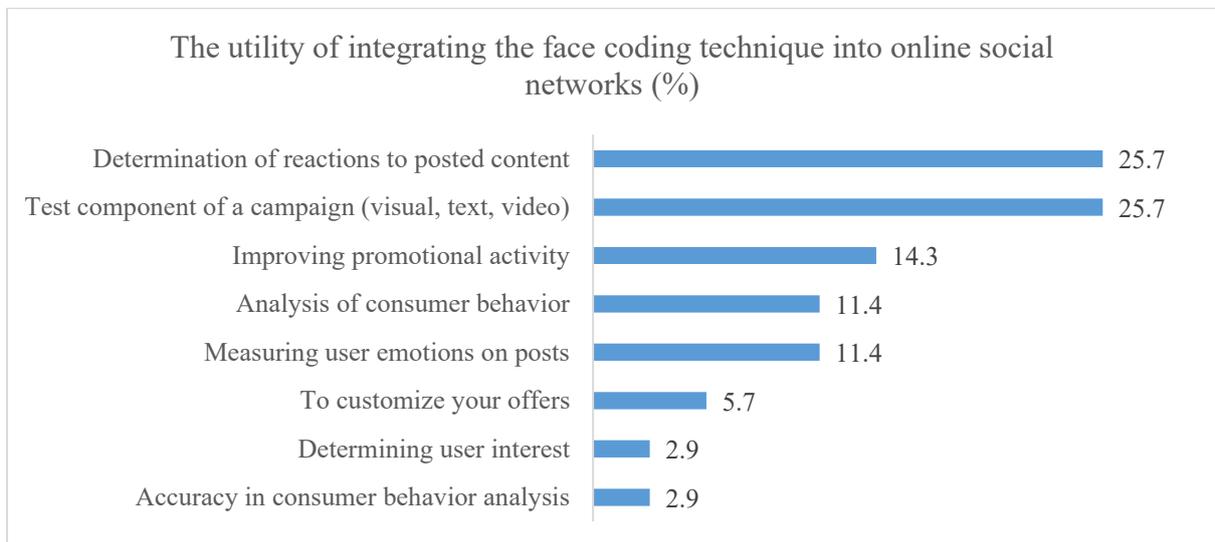


Figure 3. The utility of integrating the face coding technique into online social networks (%)

4.2.5. Assessment of the utility of the voice recognition in social media

When it comes to voice recognition, as it a lesser known neuromarketing technique, the average score dropped to 3.46, which on a scale from 1 to 5 shows us a relatively a mid-level score (most respondents positioning themselves in the middle of the scale – 32.7%).

The main reason for which a company may use this technique in social media refers to the need to find the area of interest, the area that attracts user's attention (30.6%).

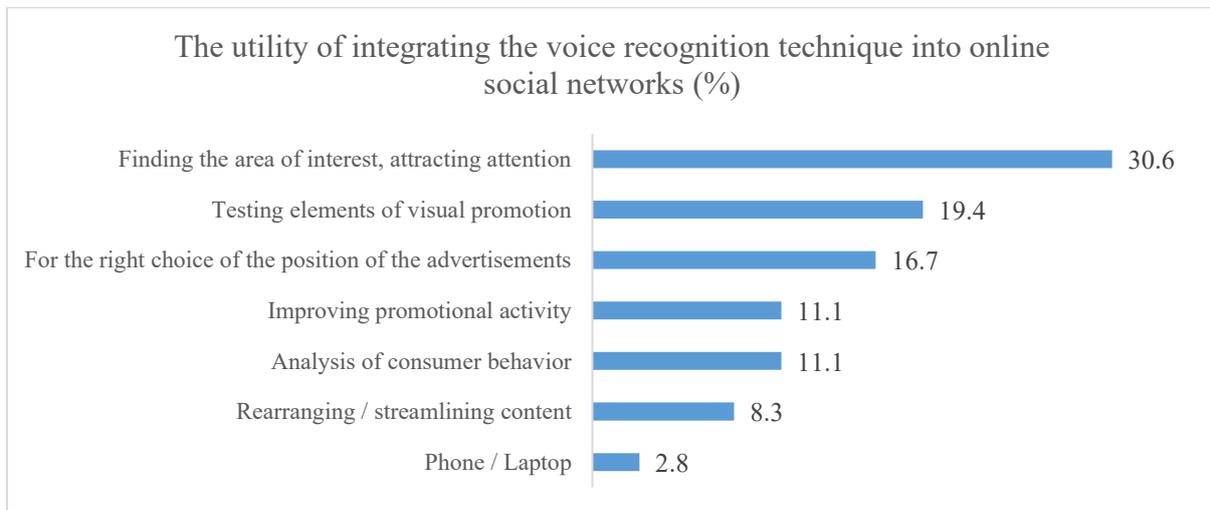


Figure 4. The utility of integrating the voice recognition technique into online social networks (%)

4.2.6. Assessment of the utility of the EEG in social media

Being the most complicated technique out of the four evaluated in the present study, EEG perceived utility is the lowest, with only half of respondents finding it 'useful' or 'very useful', the average score being 3.32.

However, we can see in Figure 5 that companies can identify very easily what are the main benefits of using EEG in social media – to determine the reactions to posted content (45.8%) and to test the user's reaction to different products (37.5%).

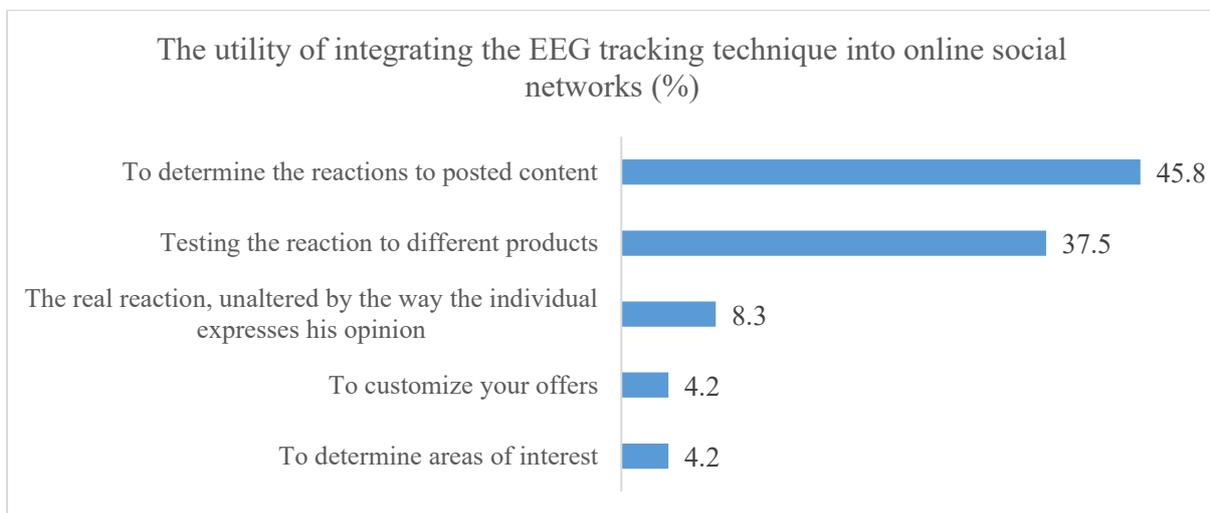


Figure 5. The utility of integrating the EEG tracking technique into online social networks (%)

5. Conclusions

As we just saw in the research results section, the most common online social network among companies is Facebook, followed by LinkedIn, Instagram and Youtube, the main goal being to promote products and services and to communicate with the costumers. This should represent the basis for changing the business approach, as this one-way communication process is no longer working. Consumers expect that their voice should be heard, thus the need for better communicational channel and instruments arises. Neuromarketing techniques give

companies the opportunity not only to collect various data about users, but also to adapt their communicational model to each person, by integrating neuromarketing into their process.

The present study showed us, however, that neuromarketing techniques are still perceived as invading consumer space, especially for those who are not familiar with this concept. Consumer acceptance is, in fact, the main barrier mentioned by companies, making them somehow reluctant to integrate neuromarketing techniques into social media.

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