

## STRATEGY OF ETHICAL APPROACH IN NEUROMARKETING IN TERMS OF MARKETING RESEARCH

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**Abstract:** *Traditional demand-based marketing research methods fail - because they depend on respondents' willingness to describe their feelings. Neuromarketing focuses on directly examining how respondents feel and what they think about a product or advertisement. This paper discusses the evolving and potential field of neuromarketing. Respondents, participants in the research are human beings and have the right to their privacy and protection of their own identity. The ambition of the contribution is to point out the possibilities of applying the strategy with regard to ethical principles in neuromarketing in the conditions of the Slovak republic.*

**Keywords:** *strategy, ethical approach, neuroscience, neuromarketing, market research*

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## 1 Neuromarketing and its place in marketing research

The use of neuromarketing activities has often provoked some discussion. On the one hand, critics of these techniques believe that their use may affect consumers' ability to choose not to consume products placed on the market. This would mean that individuals would be able to resist such efforts and would be given the easy goals of society's campaigns (Fortunato, Giraldi, Caldeira & Oliveira, 2014).

On the other hand, advocates of neuromarketing activities such as Lindstrom (2009a, 2009b) and Dooley (2010) discuss the benefits of its techniques. According to these authors, consumers would benefit from creating production and campaigns designed for them. Decisions would be facilitated rather than manipulated. Organizations would save much of their costs, which are used for inefficient and ineffective campaigns, thus ensuring greater competitiveness and improvements for customers. (Fortunato, Giraldi, & Caldeira Oliveira, 2014).

In the research itself, it is important to consider the subject of the research, namely the consumers - respondents. Those, as human beings, have their fundamental rights, principles and values, which must not be denied to them, and it is important to respect them. The purpose of this paper is to clarify neuromarketing in comparison with traditional marketing methods.

The main goal of the paper is to explain neuromarketing and identify its specifics with regard to the specifics of traditional marketing methods. We specified the main goal into two partial goals:

- to point out the importance of an ethical approach to neuromarketing,
- to propose a strategy for an ethical approach in neuromarketing.

Based on the analysis of resources, we have identified several concepts of neuromarketing. Neuromarketing has been described as a field of research (Murphy, Illes & Reiner, 2008), a field of applied neuroscience (neuroeconomics, neuropsychology, neurobusiness, consumer neuroscience), a field of study (Lee, Broderick & Chamberlain, 2007; Eser, Isin & Tolon, 2011), and part of marketing (Fisher, Chin & Klitzman, 2010), interconnection of systems of perception (Butler, 2008). For its purpose, some authors see neuromarketing primarily as a means of gaining scientific knowledge (Lee, Broderick & Chamberlain, 2007; Murphy, Illes & Reiner, 2008; Fisher, Chin & Klitzman, 2010; Butler, 2008), while others see neuromarketing rather as

a potential commercial marketing tool (Fugate; 2007). Neuromarketing has a very important place in marketing studies. As the subjects of the examination of neuromarketing are consumers themselves, their rights must be considered in their examination.

Eser, Isin and Tolon (2011) suggest that neuromarketing uses state-of-the-art brain scanning resources to understand the consumer buying process. Understanding consumer behavior is, in fact, the most common purpose found in the literature examined. (Fortunato, Giraldi, & Oliveira, 2014).

The second important input of neuromarketing reviews is to understand how customers choose during the purchasing action. Lee, Broderick and Chamberlain (2007) argue that neuromarketing has become an attractive technology for determining the probability and improbability of purchasing decisions. Neuromarketing has also been identified as a way to shape companies' marketing strategies (Eser, Isin & Tolon, 2011). Communication and advertising were described as the areas of marketing from which neuromarketing techniques benefited the most. (Fortunato, Giraldi, & Oliveira, 2014). It also helps in the selection of visual and audio functions, as well as in the timing and selection of appropriate media (Fugate, 2007). Neuromarketing also has the ability to identify consumer needs and thus develop more useful and enjoyable products (Eser, Isin & Tolon, 2011).

Finally, neuromarketing consists of a group of techniques that seek to identify areas of the brain activated by marketing stimuli and the cognitive processes that occur in these areas, as well as various related biological markers. Neuromarketing, therefore, has a great potential to identify the causes of purchasing disorders, such as compulsivity. Other possible applications of neuromarketing include the development of more effective social campaigns, such as promoting the use of seat belts in cars or smoking cessation (Orzán, Zara & Purcarea, 2012).

## **2 Methodology**

The aim of the paper is to define neuromarketing and explain it in confrontation with traditional marketing methods. The second important goal is to point out the importance of an ethical approach in the conditions of neuromarketing and to propose a strategy of an ethical approach to market research in neuromarketing.

The research took place in two stages. In the first, we looked for information in articles, blogs, and websites of neuromarketing companies. Non-academic journals and marketing blogs were selected using Google's blog search tool. Articles and blogs dealing with the concept of neuromarketing were selected. Here the first stage culminated by understanding the topic and identifying new areas of research for the next phase. A recurring point was the definition of neuromarketing as a new technique for market research.

In the second step, only peer-reviewed academic articles were analyzed. The EBSCOhost research platform was used to access the articles, which provided access to more than 320 databases. With regard to the subject of research, we defined keywords: neuromarketing, neuroscience, ethical approach, marketing. In total, we analyzed 21 academic articles.

To prepare the paper, we used the analysis of the systematically collected empirical material on the issue. We defined the basic concepts by the method of analysis, synthesis and abstraction. When evaluating neuromarketing methods, we used the method of comparison.

### **3 Traditional methods of marketing research in comparison with neuromarketing methods**

Neuromarketing is recommended as an important and revolutionary form of marketing research. Fisher, Chin and Klitzman (2010) evaluate neuromarketing as a type of qualitative research that yields graphical and quantifiable results. However, the importance of neuromarketing lies in its ability to evaluate emotional processes. (Fortunato, Giraldi & Oliveira, 2014). Thus, this technique provides access to richer and less interested marketing knowledge than other traditional research techniques, such as surveys and qualitative research (Murphy, Illes & Reiner, 2008).

The vast majority of peer-reviewed articles mentioned the advantages that neuromarketing has over traditional marketing techniques. In most articles, the most cited topic was the ability of neuromarketing to gain access and evaluate information beyond the level of human consciousness. (Fortunato, Giraldi & Oliveira, 2014). This ability favors neuromarketing over other research techniques because, according to some authors, the purchasing process is subconscious (Butler, 2008). The second most cited topic in this category was

the inability of individuals to self-assess. Lee, Broderick and Chamberlain (2007) state that it is very difficult for individuals to express their feelings and other subjective factors. In addition, individuals are usually unable to explain the origin and reason for a particular behavior, because emotions are relatively complex and often unaware of the reason. (Fortunato, Giraldi & Oliveira, 2014). In the next marketing challenge, the individual may not be aware that he will even experience a particular emotion (Murphy, Illes & Reiner, 2008). The inability to self-assess is not the only problem facing research; individuals are sometimes unwilling to collaborate on research. Individuals tend to convey incorrect information when the topic is very sensitive or when they feel the need for social acceptance (Fortunato, Giraldi & Oliveira, 2014). Thus, the answers obtained are not true; they are filtered according to the respondent's knowledge before they are reported. Neuromarketing is an opportunity to overcome these barriers because research participants have no control over the information gathered (Butler, 2008; Fugate, 2007). Another advantage of neuromarketing is the speed and timeliness of information gathering. With this feature, researchers can determine exactly which elements of a marketing strategy should be strengthened or muted. (Fortunato, Giraldi & Oliveira, 2014). In the face of these specific characteristics of neuromarketing, most texts consider this form of marketing research to be more valuable than target groups and in-depth interviews (Lee, Broderick & Chamberlain, 2007; Murphy, Illes & Reiner, 2008; Butler, 2008; Eser, Isin & Tolon, 2011; Fugate, 2007).

Neuroscientific methods are ahead of traditional marketing research methods for understanding and examining consumer behavior. This enhanced understanding allows managers to innovate and develop their products and processes across companies, increasing consumer satisfaction and leading to greater loyalty. Neuroscience can help in (Thomas et al., 2017):

- providing confirmatory evidence of the existence of the phenomenon,
- creating a more fundamental (i.e. neural level) conceptualization and understanding of basic processes,
- improving existing conceptualizations of various phenomena and
- providing methodologies for testing new and existing theories.

Traditional market research methods, such as target group methodologies and surveys, are full of systemic limitations and prejudices. They only measure what customers want to divulge and tell researchers. In the past, researchers

have often found significant differences in research methodology between the stated intention and the actual behavior of respondents. While the research method captures the respondent's stated intention towards the product or service, the actual behavior may differ from the respondent's intention towards the product or service. Today, cognitive neuroscience techniques offer a great opportunity to improve marketing research methods and possibly to redefine the field of marketing through a deeper understanding of consumer behavior. A number of techniques available to study cortical activity will help marketers better understand the motives for purchasing. (Thomas at al., 2017).

Despite all the excitement of neuromarketing that brings new and new information to our knowledge in recent decades, it should be used in parallel with traditional research methods. Individuals act not only according to their feelings, but also under the influence of the expected reward for making decisions in the short and long term. The combination of both research techniques will provide more valuable insights into consumer preferences and the purchasing process.

## **4 Discussion**

Neuromarketing has a very important place in the analyzed texts. The subject of research is always the consumer and his consumer behavior. Therefore, it is very important to pay special attention to him and create an approach that would not affect him in his actions.

### **4.1 Ethical approach in neuromarketing**

The study of brain mechanisms has yielded an interdisciplinary field of "neuroethics" (Roskies, 2002), which includes the ethics of neuroscience. It deals with moral, social and ethical issues related to the design and implementation of neuroscientific experiments, as well as their effects on existing ethical, social and legal structures. The second mention concerns the study of will, self-control, personal identity, and intention in terms of brain performance (Mileti, Guido & Prete, 2016).

The emergence of neuroethics is partly due to a growing sense of aversion and protest against technological devices such as functional magnetic resonance imaging or electroencephalogram, which neuromarketing uses. This area is often suspected of manipulative abuse, which results from reading consumers'

thoughts and guiding their shopping options (Mileti, Guido & Prete, 2016). Neuromarketing research has also been criticized for its impact on human dignity - speaking of the integrity of moral growth and the dignity of identity based on the set of rights of a part of the human being (Ulman, Cakar & Yildiz, 2015) - as well as its potential violation of bioethical principles and individual values. They are autonomy, self-determination, confidentiality, and respect for private life (Ulman, Cakar & Yildiz, 2015). Some responded to these claims by claiming that neuromarketing could not interpret consumer ideas or control individuals' purchasing opportunities (Mileti, Guido & Prete, 2016).

According to several authors, neuromarketing is the application of neuroimaging and physiological tools to record the neural correlates of consumer behavior (e.g. decision-making, emotions, attention and memory) against marketing incentives such as various brands and advertisements (Alsharif, Salleh & Baharun, 2021).

Traditional research methods have been widely used as feedback to study consumer responses (e.g. consumer decision-making) to marketing incentives such as advertising and branding. Such an assessment relies on awareness of consumer behavior and overlooks unconsciousness; thus, the discrepancy between what the consumer says and does, and here we come to the very turning point and identifying the difference between classical marketing methods and a new neuromarketing approach that can eliminate these differences or deviations. Traditional research methods provide inaccurate and unreliable information on consumer behavior (Alsharif et al., 2021; Alsharif, Salleh & Baharun, 2021), leading to the conclusion that most products and advertisements fail in the basic setting of the marketing mix and marketing strategy (Jordao, 2017; Vecchiato, 2015). Therefore, most consumer behavior (e.g., decision-making, perception) takes place unconsciously, which cannot be predicted by traditional research methods (Alsharif, Salleh & Baharun, 2021).

The technologies used are still inaccurate and cannot provide a detailed explanation of the actual mechanisms of the brain (Fugate, 2007). However, several authors have pointed to cases where neuromarketing researchers try to manipulate consumers' purchasing decisions by acting primarily on their emotions.

In neuromarketing research from the point of view of ethical approach, it is necessary to focus on three ethical areas:

- the degree of knowledge and understanding of the participants as to the objectives and possibilities of the experiments;
- transparency of research protocols, in particular as regards the implications of marketing strategies carried out by companies or other organizations;
- the creation of appropriate legislation to accompany the rapid development of this new discipline (Murphy, Illes & Reiner, 2008).

In the same way that neuromarketing techniques arouse excitement among companies, they also provoke controversy over ethical issues. Among the reviewed texts, the main ethical issue regarding neuromarketing is related to the violation of consumer privacy. Neuromarketing techniques may have the ability to read the minds of consumers. Thus, companies would be able to identify and easily trigger mechanisms that trigger consumer shopping behavior (Lee, Broderick & Chamberlain, 2007; Senior & Lee, 2008). Consumers would therefore become transparent to companies that could challenge their private ideas at any time (Fugate, 2007).

Another ethical issue in neuromarketing is the use of this technique for other purposes (Lee, Broderick & Chamberlain, 2007). When examining cognitive processes related to the consumption preferences of individuals, firms gain great power to influence purchasing decisions (Murphy, Illes & Reiner, 2008; Fisher, Chin & Klitzman, 2010). Many sources report a lack of ethics regarding the ability of neuromarketing to "create irresistible ads and products."

Neuromarketing has since moved significantly forward, and marketing agencies have begun to organize independent research, which is conducted within a very similar period of time at universities in all countries around the world, even in China (Molchanov & Yang, 2019). Private doctors already work in research agencies and universities, who can negate the previous objection. Neuromarketing would then pose a major threat to consumers' autonomy, as it would remove their defense mechanisms. The above issues concern ethical approaches in neuromarketing.

Institutions that apply neuromarketing and the way it is applied, as well as the audience being watched, are also grounds for criticism. Four of the analyzed texts indicated the existence of ethical dilemmas concerning the application of

neuromarketing by academics and physicians or the conduct of neuromarketing studies at universities. Dinu et al. (2010) show that universities are a place for many people to acquire new knowledge, in contrast to the potential of neuromarketing to influence consumers. It is therefore demonstrable that the positive impact of neuromarketing outweighs the possible unwanted negative effects that could endanger consumers. This is an important argument that may also play a role in the creation of new neuroscience, neuromarketing centers with different neuroimaging technologies. Such a space is certainly being created on the premises of the University of Economics in Bratislava. The connection between economics and neuroscience has a great potential for the university's research activities.

Other authors also claim that neuromarketing has aroused criticism because doctors and academics work in marketing research companies. According to Dinu et al. (2010) it is possible to hide possible damage to the health of participants or negative aspects of marketing research, and therefore the results could be biased. From our point of view, there is room for the discovery of possible health problems of respondents, because the examined objects are analyzed in detail and doctors can discover hidden potential health problems. Having addressed the issues of respondent's security and privacy, treatment of the identified problems can begin.

Protecting vulnerable populations is also part of neuromarketing concerns (Murphy, Illes & Reiner, 2008). Murphy, Illes and Reiner (2008) commented on the need to regulate the use of neuromarketing techniques in children and other vulnerable groups, such as people with neurological diseases or pathological disorders, people sensitive to advertisements, and legally protected groups. Finally, there have been concerns in some sources if neuromarketing is not causing consumption disorders. Lee, Broderick and Chamberlain (2007) report shopping addiction and over-consumption as problems associated with neuromarketing. In an effort to prevent ethical issues related to neuromarketing, several authors have proposed the adoption of a code of ethics in order to regulate and implement it.

Of course, the use of scientific technologies to promote commercial interest is not inherently problematic, but the use of technology that examines the inner workings of the human brain, especially beyond what might be revealed by traditional behavioral studies, raises significant ethical concerns. These issues fall into two main categories:

- protection of various parties that may be harmed or abused by neuromarketing,
- protecting consumer autonomy (Murphy, Iles & Reiner, 2008).

For some, neuromarketing raises worrying questions about the extent to which advertising agencies, marketing researchers, and their corporate clients should be able to intrude on consumer privacy, and the perceived power will allow them to manipulate consumer purchasing decisions.

Introducing neuroimaging methods into an environment where the ultimate goal is to sell more products to the consumer can raise ethical issues. In the next section, we provide an overview of ethical issues that may arise:

- Businesses will be able to read consumers' thoughts. This issue concerns the privacy of thoughts. Is it possible to use neuromarketing to find out the preferences of a person outside of a specific task? This concern can be alleviated by transparency of purpose: operators need to know what kind of efforts they are helping, and their data should only be used for that purpose (Ariely & Berns, 2010).
- Private versus public preference information. Individuals must be able to control what they choose to disclose about their personal preferences. An invasion of privacy occurs when neuroimaging methods reveal private preferences that are outside the research question of neuromarketing research (Ariely & Berns, 2010).
- The information will be used to discriminate against individuals or to misuse specific neurological traits found in a subset of individuals. Many people would find this tactic disgusting because it exploits a biological "weakness" that only exists in some people. Similarly, this information could be used to time upward price movements in product pricing in order to exploit individual weaknesses that are known to coincide with specific biological conditions (for example, rising beverage prices when someone is known to be thirsty) (Ariely & Berns, 2010).
- Medium versus peripheral path of influence. The aim of the central route is to influence consumer preferences regarding the functional aspects of the product (for example, fewer calories in beer). The peripheral path tries to manipulate preferences through motifs that are

peripherally related to the product (such as the sex of people in ads). Neuromarketing could potentially be used to increase both types of impact, but some find attempts to optimize the peripheral route more ethically questionable. (Ariely & Berns, 2010).

- Brain responses obtained from a small group of subjects will be used to generalize to a large population. This, of course, is constantly happening in the scientific literature. If neuromarketing data is used in a product design and the product injures someone, this is partly due to the setting up of neuromarketing research and poor evaluation of results. Particular attention should be paid to this, but it is not just about neuroscience research.
- Lack of regulation of traditional marketing methods, as they are not usually considered experimentation, nor are they subject to the supervision of various state institutions. For example, MRI scanning is approved in the United States by the US Food and Drug Administration (FDA) for clinical use, but because no diagnosis is made in the marketing environment, there is a potential to circumvent FDA requirements. The emerging neuromarketing industry should make a good decision to adopt an industry standard of independent review. Clients should request it.
- Perception management. How will the public react when they find that neuromarketing research has been used in product design or product marketing? The public's response to genetically modified foods could provide an opinion, because we still live today at a time when the Sars-COV-2 virus vaccine was developed and people have adopted it. Acceptance of this form of human examination is also a prerequisite. (Ariely & Berns, 2010).
- Companies do not have to be primarily concerned with the best interests of the consumer. Companies and consumers maintain complex relationships in which some of their goals are compatible while others are in conflict. On the one hand, companies strive to design, manufacture and sell products that customers seek to buy, leading to the achievement of compatible goals for the benefit of both parties. On the other hand, companies also focus on maximizing their short-term or long-term profits, sometimes to the detriment of

their consumers. Like marketing itself, an understanding of consumer preferences can be applied to goals that are in the best interests of society and their consumers, or to goals that are in the interests of society and to the detriment of their consumers. What approach neuromarketers choose is an open question. (Ariely & Berns, 2010).

#### **4.2 Ethical approach in neuromarketing research**

In order to guarantee a balance between potential discoveries and moral beliefs, it is necessary to establish a neuroethical approach, which would include the use of micro- and non-invasive devices. Future marketing research should evaluate and adopt an ethical framework for neuromarketing as well as nanomarketing. As is often discussed in the marketing literature, the ability to obtain information about consumers without their knowledge has ethical implications (Murphy, Illes & Reiner, 2008). These problems are likely to be exacerbated by the introduction of miniaturized devices and nanotechnologies in neuromarketing practices. (Mileti, Guido & Prete, 2016). Wearable, unobtrusive and imperceptible devices could allow deeper control over the daily behavior of consumers, whether at home or at the point of purchase, with the prospect of forcing people to consume unwanted products (Ariely & Berns, 2010).

Consumers have three main areas of interest when using their own data by companies, which we have described above:

- transparency,
- security,
- responsibility.

At the same time, consumers need a certain depth of understanding of the collection process and a certain perceived control over the handling of their data in order to effectively address privacy concerns. Therefore, there is a growing argument that the new scientific frontier of nanomarketing - the link between neuromarketing and nanotechnology - must defend human dignity and integrity, protect consumers' privacy and autonomy, and protect vulnerable groups. (Mileti, Guido & Prete, 2016).

Conati (2004) noted that children do not perceive sensors that measure skin conductivity as disruptive. In fact, the rise of small and nanomethodologies in neuromarketing theory has sparked a long-running debate about whether

marketing is a tool for manipulation or a way to improve consumers' lifestyles. In order to allay concerns, neuromarketing can pursue projects that benefit consumers. For example, the continuous real-time monitoring offered by portable nanodevices could provide a better understanding and treatment of some compulsive behaviors, such as shopping addiction. (Mileti, Guido & Prete, 2016). In addition, by understanding how emotions affect point-of-purchase behavior, consumers can improve their shopping habits and manage their own emotional states. Second, the Code of Conduct should outline the protection of vulnerable entities, especially children, the mentally ill, and prisoners (Murphy, Illes & Reiner, 2008). In order for these groups to be treated ethically, neuromarketing experiments must respect the universal ethical rules set out in the Declaration of Helsinki (Helsinki Declaration of the WMA), which would provide any need for well-being or any benefit from the knowledge that may result from them.

Third, ethical recommendations should include the dissemination of:

- data,
- experiments
- risks
- the benefits of experiments.

Fourth, the results of such experiments should be accurately described in publications and mass media. In order to preserve the security, confidentiality and privacy of participants, each person should be able to remain anonymous and be guaranteed that data and findings will be disclosed for scientific purposes only. At this point, research results should not be shared or sold to another group or organization. But in the case of disease diagnosis, we strongly recommend consulting a doctor who is engaged in project research, a consultation on the method of treatment (Mileti, Guido & Prete, 2016).

Our proposal for a strategy for an ethical approach in neuromarketing is to seek knowledge with respect to the truth. We divide the strategy of ethical approach to neuromarketing research into 4 basic phases:

- acquaintance with the legislation in the examined area,
- informing respondents about the objectives and risks of the research,
- acceptance of informed consents,
- protection of data and privacy of respondents.

At the beginning of the whole process, it is important that the research respondents are acquainted with the whole research process and the possible risks, if any will have to be taken during the research. The basis of the information provided is informed consent. Before entering the research, each research participant should be clearly and intelligibly informed of:

- the objectives of the specific research,
- potential risks,
- the possibility for the participant to withdraw from it freely at any time without any consequences, possibly not to participate in it at all.

Ethics is often felt by researchers as unnecessary administration, limiting or even hindering research. The fact is that adherence to ethical research requirements places a line between what is ethically acceptable and what is not. In no case does ethics have the ambition to regulate research, nor does it restrict academic freedom, as guaranteed by the European Charter of Fundamental Rights in Art. 13. If the project addresses ethically sensitive issues, a detailed justification of the need and adequacy of the use of, for example, personal data or human subjects is necessary.

An important part of the strategy of this ethical approach to research is the absence of an external influence, allowing the subject to decide independently to participate in the survey. The rules that should guide the ethical approach to neuromarketing are:

- Nuremberg Code,
- Declaration of Helsinki,
- Convention on Human Rights and Biomedicine,
- UNESCO declaration.

In 1991, the Institute of Medical Ethics and Bioethics was founded in Slovakia, which since 1994 publishes the professional journal *Medical Ethics and Bioethics*. In 2004, the Center for Bioethics, Information and Documents with its registered office in Bratislava and operations for Central European countries began. The Slovak Republic is not only faced with the challenge of solving these problems within its own country, but must also take part in solving them on a global scale within the international organizations of which it is a member. UNESCO was the first to respond to the global dimension of ethical dilemmas in science. In addition to UNESCO, the European Union and the Council of Europe place equal emphasis on the ethical aspects of

scientific research. This has also been clearly seen in the context of the Lisbon Strategy and the knowledge economy and in the preparation of the European 7th Framework Program for Education and Science 2007 – 2013.

In the process of setting up a strategy for an ethical approach to research, it is important to focus on the first phase - providing information about research. This phase can be described as a critical part of the whole strategic process. We must provide research participants - respondents with information in a comprehensible form, either in writing or orally, optimally both. It is very important that we formulate appropriate and easy-to-understand expressions and use information technology in an ideal state. A suitable form is the creation of an online questionnaire, which will provide us with fast and adequate feedback, available in real time and at any location.

Informed consent should be obtained if the research involves human subjects, human genetic material, human biological samples, or if it includes data on human subjects. Informed consent can be given to us by a person able to understand the research, its objectives and risks and to be able to make free decisions. Complications may arise with the provision of informed consent by persons in the case of:

- people serving prison sentences - prisoners,
- adolescents - small children,
- mentally retarded people,
- seriously injured people.

We can give informed consent individually with regard to local cultural customs in various forms - orally, in writing. It is important to maintain the autonomy of the respondents. In the case of community surveys, the presence of a community representative or lawyer representing a group of respondents is recommended.

The last phase in the strategy of ethical approach in neuromarketing research is the protection of data and privacy of respondents. This phase has high priority and its importance is evident in principle from the preparation of the research proposal to its implementation. The responsibility for data protection lies with the organization where the neuromarketing research itself is carried out. The project proposal needs to describe in detail how to ensure data protection, privacy and confidentiality of personal data in their collection, archiving and processing so as not to have them misused, which could result in stigmatization, discrimination.

In particular, the Helsinki Declaration addressed the interests of research participants and can be applied appropriately in neuromarketing research. It contained elements such as (Strand & Keizer, 2015):

- Medical research protects the life, health, privacy and dignity of human research participants / subjects over the interests of society.
- Necessary measures must be taken to protect the interests of human subjects from harm.
- The importance of the objectives must outweigh the inherent risks and burdens on participants - no abuse, no harm to human health.
- Research must be clearly formulated and submitted for approval with a clear statement of ethical considerations.
- Entities must volunteer and be informed of the implications of the research.
- Scientists, research participants and all other parties have ethical obligations that must be clearly defined. This should ensure the accuracy of the results published, all necessary information, sources of funding and any possible conflicts of interest, which must be clearly stated.
- Compensation for harm resulting from participation and justice for all (Bulley, Braimah & Blankson, 2018).

Neuromarketing can, in certain cases, create a negative consumer attitude towards a company that uses such practices if the consumer is convinced that they are unethical. Given the discussions about the ethics of neuromarketing, it is quite understandable that the brands actively using neuromarketing, especially in the US, prefer not to talk about it out of caution. On the other hand, it is clear that marketing researchers are rather secretive due to concerns about the disclosure of sensitive information (Miláček, 2016). The question is whether or not the results obtained through neuromarketing research can be misused to induce excessive or irresponsible consumption.

Currently, the Neuromarketing Scientific and Business Association - NMSBA sets out 12 pillars of ethical principles that must be followed. These guidelines have been in force since 2012 and are still very current today. They are based on the Helsinki Code and are extended by certain regulations and conditions, so their inclusion in neuromarketing research is paramount. On the NMSBA website we can learn about the following pillars:

- Article 1 (Basic principles):
  - Researchers must adhere to the highest research standards and use validated scientific research and procedures.
  - Researchers will not act in a way that could adversely affect the reputation and integrity of the research profession for neuromarketing.
  - The results of the research will be delivered to a third party without exaggeration or distortion.
- Article 2 (Integrity):
  - Preventive measures during research.
  - During or after the research, researchers will not deceive researchers and exploit their ignorance in the professional field.
  - No tender will be provided to participants.
  - Researchers must be honest.
- Article 3 (Credibility):
  - Public critics and opponents should contact the NMSBA before publishing anything.
  - Researchers must publish a protocol for dealing with accidental findings during the research.
- Article 4 (Transparency):
  - Participation in the research must be voluntary.
  - Researchers must maintain a public website with all needed information, contact and services.
  - Researchers will allow (clients) to audit the research process.
  - Researchers will ensure the transparency of documents, projects and all details to ensure relevance for all parties.
- Article 5 (Consent):
  - Researchers are obliged to explain and describe the technologies, procedures and tools used to the candidate before the research.
  - Participants express understanding and agreement with all information provided.
  - Participants will be fully informed of all matters.
  - Participants can withdraw even after the research has started.
- Article 6 (Privacy):
  - Neuromarketing researchers will ensure that participants are informed about the purpose of the knowledge gathering.
  - Privacy policy must be publicly available.
  - The identity of the participants will not be disclosed to the

client without their express consent.

- The results and information collected will not be used for any purpose other than those predetermined.
- Personal data may not be kept longer than necessary for the purposes of the neuromarketing project.
- Researchers will ensure access to and safety of the collected results.
- Research data, including brain scans and brain information, will remain the property of the research company and will no longer be shared.
- Article 7 (Rights of the participant):
  - Participants in any neuromarketing research project will confirm that they are not obliged to participate in the project.
  - Participants have the opportunity to unsubscribe at any time.
  - Research participants must be sure that their personal data will not be disclosed to anyone.
  - Participants are guaranteed that their personal information will be deleted or modified on request.
  - Particular attention is paid to preserving the rights of participants when transferring personal data from the country in which they are collected to another country. If the data is processed in another country, the data protection principles set out in this Code must be observed.
- Article 8 (Children and adolescents):
  - Neuromarketing research involving participants under the age of 18 may only participate with parental consent.
- Article 9 (External actors):
  - Researchers are required to report the intervention or contribution of any person or external company involved in the research.
- Article 10 (Publication):
  - When sharing project data publicly, researchers must clearly articulate which part of the report represents the interpretation of the data and which part of the data represents the key findings. Neuromarketing researchers may not associate their names with a neuromarketing research project unless they have been actively involved in the project and are able to defend the findings.
- Article 11 (Commitment):

- Researchers undertake to apply this Code and to ensure that their own clients and other parties comply with its requirements. Failure to do so will result in termination of their membership in the NMSBA.
- Article 12 (Implementation):
  - Researchers and their clients will recognize that they are familiar with this Code and will also respect other self-regulatory guidelines that are relevant to a particular region or project. The Code is valid for everyone involved in the research project.
  - NMSBA members will publish a link to the NMSBA Code, on their website.

Based on this framework, we can acknowledge all the conditions that we need to incorporate into our neuromarketing research strategy in the future. From our point of view, it seems most important to focus on the fact that participation in research must be voluntary for respondents, researchers must maintain a public website with all the necessary information, contact and services so that respondents and all participants, but also the public can find all necessary information. Because, as we observed in surveys already conducted - the lack of information increases respondents' distrust of the neuromarketing surveys themselves.

Furthermore, researchers will ensure the transparency of documents, projects and all details to ensure relevance for all parties. It is essential that researchers in the field of neuromarketing ensure that respondents are informed about the purpose of gathering knowledge. Last but not least, the consent of respondents to the research is important in our strategy. Here, the policy, rules and conditions must be clear and publicly available. The identities of participants will not be disclosed to the client without the express consent and the results and information collected will not be used for any purposes other than those set out in advance.

Based on the analysis of professional publications, we can confirm the conclusion that the strategy of neuromarketing research in the conditions of the Slovak Republic must be based on 4 basic conditions of the ethical environment, namely:

- Research institutions and organizations promote awareness and ensure that a culture of research integrity prevails in research.

- Research institutions and organizations have a crucial role to play in formulating clear rules and procedures for good research practice, as well as in properly and transparently investigating infringements.
- Research institutions and organizations shall support an adequate infrastructure for the management and protection of data and research material in all its forms (including qualitative and quantitative data, protocols, processes, other research artifacts and related metadata) necessary for reproducibility, traceability and responsibility.
- Research institutions and organizations reward open and reproducible procedures for hiring and promoting researchers.

On the other hand, an ethical environment is not the only thing that responsible researchers have to adhere to in terms of research ethics. In developing an ideal strategy, they must also consider the following conditions or procedures under which the research will be conducted:

- Researchers build on the latest knowledge in the field in their research.
- Researchers design, conduct, analyze and document research carefully and judiciously.
- Researchers use research funding properly and conscientiously.
- Researchers publish research results and interpretations openly, honestly, transparently and accurately. In justified cases, they shall preserve the confidentiality of the data or findings.
- Researchers report research results in accordance with their industry standards and in such a way that they can be (where possible) verified and reproduced.
- Executives should adopt a specific code of ethics for the specified workplace, which would be generally applicable and easily accessible to the public.

## 5 Conclusion

The advantages of neuromarketing over traditional marketing research methods include the independence of neuromarketing from the consumer's ability or desire to report emotions. Our scientific analysis has shown that respondents' rights need to be respected and their privacy protected. This paper also identified the basic benefits of an emerging potential area - neuromarketing. Another valuable element of neuromarketing research is the simultaneity of

information records with the identification of emotions processed in a fraction of a second, which will allow the demonstration of the triggering factor of this particular emotion. Another advantage is the diagnosis of respondents by doctors in case of health complications during the research (Fortunato, Giraldi & Oliveira, 2014).

From a consumer perspective, we have identified three basic pillars for building trust between researchers and respondents: transparency, security and accountability.

The main ethical issues surrounding neuromarketing include the violation of privacy and consumer autonomy. Another ethical issue is the presence of doctors and academics conducting research for commercial purposes. (Fortunato, Giraldi & Oliveira, 2014). Another problem is the concern about the exploitation of vulnerable groups, such as juveniles, the mentally disabled or the injured.

In this paper, we have identified four basic phases of an ethical approach strategy in neuromarketing research, starting with familiarity with the legislation in the research area, followed by finding and informing respondents about the objectives and risks of the research. This is followed by the phase of receiving informed consents from respondents, to whom they express consent to the research process and management and are aware of the objectives and risks of the research. The last phase of the ethical approach strategy in neuromarketing research is the protection of data and privacy of respondents, which takes place continuously from the beginning of the entire research process.

Furthermore, it is necessary to evaluate the burden-benefit ratio for participants, describe the possible potential consequences of research for human dignity, society, environment, culture, simply demonstrate the ability of the researcher to sensitively address the ethical dimensions of the research project.

To sum it all up, in a neuromarketing research strategy it is important that researchers adhere to the codes and regulations of their field, treat research objects, whether human or cultural, biological, environmental or physical, with respect, care and in accordance with the legal regulations of the Slovak Republic and ethical regulations. Researchers must take due account of the health, safety and well-being of society, collaborators and others involved in the research. The protocols sensitively perceive the importance of differences based on age, gender, culture, religion, ethnicity and social class. Trained staff

is aware of and monitors the potential damage and risks that may result from their research.

From the point of view of data collection and analysis, research institutions and organizations must ensure that all data and research material, including unpublished data, is collected, processed and organized, as well as their safe storage for a reasonable period of time, sometimes several years. We must also ensure that access to data is as open as possible within the necessary limits. As mentioned above, we must provide transparent access to and use of our data and research material. In this case, we consider the data to be legitimate research results that can be cited and used as a source of information in creating academic content.

In terms of building trust in neuromarketing research in the conditions of the Slovak Republic, it will be crucial to bring transparent information about research. It is also important to build education and training of people in this area in order to try to gain the trust and openness of respondents. We assume that certain financial reward will be a strong motivating factor - this may be the subject of research in the future.

In the future, we recommend to develop individual phases of the strategy of ethical approach in neuromarketing and to supplement them with specific steps of the whole research process, so that the pillars of trust between respondents and researchers are preserved.

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