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Impact of sensory branding on the decision-making process of tourism product purchase

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Abstract

In the aim to reveal the impact of sensory branding on the future tourists, was organized a neuro-marketing research using electroencephalographic scanning of the participants. In total, 105 examinees were subjected to EEG surveillance. All EEG participants in the experiment's work signed a unique consent form for participation in the research. They were then obliged to declare their mental and physical health, that they were not influenced by psychological medicines that could affect reasoning and emotionality as well as the prevalence of the right hand. Dominant left-handed individuals had to be excluded from the experiment for possible contra-lateralization of brain hemispheres. Respondents participated voluntarily, without material compensation. The experiment was designed and implemented so that EEG surveillance was done on two occasions. During the first scan, the visual promotional material was broadcast to the respondents and using the electroencephalograph directly followed the changes in the bioelectrical potentials of the cortex of the subjects, or their brain reaction of liking /disagreeing with certain content emitted on the computer screen.
After that, the recording is repeated, but with sensory branding, that is with a specific audio accompaniment of visual content and occasionally broadcasting a scented supplement. The computer for broadcasting visual and audio stimulus is synchronized with the EEG monitoring computer, so each change of stimulus is automatically recorded in an electroencephalographic record. This allows the researcher to have precise information on all the changes and brain responses to each given stimulus during the EEG analysis.
A comparison of statistically structured results gives an answer to the question of the extent to which this form of promotion influences the behavior and decision-making of the investigated sample of consumers.

Keywords: tourism promotion, marketing, advertising, EEG, neuro-marketing, scanning

1. Introduction

In 1904 Walter Scott, in his The Psychology of Advertising, unequivocally anticipates the development path and the importance of the application of psychology in promotion: "Advertising is the basic factor of modern business methods, and the wiser, business people can do better understand the way consumers think, they must know how to influence them more effectively - they must know how to apply psychology in advertising " (Scott, 1904: 33-34).
By appreciating today the business conditions of the era when Scott deals with advertising problems, we can say that his approach has proved decades ahead of his time, almost as a prophetic vision of the upcoming turbulent market changes. The struggle for the survival of modern companies in the saturated market has caused drastic changes in an effort to attract consumers. With promotions we are surrounded at every step, so Hood finds out the extraordinary amount of promotional information that US citizens are exposed to during the 17 hours of daily activities: "During a typical day, the average American sees over 5000 commercials" (Hood, 2005: 119-120). A simple account comes up with information about 294 propaganda messages per time, or almost five propaganda messages every minute! What comes from such a large number of information at all, how much can attract the attention of the individual and influence behavior and decision-making?
The conscious sphere of the brain is protected from the infiltration of information by filtering, an impermeable barrier to unimportant data in which the most commonly classified the propaganda messages. The psychic life of a man is

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organized so that most brain processes are automatic, at the subconscious level (Jahn & Dunne, 2004: 547-750). This is the place where marketers will be increasingly accustomed, so in the design and realization of promotional activities they combine the knowledge of other sciences, including psychology.

Feedback on the quality and effectiveness of promotional campaigns is extremely important to companies. The number of sold arrangements, that is, the number of tourist visits, is a direct indicator of the success of a tourism company, but it cannot be ascertained to what extent this is the result of the promotion undertaken, or some other factors prevailed on the decision of the tourists in the selection of the destination.

The results of the study by the independent Belgian agency *Travelsat* show that 38% international tourist travel is undertaken based on the recommendation of friends or relatives. In the sixth place of this list with 8% of the decision-making influence on the destination, there is the promotional activity of travel agencies (Travelsat, 2011). Why the impact of tourism promotion is so low compared to other forms? Is it possible and to what extent to increase the impact of tourism promotion on potential tourists? It started with the idea to explore the effects of a combination of traditional promotional techniques with sensory branding as a concept that can enhance the impact of promotion on potential customers. This assumption is based on research, and the effects of this combined effect were monitored by neuro marketing techniques - by EEG control.

2. Materials and methods

All the respondents of the EEG part of the research were carefully presented and explained the conditions and details for carrying out the research. Respondents were asked to state that they were free from neurological diseases (ie. epilepsy), that they were not under the influence of alcohol, narcotics or medicines that could impair attention, cause drowsiness or similar side effects. Then they expressed their opinion on the dominant hand, only the right-handed took part in the study, because of the possibility of counter-lateralization of left-handed ones (Annet, 1970: 303-321; Bryder, 1982: 3). After that, each respondent read and signed the Consent for Participation in Research. The EEG MITSAR 201 equipped with dry electrodes, Dry EEG Electrode, Florida Research Instruments, was used. Active electrodes, impedances below 5 kOhm, (Harmon-Jones & Peterson, 2009: 170-197), are arranged in a sequence of 10/20 series, as follows: Fp1, Fp2, F7, F3, Fz, F4, F8, T3 , C3, Cz, C4, T4, T5, P3, Pz, P4, T6, O1, O2. A reference assembly was used, with a common reference on the ear mussels (A1, A2). Processing and visualization of EEG signals made by computer software WinEEG.

The experiment was performed in a stable environment, with controlled temperature and illumination, in accordance with the conditions for performing EEG research published in Psychophysiology, "Guidelines for recording and quantitative analysis of electroencephalographic activity research contexts" (Pivik& al. 1993: 547-558). During a neurophysiological study performed using an EEG device, data analysis is required before their correction. It is necessary to remove the technical and biological artifacts from the raw EEG image. The signal is usually contaminated with various sources, interference of 50 Hz of network voltage, then strong biological signals, blinking, movement of the eyeballs. The Mitsar software WinEEG provides digital EEG filtering methods, and during the scanning of the subjects we used the following parameters: speed 30 mm / sec, absolute threshold 3 mV, low cut 0.1 sec (1.6 Hz), high-frequency suppression, (high cut) 30 Hz, and a filter (notch filter), 45-55 Hz, was used to suppress the artefact of the mains voltage. Separation of the eye blink artifact from the EEG record was performed using the Independent Component Analysis (ICA) method. This prepared EEG record, using Fast Fourier Transform (FFT), enables the creation of a brain map, (Brain mappings of the frequency spectrum). During the EEG recording, respondents were simultaneously stimulated, visual, audible, and fragrant stimuli - sensory branding was used. Prior to the emergence of each new stimulus, a pause of 5 seconds was followed by recording the base signal, (baseline). Participation in the research is voluntary, without compensation.

The experiment was designed and implemented as follows:

Promotional material, photographs and short films that will be projected on the computer screen during EEG monitoring are formed in the first phase. With the visual promotion, the appropriate tonal supplement was also prepared. For example, attractive beaches in Greece are added to the audio addition in the form of clearly recognizable Greek music. The entertainment content is divided into six blocks with four promotional photos and one short movie for 15 seconds. Each block actually represents the promotion of one of the tourist destinations, which are clearly highlighted in the photos:

Greece, France, Egypt, Turkey, Montenegro and winter ski centers of Serbia.

The first five promotional blocks deal with the affirmation of the summer tourist offer, while the sixth block promotes the winter centers of Serbia that is holiday and fun on the snow.

For each block seen, respondents rated ranging from 1 to 5:

1. Full repulsion, it irritates me
2. I do not like it
3. I am neutral
4. I like it
5. I'm thrilled

EEG controls were performed on two occasions:

During the first scan, respondents were subject only to the visual promotional material. In the preparatory phase for scanning, setting the electrodes to the main and adjusting the necessary parameters of the EEG device, each respondent is again given detailed instructions on the method of conducting the experiment. It is explained that during their observation of photographs and films, their brain reactions will be recorded. After the scan was completed, the projection was repeated. In the breaks between the slides, the respondents evaluated the promotional material seen through the offered closed-type answers - the Likert scale from 1 to 5. This part of the experiment ends with filling out a questionable statement collecting basic socio-demographic data, followed by a half-hour pause.

After a pause and refreshment, the EEG recording is repeated, but with sensory branding, that is, with the specific audio accompaniment of visual content and occasionally the emission of a fragrance supplement, which ensures the participation of the respondents in the experiment ends.

The computer used for broadcasting visual and audio stimulus is synchronized with an electroencephalograph computer, so each change of stimulus is automatically recorded in the electroencephalographic record. This allows the researcher to have accurate real-time information, all changes, and brain responses to each given stimulus during the EEG analysis. Comparison of statistically processed results gives an answer to the question of the extent to which the promotion affects the behavior and decision-making of the investigated sample of consumers, that is, whether and to what extent sensory branding can contribute to the additional convincing effect of promotional content.

3. The brief history of research bioelectric potentials

Englishman Richard Caton first observed the ability of neurons to achieve the bioelectric potential intercellular - bioelectricity, which can be detected by a galvanometer. Caton was able to record the electrical activity of the exposed brain of rabbits and monkeys using a galvanometer with mirror. In general, early explorers were extremely modest possibilities, given the area that is trying to explain. They have mainly used electrometer called "electroscope" that revealed weak electrical potential, and the experimenter these changes could follow on the instrument, through subtle mechanical changes, such diversion needles or thin gold foil. (Pearce, 2001: 620) Galvanometer which is used Caton was already considerably more advanced devices. In order to improve the visualization of the results, when measuring weak signals, intensified the waveform such as oxygen torch lighted mirror, and thus reflect the two-meter-scale display on the wall of his laboratory. (Hass, 2003: 9)

About his experiment in 1875. Caton said: "The emergence of electric current in the gray matter associated with its function." (Collura, 1993) Short and concise statements, set the cornerstone for further research electro-brain activity, actually represents the discovery of electroencephalography. A survey conducted two years later, confirms and extends previous results. Caton reports that studied more than 40 cats, rabbits, and monkeys watched the variation of brain activity. The first successful electroencephalographic (EEG) recording was performed on a human being, done by Hans Berger (1873-1941), German neurologist, at 1929. Results of early neurophysiological shooting at people were unsuccessful for various reasons. For example, a respondent was sitting with a bunch of silver electrodes affixed to the head, which was not very comfortable, the less moving head could break down the results. From failures and successful efforts formed the experience, and among other things, expressly requested that during the EEG recording, in order to eliminate ignorantly exclude other devices - ray machines for example, even though located in another building (Millet, 2001: 529)

Already in 1946, founded the American EEG Society (American Electroencephalographic Society – AEEGS), and in the same year the first International Congress of EEG experts. Ross Adey, head of the group for quantitative studies of the brain at UCLA Brain Research Institute, was a pioneer in the use of QEEG (Quantitative EEG), with the use of digital computers for data processing. During 1961, they did an excellent job of mapping the human brain for the first time. Thus, these researchers laid the foundation for further studies of the human brain.

Modern EEG is a neurophysiological method that identifies the electrical activity of the brain or changes made through the membranes of ganglion cells of the CNS (central nervous system). EEG device detects these changes by using silver or gold electrodes arranged on the head of the respondents. There are international standards that regulate the number and arrangement of electrodes, the most commonly used 10/20 or 10/10 as the expanded version. Actually, the technique is based on measuring the potential differences between these electrodes. This is the oldest neurophysiological measurement method, developed from the galvanometer used by the pioneers in this field of research. Otherwise, the method is widely accepted not only for medical purposes but also as a tool in research neuromarketing.

4. Neuromarketing

Neuromarketing is not a new type of marketing, it's a new way to approach the study of marketing. It is based on the use of modern research techniques and instruments intended for measuring the level of brain activity, to understand and measure the impact of marketing and advertising to consumers. Neuromarketing view can give a stunning and surprising results, neuromarketing techniques could explain how people really think and make decisions, including the brain processes which actually are not aware of or insight into the decisions and behavior invisible to traditional research methodology. Neuromarketing originates from the field of neuroscience, and the goal is to better understand the functioning of the human brain. This is a relatively new field of consumer research and marketing using the latest technology to study the neurophysiological processes that occur during the making individual decisions. Unlike traditional, behavioral psychological interpretations of subjects, introducing neuromarketing methods and instruments, the researchers were able to directly observe the changes in bioelectric potentials in the brain, without a doubt, unmistakably identify and measure the activities of certain regions of the brain to stimuli from the environment.

Neuromarketing is a combination of marketing and neuroscience, brain scans may identify the activity of certain brain regions, but also to gauge the level of influence of stimuli from the environment, for example - the advertising content. Ability neuromarketing techniques to peek directly into the consumer's head removes any possibility of confusion and concerns about reactions of the respondents. Tools and methods used in neuromarketing analysis of rapidly developing the ability to better visualization of the consumer subconscious response to stimuli from the environment or the use of modern software enable the visual display of brain regions involved in 2D and 3D format.

5. Sensory brending

Hulten Sensory Branding defines as a type of marketing that affects all senses, creating so emotional associations with consumers, ie marketing techniques that aim to seduce the consumer using his senses, and thus affect his feelings and behavior (Hulten, 2011: 256-273). Sensitive branding is based on the assumption that marketing companies will reach all five human senses at a far higher level than traditional marketing. Neurophysiologic brain scans reveal that visual presentations, such as company logo combined with audio-related or appropriate scent, fully engage our senses, we feel more comfortable and such combined ads are remembered! This combination is called sensory branding. In their book Sensory Marketing, the authors Hulten, Browens and Van Dijk, point out further, emphasize the role and importance of five human senses that are crucial in building individual experience in the purchase and consumer process (Hulten, Broweus& Van Dijk, 2009: 1).

Therefore, sensory marketing builds a relationship with consumers through multidimensional communication, combining modern technology and the impact on the consumer's mind. The relationship with consumers should be based on logical and rational, but also on the emotions involved in brand awareness and the construction of a sustainable brand image. The image of the brand is also the result of the sensory experiences that the individual has about the brand (Hulten, Broweus& Van Dijk, 2009: 5). Sensual marketing shows how the company through different sensory strategies and sensory experiences can create awareness of the brand, and establish a notion of brand as a relationship with the consumer's identity, lifestyle and personality (Hulten, Broweus& Van Dijk, 2009: 5). The assumption is that an attack on a larger number of consumers' senses during promotion will adequately increase the strength of the message, its impact and the emotional connection with the promoted. Today, marketers have at their disposal techniques and tools for applying and challenging a variety of sensations. With the use of new technology, it is possible to create exceptional sensory experiences for consumers, such that they have the impression of a science-fantastic journey.

Gemma Calvert, a professor of applied neuroscience at the University of Warwick in England and founder of Neuro sens in Oxford, was the team leader who experimented on combining several senses when promoting a product and responding to those combined stimuli: "However, when Dr. Kalvert presented images and fragrances at the same time, she discovered that respondents generally evaluate combinations of images and fragrances as more appealing than the look or smell itself" (Lindstrom, 2010: 179).

Austrian researchers from the Konrad Lorentz Institute have fairly advanced the field of experiments with fragrances. They develop a system for identifying individuals based on body odors, which represents individual DNA, as a volatile fingerprint. Emotions, such as fear, also control sweating, sweating, and the production of cold sweat. In accordance with this, body odor can become a potential source of information by intelligent systems for identifying individuals as well as their emotions (Emsenhuber, 2015: 7).

6. EEG experiment

In the part of the experiment realized with electroencephalographic surveillance, a total of 105 respondents participated, of which 46 males (43.8%), and 59 female participants which make 56.2%.

Considering that the EEG experiment was carried out in the period April-June, it is justified to assume the possible impact of the upcoming summer tourist season and therefore favoring destinations on the coast. Taking into account this assumption, strongly supported through a high discrepancy in average values (Greece, 4.1714, winter, ski centers of Serbia, 2.3122, see table 1), variable winter, ski centers of Serbia, excludes from further analysis.

Table 1: Average values for view content ratings

	N	Minimum	Maximum	Mean
Greece	105	3.00	5.00	4.1714
Turkey	105	3.00	5.00	3.9238
France	105	3.00	5.00	3.6762
Egypt	105	3.00	5.00	3.5524
Montenegro	105	2.00	5.00	3.2381
Winter ski centers of Srbia	105	1.00	4.00	2.3122
Valid N (listwise)	105			

Considering the subject of this research - reactions to promotional content, the first EEG analyzes relate to the comparison of the electroencephalographic finding of the best-valued destination (Greece) with the destination in the fifth place (Montenegro). The applied WinEEG software allows us creating a brain map of the frequency response spectrum of each respondent to the promotional materials. As an illustration, a brain map of one of the participants in the experiment giving the highest ratings for the destination Greece, the spectral power μV2 (PSD-Power Spectral density), for each frequency, theta, alpha and beta band is shown Figure 1.

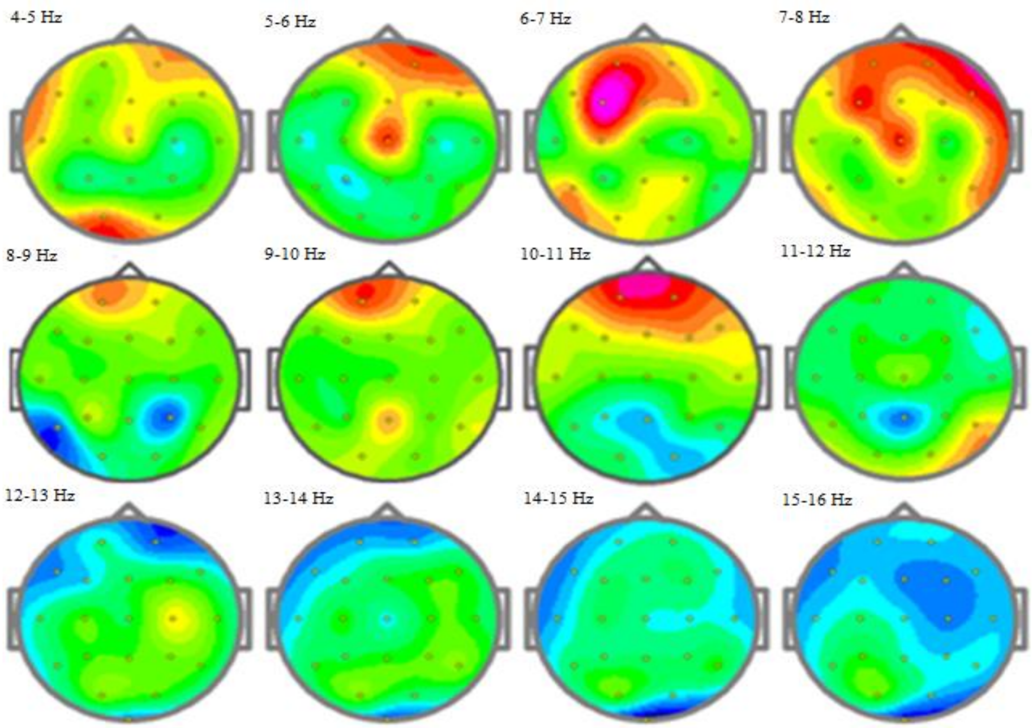

Figure 1: Spectral power of μV2, theta, alpha and beta band (Greece)

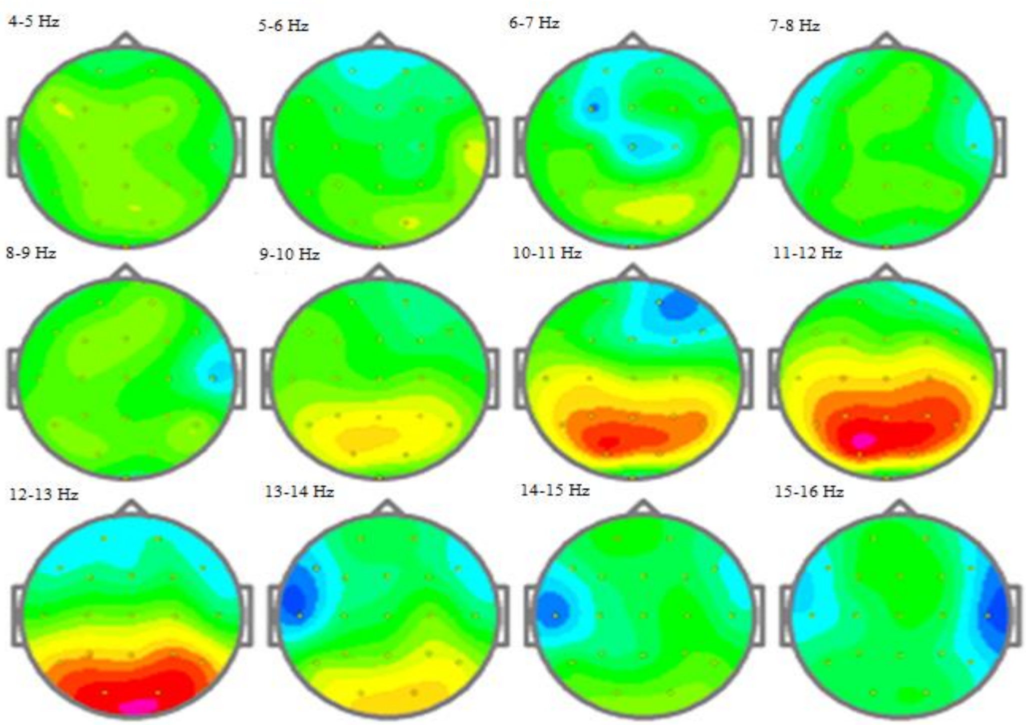

Figure 2: Spectral power of μV2, theta, alpha and beta band (Montenegro)

A brain map of one of the respondents who gave the lowest ratings to the destination of Montenegro, the spectral power of μV2 of the investigated frequency band (Figure 2).

This type of analysis provides visual information, an image display of differences in frequency bands and the spectral power of signals distributed in different brain regions. For example, the observed increased alpha rhythm activity in the occipital part, (Figure No. 2), the area of the brain that processes visual information, represents non-acceptance, non-perception. In addition, it should be kept in mind that the presence of alpha signals in that area is associated with the idling rhythm, which is also associated with reduced attention, or reduced interest in the subject for the content seen. It should be noted that the alpha rhythm in this field is generally bilaterally uniform, and that the affecting of the difference in the level of the signal of the left and right hemisphere to the processing process is still not clarified, while the achieved amplitude of the alpha rhythm does not depend only on visual stimulation, but also to the visual imagination, moods and visual attention (Feige, Scheffler& al. 2005: 2864). Therefore, in order to understand the reaction of the respondents, it is important to include in the analysis of the theta rhythm of the dorsolateral and intermediate prefrontal cortex, the area of the cortex associated with acceptance, adoration and working memory (Aftanas & Pavlov, 2005: 85-94), that is, the coding of visual stimuli in long memory, associated with the left prefrontal cortex (Rositer, Silberstein & al. 2001: 13-22). Often, in the interpretation of the EEG, the result is expressed in Hz only, without the prefix of the alphabet, which can be practical and reduce the possibility of confusion, especially in the boundary areas between the frequency bands.

By comparing the displayed brain maps of the respondents (Figure 1 and No. 2), there is a clear difference in the level of activity of the theta range (brain waves of the frequency range 4-8 Hz), between the respondents' reactions scanned during exposures to the promotional material of Greece (positive reaction on external stimulus, acceptance), and reaction to the promotion of Montenegro's destination, as a stimulus that is less accepted or rejected by most respondents.

By further analysis, by comparing the alpha band (8-13 Hz), between these two groups of subjects, the level of activity of the alpha wave in the prefrontal cortex is clearly expressed. Group Montenegro has poorly expressed alpha activity in the frontal region, while strong activation is recorded in the occipital part, and is interpreted as a representation of a negative response to the stimulus.

Beta activity (13-30 Hz) in both groups was not significantly recorded.

After analyzing the differences in the frequency bands distributed on the main subject, the analysis of the asymmetry of the recorded alpha signals in the area of the prefrontal cortex follows. In accordance with Davidson's asymmetry model, alpha asymmetry is studied between the left and right hemisphere (Davidson, 1992: 39-43).

Table 2: t-test Alpha asymmetry of the left hemisphere of the prefrontal cortex

Left hemisphere	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Greece left hemisphere Montenegro lefthem.	1.1033	1.45054	.19739	.70741	1.49925	6.590	104	.000

Table 3: t-test Alpha asymmetry of the right hemisphere of the prefrontal cortex

Right hemisphere	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Greece right hemisphere Montenegro right hem.	.93630	1.46178	.19892	.53731	1.33529	4.707	104	.000

The T-test of the paired samples was compiled by comparing the average results of the left hemisphere frontal electrodes (Fp1, F3 and F7) - (Table 2), with the average results of EEG right hemisphere electrodes (Fp2, F4 and F8), the results shown on table 3. Respondents who highly valued the destination of Greece, exhibited a significantly stronger alpha activity in both hemispheres, in particular left brain spheres. Researchers in this field point to the great importance that asymmetry can have in the creation of promotional materials, following this reaction accepting/adapting promotional content, but it should also be noted the importance of the role of engaging the right frontal cortex in encoding (Ohme, Reykowska& al., 2010: 785-793), and the storage of visual content (Astolfi, Fallani& al., 2008: 333-341).

The next step is the analysis of asymmetry in the prefrontal cortex, comparing the average values of EEG electrodes (left hemisphere: Fp1, F3, and F7, with right hemisphere on electrodes: Fp2, F4, and F8) in three frequency ranges, theta, alpha, and beta, broadcasting promotional content for the destination of Greece, (tables 4, 5 and 6).

Table 4: test of Theta asymmetry of the left and right hemisphere of the prefrontal cortex (Greece)

Theta range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Theta Greece left Theta Greece right	1.5205	2.77995	.37830	.76178	2.27934	4.019	104	.000

Table 5: t-test of Alfa asymmetry of the left and right hemisphere of the prefrontal cortex (Greece)

Alfa range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Alfa Greece left Alfa Greece right	.97825	.88529	.74704	.92517	1.36511	5.031	104	.000

Table 6: t-test of Beta asymmetry of the left and right hemisphere of the prefrontal cortex (Greece)

Beta range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Beta Greece left Beta Greece right	.12000	.49635	.06754	-.01548	.25548	1.777	104	.081

The results show a significantly stronger left hemisphere activity, the theta rhythm of the dorsolateral and intermediate prefrontal cortex, previously mentioned as the cortex related to acceptance, adoration and working memory (Aftanas& Pavlov, 2005: 85-94), or the coding of visual stimuli in long-lasting memory, activity associated with the left prefrontal cortex (Rositer, Silberstein & al. 2001: 13-22). Also, the alpha rhythm shows a significantly stronger activity of the left prefrontal cortex, which is in line with the Davidson model and points to acceptance, liking (Davidson, Ekman & al 1990: 330-341; Davidson, 1992: 39-43; Davidson & Irwin, 1999: 11-21).

By identical procedure, the asymmetry in the prefrontal cortex of the subjects was analyzed by comparing the average values on the lateral electrodes (left hemisphere: Fp1, F3 and F7, right hemisphere: Fp2, F4 and F8) in three frequency ranges, theta, alpha and beta during broadcasting promotion destination of Montenegro, (tables 7, 8, and 9).

Table 7: t-test of Theta asymmetry of the left and right hemisphere of the prefrontal cortex (Montenegro)

Theta range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Theta Montenegro left Theta Montenegro right	.10093	.30898	.04205	.01659	.018626	1.499	104	.020

Table 8:t-test of Alfa asymmetry of the left and right hemisphere of the prefrontal cortex (Montenegro)

Alpha range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Alpha Montenegro left Alpha Monteneg. right	-.01463	1.77010	.24088	-.49777	.46852	-.061	104	.952

Table 9: t-test of Alpha asymmetry of the left and right hemisphere of the prefrontal cortex (Montenegro

Beta range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Beta Montenegro left Beta Montenegro right	.04481	1.82490	.24834	-.45329	.54292	.180	104	.857

The insignificantly increased activity of left hemisphere theta rhythm of the prefrontal cortex was reported. The alpha rhythm shows even more intense activity of the right prefrontal cortex, indicating a rejection, or no liking (Davidson, Ekman & al 1990: 330-341; Davidson, 1992: 39-43; Davidson & Irwin, 1999: 11-21). The results were presented and interpreted in the light of Davidson's model of hemispheric emotional asymmetry.

Table 10: The relationship between theta / beta rhythm

Theta/beta ratio	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Theta Greece Theta Montenegro	1 .58333	2.32002	.31571	1.15009	2.41658	9 .180	104	.000
Beta Greece Beta Montenegro	1.87324	1.32443	.74799	. 55354	1.43988	14.492	104	.000

The next stage explores the relationship between EEG slow (theta) and the fast (beta) wave (Theta /beta ratio), which is associated with the phenomena of emotional regulation and level of attention (Morillas-Romero, Tortella-Felici& Putman, 2015: 598-606). The relationship between theta and the beta rhythm is calculated on the basis of the results collected from all the electrodes at the head of the respondents (Table 10).

From the displayed values, the increased attention and emotional involvement of the respondents exposed to the stimulus-promotional material Greece can be concluded, so these contents are in the focus of the respondents' attention, they are accepted, and are permanently remembered.

In addition to interpreting and interpreting EEG results based on Davidson's frontal asymmetry model, attention is paid to the HERA model of asymmetry, the acronym of Hemispheric Encoding Retrieval Asymetry. The left prefrontal cortex (PFC) is responsible for processing information in long-term memory (Tulving, Kapur& al., 1994: 2016-2020; Habid, Nyberg &Tulving, 2003: 241-245), which is consistent with the Davidson model of responsibility of the left prefrontal cortex for acceptance-admiring content, which is stored as such for good and long-term storage. According to this model, the activity of the left cortex is also reflected in the coding of verbal material, while the visual representations and other non-verbal contents (images of faces, known and unknown people) are processed in the right (Sergerie, Lepage&Armony, 2005: 580-585), and that the right prefrontal cortex has an important role in accessing data from long-term memory, LTM-Long Term Memory, (Kelley & al., 1998: 927-936). Further analyses of the role and significance of the right prefrontal cortex, in particular, the contradictions between David and HERA, far outweigh the framework and subject of research in this paper.

The meaning of the asymmetry of the EEG rhythm in the prefrontal cortex, according to Davidson's model of frontal asymmetry, is interpreted by Aftanas and Pavlov, whose research confirms the association of the aunt circumference with emotional and memorization (Aftanas& Pavlov, 2005: 85-94). According to the MAC model, also the acronym of Memory Affect Cognition, the theory developed by Ambler and Burne, the extraordinary role of emotions in memory, or increased activity of the left prefrontal cortex of the alpha and the aunt's rhythm, is emphasized as a reaction to appealing content that will be better remembered (Ambler &Burne, 1999: 25-34). In the second phase of the EEG experiment, the scan was repeated with sensory branding, that is, the audio accompaniment of visual promotion and the emission of scented supplements. As in the previous part of the study, visual information is first analyzed, that is, the visual representation of differences in frequency bands and the spectral power of signals distributed in the brain regions of the respondents (Figure 3).

In addition to researching and analyzing the magnitude of the impact of sensory branding on the respondents who decided that the reported data showed the dominant destination of Greece, the significant question is to what extent sensorial branding can contribute to an additional positive effect of promotional content on the lowest-placed destination Montenegro.

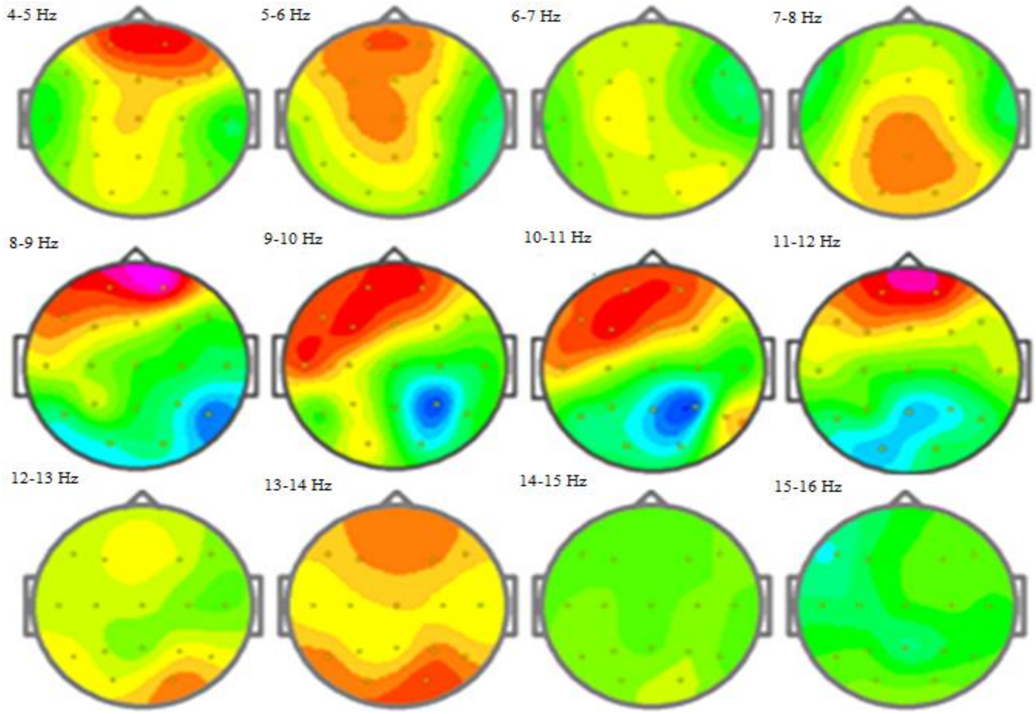

Figure 3: Spectral power μV2, Theta, Alpha and Beta band - sensory branding (Greece)

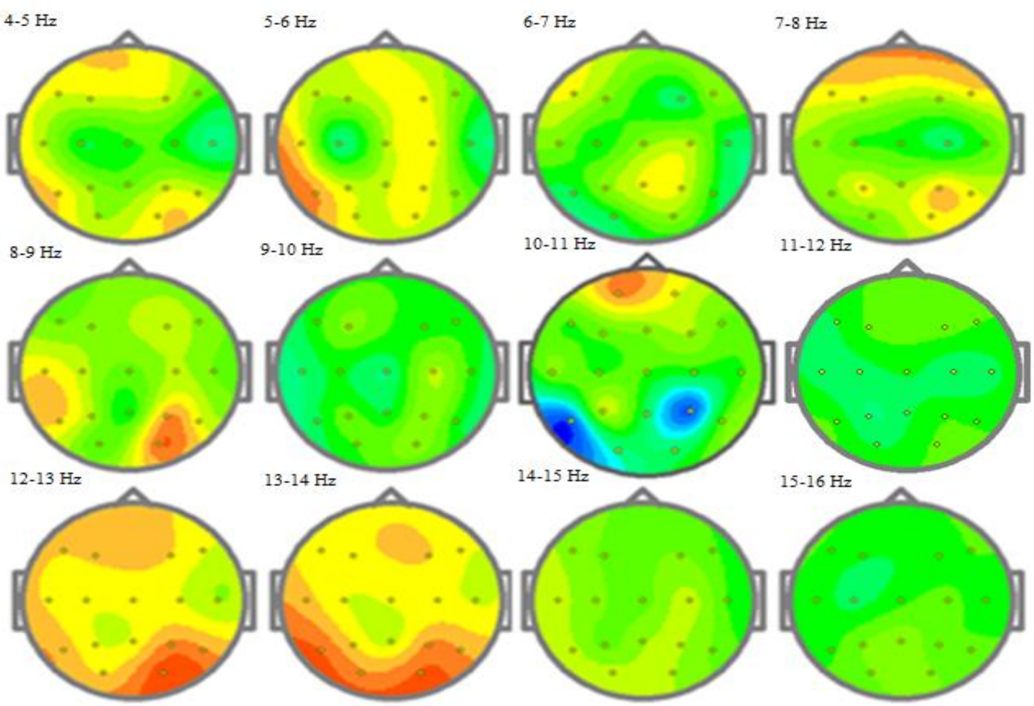

Figure 4: Spectral power μV2, Theta, Alpha and Beta band - sensory branding (Montenegro)

From the presented brain maps of the subjects (Figures 3 and 4) a significant difference in the level of the theta range of the prefrontal cortex (brain wave waves of the frequency range of 4-8 Hz) is noticeable. Slight theta waves of 4-6 Hz are intensified in respondents scanned by promoted material from Greece, indicating that the promotional material of the destination is Greece, with the effect of sensory branding again accepted better. By comparing the alpha band (8-13 Hz), between these two groups of subjects, there is a clear difference in the level of alpha wave activity in the prefrontal cortex; group Montenegro has poorly expressed alpha activity in the frontal region.

Beta activity (13-30 Hz) is recorded in the occipital section in the range of 12-13 Hz, as well as in the prefrontal cortex, both sides, indicating an elevated level of attention, focus on content (Morillas-Romero, Tortella-Felici& Putman, 2015: 598-606).

As in the first part of the study, in accordance with Davidson's asymmetry model, the next step is the alpha asymmetry between left and right hemisphere (Davidson, 1992: 39-43). The T-test of the paired samples was done by comparing the average results of the left hemisphere frontal electrodes (Fp1, F3 and F7 - Table 11), with average EEG right hemisphere electrodes (Fp2, F4 and F8), the results shown in table 12.

Table: 11: t-test alpha asymmetry of the left hemisphere of the prefrontal cortex (sensory branding)

Left hemisphere	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Greece left hemisphere Montenegro left hem.	1.73852	1.70024	.23137	1.27444	2.20259	7.314	104	.000

Table 12: t-test alpha asymmetry of the right hemisphere of the prefrontal cortex (sensory branding)

Right hemisphere	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Greece right hemisphere Montenegro right hem.	.88500	1.50337	.20458	.47466	1.29534	4.026	104	.000

Respondents who highly valued the destination of Greece have exhibited a significantly stronger alpha activity, especially the left brain sphere, which is a sign of high evaluation and adherence to the emitted content, but should bear in mind the importance of engaging the right frontal cortex in coding (Ohme, Reykowska& al 2010: 785-793), and the storage of visual content (Astolfi, Fallani& al., 2008: 333-341; Vecchiato, Astolfi&Fallani, 2010: 165-179).

The next step is the analysis of asymmetry in the prefrontal cortex, comparing the average values of EEG electrodes (left hemisphere: Fp1, F3, and F7, right hemisphere on electrodes: Fp2, F4, and F8) in three frequency ranges, aunts, alpha, and beta, broadcasting promotional content for the destination of Greece, (tables 13, 14, and 15).

Table 13: t-test Theta asymmetry of sensory branding of the left / right hemisphere of the prefrontal cortex (Greece)

Theta range Greece	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Theta Greece left Theta Greece right	3.81648	3.91005	.53209	2.74924	4.88372	7.173	104	.000

Table 14: t-test Alpha asymmetry of sensory branding of the left / right hemisphere of the prefrontal cortex (Greece)

Alpha range Greece	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Alpha Grčka leva Alpha Grčkadesna	1.28870	1.14853	.15221	.48340	1.09400	6.128	104	.000

Table 15: t-test Beta asymmetry of sensory branding of the left / right hemisphere of the prefrontal cortex (Greece)

Beta range Greece	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Beta Greece left Beta Greece right	-1.63167	2.95906	.40268	-2.43933	-.82400	-4.052	104	.002

It has already been noted that the frontal EEG asymmetry shows individual differences in the emotional response of the respondent to the given stimulus. Significantly stronger activity of the left hemisphere of respondents favoring the destination of Greece, the area associated with the acceptance or admiration of broadcasted content (Aftanas& Pavlov, 2005: 85-94), coding of visual stimulation in LTM (Rositer, Silberstein & al. 2001: 13-22), confirms the credibility of the position expressed in the survey part of the survey, the liking of the selected destination. The alpha rhythm shows a significantly stronger activity of the left prefrontal cortex, which is in line with David's model and suggests acceptance, liking (Davidson, Ekman et al 1990: 330-341; Davidson, 1992: 39-43; Davidson & Irwin, 1999: 11-21). More noticeable activity of the beta volume of the right hemisphere is observed, which leads to increased attention and additional, cognitive processing of stimuli (Vecchiato, Astolfi& Fallani, 2010: 165-179; Vechiato, Cherubino, Trettel & Babiloni, 2013: 49).

By identical procedure, the asymmetry in the prefrontal cortex of the subjects was analyzed by comparing the average values on the lateral electrodes (left hemisphere: Fp1, F3 and F7, right hemisphere: Fp2, F4 and F8) in three frequency ranges, aethe, alpha and beta during broadcasting promotion destination Montenegro, (tables 16, 17, and 18).

Table 16: t-test Theta asymmetry of sensory branding of the left / right hemisphere of the prefrontal cortex (Montenegro)

Theta range Montenegro	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Theta Montenegro left Theta Montenegro right	.30278	.65482	.08911	.12405	.48151	3.398	104	.001

Table 17: t-test Alpha asymmetry of sensory branding of the left / right hemisphere of the prefrontal cortex (Montenegro)

Alpha range Montenegro	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Alpha Montenegro left Alpha Montenegro right	.58815	1.68256	.22897	.12890	1.04740	2.569	104	.000

Table 18: t-test Beta asymmetry of sensory branding of the left / right hemisphere of the prefrontal cortex (Montenegro)

Beta range Montenegro	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Beta Montenegro left Beta Montenegro right	-2.43611	3.43302	.46717	-3.37314	-1.49900	-5.215	104	.000

Comparison of the activity of the hemispheres of the brain of the respondents shows a more intense left hemisphere activity of the prefrontal cortex of the theta and alpha range of participants, which signifies adulation, the liking of the experienced stimulus (Aftanas& Pavlov, 2005: 85-94; Davidson, Ekman et al., 1990: 330-341; Davidson , 1992: 39-43 Davidson & Irwin, 1999: 11-21.). In the beta-band, there is the more pronounced activity of the right prefrontal cortex, which points to increased attention to the content (Vecchiato, Astolfi&Fallani, 2010: 165-179; Vechiato, Cherubino, Trettel& Babylon, 2013: 49).

The next step explores the relationship between EEG slow (theta) and the fast (beta) wave (Theta / beta ratio), which is associated with the phenomena of emotional regulation and level of attention (Morillas-Romero, Tortella-Felici& Putman, 2015: 598-606). The relationship between the theta and the beta rhythm is calculated on the basis of the results collected from all electrodes at the head of the respondents (Table 19).

Table 19: The relationship between theta / beta rhythm

Paired Differences					t	df	Sig. (2-tailed)
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval o the Difference				
			Lower	Upper			
4.19852	3.73728	.35962	3.48561	4.91142	11.675	104	.000
.20139	3.95595	.38066	-.55323	.95601	.529	104	.598

As with the first scan, from the displayed values of theta/beta relation (theta scope), the general attention can be drawn to the increased attention and emotional involvement of the subjects exposed to the stimulus-promotional material. In the beta range, there is no significant difference, one can conclude the equally high level of attention of the analyzed respondents, so these contents are in the focus of attention, accepted and permanently memorized (Astolfi, Falani, Cincotti& al., 2008: 522-531).

Table 20: t-test alpha asymmetry of the left hemisphere of the prefrontal cortex(I Scan / II Scan - Sensory Branding)

Left hemisphere	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Greece left hemisphere Montenegro left hem.	1.1033	1.45054	.19739	.70741	1.49925	6.590	104	.000
Greece left hemisphere Montenegro left hem.	1.73852	1.70024	.23137	1.27444	2.20259	7.314	104	.000

5.1 EEG scanning with sensory branding

The results presented are based on data collected during the neuromarketing experiment, EEG scanning of volunteer performed on two occasions. Tables 20 and 21, respectively, show the compared average results of left hemisphere frontal electrodes (Fp1, F3, and F7) and right hemisphere electrodes (Fp2, F4, and F8) recorded the first shot and scan with the addition of a sensory branding, or II scan - red shaded value.

Table 21: t-test alpha asymmetry of the right hemisphere of the prefrontal cortex(I Scan / II Scan - Sensory Branding)

Right hemisphere	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Greece right hemisphere Montenegro right hem.	.93630	1.46178	.19892	.53731	1.33529	4.707	104	.000
Greece right hemisphere Montenegro right hem.	.88500	1.50337	.20458	.47466	1.29534	4.026	104	.000

This spectral imbalance of the prefrontal cortex, or hemispheric asymmetry (Table 22), expressed through increased left hemisphere activity (tI = 5.590; tII = 7.514, p = 0.000), represents a sense of satisfaction, acceptance, and improved storage of content in the promotion assessment process (Vechiato, Cherubino, Trettel&Babiloni, 2013: 49).
Comparing the results of the right side, between the first and the second scan, the hemispheric asymmetry is somewhat diminished, (tI = 4.707, tII = 4.026, with a high level of significance p = 0.000), because as a consequence of the action of an additional sensory stimulus to all respondents, the right brain hemisphere more active in all respondents, which indicates an increased level of attention, increased interest in the presented content (Ohme, Reykowska& al.

2010: 785-793).
From the given t values (the magnitude of the impact), a certain effect of the sensory branding is noticed, but the extent of this impact on the respondents cannot be said much. One possibility to determine the size of the impact of this intervention is to calculate the eta square (Pallant, 2011: 246). The t-test of the paired samples compares the mean values measured on the left hemisphere (Table 23) before and after the intervention with sensory supplements. The ε square is calculated for the value of **t** of the first scan, t = 0.29, while the size of the impact for the second scan is t = 0.33. In accordance with the guidelines for interpreting these values (Cohen gives orientation values: 0.01 - low impact; 0.06 - moderate, 0.14 - great influenc, Cohen 1988: 284-287), it can be said that this influence is large.
A slight discrepancy in the values of t between I and II scanning (4%), the product has a positive effect of sensory branding on all respondents!
The positive influence of sensory branding is reflected in the stronger activity of the left hemisphere of the theta rhythm of the prefrontal cortex (Table 24), the area of the cortex associated with acceptance, adoration and working memory (Aftanas& Pavlov, 2005: 85-94), as well as the transfer of the presented stimuli in long-term memory, (Rositer, Silberstein & al. 2001: 13-22). The strong activity of the theta scope reflects emotional involvement, which ensures the better memory of the appealing content (Ambler &Burne, 1999: 25-34).

Table 22: t-test Theta asymmetry of the left and right hemisphere of the prefrontal cortex(I Scan / II-Sensor Branding - Greece)

Theta range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Theta Greece left Theta Greece right	1.5205	2.77995	.38307	.76178	2.27934	4.019	104	.000
Theta Greece left Theta Greece right	3.81648	3.91005	.53209	2.74924	4.88372	7.173	104	.000

Alpha rhythm (II scanning) shows the increased activity of the left prefrontal cortex (Table 23), not as much as theta range, but this small additional activity indicates increased acceptance/admiration of the emitted stimulus, and increased attention (Davidson, Ekman Davidson & Irwin, 1999: 11-21), as a result of the respondent's exposure to additional stimuli-sensory branding.

Table 23: t-test Alpha asymmetry of the left and right hemisphere of the prefrontal cortex (I Scan / II-Sensor Branding - Greece)

Alpha range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Alpha Greece left Alpha Greece right	.97825	.88529	.74704	.92517	1.36511	5.031	104	.000
Alpha Greece left Alpha Greece right	1.28870	1.14853	.15221	.48340	1.09400	6.128	104	.000

In the beta range, sensory stimuli cause a change in the intensity of bioelectric potentials in the hemispheres. There is a jump in the right hemisphere, (Table 24), which signifies increased interest and increased attention to broadcasted content (Vecchiato, Astolfi&Fallani, 2010: 165-179; Vechiato, Cherubino, Trettel& Babylon, 2013: 49).

Table 24: t-test Beta asymmetry of the left and right hemisphere of the prefrontal cortex (I Scan / II-Sensor Branding - Greece)

Beta range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Beta Greece left Beta Greece right	.12000	.49635	.06754	-.01548	.25548	1.777	104	.081
Beta Greece left Beta Greece right	-1.63167	2.95906	.40268	-2.43933	-.82400	-4.052	104	.002

The results show the level of influence of sensory branding on the respondents who decided for the first-ranked destination Greece. However, the extremely important question is to what extent sensorial branding can contribute to the additional perceived effect of promotional content on the lowest-placed destination? Therefore, special attention is devoted to the analysis of the impact of sensory branding on respondents who have declared themselves the weakest positioned destination of Montenegro.

Compared with the results of the first scan, the effect of sensor branding is expressed through the increased activity of the left hemisphere prefrontal cortex theta rhythm (Table 25), which is interpreted as accepting / adapting and storing memory data (Aftanas& Pavlov, 2005: 85-94 Rositer, Silberstein & al. 2001: 13-22). Theta rhythm in this area of the cortex represents a positive emotional involvement, so the promoted promotion arouses the additional interest of the respondents, which directly reflects on the quality of memorizing stimuli (Ambler &Burne, 1999: 25-34; Davidson, 2002: 68-80); easier and better remembered.

Table 25: t-test Theta asymmetry of the left and right hemisphere of the prefrontal cortex (I Scan / II-Sensor Branding - Montenegro)

Theta range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Theta Montenegro left Theta Montenegro right	.10093	.30898	.04205	.01659	.018626	1.499	104	.020
Theta montenegro left Theta Montenegro right	.30278	.65482	.08911	.12405	.48151	3.398	104	.001

The alpha rhythm of the first scan (Table 26) shows the minimal hemisphere imbalance value in the right-hand side (t = -0.061) indicating indifference or not accepting / not admiring the promotion (Davidson 1992: 39-43; Davidson & Irwin, 1999: 11-21). The results of the second scan show higher left hemisphere values, indicating the positive effect of sensory branding on respondents (t = 2.569), or a positive reaction to broadcast promotional material (Davidson, Ekman et al 1990: 330-341; Davidson, 1992: 39- 43; Davidson & Irwin, 1999: 11-21).

Table 26: t-test Alpha asymmetry of the left and right hemisphere of the prefrontal cortex(I Scan / II-Sensor Branding - Montenegro)

Alpha range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Alpha Montenegro left Alpha Montenegro right	-.01463	1.77010	.24088	-.49777	.46852	-.061	104	.952
Alpha Montenegro left Alpha Montenegro desna	.58815	1.68256	.22897	.12890	1.04740	2.569	104	.000

Table 27: t-test Alfa asymmetry of the left and right hemisphere of the prefrontal cortex(I Scan / II-Sensor Branding - Montenegro)

Beta range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Beta Montenegro left Beta Montenegro right	.04481	1.82490	.24834	-.45329	.54292	.180	104	.857
Beta Montenegro left Beta Montenegro right	-2.43611	3.43302	.46717	-3.37314	-1.49900	-5.215	104	.000

The average level of impact of the beta band (Table 27) during the first scan (t = 0.180, with exceptionally low significance level p = 0.857) shows indifference to the projected promotional content. During a repeated recording with the addition of sensory branding, a stronger beta activity of the right cortex was observed (t = 5.215), indicating increased alertness and/or increased level of attention to the emitted stimulus (Astolfi, Falani, Cincotti& al., 2008: 522-531; , Astolfi&Fallani, 2010: 165-179; Vechiato, Cherubino, Trettel&Babiloni, 2013: 49).

T-test results undoubtedly show changes in respondents' responses, but recorded hemispheric asymmetries under the influence of sensory branding, are almost a translation of the result of the magnitude of the effect, a parallel increase in values from which it is not easy to conclude the real impact of the sensory branding. Therefore, in the measurement of the effects of sensory branding, comparisons will be made of the results recorded on the same hemispheres within the same variable, obtained before and after the sensory additive intervention to the respondents.

It has already been noted that the electroencephalographic scanning of the subjects provides an extra amount of data. Starting from the standpoint that the positive impact of sensory branding has been demonstrated and proved to a great extent, and in an effort to reduce the amount of information, the final analysis of the effects of sensory supplements on promoting the destination, will be done by comparing the results of only the left hemisphere, the area of the brain whose increased activity signifies adoration, acceptance of stimuli is actually a priority sphere of interest in this research.

As in the previous procedures, using the t-test compares the values of the first recording with the values obtained during the second scan, with the influence of the sensor brand. In order to avoid confusion during statistical analysis of numerous data and analyzes, the results of the first recording and the left hemisphere are always in the first place, while the results of the second scan in the second row of the comparative tables are the red shaded variable.

The results show a significant increase in the theta left hemisphere rhythm activity as a consequence of the positive effect of sensory supplements (Table 28). The impact factor, the value t = -8.000, calculated using the eta square, is 0.38, which in turn means that the influence of sensor brand increased the acceptance of promotional content by 38%,* so that with the value p = 0.000, (representing the probability of making the wrong conclusion) it can be reasonably concluded that the effect of sensory branding is significant and positive.

Table 28: t-test asymmetry of left hemisphere Theta range of the prefrontal cortex(I Scan / II Scan -Sensor Branding - Greece)

Theta range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Greece left hemisphere I Greece left hemisphereII	-3.35259	2.93348	.53528	4.42623	-2.27869	-8.000	104	.000

Comparison of the values of the alpha rhythm of the first scan and the results obtained under the influence of sensor branding (Table 29) shows an increase in the activity of this range, so that the value t = -5.100 is calculated over the eta square of 0.199, ie 19.9%, which means an increase in the acceptance of the promotional content for the percentage indicated. With a value of p = 0.000, it is justified to claim a significant difference between the results compared, or the positive effect of sensory branding on respondents.

Beta rhythm of the left hemisphere, compared to the same hemisphere during the second scan, shows an increased value, increasing the attention to the presented content expressed through t = 0.114 and 11.4%, with probability p = 0.003, it is reasonable to conclude the increased inertia and attention for the content so placed, which is interpreted as a positive influence of the sensory branding (Table 30).

****t*** value calculated by the t-test of the paired samples, using the formula for calculating the eta square, is converted to an indicator of the magnitude of the effect in the t-test of the vaporized samples. The value obtained is multiplied by 100, and thus translates into a percentage expression of the size of the impact.

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Table 29: t-test asymmetry of left hemisphere Alpha range of the prefrontal cortex(I Scan / II-Sensor Branding - Greece)

Alpha range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Greece left hemisphere I Greece left hemisphere II	-1.77056	2.55092	.34714	-2.46682	-1.07429	-5.100	104	.000

Table 30: t-test asymmetry of left hemisphere Beta range of the prefrontal cortex(I Scan / II-Sensor Branding - Greece)

Beta range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Greece left hemisphere I Greece left hemisphere II	-.61611	1.46200	.19895	-1.01516	-.21706	-3.597	140	.003

As in the previous procedure, using the t-test, values of the theta range of the first recording are compared with the values obtained during the second left hemisphere scan, the variable of Montenegro (Table 31). The value of the magnitude of the effect, t = -4.453, calculated with the help of the eta-square is t = 0.16, and 16% with the significance level p = 0.000 leads to the conclusion that respondents under the influence of sensorial branding increased the level of acceptance/appeal of the presented content by 16%.

Table 31: t-test asymmetry of the left hemisphere of Theta range of the prefrontal cortex (I Scan / II Sensor Branding - Montenegro)

Theta range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Montenegro left hem. I Montenegro left hem. II	-.46259	.76331	.10387	-.67094	-.25425	-4.453	104	.000

Table 32: t-test asymmetry of the left hemisphere of Alpha range of the prefrontal cortex (I Scan / II Sensor Branding - Montenegro)

Alpha range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Montenegro lefthem. I Montenegro lefthem. II	-.77907	1.55762	.21197	-1.20422	-.35392	-3.675	104	.001

The alpha rhythm of the left hemisphere of the first scan compared to the same hemisphere during the second scan (Table 32) shows the value t = -3.675, calculated over the eta square gives a value of = 0.115, or 11.5%, with the significance level p = 0.001, an increased level of acceptance /admiration of promotional content is concluded.

Table 33: t-test asymmetry of the left hemisphere of Alfa range of the prefrontal cortex (I Scan / II Sensor Branding - Montenegro)

Beta range	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Montenegro left hem. I Montenegro left hem. II	-.55685	1.57468	.21429	-.98666	-.12705	-2.599	104	.002

Compared data in the beta range (Table 33), the left hemisphere between the first and the second scan, show an increased value, increasing attention to the displayed content, so that the value t is 0.114 and 11.4%, with the probability p = 0.003, it is therefore justifiable to conclude that this is a consequence of the positive effect of sensory branding on respondents.

7. Conclusion

The electroencephalographic scanning of the subjects provides various sorts of data. The researcher processes the collected information according to a predetermined criterion, that is, monitors the behavior of the selected parameters by which it proves/disproves hypotheses. The criterion for data analysis during this experiment was the application of WinEEG software which enables the creation of a brain map of the frequency spectrum (spectral power), the reaction of each respondent to the seen promotional materials. Then, using the Davidson model of hemispheric asymmetry, the reaction of the liking/disagreeing with the presented promotional material was analyzed. An identical procedure was repeated during the EEG scan of the respondents using sensory branding. In all measurements, sensory stimuli induced a change in the intensity of bioelectric potentials in the hemispheres, so that after processing and comparing the obtained data, it is entirely justified to assert the positive effect of sensory branding on respondents.

Previously presented is a fact-based evidence of the positive impact of sensory branding on respondents, that is, through the combination of promotional techniques and sensory branding, it is possible to increase the influence of tourism promotion on potential tourists in the decision-making process on purchasing a tourism product.

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