



Bemol Intelligence ***Consumer Neuroscience*** ***Brand Study***

- White Paper -







ÍNDICE

INTRODUCTION	3
RESEARCH PARADIGM	7
INSTRUMENTS AND METHODOLOGY	11
GENERAL STUDY PROCEDURE	16
RESULTS	20
DISCUSSION	30
CONCLUSIONS	33
REFERENCES	34

A top-down view of a desk with a wooden grain texture. A pen with a black and white striped grip and a silver tip lies diagonally in the upper left. A white notebook is open in the center, showing a large black letter 'C' on the top page and the words 'CREATIVE MESS' in bold black letters on the bottom page. A red banner is overlaid at the bottom of the image, containing the word 'INTRODUCTION' in white. A white object, possibly a stapler or paperweight, is partially visible on the left side.

C

**CREATIVE
MESS**

INTRODUCTION



C

CREATIVE MESS

INTRODUÇÃO

Far goes the time when sales numbers dictated which brand was notorious successful and growing. Nowadays the ones that are involved with the commerce of all kind of goods should attend to a multitouchpoint logic, understanding the necessity, buys and desired services, anticipating consumer's needs. With that in mind is necessary to know what the consumer, as a neurobiological being that he is, and how does the human brain work in the decision making process (Rodrigues, 2015).

There is as, a matter of fact, a complex revolution taking place in the retail industry, that can only be understood e and followed by the better informed entrepreneurs that are able to adapt in the domain

of intelligence, and innovate, coming up with new insights from multiple data sources from brands such as the dimensional model ICN NeuroBrandBuilder© (Rodrigues, 2015).

Selling occurs in multiplatforms with the growing online competitors such as Amazon or AliExpress, traditional retailers cannot exclude the urge to bound the physical and digital world, thus they should take more into attention the insights that neuroscience brings to innovate in a differentiated and correct form.

Some studies in the field of applied neuroscience indicate that the consumer wants to feel unique

and desires more than a simple buying process, the consumer wishes to live an experience, directed to the sensorial system as a way to improve the decision making process, for example, the visual proportions of packages, the chocolate consumption or even the feminine menstrual cycle, can influence the decision making process (Rodrigues, 2011).

The trust relationship between the sales person and client can last for years, but without a omnichannel logic and additional complementary services to the sale that relationship will be much more difficult.

The brand is left without a differentiated factor in the market, facing their competition without this omnichannel strategy.

Technology is nowadays an essential tool in this relational logic allowing to support the retail process not only to attend client necessities, how his brain works will be essential in the definition and application of these strategies, allowing to identify vectors that will allow to anticipate them (Egol, M., et al, 2013).

Brand, store, consumers and collaborators, were the main target of the present study. What we

here present will clarify how it is possible through innovative neuroscience techniques to draw drivers that can as a matter of fact elevate Bemol to a new success baseline. But how can we foresee how the consumer reacts to stimuli? How can we know where the brand should evolve?

It's in this field that neuroscience can land a help without the traditional ways to think without validate.

In this study we sought with the aid of vanguard techniques from neuroscience, using the ICN NeuroBrandBuilder and with personal metrics, to answer about the efficiency of communication of the brand and in which way it can improve its presence in the market as well as to really know clients and what they which for, from the consumer's behavior and his biology (Rodrigues, Moreira & Vitorino, 2013).

We live in the 3.0 emotion era (Lee & Kotler, 2011) pointing out the importance of emotion in the process of decision making and the role of cognitive neuroscience applied to consumption, in way to access more valid data, for an accurate analysis and drivers of application consequently more effective (Rodrigues, 2015).



"If you think on-line buys are leading to the rapid death of physical stores, think again. More than 75% of buys are made in stores."¹



¹ Wall Street Journal. "Online Shopping is Big. It's Also Tiny." February 26, 2014: <http://blogs.wsj.com/corporate-intelligence/2014/02/26/online-shopping-is-big-its-also-tiny/>



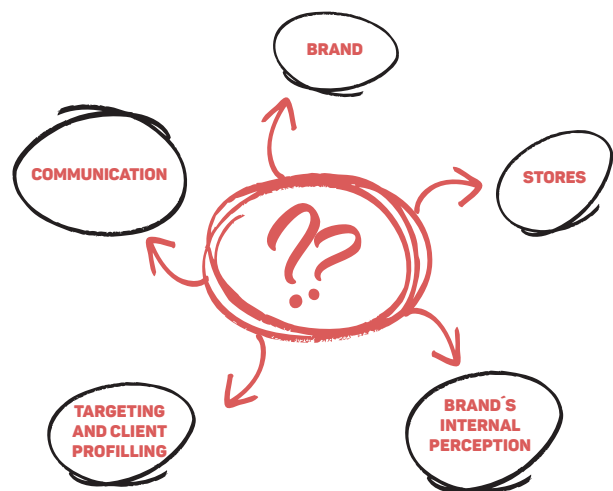
RESEARCH PARADIGM

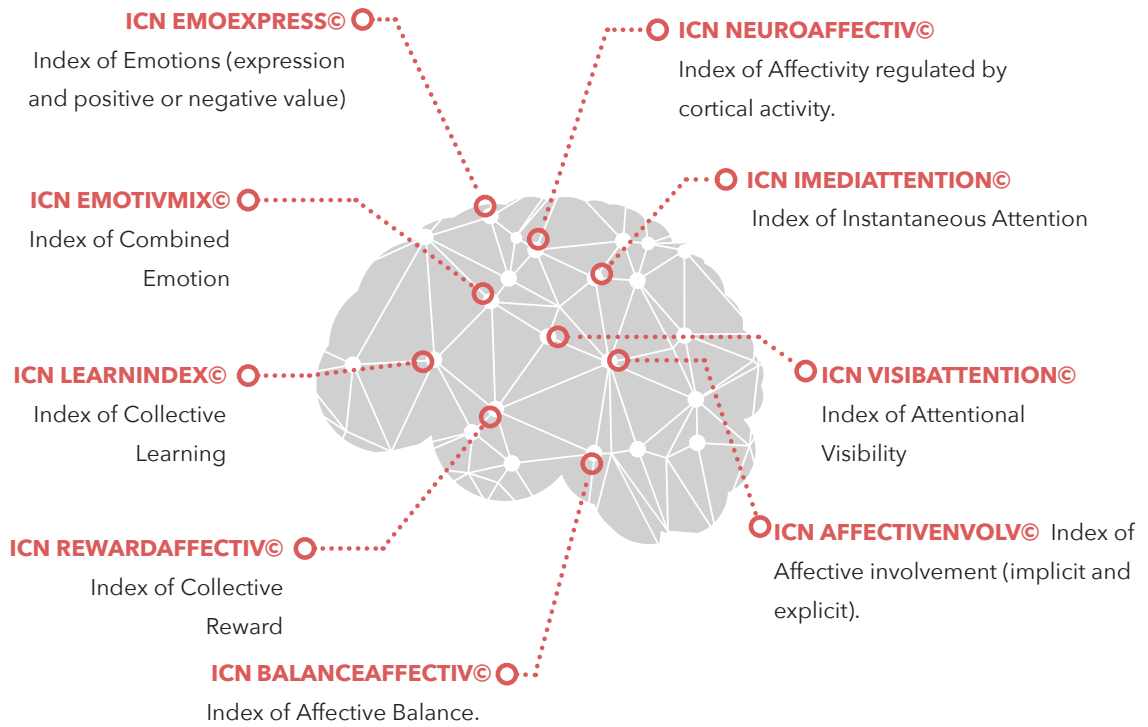


RESEARCH PARADIGM

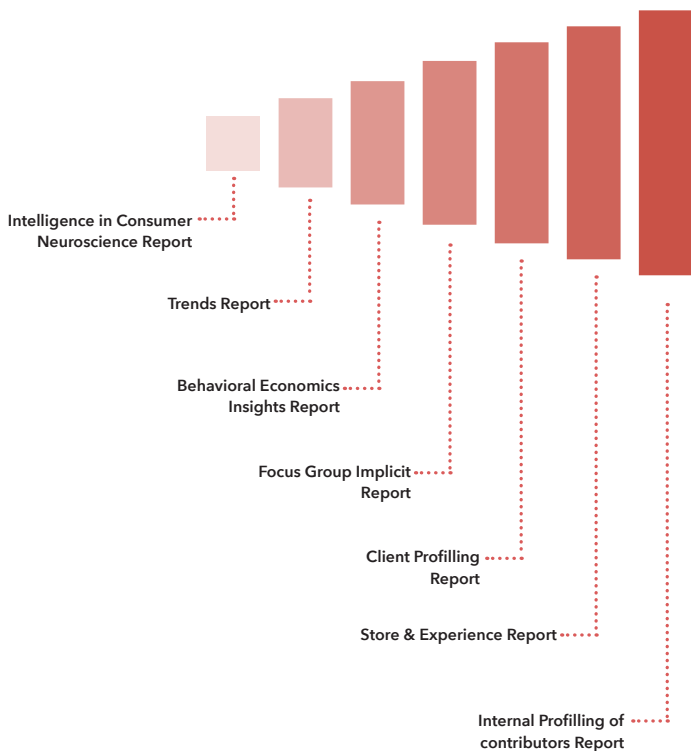
In the scope of a continuous improving process, Bemol is the brand leader in the retail field in the Amazonas region - Brazil, meant to obtain answers of their consumers in 5 dimensions:

In that sense, we intended to evaluate several types of measures, inside of neuroscience study, with incidence in own metrics of ICN Agency, that are the result of data processing based in data extracted from the instruments bellow described:





Besides the comparative metrics, reports were generated for crossing effects of relevant data, inside NeuroInsights© ICN Agency methodology such as:



The computation of various sources of data, with the intent of including all studies, generate the final report, denominated of NeuroInsights© Report with elements of practical intervention of the brand answering to the questions placed in the briefing provided by the client about the 5 vectors above depicted.

Each metric, dimensions and evaluations/reports are object of its own methodology that for reasons of extension are nor described here.



INSTRUMENTS AND METHODOLOGY



INSTRUMENTS AND METHODOLOGY

The research methodology of mix type includes the implicit evaluation and subjective of quantitative and qualitative type, with statistical analysis with metrics scientifically validated and own others whose idea is top gauge the transversality of elements. Thus, besides other instruments, were used:



ELECTROENCEPHALOGRAPHY: EEG

With the intention of evaluate the affective impact of the presented stimuli, the cortical activity was registered through system of EEG Emotiv EPOC+, with 14 channels and a sample rate of 256Hz. Metrics were calculated such as:

•Measures of emotional extent (Emotiv, 2010)

Excitation; Involvement/Boredom; Frustration; Meditation.



EMOTIONAL FACIAL EXPRESSIONS

Emotional expressions were registered through EMOTIENT software, based in digital image, through a web cam installed above the monitor, being an index associated to the emotional state based in FACS system, in a way to determine the emotional responses to stimuli. Metrics of units of action were calculated that define emotional expressions, for each stimulus, allowing to infer that comparison of metrics as:

- **Emotional extent**

Positive, negative or neutral;

- **Emotional expressions**

Joy, Surprise, Anger, Fear, Disdain, Disgust, Sadness, Confusion and Frustration.



SCR + HR: SKIN CONDUCTANCE RESPONSE + HEART RATE

The Conductance skin response (SCR) and heart rate (measured by Photoplethysmography ear oximeter) were continuously implemented through out the study. These are automatic emotional responses measured through the involuntary physiological activation of the volunteer allowing to infer about the way we experience and regulate our emotions (Rosa, Arriaga, & Esteves, 2009; Rosa, Caires, Costa, Rodelo, & Pinto 2014; Rosa, Esteves, & Arriaga, 2015).

With these sort of measures was possible to collect:

- **Physiological Activation**

Extent of skin conductance response.

- **Peaks of SCR activation**

By percentage of peaks and its differential by presented stimulus.

- **Heart Frequency Rate**

By the average number of heart beats at a minute de resposta de condutância dérmica.



EYE TRACKING

In this study the recording of ocular movements was made through the software system Attention Tool 6.1 (from iMotions) with a built in system of Eye-Tracking Eyetribe with a frequency of 30 Hz and an average precision of 0.5 visual angle. From this measure we withdraw as basic elements:

- **Fixations**

Points of fixation (point-of-regard) are the basic unit of measurement collected by the Eye Tracker. Having a start point (where?) and information's of time (when?) its possible to identify the attentional sequence (Rosa, Esteves, & Arriaga, 2012; Rosa, Gamito, Oliveira, Morais, Pavlovic, & Smyth, 2015, Rosa et al., 2017-ahead of print).

- **Racio:**

Number of participants that had at least one fixation in the AOI (Area Of Interest) comparing to the total number of participants.

- **Revisits:**

This metric relates to the number of repeated visualizations that one makes to a stimulus or AOI.

• **Heat Maps or Opacity Maps:**

Indicate areas of higher attentional focus representing in a graphic way the gaze points aggregation. Heats maps show the visual distribution of attention representing in red areas of more focused attention, descending to an yellow gradient and then green. The opacity maps show as brighter or darker the higher visual attentional areas (Rosa, 2015).

• **TTF - Time To First Fixation:**

Indicates the quantity of time that a subject spends until he looks at a specific AOI. (Banovic, Chrysochou, Grunert, Rosa, & Gamito, 2016; Rosa, Esteves, & Arriaga, 2014).

• **Distance from monitor (Avoidance):**

We can conclude from the approach-avoidance behavior towards different stimulus, approaching when stimulus is perceived as pleasant and avoiding when perceives as unpleasant.

The software iMotions that aggregates information from several instruments such as Eye Tracking, also allows to infer about the stimulus element during the time of explosion that has generates more interest and which time of behaviors aggregates.

IMOTIONS 6.1 - SOFTWARE INTEGRATED DATA COLLECTION AND BIOMETRIC ANALYSIS

In this study, and in order to aggregate the elements previously referred the software iMotions version 6.1 was used. This software allows to collect data from several equipment's (Eye Tracking, Facial Expression Analysis, Galvanic Skin Response, Surveys, EEG in one software platform. Besides the already explained instruments the mode Survey, allows to pose in a random manner words/answers for participant's choice with measurement of average time of choice, allowing to infer about the immediacy of word recognition.



SCALES AND QUESTIONNAIRES

The research protocol included several psychological questionnaires and Battery scales with the objective of extracting implicit and explicit content about Bemol.

QUESTIONNAIRES OF OBSERVATION AND DATA COLLECTION

• **Brief Maximization Scalee (Nenkov, Morrin, Ward, Schwartz & Hulland, 2008)**

This questionnaire allows to categorize the consumers in relation to the decision making process. Schwartz et al. (2002) suggests that the predisposition for optimizing the collection process when we make decision is a dispositional variable, that can distinguish between maximizers and satisficers. Maximizers are the ones that always search for the best answer, the best product, the best decision, investing great amounts of resources and efforts (mainly time) in the search for information.

Satisficers on the other hand are the ones that content themselves with the good enough option, the one that satisfies their necessities, by doing so they save a great amount of resources.

• **Self Assessment Manikin (SAM) Modified (Bradley & Lang, 1994)**

SAM is a non-verbal pictorial assessment tool and therefor it does not suffer the cultural influences. This technique directly measures pleasure, arousal and dominance associated with a person affective reaction to a wide variety of stimuli.

Each dimension presents five humanoid figures. This modified version presents a scale of nine points, varying from -4 to 4 in the pleasure dimension, to assess the personal pleasantness response to a stimulus. In the dimension arousal (perceived activation) a scale from 1 to 9 was used. In this study the dominance dimension was not used because it would not be relevant for the study purposes.

• **BIS/BAS (Gray, 1970 in Pickering et al., 1999)**

Is related to the sensibility to punishment and avoidance behavior. The Behavioral Activation System (BAS) is related with the sensibility to reward as well as to behavioral motivation. Allows to infer about dimensions of reaction to reward events, such as, if one searches the type of reward by diversion, orientation or direct reward.

• **MBTI - Myers-Briggs Type Indicator (Myers, McCaulley, Quenk & Hammer, 1998)**

This scale is an instrument used to identify personal characteristics and preferences. This measure of personality allows to draw a relational frame of dichotomy with 16 types of profiles based in Carl Jung's theory.

The profiles are built form the relationship between attitudes: Extroversion (E) and Introversion (I); Functions: Sensorial (S), Intuition (N), Thinkers (T) and Felling's (F) and by life style distinguished between Judgment (J) and Perception (P).

• **PANAS - Positive Affect and Negative Affect Schedule (Galinha & Ribeiro, 2005)**

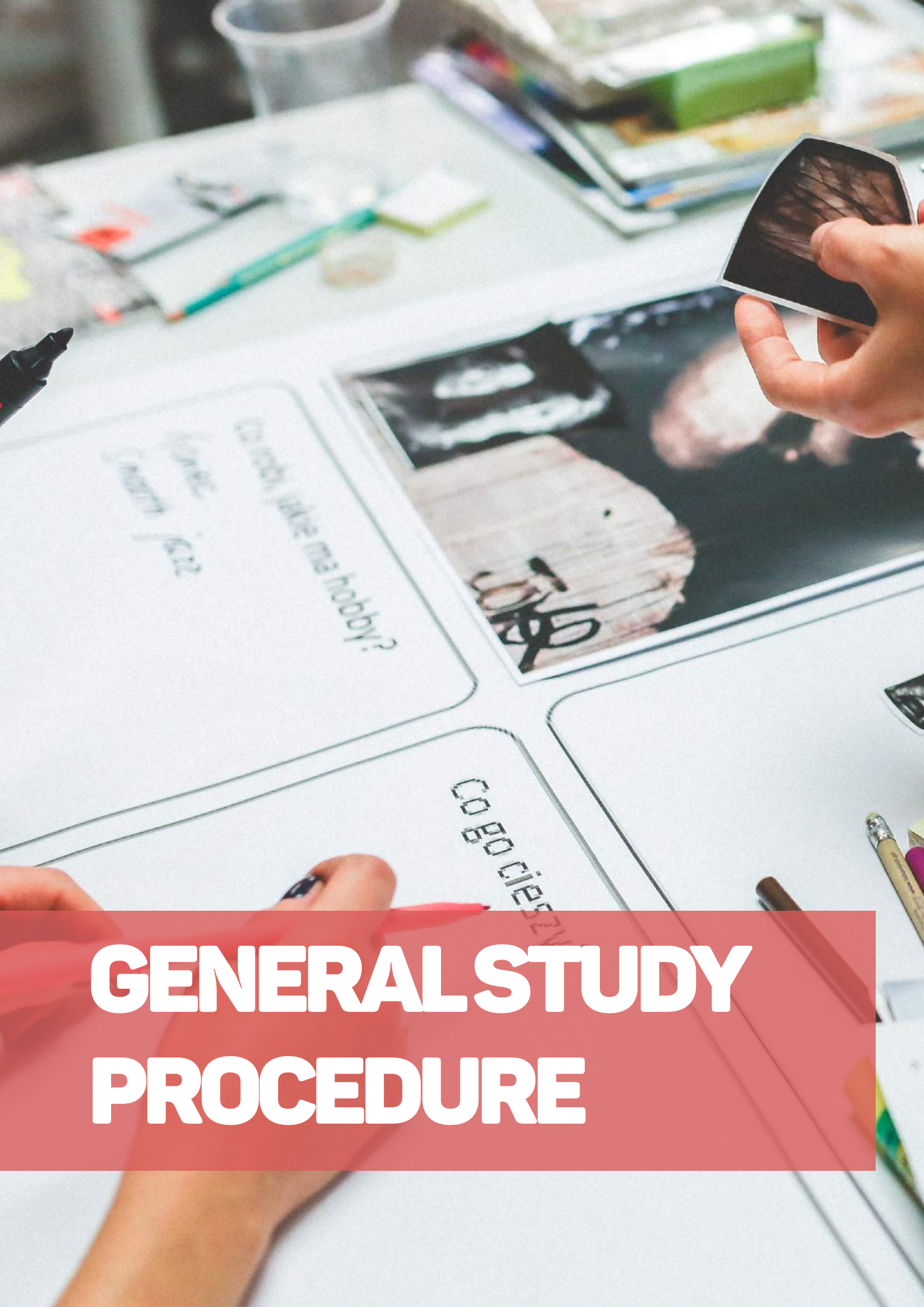
This scale consists in a group of 20 words that described feelings and emotions. Was asked to subjects, in the Portuguese version of the instrument, that they indicated in which way they felt each emotion in the last 2 weeks having as reference a technology and home appliances store.

• **Planets Projective Test**

This test, was conducted in focus group, allows the subject to place the brands that they are confronted by in different order of importance in a projective manner, the projective figures of the Sun, Mars, Shooting Star and Rising Star are used

• **Open Questionnaire**

A questionnaire featuring open questions of short answer was built. This questionnaire allowed to collect subjective impressions about the brand and store in a deeper manner



GENERAL STUDY PROCEDURE



GENERAL STUDY PROCEDURE

This study was divided in 3 moments that we will describe:

• First Moment

Every subject (n=97), upon arrival, was forwarded to a room where were attributed a code and signed the informed consent of the study.

They calculated a distractory task of counting numbers from 30 to 0 in intervals of 3.

Afterwards everybody filled the following scales:

- **MBTI**
- **BIS/BAS**
- **Brief Maximization Scale**

These scales were presented before any stimulus in order to avoid exhaustion and interference of the testing in the admeasurement of his/her profile.

• Second Moment

Afterwards in a random fashion a portion of the elements (n=40) that compose the final sample (n=97) were referred to the study using Neuroscience tools, the other portion (n=57) of subjects were taken in groups of 8 people to another room to focus group attainment.

Regarding instructions given, in the neurophysiologic study the initial briefing included the clarification of the non-invasive instruments used, and was explained that the subject would be part of a market study and that the data would be analyzed in group thus no personal information would be individually regarded.

Moreover, it was required that the participants washed their hands with a neutral soap (30 min before data collection) to ensure fidelity of collected data via RCD, additionally it was asked to take off all metal accessories and that the cellphone was in flight mode. Stimulus were presented via software iMotions 6.1 (iMotions Biometric Research, A/S) in a Lenovo laptop, the stimuli images were projected in a 24" monitor in front of the volunteer. In the recollection room artificial illumination was controlled as well as sound, only one investigator was present during collection, and in order to ensure best reliability the investigator was kept the same through out the whole study.

In the case of Focus Group subjects, they received the same instructions and were taken in groups of 8 people to a room where chairs were displayed in a semicircle. The Focus Group open discussion was accompanied by a presentation in order to minimize investigator interference. In this experiment facial expressions as well as reaction times were acquired with qBetter software.

• **Third Moment**

After subject's exit the presentation of stimulus both groups (Neurophysiologic and focus group) were again, in an individual manner, assigned to another room where they completed the following scales:

SAM (evaluating the same stimuli, in a randomized fashion, using the codification system for each stimulus allowing that the presentation of stimulus from subject to subject to be randomized).

Positive and Negative Affect Schedule (PANAS)

Comprises two mood scales, one that measures positive affect and the other which measures negative affect. Used as a psychometric scale, the PANAS can show relations between positive and negative affect with personality stats and traits. Ten descriptors are used for each PA scale and NA to define their meanings. Participants in the PANAS are required to respond to a 20-item test using 5-point scale that ranges from very slightly or not at all (1) to extremely (5).

The collection of Neurophysiological data and focus group was conducted in the offices of Bemol in Manaus. Both procedures (focus group or neurophysiology followed by scales and questionnaires) had a total estimated time of completion of 60 min. at the end of the study subjects were given a financial gratification.

Additionally, studies of ICN Tracing©, Mystery client and Shop Along were conducted in several Bemol stores in variable schedules, these results are not discussed here for extension reasons.

Presented Stimuli

Four brands and correspondent stimuli were selected: Logo; Slogan; Handouts; Publicity; Merchandising and Showcase. Three to four stimuli were presented isolated or in visual competition in a rotating paradigm (see picture), being that um stimulus was from Bemol, one from the rivalry store, another form a Benchmarking international brand and one created by ICN-Agency. These stimuli were evaluated in both pleasantness and activation.

For the slogan stimuli the actual slogan was presented as well as the previous Bemol slogan.

Words that the subjects potentially associated to the brand, to Bemol personality and with which participants would describe Bemol, were evaluated. These words were presented in a random presentation paradigm in which the subject selected three.



Image 1 - Paradigm of visual competition with the Showcase stimulus.



RESULTS



RESULTS

This study was done with the intent of give answer to several questions indicated by the client (Bemol) that were taken in consideration in the drawing of the investigation paradigm, these questions were:



1. Which stimulus the client remembers better: Bemol or Rivalry store?

2. Does the consumer appreciate the brand Bemol?

3. What kind of emotions does the consumer associate with Bemol?

4. What is the client profile that the store Bemol has? What does he crave from the brand?

5. What is the client perception of Bemol's publicity communication and logo?



6. How could we rebuild a better showcase that has more impact factor?

Aiming to answer to all different client's questions, and highlighting only a few in the present document, a paradigm was designed with several purposes that would pass through the evaluation of effectiveness of Bemol's advertising (Logo, Showcase, handout advertising and other publicity dissemination tools) when compared with advertising tools from the prime rivalry store and ICN-Agency creation.

SAMPLE DESCRIPTION

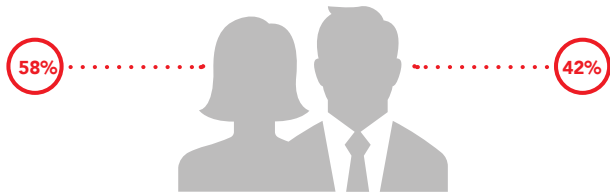


Image 2 - Gender distribution in the study.

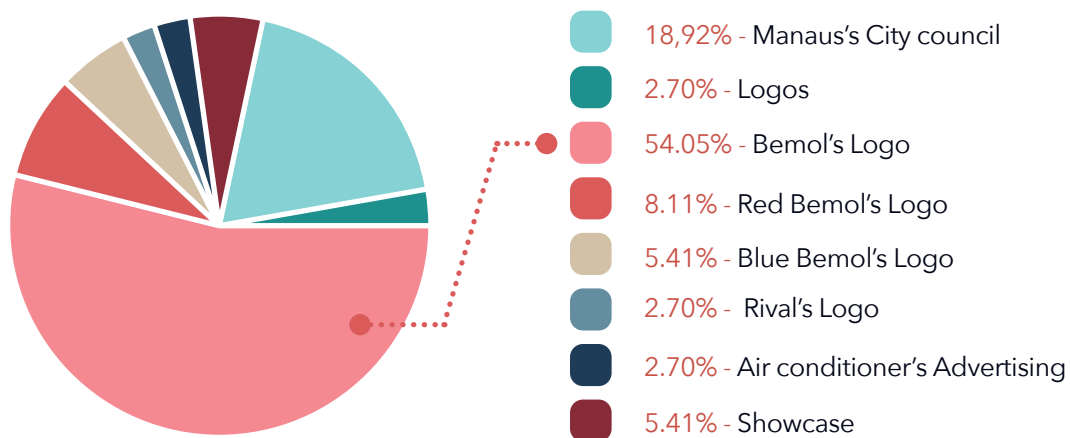
Total sample was composed of 97 subjects being 58,33% females and 41,67% males.

KEY FINDINGS (BEMOL VS. CONCORRENTES)

1) TASK OF RECALL (MEMORY)

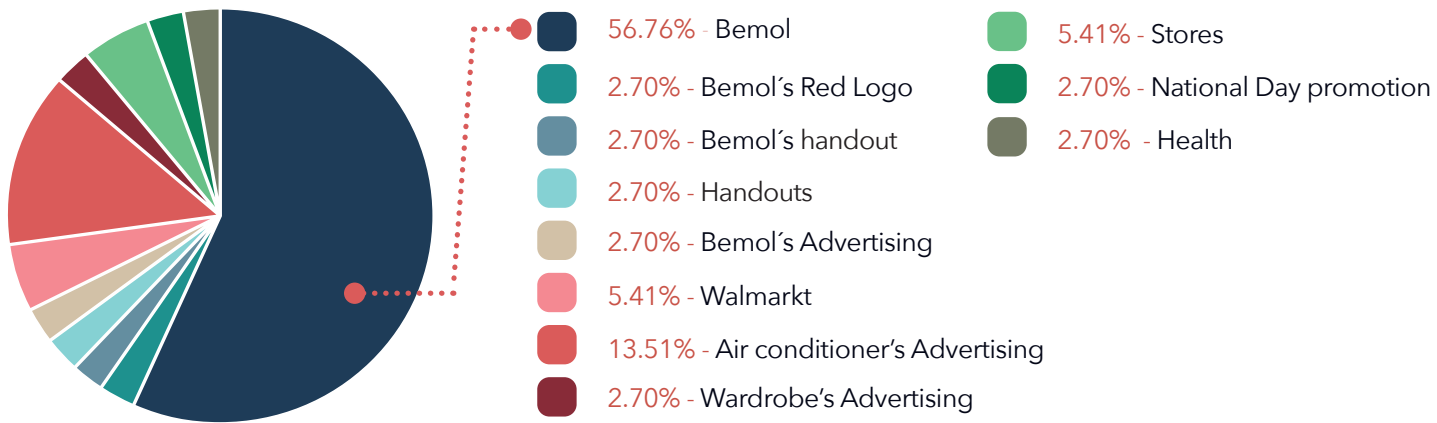
Subject recalls Bemol's advertising tools better than others:

Subsequent of stimuli memory recall task, after distractive count-down task, done after advertising images exhibition participants show higher recall rate of Bemol's advertising stimuli, with as much as 75,68% of people pointing out related Bemol stimuli (after distractive count-down task).



Graphic 1 - Main elements reminded in the recall memory task.

Furthermore, when questioned about what publicity was more appealing, the large majority 81,07% of participants point out Bemol related elements.



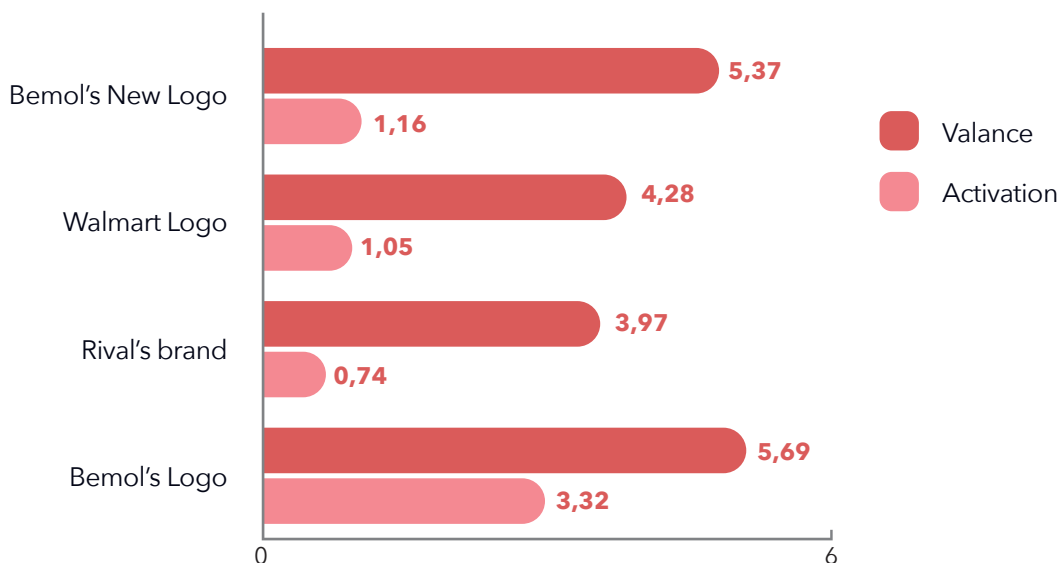
Graphic 2 - Advertising tools that were regarded as most appealing.

CONSUMER'S PROFILE

Consumer knows and appreciates Bemol's publicity!!

Using the SAM emotion assessment tool, we concluded the Bemol reveals reputation at a positive involvement superior to other brands. Participants recognize Bemol's presence in social media (53% knows Bemol activity in social media) against the opponent brand (88% does not know) and 61% categorize Bemol's brand as extremely pleasant and

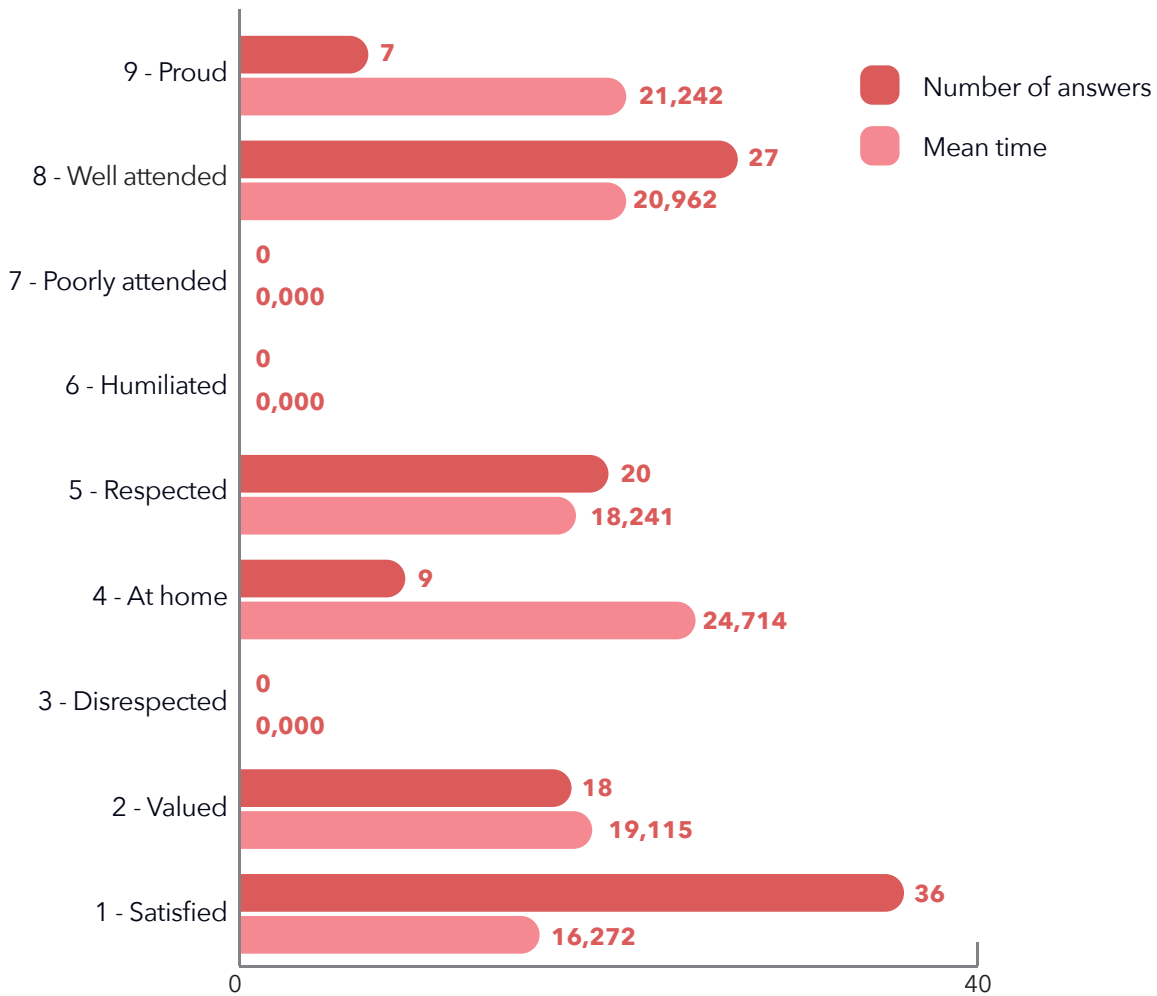
24% considers that the brand generates positive activation. Comparing publicity handouts 49% of participants considers Bemol's handout as extremely pleasant against only 12% that considers rivalry store's handout the better one.



Graphic 3 - Total sample logos

Likewise, 27% consider Bemol's handout to be responsible for positive activation against 12% that relate this kind of experience to the rivalry's handout.

When solicited the answers about how Bemol makes one feel, negative emotional options were not chosen, and the faster and more often chosen answers were Satisfied (16,272sec), Respected (18,241sec), Valued (19,115sec) and Well attended (20,962sec)



Graphic 4 - How bemol makes me feel? (open questionnaire)

Emotions associated to Bemol are positive ones!

Data collected with open answers questionnaire shows that subjects appreciate the brand and reveal a positive affect towards the brand, identifying themselves with colors used and brand slogan.

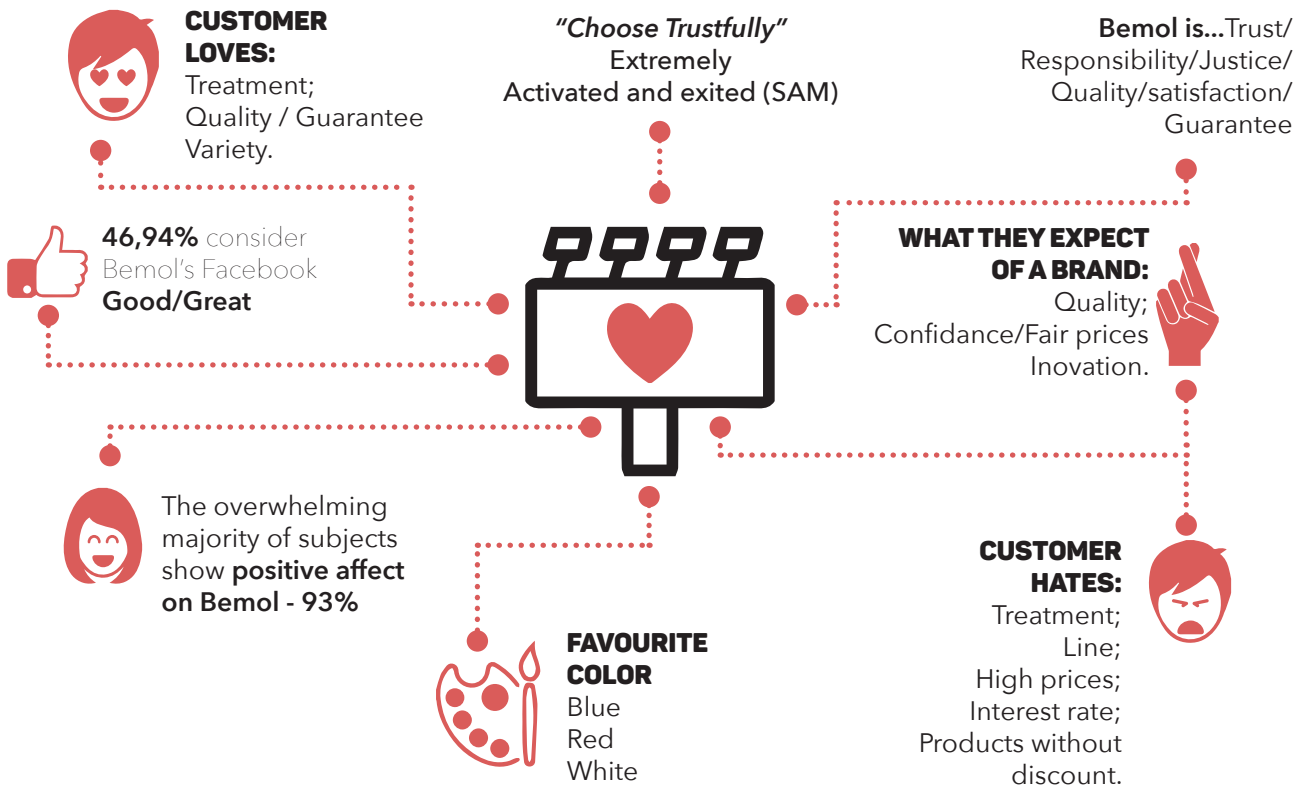


Image 3 - Affect associated with colors, slogan and Bemol's characteristics

Consumer is demanding and is looking for quality...

From the results of Brief Maximization Scale; Myers-Briggs e BIS/BAS batteries, the consumer profiled revealed that the person that shops at Bemol is someone that is rigorous and always searches for the best option possible, because of that this type of consumer frequently spends more time in

the search of products. Additionally, revels great resistance to the absence of reward. Most of the sample has Thinker profile type (INTP=18,56%) Craftsman (ISTP=12,37%) and Idealistic (INFP=11,34%), which allows to aggregate three conducts of thinking and act. Moreover they are:

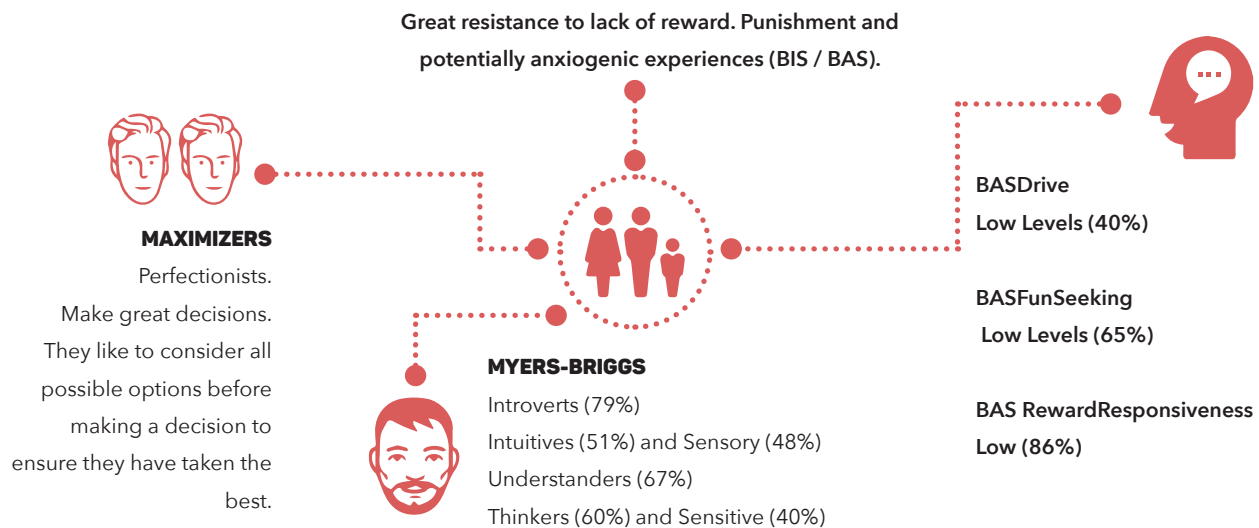


Image 4 - Consumer's profile derived from personality batteries.

3) COGNITIVE NEUROSCIENCE APPLIED TO CONSUMPTION

The computation of all metrics, that are here depicted, were calculated alike to all presented stimuli (logo; publicity; showcase; merchandising and slogan) are here presented only the results referring to the evaluation of showcases. We presented three showcases (Bemol's; Bemol's rivalry and a new one created by ICN-Agency). Afterwards a paradigm of visual competition was created between Bemol's showcase and the one created by ICN-Agency.

Showcases generate involvement and excitement.

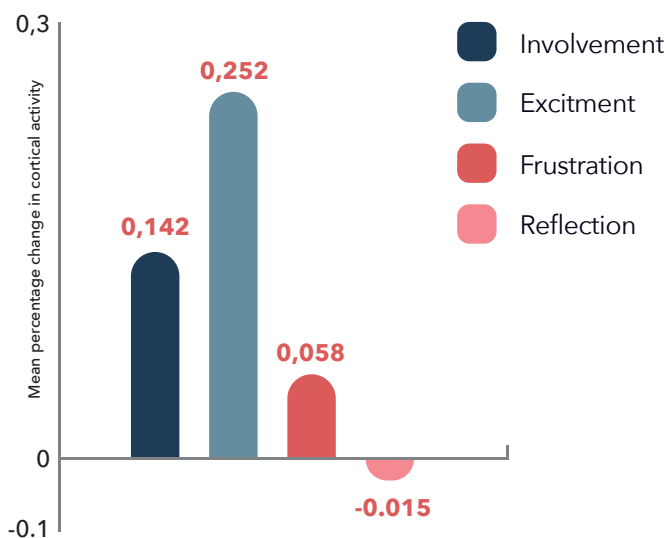
As a result of neurophysiological study (that included software and equipment previously described) we concluded that the areas of interest created in Bemol's new showcase have more attentional impact.



Image 4 - Heat map of AOI's from Bemol's Showcases

A Factorial Anova of repetitive measures with type of stimulus and emotions as intra-subject's factors allows us to verify that there are no differences in variation of emotional expression due to the stimuli showcase.

Although, in ICN NEUROAFFECTIV© metric differences were identified between the cortical activity $F(1.93,108.40)=54.20, p < .001$.



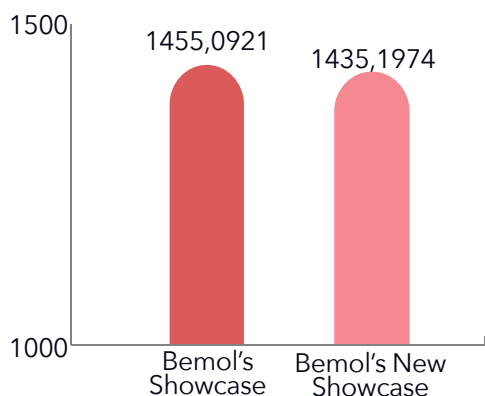
Graphic 5 - ICN NEUROAFFECTIV© technique shows cortical cerebral activity, higher excitement and involvement in at the presentation os showcases as a stimulus.

One can conclude from the results that there is a higher cortical excitation (involvement, frustration and meditation) level registered when the showcases are presented than when other stimulus is shown.

Regarding the showcases analysis with the ICN EMOEXPRESS© metric, a repetitive measure Anova Factorial was done that allowed to verify that there are no significant differences inferred by this type of stimulus in particular. Although, there were differences between the type of emotional expression $F(3.71, 230.14) = 11,20, p < .001$, having a higher related expression of negative emotions during the presentation of showcases. There wasn't an interaction effect between both factors.

Bemol new showcase developed by ICN-Agency generates higher immediate visual factor.

The ICN IMEDATTENTION© metric was used to explore the attentional immediacy (less time to TTF) associated with stimulus showcases, although, the Anova repetitive measure with type of showcase as intrasubject factor allowed to verify that there were no significant differences in the attentional orientation between showcases presented (immediacy) $p > .05$.

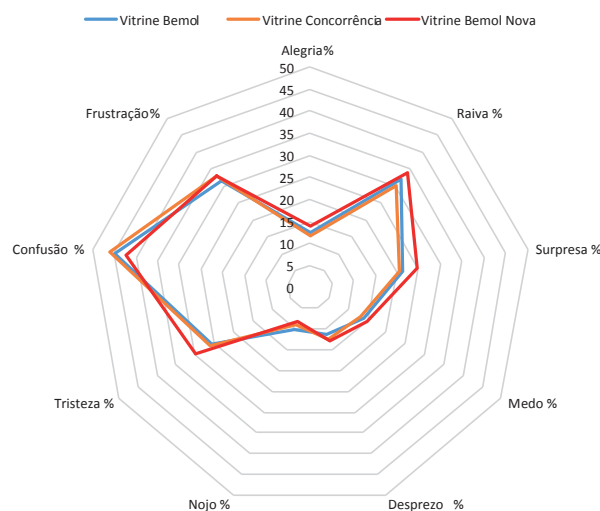


Graphic 6 - ICN IMEDATTENTION©, metric points out to a smaller TTF in the new showcase although it does not present statistical significance.

The ICN VISIBATTENTION© metric was constructed from a visual competition task with 4 random presentations, with the duration of 6 seconds, with the objective of measuring the visual attention dedicated to visits and revisits in defined AOI's. An repetitive measure Anova was calculated with type of showcase as an intra individuals factor, which did not revealed differences in visibility of stimulus (at least one visit in AOI) $p > .05$.

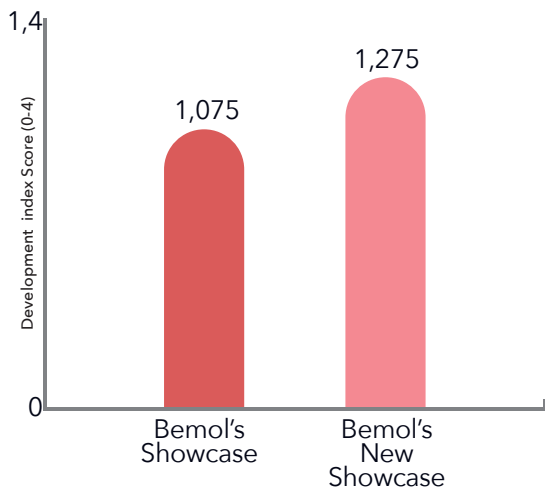
Bemol new showcase excites and engages more!

The application of Emotient metrics (iMotions) stands in the comparison of facial expressions. The application of this metric to the diferente stimulus, although it has not revealed significative results, it points out to a higher index of joy, surprise and anger in the case of the stimulus new showcase, and less confusion and disgust when compared with the other showcases.



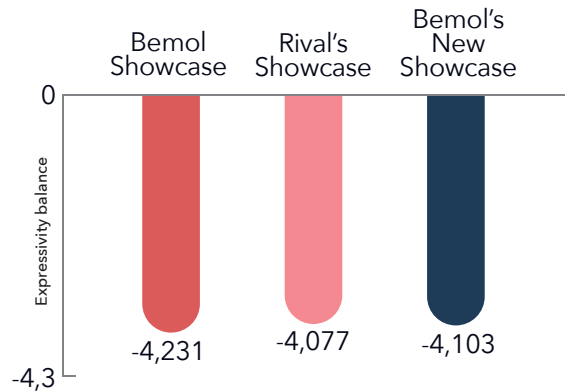
Graphic 7 - Emotient (Facet) metric reveals the new showcase stimulus tends to deliver a positive emotional index.

The usage of ICN AFFECTIVENVOLV© metrics, after the repetitive measure Anova with two showcases (actual and new) as a intrasubject factor did not revealed differences in average involvement in function of showcase ($p > .05$). although, it does reveal a tendency for significance in the involvement averages regarding showcases comparison ($p = .100$).



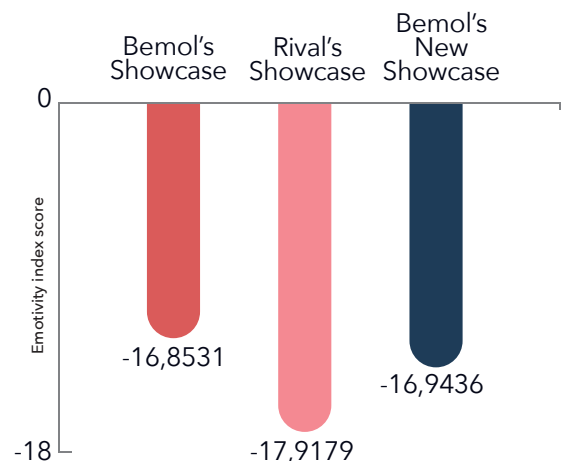
Graphic 8 - ICN AFFECTIVENVOLV©, metrics points out to a higher positive affection in the new bemol showcase stimulus.

The usage of ICN BALANCEAFFECTIV© metric corresponds to a index generated by the analysis of average of percentage of facial expressions. In what concerns the showcase stimulus there were no significant differences in the affective comparison between the three showcases ($p > .05$).



Graphic 9 - ICN BALANCEAFFECTIV© metric indicates an affective comparison more positive for the rivalry showcase.

ICN EMOTIVMIX© metric is an index composite of emotivity whose scale variates from de -100 a 100 and 0 has a neutral value. According to this technic there are no significant differences between presented showcases ($p > .05$), although bemol showcases presented less negative emotion attachment.



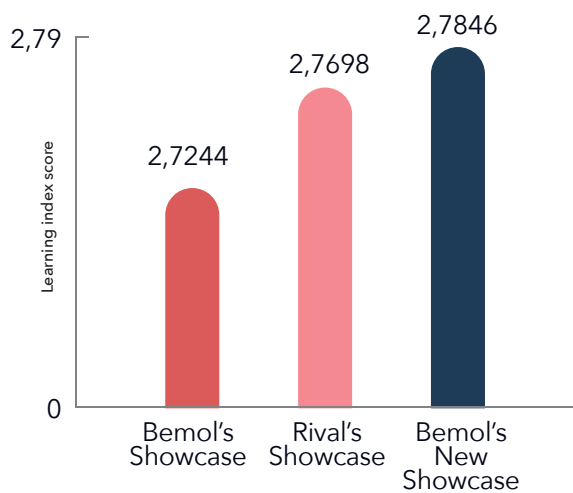
Graphic 10 - ICN EMOTIVMIX© metric points out to a less negative emotion in the case of Bemol's showcase.

Bemol’s new showcase tens to deliver an higher level of learning

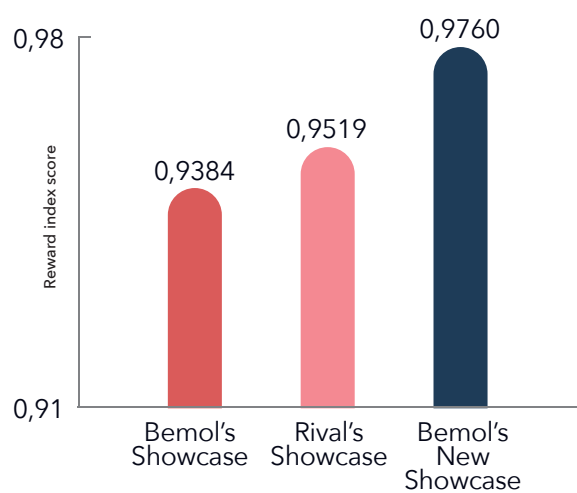
ICN LEARNINDEX© index is computed from the perceptual difference between composite variables related with learning, that varies in a scale from 0 to 5. An Anova of repetitive measures failed to reveal significative difference in ICN LEARNINDEX© ($p > .05$) though the new bemol’s showcase presented a slightly higher learning index level.

Bemol’s new showcase tens to be more rewarding.

The ICN REWARD AFFECTIV© metrics as an index was computed having in account several reward related data. An Anova of repetitive measures did not revealed significative differences in ICN REWARD AFFECTIV©. Although, Bemol’s new showcase was the one that revealed the highest reward score.



Graphic 11 - iCN LEARNINDEX© metrics points out to higher levels of bemol’s new showcase.



Graphic 12 - ICN REWARD AFFECTIV© metrics points out higher levels of reward score in the case of bemol’s new showcase.



DISCUSSION



DISCUSSION

All methodology, sample, means as well as data treatment and reduction allowed us to deliver an investigation capable of extracting reliable information of extreme importance, that we crossed in NeuroInsights, that we call of Intelligence Consumer Neuroscience. The NeuroInsights are the result of the study crossover of the consumer's profile, the Neuroscience consumer's study, the evaluation of the store (Tracing, shop along and mystery cliente), Tendencies of behavior, Behavioral economy study, Emotional Focus group study, internal perception of the brand study, key-words studies and academic studies that support the same insight.

The usage of Neuroscience tools, like EEG, Eye Tracking, GSR, Heart rate, iMotions software like FACET and Attention tool, as well as the usage of observation scales and collection of data allowed to consolidate results creating a high quality study crossover, making this study a more complex and reliable one.

According to what was initially hypothesized, it was possible through the combination of collection of data techniques, to understand how the consumer understands Bemol's brand and why he chooses Bemol instead of the rivalry.

One can understand from the collected data from the memory task that Bemol's brand not only is the best remembered, as its publicity suggests the creation of a deeper emotional bond in the consumer.

The consumer not only recognizes Bemol's brand in social media as he appreciates the publicity in handout format, revealing a great perception of the communication used by the brand and its media market usage.

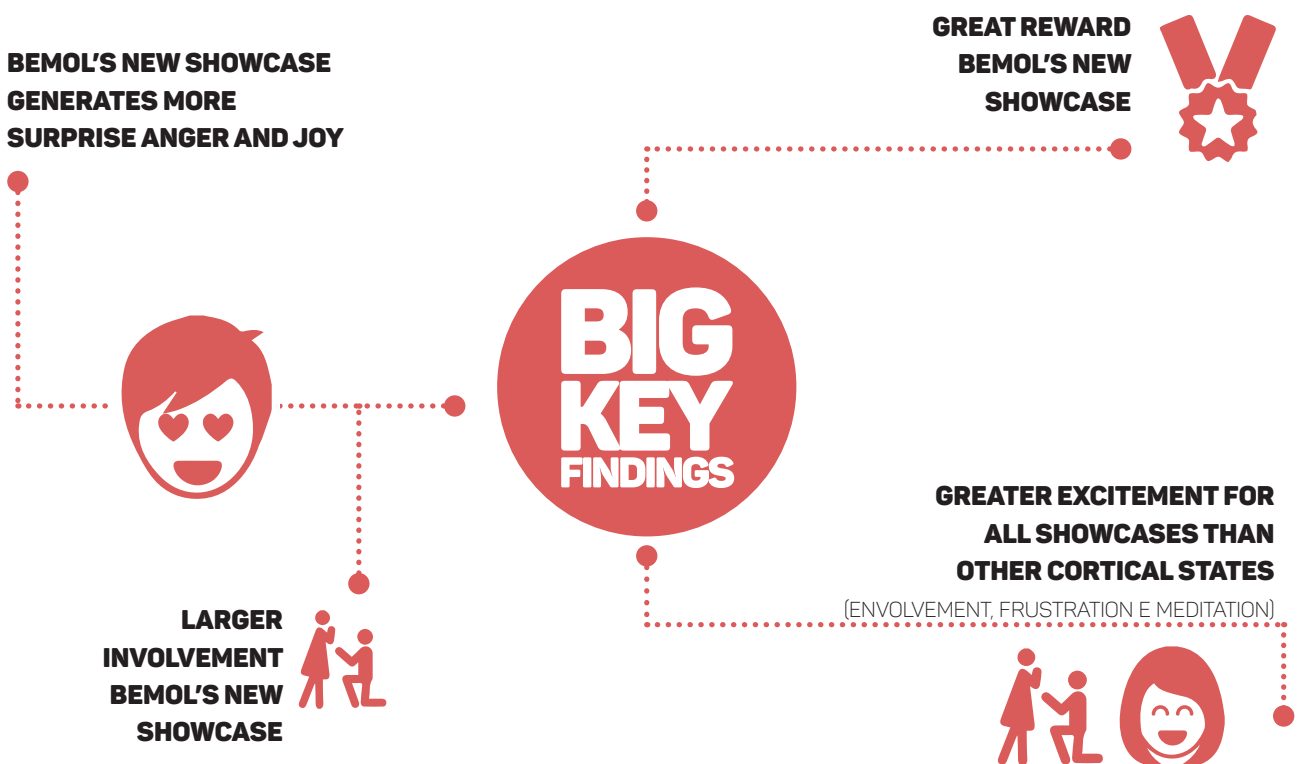
Bemol's elements (logo; handout; showcase; publicity and Merchandising) stand out from others presented in the different studied metrics in this study.

The implementation of more than 200 suggestions generated by the insights, can with higher probability of success, increase the reliability, trust

and binding of clients to Bemol. This brand has already a strong trust and fidelity from their clients, it can grow and maintain status of brand that sells the most by m2 in Brasil.

As a matter of fact, these methods show a huge advantage in what concerns to data crossing, once the usage of neuroscience tools allows the collection of more reliable data, allowing the investigator to access the consumer's real thoughts and feelings using to do so several types of study and data crossing that are only the same.

Thus, in synthesis, we obtained the following results in what the showcases concern (although the metrics results become less significant by the fact that we data crossed various factors):



A modern office chair is shown in profile, facing right. The chair has a dark, curved backrest and a light-colored seat. The background is a bright, overexposed area with a grid pattern of light and dark squares, suggesting a window or a wall with a grid. The overall color palette is dominated by light blues and greys, with a dark red horizontal band at the bottom.

CONCLUSIONS



CONCLUSIONS

Cognitive Neuroscience applied to consumption offers the perspective of a quantitative method to test the efficiency of publicity communication and brand affectivity and its products. Being so in the shape of logos, vídeos, handouts, shelves or physical spaces, or even experience, everything is possible to measure.

In this case it was suggested the renovation of showcases with alterations suggested in the new showcase developed, due to the impact that those alterations might generate reinforced by key words that the clientes suggest.

The integration of equipment and technicians with the capability of measuring the analyzed metrics in this study, in stores, registers or in the web are indispensable in the near future. The strategic integration of touch equipments and multimedia

in showcases and other spaces is equally important to an immersive experience without forgetting the creation of more comfortable spaces aligned with the home concept, favoring the emergence of familiar spaces to the consumer, reducing stress levels and attenuating the pain of paying.

The future of Neuroscience applied to consumption is promising and presents the possibility of investigation of the decision making process allowing thus to influenciante their choices and go beyond their expectations of consumption and attendance.

REFERENCES

- Banovic, M., Chrysochou, P., Grunert, K. G., Rosa, P. J., & Gamito, P. (2016). *The effect of fat content on visual attention and choice of red meat and differences across gender. Food Quality and Preference*, 52, 42-51 doi:10.1016/j.foodqual.2016.03.017;
- Bradley, M. M., & Lang, P. J. (1994). Measuring emotion: the self-assessment manikin and the semantic differential. *Journal of Behavior Therapy and Experimental Psychiatry*, 25(1), 49-59;
- Egol, M., Sarma, R., Sayani, N. (2013). *Reimagining shopper marketing & Building brands through omnichannel experiences*. Booz & Company.
- Emotiv, E. P. O. C. (2010). *Software Development Kit*.
- Galinha, I. C., & Pais-Ribeiro, J. L. (2005). Contribuição para o estudo da versão portuguesa da Positive and Negative Affect Schedule (PANAS): II-Estudo psicométrico. *Análise Psicológica*, 23(2), 219-227.
- Gray, J. A. (1970). The psychophysiological basis of Introversion-Extraversion. *Behaviour Research and Therapy*, 8, 249-266.
- Kotler, Philip; Armstrong, Gary. *Princípio de marketing*. 9 ed. São Paulo: Prentice Hall, 2003;
- Lee, N. R., & Kotler, P. (2011). *Social marketing: Influencing behaviors for good*. Sage.
- McCarthy, E. Jerome; Perreault Jr., William D. *Marketing essencial: uma abordagem gerencial e global*. São Paulo: Atlas, 1997;
- Myers, I. B., McCaulley, M. H., & Most, R. (1985). Manual, a guide to the development and use of the Myers-Briggs type indicator. *Consulting Psychologists Press*;
- Myers, I. B.; McCaulley M. H.; Quenk, N. L. & Hammer, A. L. (1998). *MBTI Manual (A guide to the development and use of the Myers Briggs type indicator)*. *Consulting Psychologists Press*; 3rd ed edition;
- Nenkov, G. Y., Morrin, M., Schwartz, B., Ward, A., & Hulland, J. (2008). A short form of the Maximization Scale: Factor structure, reliability and validity studies. *Judgment and Decision Making*, 3(5), 371-388;
- Pickering, A. D., & Gray, J. A. (1999). The neuroscience of personality. *Handbook of personality: Theory and research*, 2, 277-299.
- Rodrigues, F. (2011). *Influência do Neuromarketing nos processos de tomada de decisão*. Viseu: PsicoSoma Editora;
- Rodrigues, F., Oliveira, M., Diogo, J. (2015). *Princípios de Neuromarketing: Neurociência cognitiva aplicada ao consumo, espaços e design*. Viseu: PsicoSoma Editora;
- Rodrigues, F.; Moreira, J. & Vitorino, L. (2013). *Comportamento do Consumidor: Quando a neurociência, a psicologia, a economia e o marketing se encontram*. Viseu: PsicoSoma Editora;
- Rosa P. J., Gamito, P., Oliveira, J. Morais, D., Pavlovic, M, & Smyth, O. (2015). Show me your eyes! The combined use of eye tracking and virtual reality applications for cognitive assessment. In REHAB' 15 Proceedings of the 2015 Workshop on ICTs for improving Patients Rehabilitation Research Techniques;
- Rosa, P. J., Arriaga, P., & Esteves, F. (2009). Subliminal exposure to biologically relevant stimuli on affective and physiological states. In *Psychophysiology* (Vol. 46, pp. S52-S52);
- Rosa, P. J., Gamito, P., Oliveira J., Morais, D., Pavlovic, M., Smyth, O., Maia, I & Gomes, T. (2017-ahead of print). Eye movement analysis and cognitive assessment: the use of comparative visual search tasks in a non-immersive VR application. *Methods of Information in Medicine*, 0, 0-0 [IF: 2.24, 2015];
- Rosa, P.J. (2015). What do your eyes really say? Bridging eye movements to consumer behavior. *International Journal of Psychological Research*, 8(2), 91-104;
- Rosa, P.J., Caires, C., Costa, L., Rodelo, L., & Pinto, L. (2014). Affective and Psychophysiological Responses to Erotic Stimuli: Does Color Matter? In P. Gamito and P.J. Rosa, I see me, you see me: inferring cognitive and emotional processes from gazing behavior (pp. 171-190). Newcastle upon Tyne: Cambridge Scholars Publishing;
- Rosa, P.J., Esteves, F. & Arriaga (2014). Effects of fear-relevant stimuli on attention: integrating gaze data with subliminal exposure. *Proceedings of IEEE International Symposium on Medical Measurements and Applications*, 1, 1-6. Doi: 10.1109/MeMeA.2014.6860021;
- Rosa, P.J., Esteves, F. & Arriaga (2015). Beyond traditional clinical measurements for screening fears and phobias. *IEEE Transactions on Instrumentation & Measurement*, 64(12), 3396-3404 doi 10.1109/TIM.2015.2450292;
- Rosa, P.J., Esteves, F. & Arriaga, P. (2012). Ver ou não ver, eis a questão. A relação entre a emoção e a atenção visual selectiva. *In-Mind*, 3(1-4), 9-1;
- Schwartz, B., Ward, A., Monterosso, J., Lyubomirsky, S., White, K., & Lehman, D. R. (2002). Maximizing versus satisficing: happiness is a matter of choice. *Journal of Personality and Social Psychology*, 83(5), 1178;
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of personality and social psychology*, 54(6), 1063;

