

## EMOTIONAL OR RATIONAL PRODUCT LABELING USING GALVANIC SKIN RESPONSE

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Material original autorizado para su primera publicación en la revista académica REDMARKA. Revista Digital de Marketing Aplicado.

<https://doi.org/10.17979/redma.2018.01.020.4814>

Recibido: 17 octubre 2017

Aceptado: 2 abril 2018

### **Abstract**

In the research on consumer purchasing decisions, there has historically been a constant duality between the presence or absence of emotions and their role. Historically they have been observed as annoyances that interfere with optimal

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process, as it would be rational and cognitive. Since the late 70s, some researches emerged defending the importance of emotional processes in decision-making. The latest studies also persist in the idea that emotions are present in all product purchase decisions. But, does it occur with the same intensity in all types of products? In this research paper, an experiment is proposed to classify different products in two categories, one that concentrates those that generate a more intense emotional response and another with less intensity. This categorization is interesting for those experiments in which it is necessary, either for statistical treatment or for other reasons, grouping products by emotional response.

**Keywords:** Consumer Behaviour, Neuromarketing

## **1. EMOTIONAL AND RATIONAL PRODUCTS**

Since the first studies to the 70s, the research on the mechanisms that control human decision-making, has been focused on rational processes. Emotions were impediments, hindrances that emerged and sometimes prevented a correct decision, based on procedures that used human reason, to maximize the full benefit pursued by each person (Edwards 1954, Simon 1959).

The researchers had no doubt about the impact of emotions on decision-making processes, but felt that they were part of brain mechanisms different from the objective reason of each person. Therefore, they were seen as small problems that could prevent a correct decision in a decision making process.

The decision-maker, if acted properly, could eliminate that emotional influence of the equation, specifically those mechanisms controlling emotions, and exclusively activated rational processes, either consciously or unconsciously, to make the decision that resulted optimal for everyone, at all times.

This view, now obsolete among decision-making researchers, is still very common in the thoughts of people that are not familiar with these issues, being

widely believed the idea that emotions hinder good reason and, therefore, good decisions.

Mainly in the late 70s, major studies emerged that suggest that decision-making is very directly influenced by the emotions of each person, as is the case of Zajonc (1980); Fischhoff et al, (1988).; Hsee, (1988).

## **2. RESEARCH: INFLUENCE OF EMOTIONS IN DECISION-MAKING**

Etzioni (1988) outlines a decision-making model that is different from the one used in economy and psychology, arguing that most of the choices are made based on emotional reasons and committed value. Information processing is often excluded in other areas of choosing options, as emotions and values allow some options to be considered rationally, but it tends to "color" them or shortens deliberation. Fischhoff et al. (1988) argue that people have clear preferences on topics that are familiar to them, simple, and directly 'experienceable'. This allows them to perform trial and error operations, and justify the answers to decision-making as a matter of values, such as habits and traditions, that's why the study of preferences in decision making is complex and variable. Westbrook and Oliver (1991) also highlight the importance of emotions in consumer behavior, particularly in the post-purchase period, considering that the extent of satisfaction depends on the ability to represent the emotional content of the consumption experience.

While other authors such as Lewicka (1997) argue that the concept of utility has changed its meaning in literature about decision-making, on describing qualities of options that emphasize on emotional aspects, and are related to the action, which are descriptive. This change may reflect real differences between types of utilities. According to Lewicka (1997), rationalization and justification, once the decision is made, are more resilient when the decision has been made based on emotions, rather than when it has been based on 'objective' reasons, which could make us abandon our decision if a better option appears.

Having made the choice of a 'favorite alternative', the rest lose interest. It passes from a diagnostic scheme to one based on categories, "attribute to alternative", to "alternative to attribute", wondering: which one to pick? What would happen if I take alternative x? Also Kemdal et al. (1997) note that the decision making is not focused on the choice, but rather on finding arguments that defend the option, in order to avoid the feeling of remorse or regret, and criticism from others. Accordingly, the alternative is gradually separated from the other available. They argue that the decision maker tries to clearly separate a preliminary alternative choice from the other alternatives, and they call it differentiation (Svensson 1988).

Mellers et al. (1998) claim that for decades it has been studied and analyzed the rational choice theory, having found, according to the authors, several erroneous considerations:

- Rationality is a simple individual response. The problems may lack sufficient detail to have a single answer.
- Correct answers are consistent with a system of preferences and beliefs, but a judgment should also reflect the basic principles of survival and adaptation.
- Individuals have their own beliefs, and these can't be known by the experimenter conducting a study on their decision making process.

Hsee (1998) considers that some important attributes are not used by a decision maker, unless they can be moved precisely to an emotional frame of reference. He also proposes that positive emotions improve problem solving and decision making, leading to a flexible, innovative, creative, thorough and efficient cognitive processing, and further believes that emotions play an important role in cognitive processes and greatly influence the thoughts. It also states that there is no evidence that people with positive emotions see their cognitive ability reduced, as in contrast, they are more open, organized, and with clearer thoughts. The effects of these in decisions are observed more in

important and interesting decisions than those that are boring or unimportant. The implication of the decision maker in this regard is crucial for its influence. In the same vein, also Svenson (2003) argues that emotions play an important role in human behavior. In this sense, researchers have been interested for its effects in decision-making, even suggesting in some cases that most of the values are derived from emotions (Zajonc 1980).

According to Svenson (2003), emotions or feelings are defined as physical or mental sensations of the decision maker with positive or negative character, and influence the decision in two ways: in the decision process (information processing) or in structure (representation of the decision problem), i.e., the attractiveness of the information. Svenson (2003) suggests that somatic or affective markers accelerate decision, with a meaning of survival and saving energy. Reactions and emotional responses can accelerate the decision, but they can also deaccelerate if the emotional reactions are in conflict with one another or with their cognitive components.

Schneider and Barnes (2003) consider that the strict criteria for decision making of rationality in the way of consistency and coherence does not seem as important as in the practice of personal satisfaction. When the context changes, the preferences change.

Mitchell (2011) suggests that the body uses emotional information when the decision-making process is significant, and minimizes its influence when it is not so. Also Mikel et al. (2011) consider that the deliberative decision strategies have historically been regarded as the safest way to effective decisions. However, recent evidence and theory suggest that affective strategies can be equally effective: focusing on feelings rather than details do make higher quality complex decisions. These results suggest that emotional decision making strategies can be more effective than the strategies of rational deliberation that are need to make some difficult decisions.

Mackie and Worth (1989) surveyed American students intending to find out whether or not they were in favor of greater control over the possession and use of firearms. In their experiment, they induced half of students with a positive mood by projecting five minutes of a comedy show. Others saw an excerpt of a program about wine, which is neutral in emotional terms. Then, each group was presented with an argument defending a thesis on the control of weapons that was contrary to their own opinions. Those who were in favor of increasing gun control read an argument that was opposed to such restrictions, while those who were against it read an argument in favor. In general terms, the influence of good arguments revealed to be higher than the bad.

Now, for those who were in a positive mood and had little time to think, the difference was very small. While all other groups found much less convincing the weak arguments, the ones who were in good spirits and were in a hurry, the bad arguments resulted as persuasive as the good ones. The research suggests that there are two ways to make judgments about complex issues, one is slow but very accurate, and the other is fast. The slow but accurate is essentially based on logic, but the quickly one relies greatly on emotion. Reason and emotion can be designed as two complementary mechanisms of the human brain to make decisions.

### **3. DESCRIPTION OF THE PRODUCT LABELING EXPERIMENT**

In the present article it is established an experiment to determine the emotional arousal that causes the purchase of different products. It was conducted with a sample of 12 subjects with the following profile:

- Men
- Right-handed
- Age between 30 and 45.
- Incomes above € 24,000 per year
- Location: Madrid
- Marital status: Stable partner

- Nationality: Spanish
- Graduated from college

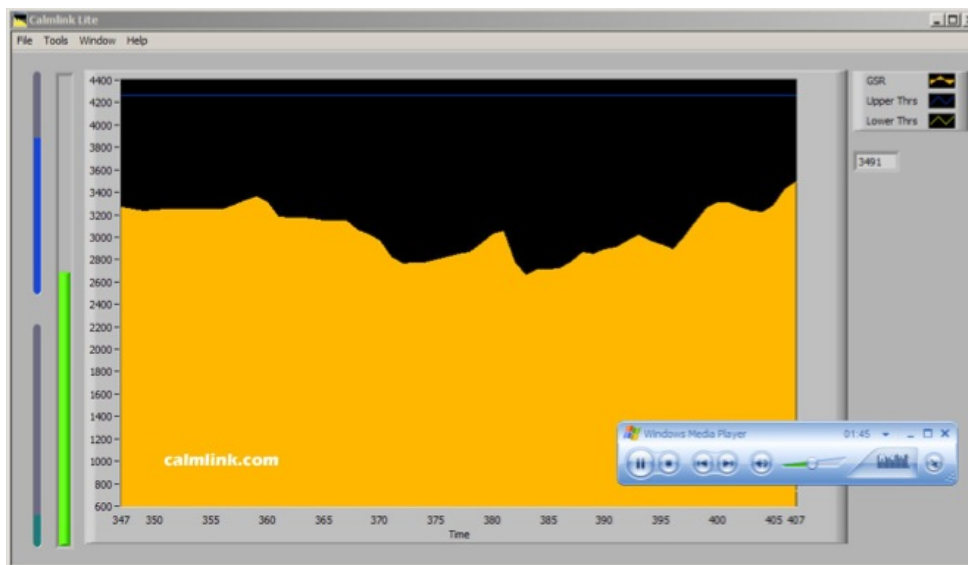
The test consists of a product classification, based on the activation that produces a simulated online purchase. The measure used is skin conductance (also called Galvanic Skin Response, GSR), widely used for measuring emotions. For this we used a device called GSR2, which precisely controls the levels of stress related to the translation of small changes in stress-skin conductance in a rising or falling tone. It measures changes in the autonomic nervous system activity by monitoring the subtle changes in the moisture in the fingers, the galvanic skin response.

**Image 1:** Instrument for measuring skin conductance, GSR2



In order to manage the information received with the device, we used a software called *Calmlink*, which has helped us to measure the galvanic skin response of subjects for each product under study.

Image 2: Calmlink Software for managing the galvanic skin response measures



The experiment consisted of two phases:

- In a first phase in which the usual conductance measurement of each subject is set, as each subject varies. For this the device has been placed and a time of 5 minutes was expected to obtain the usual measure in relaxed state of each subject.
- In the second phase, the subjects have been asked to conduct the process of buying the products in random order. Between each of the product purchase transparencies it has been introduced 15 seconds of rest in a neutral slide in order to return to rest. That way we have observed for each subject, the activation of galvanic skin response.



Image 3: Example of use of device in product purchase



Source: prepared by author

Image 4: Example of use of device in product purchase



Source: prepared by author

The products that have been studied were as follows:

Paintings, home air fresheners, digital frames, oral elixirs, washing detergents, Men's shirts, Men's shoes, digital cameras, hairdryers, mobile phones, brandies, alkaline batteries, heaters, pendants for men, men's jewelry, chairs, women perfumes, fabric softeners, hair conditioners, shaving machines, ties, ebooks, twin bracelets, tablets, jacuzzis, MP4s, pashminas for women, tennis rackets, bath salts, hats, snowboards, televisions, facial creams, Car radios, massage oils, earrings, body creams, leather jackets, incense, candles, women bracelets, men's perfume, champagne, sandwich loaves, paper napkins, rulers, shelves, visors, women shirts, knives,

umbrellas, juicers, women lingerie, USB sticks, baby car seats, pens, toothpaste, hangers, air fresheners, instant cocoa, cereals, nose hair scissors, sunscreen, rain coats, comforters, shaving foams, gloves, wheels, desk chairs, hair gels, pans, bowls, hair foams, champagne, plastic knives and forks, computer speakers, hair waxes, plastic plates and shelves.

For a nominal labeling, it has been considered that a product is emotional if the increase from the one in rest is greater than 35%, that is, if the index is 1.35 or more. If the increment of activation is less than 35%, the product will then be rational (with a less than 1.35 index).

For example, if a product A, the measure of the individual in rest is 2300, and in the process of buying it rises to 3200, the increase would be 39%, whereby the rate would be 1.39. This product would be labeled as an emotional product.

If in the above example of the product A, the measure goes up to 3000, the increase over the rest would be 30% and the index 1.30. We would then label this product as rational.

#### 4. DISCUSSION AND CONCLUSIONS

In this article it is proposed an experiment of product classification in two groups, depending on the emotional stimulation that the online purchase produces.

In annex 1 the tables are specified with the concrete results of all the products in the experiment. The resulting classification of the products, according to the following criteria would be:

- **Labeled as emotional:** paintings, lingerie, digital frames, man shirts, women's shirts, men's shoes, digital cameras, car radios, Men's perfumes, mobile phones, brandies, jewelry for men, computer speakers, Women's perfumes, champagnes, hair conditioners, shaving machines, ties, leather jackets, ebooks, twin bracelets, tablets, jacuzzis, MP4s,

pashminas for women, tennis rackets, bath salts, hats, snowboards, televisions, facial creams, home air fresheners, massage oils, earrings, body creams, incense, candles, bracelets, champagne and pendants for men.

- **Labeled as rational:** sandwich loaves, paper napkins, rulers, shelves, visors, alkaline batteries, knives, umbrellas, juicers, USB sticks, baby car seats, pens, toothpaste, hangers, oral elixirs, air fresheners, instant cocoa, heaters, cereals, nose hair scissors, sunscreen, raincoats, washing detergents, comforters, shaving foams, gloves, wheels, hair dryers, desk chairs, fabric softeners, hair gels, pans, bowls, hair foams, plastic knives and forks, chairs, hair waxes, plastic plates and shelves.

When reviewing the influence of emotions in decision making, it has been observed that a majority of researchers believe that emotions influenced the decision-making process of buying all items (Zajonc, 1980; Hsee, 1988, Damasio 1994, Schneider et al. 2003). This does not mean that there are some products that arouse emotions more intensely. In the experiment of measuring skin conductance, we could observe that exposure to the purchase of some products produced greater emotional arousal than others, which is interesting for the application of techniques in certain experiments that require the grouping of more emotional products on one hand and those which elicited less intense emotions on the other, such as functional Magnetic Resonance Imaging (fMRI) or electroencephalogram (EEG), or other biometric measures such as eye-tracking, or those related to the expansion of the pupil (pupilometer).

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## ANNEX 1 RESULT OF PRODUCT LABELING EXPERIMENT

	Paintings	Lingerie	Digital Frames	Sándwich loaves	Paper napkins	Man shirts	Rulers	Shirts	Shelves	Men´s shoes	Visors	Cameras	Car radios	Perfumes	Batteries
Subject 1	E (1,42)	E (1,37)	E (1,38)	R (1,12)	R (1,16)	E (1,37)	R (1,06)	E (1,37)	R (1,31)	E (1,36)	R (1,31)	E (1,38)	E (1,44)	E (1,43)	R (1,13)
Subject 2	E (1,38)	E (1,39)	E (1,41)	R (1,08)	R (1,21)	R (1,16)	R (1,08)	E (1,41)	R (1,28)	R (1,29)	R (1,21)	E (1,38)	E (1,41)	E (1,46)	R (1,15)
Subject 3	E (1,54)	E (1,36)	E (1,40)	E (1,36)	R (1,11)	E (1,41)	R (1,11)	E (1,43)	R (1,14)	E (1,47)	R (1,24)	E (1,43)	E (1,39)	E (1,41)	R (1,07)
Subject 4	E (1,43)	E (1,40)	E (1,38)	R (1,09)	E (1,38)	E (1,40)	R (1,14)	E (1,48)	R (1,05)	E (1,38)	R (1,28)	E (1,44)	R (1,23)	E (1,38)	R (0,98)
Subject 5	E (1,39)	E (1,36)	R (1,23)	R (1,11)	R (1,03)	E (1,56)	R (1,21)	E (1,53)	R (1,11)	E (1,39)	R (1,06)	E (1,39)	E (1,37)	E (1,38)	E (1,04)
Subject 6	E (1,38)	E (1,47)	E (1,43)	R (1,09)	R (1,06)	E (1,39)	R (1,04)	E (1,36)	R (1,14)	E (1,41)	R (1,09)	E (1,50)	E (1,43)	E (1,36)	R (1,08)
Subject 7	E (1,46)	R (1,28)	E (1,42)	R (1,15)	R (1,07)	E (1,41)	R (1,08)	E (1,42)	R (1,17)	E (1,43)	R (1,11)	R (1,33)	E (1,41)	E (1,53)	R (1,13)
Subject 8	E (1,54)	E (1,39)	E (1,38)	R (1,19)	R (1,02)	E (1,38)	R (1,14)	E (1,45)	R (1,32)	E (1,44)	R (1,13)	E (1,39)	E (1,44)	E (1,45)	R (1,16)
Subject 9	E (1,47)	E (1,43)	E (1,35)	R (1,05)	R (1,12)	E (1,42)	E (1,42)	E (1,47)	R (1,21)	E (1,35)	R (1,19)	E (1,41)	E (1,39)	E (1,44)	R (1,12)
Subj. 10	E (1,35)	E (1,44)	R (1,19)	R (1,07)	R (1,16)	E (1,47)	E (1,44)	E (1,48)	R (1,22)	E (1,47)	R (1,22)	E (1,40)	E (1,44)	R (1,28)	R (1,16)
Subj. 11	E (1,39)	E (1,48)	E (1,38)	R (1,08)	R (1,14)	E (1,42)	R (1,31)	E (1,42)	E (1,37)	E (1,39)	R (1,33)	E (1,38)	E (1,50)	E (1,43)	R (1,18)
Subj. 12	E (1,40)	E (1,36)	E (1,42)	R (1,22)	R (1,19)	R (1,11)	R (1,17)	E (1,40)	R (1,21)	E (1,44)	R (1,25)	E (1,39)	E (1,49)	E (1,44)	R (1,08)
MEAN	1,43	1,39	1,36	1,13	1,14	1,38	1,18	1,44	1,21	1,40	1,20	1,40	1,41	1,42	1,11
STANDARD DEV..	0,06	0,05	0,07	0,08	0,09	0,12	0,13	0,04	0,09	0,05	0,08	0,04	0,06	0,06	0,05

	Knives	Mobile telephons	Umbrellas	Brandies	Juicers	Jewelry for men	Computer speakers	Babycar seats	Women perfumes	Pens	Champagnes	Hair condition	Pasta	Shaving machines
Subject 1	R (1,16)	E (1,39)	R (1,04)	E (1,39)	R (1,06)	E (1,38)	E (1,37)	R (1,06)	E (1,38)	E (1,37)	E (1,41)	E (1,42)	R (1,04)	E (1,39)
Subject 2	R (1,06)	E (1,46)	R (1,08)	E (1,43)	R (1,16)	E (1,41)	E (1,52)	R (1,09)	E (1,43)	R (1,21)	E (1,38)	E (1,41)	R (1,02)	E (1,46)
Subject 3	R (1,19)	E (1,41)	R (1,03)	E (1,41)	R (1,18)	E (1,39)	R (1,28)	R (1,14)	E (1,41)	R (1,17)	E (1,43)	R (1,18)	R (1,13)	E (1,45)
Subject 4	R (1,21)	E (1,49)	E (1,39)	E (1,47)	R (1,23)	E (1,44)	R (1,31)	R (1,19)	E (1,53)	R (1,19)	E (1,44)	E (1,42)	R (1,18)	E (1,52)
Subject 5	R (1,17)	E (1,39)	R (1,05)	E (1,41)	R (1,26)	E (1,47)	E (1,46)	E (1,39)	R (1,27)	R (1,21)	E (1,51)	E (1,48)	R (1,16)	R (1,21)
Subject 6	R (1,03)	E (1,42)	R (1,11)	E (1,38)	R (1,28)	E (1,39)	E (1,41)	R (1,21)	E (1,48)	R (1,13)	E (1,57)	E (1,49)	R (1,21)	E (1,39)
Subject 7	R (1,04)	R (1,31)	R (1,14)	E (1,40)	R (1,21)	E (1,44)	E (1,49)	R (1,07)	E (1,46)	R (1,12)	E (1,42)	E (1,51)	R (1,12)	E (1,48)
Subject 8	R (1,09)	E (1,50)	R (1,19)	E (1,43)	R (1,04)	E (1,49)	E (1,38)	R (1,04)	E (1,39)	R (1,06)	E (1,42)	E (1,38)	R (1,01)	E (1,46)
Subject 9	R (1,18)	E (1,46)	E (1,41)	E (1,48)	R (1,07)	E (1,45)	E (1,39)	R (1,18)	E (1,42)	R (1,30)	E (1,38)	E (1,47)	E (1,39)	E (1,52)
Subj. 10	R (1,23)	R (1,42)	R (1,25)	E (1,39)	R (1,03)	E (1,39)	E (1,47)	R (1,26)	E (1,48)	E (1,39)	R (1,19)	E (1,43)	R (1,08)	E (1,43)
Subj. 11	R (1,21)	E (1,41)	R (1,28)	E (1,48)	R (1,01)	E (1,53)	E (1,43)	R (1,17)	E (1,43)	R (1,21)	E (1,39)	E (1,44)	R (1,11)	E (1,48)
Subj. 12	R (1,13)	E (1,44)	R (1,27)	E (1,51)	R (1,11)	E (1,51)	E (1,46)	R (1,28)	E (1,44)	R (1,15)	E (1,49)	E (1,49)	R (1,18)	R (1,11)
MEAN	1,14	1,43	1,19	1,43	1,14	1,44	1,41	1,17	1,43	1,21	1,42	1,43	1,14	1,41
STANDARD DEV..	0,07	0,05	0,13	0,04	0,09	0,05	0,07	0,1	0,06	0,09	0,09	0,08	0,1	0,12

	Sostener	Hangers	Ebooks	Oral elixirs	Twin bracelets	Air fresheners	Tablets	Instant cocoa	Jacuzzi	MP4	Pashmina	Heaters	Tennis rackets	Bath salts
Subject 1	R (1,16)	R (1,14)	E (1,39)	R (1,16)	E (1,37)	R (1,12)	E (1,38)	E (1,47)	E (1,45)	E (1,38)	E (1,46)	R (1,22)	E (1,38)	E (1,46)
Subject 2	R (1,14)	R (1,31)	R (1,23)	R (1,04)	E (1,35)	R (1,12)	E (1,57)	E (1,43)	E (1,48)	E (1,43)	E (1,42)	R (1,04)	E (1,41)	E (1,41)
Subject 3	R (1,04)	R (1,26)	E (1,40)	R (1,02)	E (1,43)	R (1,18)	E (1,62)	R (1,32)	E (1,41)	E (1,47)	E (1,53)	R (1,09)	E (1,39)	E (1,38)
Subject 4	R (1,31)	R (1,12)	E (1,47)	R (1,27)	E (1,48)	R (1,15)	R (1,20)	R (1,12)	E (1,37)	E (1,54)	E (1,37)	R (1,31)	E (1,48)	E (1,41)
Subject 5	R (1,21)	R (1,03)	E (1,51)	E (1,38)	E (1,39)	R (1,27)	E (1,53)	R (1,07)	E (1,35)	E (1,51)	E (1,35)	R (1,04)	E (1,43)	E (1,49)

Subject 6	E (1,42)	R (1,08)	E (1,38)	R (1,07)	E (1,46)	R (1,26)	E (1,48)	R (1,02)	R (1,21)	E (1,47)	E (1,48)	R (1,22)	E (1,53)	R (1,21)
Subject 7	E (1,56)	R (1,09)	E (1,39)	R (1,15)	E (1,39)	R (1,16)	E (1,42)	R (1,08)	E (1,46)	E (1,55)	E (1,52)	R (1,05)	E (1,55)	E (1,49)
Subject 8	R (1,31)	R (1,11)	E (1,47)	R (1,29)	E (1,56)	R (1,29)	E (1,39)	R (1,14)	E (1,53)	E (1,37)	E (1,48)	E (1,37)	E (1,42)	E (1,43)
Subject 9	R (1,25)	R (1,04)	E (1,42)	R (1,31)	E (1,52)	R (1,14)	E (1,36)	R (1,24)	E (1,43)	E (1,42)	E (1,43)	R (1,25)	R (1,23)	E (1,36)
Subj. 10	R (1,24)	R (1,06)	E (1,48)	R (1,15)	E (1,48)	E (1,38)	E (1,53)	R (1,28)	E (1,40)	E (1,49)	R (1,31)	R (1,29)	E (1,48)	E (1,38)
Subj. 11	R (1,14)	R (1,21)	E (1,41)	R (1,18)	R (1,26)	R (1,26)	E (1,42)	R (1,25)	E (1,38)	R (1,27)	E (1,46)	R (1,17)	E (1,42)	E (1,44)
Subj. 12	R (1,17)	R (1,10)	E (1,37)	R (1,27)	E (1,42)	R (1,21)	E (1,48)	R (1,14)	E (1,46)	E (1,48)	E (1,39)	R (1,28)	E (1,48)	E (1,51)
MEAN	1,25	1,13	1,41	1,19	1,43	1,21	1,45	1,21	1,41	1,45	1,43	1,19	1,43	1,41
STANDARD DEV..	0,14	0,08	0,07	0,11	0,08	0,08	0,11	0,14	0,08	0,07	0,06	0,11	0,08	0,08
	Hats	Show-boards	TVs	Cereals	Facial creams	Nose hair scissors	Hair ges	Pans	Suscreens	Earrings	Face creams	Incense s	Oilskins	Candles
Subject 1	E (1,38)	E (1,38)	R (1,12)	E (1,37)	E (1,38)	R (1,14)	R (1,21)	R (1,21)	R (1,21)	E (1,36)	E (1,38)	E (1,43)	R (1,31)	E (1,42)
Subject 2	E (1,45)	E (1,38)	R (1,15)	R (1,18)	E (1,36)	R (1,07)	R (1,17)	R (1,21)	R (1,10)	E (1,41)	E (1,42)	E (1,41)	R (1,21)	E (1,47)
Subject 3	E (1,44)	E (1,36)	E (1,38)	R (1,21)	E (1,39)	R (1,06)	R (1,14)	R (1,25)	R (1,15)	E (1,47)	E (1,41)	R (1,34)	R (1,06)	E (1,42)
Subject 4	E (1,43)	E (1,43)	E (1,39)	R (1,28)	E (1,41)	R (1,11)	R (1,06)	R (1,06)	R (1,16)	E (1,46)	E (1,39)	R (1,32)	R (1,08)	E (1,49)
Subject 5	E (1,43)	E (1,47)	E (1,42)	R (1,29)	R (1,13)	R (1,16)	R (1,11)	R (1,09)	R (1,23)	E (1,38)	E (1,41)	E (1,43)	R (1,04)	E (1,41)
Subject 6	E (1,38)	E (1,51)	E (1,41)	E (1,38)	E (1,38)	R (1,31)	R (1,17)	R (1,13)	E (1,37)	E (1,41)	E (1,40)	E (1,48)	R (1,11)	E (1,37)
Subject 7	E (1,39)	E (1,46)	E (1,47)	R (1,25)	E (1,42)	R (1,22)	R (1,31)	R (1,18)	R (1,26)	E (1,49)	E (1,39)	E (1,43)	R (1,03)	R (1,36)
Subject 8	E (1,41)	E (1,41)	E (1,48)	R (1,21)	E (1,46)	R (1,27)	R (1,28)	R (1,23)	R (1,06)	E (1,52)	E (1,51)	E (1,47)	R (1,05)	E (1,41)
Subject 9	R (1,44)	E (1,38)	E (1,49)	R (1,15)	E (1,51)	R (1,28)	R (1,26)	R (1,30)	R (1,08)	E (1,38)	E (1,48)	E (1,47)	R (1,14)	E (1,38)
Subj. 10	E (1,48)	R (1,26)	E (1,41)	R (1,11)	E (1,44)	R (1,29)	R (1,29)	R (1,28)	R (1,11)	E (1,41)	E (1,43)	E (1,43)	R (1,13)	E (1,46)
Subj. 11	E (1,41)	E (1,46)	E (1,49)	R (1,06)	E (1,41)	R (1,21)	R (1,24)	R (1,26)	R (1,16)	E (1,43)	E (1,48)	E (1,41)	R (1,12)	E (1,49)
Subj. 12	E (1,44)	E (1,38)	E (1,44)	R (1,01)	E (1,40)	R (1,18)	E (1,36)	R (1,21)	R (1,19)	E (1,48)	E (1,49)	E (1,41)	R (1,18)	E (1,51)
MEAN	1,42	1,41	1,39	1,21	1,39	1,19	1,22	1,20	1,17	1,43	1,43	1,42	1,12	1,43
STANDARD DEV..	0,03	0,06	0,12	0,11	0,09	0,08	0,08	0,07	0,08	0,05	0,04	0,04	0,08	0,05



	Washing detergents	Comforters	Shaving foams	Gloves	Wheels	Plastic knives	Hair dryers	Desk chairs	Home air fresheners	Masaje oils	Bowls	Hair foams	Ties	Men jackets
Subject 1	R (1,21)	R (1,17)	R (1,06)	R (1,27)	R (1,13)	R (1,18)	R (1,12)	R (1,12)	E (1,46)	E (1,42)	R (1,21)	R (1,09)	E (1,37)	E (1,46)
Subject 2	R (1,08)	R (1,19)	R (1,03)	R (1,15)	E (1,45)	R (1,12)	R (1,06)	E (1,46)	E (1,45)	E (1,38)	R (1,16)	R (1,14)	R (1,16)	E (1,41)
Subject 3	R (1,24)	R (1,26)	R (1,31)	R (1,12)	R (1,04)	R (1,27)	R (1,09)	R (1,21)	E (1,38)	E (1,51)	R (1,28)	R (1,23)	E (1,42)	E (1,39)
Subject 4	R (1,18)	R (1,25)	R (1,26)	R (1,11)	R (1,03)	R (1,15)	R (1,14)	R (1,07)	E (1,49)	E (1,48)	R (1,31)	R (1,28)	E (1,48)	E (1,52)
Subject 5	R (1,31)	R (1,04)	E (1,42)	R (1,04)	R (1,16)	R (1,19)	R (1,19)	R (1,17)	E (1,38)	R (1,21)	R (1,21)	R (1,31)	E (1,51)	E (1,53)
Subject 6	R (1,08)	R (1,03)	R (1,13)	R (1,32)	R (1,18)	R (1,05)	R (1,31)	R (1,26)	E (1,47)	R (1,17)	R (1,18)	R (1,21)	E (1,37)	E (1,39)
Subject 7	R (1,21)	R (1,08)	R (1,08)	R (1,30)	R (1,28)	R (1,28)	R (1,05)	R (1,12)	E (1,51)	E (1,46)	R (1,30)	E (1,46)	E (1,39)	E (1,43)
Subject 8	R (1,28)	R (1,04)	R (1,06)	R (1,23)	R (1,31)	R (1,31)	R (1,19)	R (1,06)	E (1,47)	E (1,41)	R (1,25)	R (1,30)	E (1,42)	E (1,40)
Subject 9	R (1,26)	E (1,26)	R (1,09)	R (1,20)	E (1,47)	R (1,23)	R (1,12)	R (1,03)	E (1,39)	E (1,38)	R (1,22)	R (1,16)	E (1,47)	R (1,17)
Subj. 10	E (1,39)	R (1,29)	R (1,18)	R (1,16)	R (1,06)	R (1,27)	R (1,06)	R (1,27)	E (1,47)	E (1,46)	R (1,21)	R (1,06)	E (1,42)	E (1,42)
Subj. 11	R (1,24)	R (1,21)	R (1,06)	R (1,05)	R (1,09)	R (1,30)	R (1,28)	R (1,31)	E (1,41)	E (1,42)	R (1,06)	R (1,10)	E (1,54)	E (1,52)
Subj. 12	R (1,07)	R (1,16)	R (1,29)	R (1,24)	R (1,18)	R (1,14)	E (1,45)	R (1,12)	E (1,40)	E (1,39)	R (1,09)	R (1,07)	E (1,47)	E (1,48)
MEAN	1,21	1,17	1,16	1,18	1,20	1,21	1,17	1,18	1,44	1,39	1,21	1,20	1,42	1,43
STANDARD DEV..	0,09	0,09	0,12	0,09	0,14	0,08	0,12	0,12	0,04	0,1	0,07	0,12	0,09	0,09

	Hair waxes	Plastic plates	French champagnes	USBs	Pendants for men	Shelves	Chairs	Men bracelets	Plastic forks
Subject 1	R (1,21)	R (1,12)	E (1,38)	R (1,12)	E (1,43)	E (1,38)	R (1,04)	E (1,48)	R (1,03)
Subject 2	R (1,27)	R (1,03)	E (1,44)	R (1,05)	E (1,53)	R (1,08)	R (1,15)	E (1,38)	R (1,15)
Subject 3	R (1,13)	R (1,24)	E (1,58)	R (1,09)	E (1,43)	R (1,04)	R (1,31)	E (1,53)	R (1,05)
Subject 4	E (1,46)	R (1,21)	E (1,36)	R (1,17)	E (1,38)	R (1,08)	R (1,28)	E (1,48)	R (1,17)
Subject 5	R (1,15)	R (1,16)	R (1,21)	R (1,21)	E (1,59)	R (1,16)	E (1,47)	E (1,42)	R (1,21)
Subject 6	R (1,05)	R (1,18)	E (1,58)	R (1,26)	E (1,51)	R (1,19)	R (1,11)	E (1,39)	R (1,29)
Subject 7	R (1,09)	R (1,11)	E (1,57)	R (1,14)	E (1,46)	R (1,06)	R (1,17)	E (1,42)	R (1,31)
Subject 8	R (1,11)	R (1,21)	E (1,37)	E (1,39)	E (1,42)	R (1,27)	R (1,16)	R (1,32)	R (1,17)
Subject 9	R (1,27)	R (1,31)	E (1,35)	R (1,05)	R (1,07)	R (1,31)	R (1,04)	R (1,21)	R (1,15)
Subj. 10	R (1,26)	R (1,32)	E (1,43)	R (1,13)	E (1,38)	R (1,21)	E (1,38)	E (1,39)	R (1,06)
Subj. 11	R (1,03)	R (1,04)	E (1,48)	E (1,43)	E (1,46)	R (1,05)	R (1,02)	E (1,48)	R (1,09)
Subj. 12	R (1,30)	R (1,09)	E (1,51)	R (1,04)	E (1,48)	E (1,48)	R (1,01)	E (1,53)	R (1,16)
MEAN	1,19	1,17	1,44	1,17	1,43	1,19	1,18	1,42	1,15
STANDARD DEV..	0,12	0,09	0,11	0,12	0,12	0,14	0,15	0,09	0,08