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Can irrelevant attributes mislead consumers' health assessment of food products?

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Abstract

This thesis analyses and proves how meaningless differentiation on an irrelevant attribute influences consumers' healthiness assessment of a food product and that the revelation of irrelevance is not able to weaken this the effect. To answer this question, I ran an experiment in which 239 respondents had to evaluate the healthiness of a chocolate granola bar. The food product was manipulated in six different conditions depending on the content of a regular ingredient (chocolate) or a special ingredient ("raw" chocolate), presence or absence of disclosure of irrelevance of the attribute, price level (high or low). Every respondent visualized only one of the six versions of the product and had to assess its healthiness. The results showed that the irrelevant attribute had a significant positive effect on healthiness assessment and that the disclosure of irrelevance didn't weaken the effect of meaningless differentiation. No significant effect was observed due to price variation. The experiment supports the past literature confirming that irrelevant attributes have an influence on consumers' perceptions and it brings out that they will continue to base their assessment on the inferences that the irrelevant attribute triggered, even when some relevant information is provided. From a marketing point of view, this outcome reveals that firms can differentiate and gain a suitable position in consumers' mind thanks to irrelevant attributes that are able to draw positive attention. On the other hand, it shows how consumers can fall victims of misleading marketing practices that make them form wrong opinions on health-related topics.

Content

Introduction

Use of health and nutrition-related claims on packaging and in advertising for food products is becoming very common, mainly because it seems to have a great influence on consumers and improve sales (Cao e Yan 2016; Rao e Wang 2016). Indeed, they have a significant positive impact on product evaluation and purchase intention (Chrysochou and Grunert 2014; Wansink and Chandon 2006). For example, process claims (i.e. how a given food is produced and processed) do not give specific information about the healthfulness of a product, but highlighting them can influence consumers in product evaluation (Berry, Burton, Howlett, 2017; Chrysochou and Grunert 2014). Indeed, it has been shown that judgments about healthfulness are more strongly influenced by information about the process rather than those about the content (e.g. nutritional facts and ingredients) (Rozin, 2005; Siegrist and Sutterlin, 2017). A famous example is the claim "organic" which has been shown to influence consumers' perceived product healthfulness and purchase intention (Chrysochou and Grunert 2014; Olson, 2016). Even if "organic" defines just the production process (Honkanen et al., 2006; Vittersø and Tangeland, 2015, Olson, 2016), many consumers believe that organic food is safer and healthier than regular industrial food (Bezawada and Pauwels, 2013; Thøgersen et al., 2015). Conversely, it is possible to cite many sources that show contrary evidence against organic food beliefs (New York Daily News headline, Bravata 2012; Berezow and Hartsfield, 2012; Philadelphia Inquirer headline, Yudell, 2012; Seufert et al., 2012; Smith-Spangler et al., 2012; CBS News, Castillo, 2012; Financial Times, Skapinker, 2012).

Another common trend is the use of "natural" claims. Sales of "naturally" sweetened products which are experiencing a huge growth (Nielsen 2015). In this case, the claim "natural" according to FDA is not an official definition and it doesn't have any meaning when related to processed food, but it has a significant impact on consumer's food product healthfulness assessment (Berry et al., 2017).

Other marketing strategies aim to create "superfood" due to some particular characteristics that make food products stand out from the others. For example, has been spread a lot of incorrect information about pink Himalayan salt and its benefits. Its colour and origin were used to convince people of amazing benefits, persuading them to buy it

at a high price and convincing them of its superior properties, while, actually, it has no additional benefits compared to classic white salt (Bressanini, "Sale Rosa dell' Himalaya? no grazie": http://bressanini-lescienze.blogautore.espresso.repubblica.it/2015/12/09/sale-rosa-dellhimalaya-no-grazie/).

The examples mentioned above show one main common misleading phenomenon observed during product assessment, which is “meaningless differentiation” (Carpenter, Glazer and Nakamoto, 1994; Broniarczyk & Gershoff, 2003; Brown & Carpenter, 2000; Meyvis & Janiszewski, 2002; Goldwell, 2008; Miljkovic et al., 2009 ; Albrecht et al., 2011; Berry, 2017; Clement et al, 2018). When a product has "special" (i.e. new, unique or attractive) characteristics, even if they are completely meaningless or irrelevant to judge specific product benefits, consumers will value them and judge the product more favourably (e.g. healthier). So, even if the information given is irrelevant to the actual benefits, consumers will make inferences about the product, convincing themselves of wrong facts.

Many reasons contribute to this phenomenon to take place. Consumers can find difficult to interpret information and judge food product because they don't have the right knowledge to do it: being concerned about diet and healthy lifestyle doesn't mean having the same knowledge as an expert in the nutrition field. It has been shown that often consumers have limited nutrition knowledge (Parmenter E Wardle, 1999). For example, a Swiss study showed that more than half of the participants erroneously believed that brown sugar is healthier than white sugar (Dickson-Spilmann, Siegrist & Keller, 2011). Moreover, even after the use of a product, consumers are not able to identify which features the effect or performance can be attributed. Thus, often the only way to know whether a feature is irrelevant or not is to consult independent sources such as consumers protection organizations, experts and test reports (Hoch & Deughton, 1989; Albrecht et al., 2011). Consequently, when consumers lack the necessary knowledge to make informed decisions, they have to rely on substitutes for knowledge. In such situations, people may rely on simple heuristics to make decisions (Tversky & Kahneman, 1974). For example, consumers rely on symbolic information to judge non-observable food properties, such as the healthiness of a specific food product (Sütterlin, Siegrist, 2015).

More generally, consumers often base their purchase decision on words, figures, illustrations and other attributes placed on the front product package (especially when assessing product in-store), instead of reading the exact facts about the product, such as information usually printed on the back related to product declarations such as ingredients and nutritional facts, leading them to decision mostly based on an incomplete process (Nordfalt, 2009; Clement et al., 2018). This happens when consumers evaluate a product that is not familiar with or that require some specific knowledge, so they can misinterpret and be misled by other elements such as visually vivid elements on the package (Clement et al 2018). Consumers often fool themselves and make assumptions about the benefits of the products, even if the message conveyed by the brand (advertisement, claim, logos) doesn't explicitly communicate the presence of that benefit and this happens due to several heuristics and biases that will be explained more deeply in the next paragraphs. Lastly, people may gather information from non-certified people and so disinformation spreads. For example, there are social media influencers in the food and fitness sector that promote food supplement and give dietary advice, even if they are not a nutritionist.

The results of past experiments (Carpenter, Glazer and Nakamoto 1994, Broniarczyk & Gershoff, 2003; Brown & Carpenter, 2000; Meyvis & Janiszewski, 2002; Goldwell, 2008; Miljkovic, 2009 ; Albrecht et al., 2010; Berry et al., 2017; Clement et al, 2018) demonstrated that an irrelevant attribute (as long as it is unique and distinctive) can be valued and this effect persists even if consumers acknowledge the attribute is irrelevant. In this case, can we still talk of unfair conduct?

This thesis aims to investigate the effect of meaningless differentiation on healthiness assessment of food product. I ran an experiment collecting responses through a survey and analysing them through statistical software (SPSS), to test whether or not a product differentiated on a meaningless attribute is perceived by consumers as healthier than a regular version of it. Moreover, I investigated the possible effect of two moderators of the main effects: disclosure of the irrelevance and price. I wanted to check whether the disclosure of the irrelevance of the attribute is able to weaken the main effect or not and if a high price can be justified by the presence of the meaningless attribute and if it strengthens the main effect.

In Chapter IV, I hypothesized which could be the underlying causes of the respondents' behaviour with the support of the results obtained from the experiment (Chapter III) and the bias and heuristics presented in Chapter I: Literature Review. Even if it is not possible to give a definitive and univocal explanation of consumers' behaviour, this thesis contributes to the scientific literature about consumers' choice in food products, giving additional proves that preferences and choices are formed through biased mental process and heuristics. In this way, these results can give some advice to better target the efforts of marketing in new product development, product positioning and advertising.

On the other hand, this topic is also important for general health issues. Food products possess some substantive or important nutrition attributes that may have direct short- and long-term effects on human health. For this reason, the implications of the results in this study are pertinent to the issue of the effect of the presence/absence of trivial attributes alongside the substantive nutrition attributes on consumer choice. It is important to investigate this topic to better understand how marketing activities can influences choices that have an impact on consumers' diet and health, to understand where is the edge of a unfair conduct and when it is necessary to put in place some regulation to protect consumers, for example, forcing companies to give accurate information about advertising claims, ingredients and nutritional facts.

CHAPTER I: Literature Review

Meaningless Differentiation

Product differentiation is one of the most famous marketing strategies and has been deeply described and analysed, for example, in well-known studies by Aaker (1991), Kotler (1991), Porter (1985). This strategy is functional to position a product or brand in a distinct place in consumers' mind, by offering a product with characteristics, attributes, and benefits that other competitors are not able to offer. Moreover, the mere differentiation is not sufficient, but, above all, is necessary to make consumers perceive the distinct positioning of our product or brand. Indeed, successful product differentiation should be consumer-oriented, i.e. based on attributes and characteristics that are meaningful, relevant and valuable for consumers (Porter 1985). In this way, the product or brand is able to gain consumers' attention, to influence their preferences and finally to convince them to buy it. For example, San Carlo differentiated itself launching unusual new products in the potato chips market in the last years. They introduce new potato chips product with unconventional flavours like lime, mango or mustard, encouraging consumers to try them using the claim "Taste is for the curious ones". In this way, these products are noteworthy and memorable for the consumers and are able both to attract new curious potential customers and to please again the loyal ones.

However, some products or brands have successfully differentiated on attributes that seem important and functional to give benefits, creating a connection between them and the product quality, but that on closer examination are not (Carpenter, Glazer and Nakamoto 1994; Berry et al., 2017; Clement et al., 2018; Albrecht et al., 2010; Miljkovic et al., 2009). This is called “meaningless differentiation”. Even if the attribute is not relevant and functional to give any better performance, the presence of that attribute create a “difference” in the product or brand and can influence consumer’s buying decision process (Carpenter, Glazer, and Nakamoto1994; Loken, 2006; Miljkovic et al., 2009). In other words, an irrelevant attribute is a feature that does not provide any physical-technical utility (pct-utility) or an attribute whose impact on product performance/utility is trivial and marginal (Brown & Carpenter, 2000; Albrecht et al., 2010). For example, in the '80s Procter & Gamble marketed the instant Folger's coffee claiming that is had "flaked coffee crystals" created through a "unique, patented

process," implying, but not stating it explicitly in its advertising, that flaked coffee crystals improve the taste of the coffee. Indeed, the shape of the coffee grains is relevant for ground coffee (i.e. a greater surface area exposed during brewing release more flavour), but it is irrelevant for instant coffee since the crystal simply dissolves, so its surface area does not affect flavour (Carpenter et al., 1994).

It is important to notice that even if the attribute is called "irrelevant", it doesn't mean that consumers ignore it during the purchase decision. These features are useless from a pct-utility point of view, but they are useful to differentiate the product, to gain consumers attention and make them perceived as superior or, in general, make them prefer it in comparison to the others alternatives in the market (Capenter, Glazer and Nakamoto, 1994; Albrecht et al., 2010).

It is possible to find a concept close to meaningless differentiation for the first time in a paper by Hoteling (1929) called “Stability in Competition”. He expressed the idea that producers have an incentive to make their products more or less alike, with only small differences between them due to standardization of large-scale production, fashion and imitation that characterize markets. For these reasons, firms competing in the same market have limited opportunities to differentiate their product, especially on physical attributes. A trend which is possible to observe in the markets over the years is that differentiation has increasingly been based more on intangible attributes like brand image, identity, emotive connection etc. instead of attributes which are strictly physical and related to the performance of the product.

It has been shown that competition is often over a set of common attributes on which brands differ, but one brand can differentiate itself introducing a new, unique, distinguishing, but irrelevant attribute (Carpenter, Glazer and Nakamoto, 1994). It happens especially when the differentiating attribute is difficult to evaluate and when the consumer has not the proper knowledge and information to give an objective assessment of the product, making him not aware of the irrelevance (Carpenter, Glazer and Nakamoto, 1994). Moreover, Lack of necessary knowledge can make consumers rely on substitutes for knowledge such as heuristics and assess products by substituting a seemingly semantically or associatively related property that comes more easily to

mind (Tversky & Kahneman 1974). For example, the idea that buying a pack of fruit-derived sugar (e.g. coconut sugar) is healthier than one of regular sugar is just a false belief. Consumers incorrectly thinks that the fruit origin is an important attribute, because it is linked to the concept of "natural" and so to "harmless", but actually it is something totally irrelevant since they are both "free sugars" (Fleck, interview: https://www.who.int/bulletin/volumes/92/11/14-031114.pdf) and have virtually the same amount of calories (Bressanini, 2013). Thus from a health point of view, is important only to reduce the daily intake of free sugars, while substituting regular sugar with fruit sugar is completely useless. The only difference is that 1 kg of coconut sugars costs around 10 euros while 1 kg of white sugars costs around 1 euro. Indeed, an assessment is mediated by a heuristic when relevant attributes are not readily accessible, so consumers will rely on easy-to-judge attributes (Kahneman & Frederick, 2005; Siegrist & Sutterlin, 2017). For this reason, a new salient attribute can simplify the decision-making process of consumers, allowing them to take a shortcut when judging a product relying on a simple single attribute (Carpenter, Glazer and Nakamoto, 1994).

"Reason-based choice" theory has been used to try to explain why meaningless differentiation is effective (Fischer et al. 1999, Brown and Carpenter, 2000; Miljkovic et al., 2009). According to it, consumers base their decision/judgment process on easily, cognitively available reasons. Theoretically, products and brands are evaluated based on substantive attributes to determine which one is superior (Tversky, Sattah and Slovic, 1988). However, if a reasonable decision can't be made based on relevant attributes, consumers will rely on trivial attributes (Fischer et al., 1999). This is called "instrumental reasoning process" and explain how consumers take in consideration an irrelevant attribute independently from the existence of the other products attributes (Bastardi & Shafir, 1998; Fischer et al., 1999). It is a process that often takes place, in which consumers adopt simplifying strategies to solve complex problems (Taylor 1984, Payne, 1976) and, for example, choose an alternative which is founded on easily justifiable, cognitively available arguments (Hsee, 1995; Kunda, 1990; Shafir, Simonson, & Tversky, 1993; Simonson, 1989). Moreover, the impact of the irrelevant attributes increases when the complexity of the choice scope increase, because consumers perceive that differences in substantive attributes among the different products or brands are not

so evident. In this way, the trivial attribute becomes a distinctive sign (Carpenter, Glazer, and Nakamoto, 1994; Miljkovic et al., 2009). So, we can say that attributes play an important role when consumers are not able to differentiate a product on substantive quality attributes or economic variable such as price (Miljkovic et al., 2009). This effect is related to the fact that the context of choice and "problem framing" affects consumer preferences and decisions (Tversky and Kahnemann, 1986; Simonson and Tversky 1992). Indeed, including an asymmetrically dominated alternative in a set of choice can affect preferences for the other alternatives (Carpenter, Glazer and Nakamoto, 1994).

Informativeness principle of communication theory

Consumers can perceive the meaningless attribute as valuable even without trying it or searching for more information from different sources. This happens just because of the information that the communication conveys (Carpenter, Glazer and Nakamoto, 1994). According to the Informativeness principle of communications theory, the purpose of communication is to inform and to communicate something not already known (Clark 1985). Communication has two parts: a semantic component (the message's literal meaning) and a pragmatic component (the reason for the communication; e.g., Harrris and Monaco 1978). In cases in which the literal component is uninformative, individuals focus on the pragmatic and ask themselves why that information is present (Gruenfeld and Wyer 1992). In the same way, an irrelevant attribute attached to a brand is semantically uninformative. Consequently, consumers focus on the pragmatic component, speculating as to why the attribute is there at all. The mere existence of the irrelevant attribute implies it is beneficial and may lead buyers to value it, even if they can't comprehend how it can result in a benefit. Thus, the irrelevant attribute becomes relevant because it conveys pragmatic information (Carpenter, Glazer and Nakamoto, 1994). For example, in the '70s Alberto Culver launched the "Natural Silk Shampoo", a shampoo enriched with silk. The claim "*We put silk in a bottle*" made people think that the shampoo can give to their hair some benefits similar to the properties of the silk.

Relevance principle

According to Relevance principle, the receiver expects that the information (especially when highlighted) given in communication are relevant at maximum. Then, the relevance of information is defined as a trade-off between conceptual effects and processing effort.

The receiver has a limited amount of time and motivation and can achieve a limited amount of conceptual effects from any piece of information. Because of the trade-off, the process stops when a good enough interpretation has been reached. For this reason, claims, symbolic information, highlighted attribute (even if meaningless), are perceived as enough and be the reason for an unjustified decision, but not an irrational decision (Clement et al. , 2018). Thus, we can identify some elements called "PMEs" (potential misleading effects) which are present in labelling, packaging, advertisement etc. etc. and that are not factually false, but that can mislead consumers and make them take unjustified decisions. Two examples are highlighted numerical information and pictorial information. In both cases, the PMEs are interpreted improperly and are not sufficient to assess the whole product, moreover, the pictorial ones have with obvious relation with the product. For example, it is possible to find claims highlighting a high fibre content on corn chips packaging, which frames the product more positively. This statement could improve the consumers' perception of healthiness of the product, even if this information is quite irrelevant since these products are junk food high in fat and calories and must be consumed in small quantities.

Consumer's Bias and heuristics

From a rational point of view, the irrelevant attribute should be ignored, but it has been demonstrated that this doesn't happen. It is possible to find the foundation of this mechanism in some bias and heuristics that mislead consumers' brain when judging products and taking decisions.

Halo effect

Consumers often make inferences on a product based on limited information. For example, product claims are a perfect source of these types of inferences (Ross and Creyer 1992). They can be misleading when consumers overgeneralize from single pieces of information to a broader set of attributes influencing product evaluation and purchase intentions (Sütterlin & Siegrist, 2015; Berry et al., 2017). Thus, an assessment given to a single attribute can influence the whole product evaluation and even the evaluation of other different products of the same brand. For this reason, a consumer may make an unjustified purchase decision on the basis of objectively true information, which is related only to a single aspect of the product and that is not related to many others important

characteristics (Clement et al., 2018). For example, the physical appearance or the politeness of a person who is providing a service can influence positively the evaluation of the quality of it.

Consequently, we can talk about health halo effect (Andrews, Burton & Netemeyer, 2000) when the perception of an attribute influences the health evaluation of another (unrelated) attribute or the overall product (Sütterlin & Siegrist, 2015, Clement et al., 2018). It happens when health claims mislead consumers in evaluating nutrient content, making them infer some benefits that are beyond the objective ones related to the claim and that have nothing to do with the claim itself. (Berry et al., 2017; Clement et al., 2018). For example, claims related to the fat content such as "5% fat" or "30% less fat" are a completely true statement, but this information can mislead consumers when judging the overall product evaluation. We can't say that a product is healthier than another one just because of the claim "5 % fat", there could be other products with less percentage of it but without the claim printed on the package. Still, a product with a "30% less fat" claim can have anyways a high sugar content or a "low cholesterol" product doesn't mean low fat in general, which are not suitable characteristic for people that want to lose weight (Clement et al. 2018), Another example is related to the "natural" claim: consumers can use "perceived naturalness" as a positive indicator of the overall quality of the food (Rozin et al., 1999.). It has been shown that "natural" claims make consumer infer that the product is minimally processed, GMO-free and organic, which are characteristics that mediate perceived product healthfulness and purchase intention, while actually (as mentioned before) the word "natural" doesn't have an official meaning according to FDA and so has not any relevance to determine the degree of healthfulness of the product (Berry et al., 2017).

Confirmation Bias

Benefits associated with meaningless attributes are often suggested by the advertising, so consumers want to test whether or not there is an additional benefit testing the differentiated product when using it (Ha and Hoch 1989). It has been showed that consumers tend to confirm the advertising claim by using experience due to confirmation bias (Carpenter, Glazer and Nakamoro, 1994). In other words, consumers try to test whether or not the differentiated product will give an expected additional benefit, but they

will do it in a biased way. Some studies showed that people focus only on evidence for the focal hypothesis (prove the superiority of the differentiated product) but ignore the possible existence of evidence that would support alternative hypothesis (Trope, Yakov and Libermann, 1996) or, more generally, that the product will not deliver the expected benefit (Meyvis and Janiszewski, 2002). This is in line with the concept of acceptance that is effortless than rejection (Gilbert, Tafarodi and Malone, 1993), so the associations created by the advertising/claim of the irrelevant attribute will be automatically accepted and their rejection would require more effort. Moreover, consumers will also search for information in a biased way: they will search only for confirming evidence (Meyvis and Janiszewski, 2002). Thus, the final effect is that consumers will classify ambiguous or irrelevant information as confirming their belief (i.e. the differentiated product is better), even if the information is equally supportive for the hypothesis that the differentiated product doesn't deliver any additional benefits (Ha and Hoch 1989, Meyvis and Janiszewski, 2002).

Base Rate Neglect

Some studies showed that causality is attributed more often to distinctive rather than common attributes (Einhorn and Hogarth, 1986; McGill, 1989). Similarly, irrelevant attributes that are unique, memorable and salient can mislead consumers and make them perceive a superior performance due to it. Indeed, a special attribute sticks in the consumer's mind, especially when communicated through a claim that draws their attention or advertising that triggers some positive emotions. Thus, it diverts consumers to rely less on rational information such as nutritional values or ingredients. They encourage consumers to make positive inferences about the attribute of the product or brand and influence their preferences and buying behaviour (Carpenter, Glazer, and Nakamoto, 1994; Miljkovic et al. , 2009).

CHAPTER II: Theoretical Framework

In this thesis I will conduct a research work that has its theoretical and empirical foundation in the following facts:

- The effect of meaningless differentiation on product evaluation has been demonstrated by several studies (Carpenter, Glazer and Nakamoto, 1994; Broniarczyk & Gershoff, 2003; Brown & Carpenter, 2000; Meyvis & Janiszewski, 2002; Goldwell, 2008; Miljkovic et al., 2009; Albrecht et al., 2010 ; Berry et al., 2017; Clement et al, 2018) and it has been tested on different product categories;
- Often consumers don't have the right knowledge to assess the healthiness of food product (Dickson-Spilmann, Siegrist & Keller, 2011; Sütterlin & Siegrist, 2015; Siegrist and Sütterlin, 2017);
- Consumers are easily misled by irrelevant information communicated by advertising, packaging and claims, even if it is factually true, but irrelevant to assess some specific benefits (Sütterlin & Siegrist, 2015; Clement et al., 2018; Chandon and Wansink, 2006; Berry et al., 2017; Clement et al., 2018; Rozin, Fischler, Imada, Sarubin & Wrzesniewski, 1999).

For this reason, the experiment run in Chapter III aims to look for some empirical evidence of the effect of meaningless differentiation on consumers' perceived healthiness of food product.

Characteristics of the irrelevant attribute

Novelty

Competing brand in the same market often present redundant information, so when a brand offers a product with a new attribute, it is perceived with greater weight in judgment and the new feature favourably affects product evaluation (Kahnemann, 1973). This mechanism is also well known in perception psychology; for example, a study by Wyer (1970) showed that new types of information fundamentally receive a higher significance within the context of the perception process. Thus, an irrelevant attribute that is

completely new or used for the first time in conjunction with the product category will leave a strong impression on consumer's mind and will be able to influence positively their opinion, if it is able to arouse positive associations to the product. In this way, an irrelevant attribute can make a product to emerge, because of the novelty of the information conveyed, especially if the competitors have similar offers between them (Carpenter, Glazer and Nakamoro, 1994; Albrecht et al., 2010).

Uniqueness

The differentiating attribute should be characterized also by uniqueness. It is defined as "the degree to which customers feel the brand is different from competing brands" (Netemeyer et al., 2004, p.211). For this reason, a unique attribute even if irrelevant is likely to be more salient in competition because it makes the brand "different" and so more distinctive in consumers' mind. In a certain way, the trivial attribute becomes important because it is a mark of differentiation and it makes the product or brand different from the others, making consumers paying more attention to it and giving to it a more favourable positioning (Miljkovic et al., 2009). This lead to dominance in perception and therefore a preference for the differentiated brand (Carpenter, Glazer and Nakamoto, 1994).

Attractiveness

A product feature should be characterized also by attractiveness. This attribute refers to the degree to which a person view the feature of a product as desirable and pleasant (Wansink and Brian 2004; James E. Painter, Yeon-Kyung Lee, 2006). Attractiveness can generate positive associations related to the product and so can increase the appeal of the product. Indeed, a positive relationship between attractiveness and perception of product quality has been found in several contexts (Dion et al., 1972; Richardson et al., 1996; Wang et al. 2011; Schnurr et al. 2016).

Moreover, it is possible to refer to the Kano Model (1984), when assessing the characteristics of a product and the related consumer's satisfaction (Octavian 2012). The model proposes three classes of attributes, of which one is "attractive quality". An attribute that has attractive quality generates high levels of customer satisfaction when fulfilled, but it does not cause customer dissatisfaction when absent. Indeed, These

attributes are neither required nor expected by customers, but they are the key to consumers' satisfaction.
In the end, all the product features that are novel (Nowlis & Simonson, 1996; Wyer, 1970), attractive (Hutchinson & Alba, 1991; Ratneshwar, Mick, & Reitinger, 1990) and unique (Dhar & Nowlis, 1999; Zhou & Nakamoto, 2007) have an influence on product evaluation by consumers. The nature of such features can trigger attention and for this reason are able to influence the evaluation process (Albrecht et al., 2011). Moreover, they can be triggering factors for causal attribution (Weiner 1985) in the specific task of judging whether a food product is healthy or not and determining which are the determiners of healthiness.

Dilution effect: the direction of the influence of the irrelevant attribute

It has been thought that irrelevant attributes can have a dilution effect on the other relevant attributes due to an averaging process (Tetlock and Boettger, 1989). Indeed, this happens because of the salience effect: trivial attributes draw attention away from important attributes, misleading consumer's judgment (Hutchison and Alba, 1991). Consistently, an irrelevant attribute can have a negative effect on product or brand choice (Albrecht et al., 2010). Indeed, an irrelevant attribute can be perceived as an indicator that the brand is inferior considering the other attributes and as a sign that the product is a less attractive alternative. Anyway, is necessary that the irrelevant feature is perceived negatively in order to the dilution effect to take place. Only if the value attached to the attribute is negative, it will influence the overall rating and thus reduce the attractiveness of the product or brand (Meyvis & Janiszewski, 2002).

The perception and assessment of the irrelevant attribute depend also on the number of alternatives in the choice set and the number of alternatives that have an irrelevant attribute (Broniarczyk and Gershoff, 2003). Therefore, if the choice set is homogeneous with only one brand differentiated with an irrelevant attribute, the positive perception of the latter will affect the final choice more effectively, because the positive rating justifies the choice of the differentiated product or brand. On the other hand, if only one brand doesn't have the irrelevant attribute, then a negative rating of the irrelevant attribute will reasonably make the consumer to choose the non-differentiated brand because it simplifies and justifies the choice (Carpenter, Glazer, and Nakamoto 1994). Lastly, if the

choice set consists of only 2 brands, the positive or negative judgment of the irrelevant attribute will definitely influence the final choice (Brown and Carpenter, 2000).

In the end, the results of Albrecht et al. (2010) don't contradict past studies showing the influence on the choice of a meaningless attribute, but rather merely reveal the instrumental approach of consumers when they justify their decisions. From this perspective, the irrelevant attribute can be the decisive tool in determining the consumers' choice between different products or brands. For this reason, it is important that the irrelevant attribute can elicit positive associations around the product or brand in order to convince to purchase and it should not be just unusual characteristics that draw consumers' attention.

Symbolic meaning

Claims can influence consumers' attribute inferences and product evaluations just through the use of words (packaging and advertising) that make consumers make non-logic inferences about product quality and properties (Berry et al., 2017; Sütterlin & Siegrist 2015; Siegrist and Sutterlin, 2017). Attributes can have a symbolic meaning, which is a significance different from the literal sense that is able to signify ideas and quality (Sütterlin & Siegrist 2015). Indeed, there is a strong influence of the symbolic significance of information on people's processing and evaluation, showing a tendency to focus more on information with strong symbolic meaning, which is attributed to an aspect or a term used in labelling or claim. It is "symbolic" because it transcends objective facts and shape perception through the use of stereotypical information (Sütterlin & Siegrist, 2015; Siegrist and Sutterlin, 2017).

Consumers rely on symbolic information when judging food properties that are non-observable or that are not able to judge (Sütterlin & Siegrist, 2015). For example, the claim "natural" can generate some concepts and meanings that consumers relate to the product. This is because probably the natural claim form "an aura of naturalness" that makes consumers make inferences about product evaluation and healthfulness. Indeed, the semantic network associated with the concept "natural" can be a source of favourable product-related inferences such as "pure", "virtuous", "preservative-free", "not processed" and in general "healthy" (Berry et al., 2017). Another example is a study that

showed that a product labelled as containing "fruit sugar" (in German, “fruit sugar” is the colloquial term for fructose) is perceived to be healthier than a product labelled as containing just “sugar”, since the term “fruit” has a high positive symbolic significance and signify healthiness (Briz et al., 2008; Sütterlin, Siegrist, 2015).

Disclosure of irrelevance

Meaningless Differentiation can be implicit or explicit: the irrelevance of the special attribute can be revealed or not. According to Normative theory, when the irrelevance is revealed, the attribute should be completely ignored, because it is useless, it doesn't provide any benefits and it would have no value, since it should not be any impact on product or brand choice (Carpenter, Glazer, Nakamoto, 1994; Tversky and Kahneman, 1986). However, some studies indicate that the irrelevant attribute is not ignored in decision making after disclosure. Even, if the attribute is perceived as useless, it still makes the product distinctive in consumers' mind and unique in comparison to competitors. Thus, the differentiated brand may still be favoured because the irrelevant attribute is difficult to ignore and to be discounted (Carpenter, Glazer and Nakamoto, 1994). Therefore, revealing the irrelevance of the attribute can make consumers recognize that the attribute has no value, but it will continue to make them perceived the differentiated product as different and to prefer it because it simplifies the decision making (Carpenter, Glazer and Nakamoto, 1994).

The explanation for this effect are some biases that take place in the evaluation process. Generally, the associations triggered by the irrelevant attribute are not easy to be erased even after the revelation of the irrelevance (Albrecht et al., 2011). First of all, this happens due to the anchor effect. This effect was discovered in studies where the specification of an arbitrary number prompted participants to orient themselves around that number when a numerical assessment was required (Strack & Mussweiler 1997; Tversky & Kahneman, 1974). Similarly, the prior exposure to the irrelevant attribute prompts consumers to orient themselves around all the associations triggered before by it, also after the revelation of its irrelevance. In other words, first impressions remain, even if new information does not confirm them (Albrecht et al., 2011).

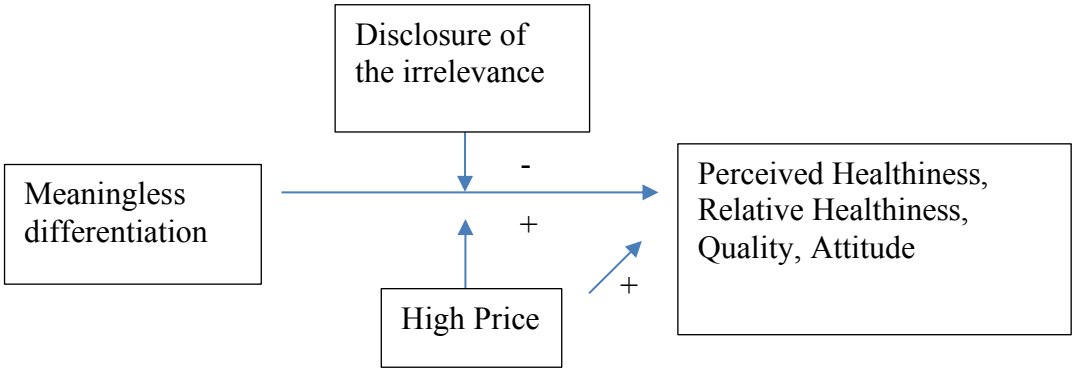
It was observed also a "perseverance effect", which means that consumers have a basic tendency to cling to their beliefs and opinion. For example, people's reaction toward the discrediting of original beliefs by a reliable source is to remain attached to their previous opinions, even if some official sources prove the incorrectness of the opinion (Anderson, Lepper, & Ross, 1980; Lepper, Ross, & Lau, 1986). The negation of a piece of information thus does not lead to the abandonment of a belief; rather, it leads to the devaluation of the negative information (Albrecht et al., 2011). Moreover, it has been demonstrated that the correction of a false conclusion is a very complex process and require a high processing intensity and efforts (Johar and Simmons 2000; Gilbert, Tafarodi, & Malone, 1993). That's because this process takes place in a two-level process in which corrective information is first encoded and then later accepted and used (Johar and Simmons 2000). It is to be expected, however, that consumers do not fully integrate this information into their judgment of the brand due to the lack of necessary processing capacity (Albrecht et al., 2011). This theory would explain why the positive associations triggered by the irrelevant attribute continue to influence consumers' choice even after the disclosure of irrelevance. This effect manifests also in another situation, for example, a study by Siegrist and Sütterlin, 2017 demonstrated that, even if the two alternatives were presented with the same level of related risk, the risk associated with red meat consumption is perceived as more acceptable in the case of traditional meat production compared with cultured meat production. These results demonstrate the difficulty in convincing consumers to accept risks related to new production methods even if the total risk to which they are exposed has not changed compared to the one related to the old methods. This confirms previous research evidence of a biased benefit perception in the evaluation of different food production methods.

On the other hand, it has been also showed the efficacy of the disclosure of the irrelevance. The study by Berry (2017) shows that giving an OID (Objective Information Disclosure, i.e. revealing the irrelevance of the attribute) moderates the consumers' positive attribute-related inferences and evaluations of the product triggered by the "natural" claim. However, the OID is not able to completely attenuate the effect of the irrelevant attribute. Indeed, also, in this case, some incorrect beliefs remain: consumers still infer that a product labelled as "natural" is less likely to contain GMOs (Berry et al 2017).

The Price Moderator

In Carpenter's study (1994) it has been observed that meaningless differentiation is effective most of the time, even when the differentiated brand has a price higher than the competitors. Moreover, in some cases, a higher price increased preference for the differentiated brand. This probably happens for two reasons. First, price provides an additional source of information useful to judge the product's quality. Specifically, Carpenter's study revealed that at a low price, the irrelevant attribute is not valued (regardless of revelation). At a high price (regardless of revelation) the irrelevant attribute leads to greater brand valuation. Second, it suggests that high prices add to brands or products distinctiveness, making discounting irrelevant unique attribute more difficult. This means that a high price is justified by the presence of the irrelevant attribute and the utility of the irrelevant attribute is at the same time confirmed by the high price.

Model



Considering the variables explained in the previous paragraphs, the experiment will test whether or not:

- H1: Respondent will evaluate the product differentiated on the meaningless attribute as healthier, of better quality and with a better attitude in comparison to its regular version.
- H2: Disclosure of the irrelevance of the attribute will not weaken the healthiness perception of the differentiated product.
- H3: A high price will strengthen the main effect of meaningless differentiation on healthiness assessment.

I expect that the experiment will support these theses confirming my previous expectations. I expect that the respondent will perceive the differentiated and more expensive version of the product as healthier. Moreover, the respondent will still prefer the differentiated product even when they are exposed to a disclaimer that reveals the irrelevance of the product.

CHAPTER III: Study

Design and Methodology

I designed and ran an experiment as it follows. I selected one product as a stimulus, a granola bar with chocolate. I chose this type of product because it can be manipulated easily and because it is a controversial product category. A lot of granola bars are marketed as healthy food, but it can't be denied that they are snacks and they are processed food. They can be made up of different ingredients (cereal types, dried fruits, chocolate ecce cc) and their nutritional values can vary a lot. So, granola bar can't be defined as a category made only of healthy products, but more realistically composed of both healthy and non-healthy products. The Granola Bar was manipulated based on three possible characteristics: differentiation, presence of disclosure and price level. First, the product presented can be a regular one, granola bar with dark chocolate, or a meaninglessly differentiated one, granola bar with "raw" dark chocolate. It is important to highlight that all the products have the same nutritional facts table. Second, stimulus varies whether disclosure of the irrelevance of the attribute is given or not. The Raw Chocolate Granola Bar can be presented or not with a brief disclaimer saying: "This kind of product is considered healthy when it contains low percentages of saturated fats and sugars and a low calories content. Other features are added for marketing purposes only. In general, chocolate is a product to be consumed in moderation because it has high-fat content". Finally, the last manipulation is the price level. Every product can have a low or high price, respectively 1,90 € and 3,10€. They were chosen considering the prices for granola bars on Italian online stores such as Amazon.it, Conad.it, Carrefour.it, Coop.it, Auchan.it. The average price for a pack of six granola bars is 2,50 €.

Every product was presented (Appendix: Figures 1a-f) with a frontal graphic of a fictitious package, a nutritional facts table (the same for every version of the products) and a brief description of the product.

The experimental groups are assigned as it follows:

	Control Group (no differentiation)	Implicit irrelevance of the attribute (no-revelation)	Explicit irrelevance of attribute (revelation)
Low Price	1. Regular product & low price	3. Differentiated product, no disclosure & low price	5. Differentiated product, disclosure & low price
High Price	2. Regular product & high price	4. Differentiated product, no disclosure & high price	6. Differentiated product, disclosure & high price

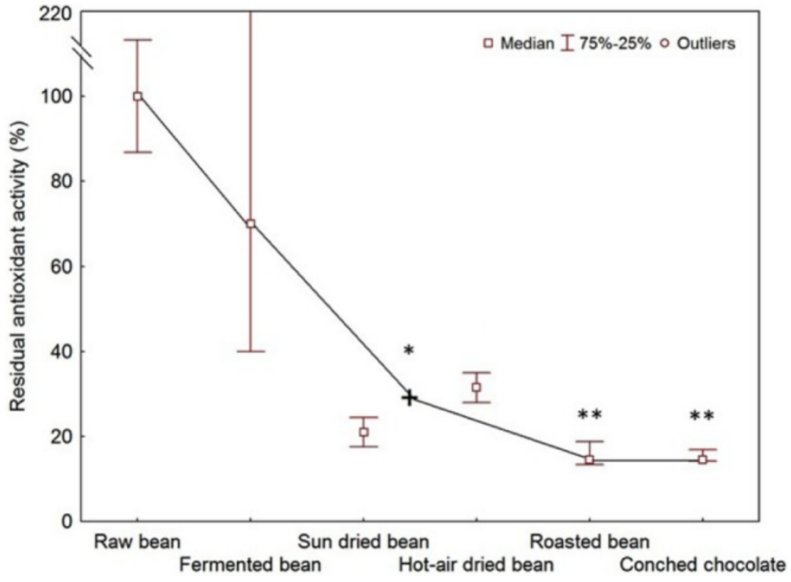
Each respondent randomly visualized only one product with a brief description, manipulated according to one of the six conditions described in the table as it appears in the table above. Then, she/he was asked to respond to some questions.

Choose of the Irrelevant Attribute: "Raw" Chocolate

According to Global Organic Chocolate Market report (2018) (https://www.prnewswire.com/news-releases/global-organic-chocolate-market-2017-2021---growing-popularity-of-artisanal-organic-chocolate---research-and-ma), raw chocolate has been on the rise in popularity and it will continue growing through 2020. Raw Chocolate is the product obtained from the processing of cocoa beans by skipping the roasting process or by running it at a temperature not exceeding 42 ° C (Parkinson, "Who, what, why: What is raw chocolate?": https://www.bbc.com/news/blogs-magazine-monitor-28104303; Eataly, "Che cos'è il cioccolato crudo?": https://www.eataly.net/it_it/magazine/eataly-racconta/cose-cioccolato-crudo/). For this reason, It is believed that cocoa beans lose less organoleptic properties and are not impoverished from a nutritional point of view. This argumentation is scarce and questionable. First, there isn't an official definition for "raw chocolate" according to the law (No European regulation: AIDEPI, "Chocolate Regulations": http://www.aidepi.it/en/chocolate/164-regulations.html; no FDA regulation, "Code of Federal Regulations Title 21": https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?CFRPart=163), so the respect of this procedure can't be regulated, checked and guaranteed by a

supervisory commission (Sabaini, "Il cioccolato raw non esiste: ecco il cioccolato raw": https://www.sabadi.it/cioccolato-raw-non-esiste-cioccolato-raw/). Moreover, many scientists, journalists and dieticians have expressed their scepticism toward this product (Patenaude, "Cacao crudo e bacche goji": https://crudoesalute.com/bacche-goji-e-cacao-crudo/; Hosie, "Is healthy chocolate really good for you?": https://www.independent.co.uk/life-style/health-and-families/healthy-chocolate-good-for-you-snack-diet-health-weight-a7881296.html; Sharon, "The raw chocolate nosense": https://thechocolatejournalist.com/raw-chocolate-nonsense/). Indeed, no study/experiment that proves healthier properties of the raw chocolate can't be found on Google Scholar nor PubMed. The only sources of scientifically valid information that we have are studies about the chocolate-making process (Beckett, 2000: https://pubs.rsc.org/en/content/ebook/9780854046003) and antioxidant activity and polyphenols loss during manufactory process (Di Mattia, Sacchetti, Mastrocola and Serafini 2017; Bordiga, Locatelli, Travaglia, Coisson, Mazza, Arlorio, 2015). The studies show that regardless of the roasting process, cocoa beans reach a 50 °C temperature during the fermentation process (before the roasting process) and can reach 80 °C during the conching process. The study by Di Mattia et al. (2017) shows how the major loss of antioxidant activity happens during the fermentation and drying step of the chocolate-making process (Figure 2).

Figure 2- Residual Antioxidant activity of cocoa processed product after each processing step. (Di Mattia et al. 2017)



It is possible to do another critic related to the word “raw” itself and the concept that can express. “Raw” refers to something that is not cooked and generally not processed, a concept that is hard to apply to any chocolate products and, for this reason, can be deceiving. Whether we define it “raw” or not, chocolate is the mixture of chocolate liquor, cocoa butter and cocoa powder, which are products derived from cocoa beans transformed through different processes: fermentation, drying roasting, winnowing, grinding, mixing, blending, molding, conching, tempering (The World Atlas of Chocolate, “The production of chocolate”: https://www.sfu.ca/geog351fall03/groups-webpages/gp8/prod/prod.html; Chocolate Alchemy, “How to make chocolate”: https://chocolatealchemy.com/how-to-make-chocolate-the-complete-text-guide#chocolate-making-at-home-101-1; Beckett, 2000: https://pubs.rsc.org/en/content/ebook/9780854046003).

Finally, there is a more general consideration to do about healthiness assessment of food: containing good nutrients/ micronutrients doesn't mean automatically being healthy. It is needed to assess the product as all, considering both healthy and harmful characteristics of the product. The fact that a product has some benefits can't cloud the fact that it can have some harmful effects too. E.g wine has some healthy micronutrients, but we can't ignore the fact that it contains alcohol, which is carcinogenic (World Health Organization, "Alcohol" https://www.who.int/news-room/fact-sheets/detail/alcohol, World Health Organization, “Cancer”: https://www.who.int/news-room/fact-sheets/detail/cancer). In the same way, even if raw chocolate had some additional micronutrients, it would remain anyway a product rich in fat and sugar and for this reason a product to be consumed moderately.

Data Collection

I used Qualtrics to create a survey and gather data, that respondent had to do online on this link: https://impresaluiss.eu.qualtrics.com/jfe/form/SV_09B1vapdHlWCme9. This software allowed me to create a survey in which respondents visualized randomly only one version of the product with a brief description and then answered some questions. The questions consisted of assessment for different characteristics of the product. Respondents were asked to express how much they agreed with some statement related to the product presented using a Likert-scale from 1 to 7 (1= totally disagree; 7= totally

agree), every respondent was presented with the same questions. The statement express judgement related to the variables: attractiveness, novelty, uniqueness of the product, price fairness, perceived quality of the product, healthiness, relative healthiness in comparison to other products in the same category, attitude towards the product and purchase intention (Appendix: Table 1).

To measure these variables I used both pre-validated and adapted Marketing Scales. I picked up one item of the marketing scale "Food Salience" (Wansik & Brian 2004, James, Painter and Yeon-Kyung Lee 2006) to measure the attractiveness of the product presented. I used two items of the scale "Novelty" (Masetti, Brenda 1996) to measure to what extent the product is perceived as uncommon and distinct. The variable "Uniqueness" was measured using two items from the scales "Uniqueness of the Brand" (Malar, Lucia, Bettina Nyffenegger, Harley Krohmer and Wayne D. Hoyer 2012) and "Brand Distinctiveness" (Zhou, Kevin and Zheng Nakamoto 2007). This variable aims to measure the extent to which a respondent views the product as unique and different from other brands in the same product category. These variables were useful to check how the manipulation of the stimuli made respondent perceive the different versions of the product. (i.e. we aspect the raw chocolate granola bar to be perceived as something more attractive, new and unique compared to the other granola bar in the market). Then, I used two items of the scale "Quality of the meal" to measure respondent's belief that the product is of high quality and is made with premium ingredients (Alavi, Sascha, Torsten Bornemann and Jan Wieseke 2015). The perceived healthiness of the product was measured using items from the scale "Attitude toward the food Product (Nutritiousness)" (Connell, Paul M., Merrie Brucks and Jesper H. Nielsen 2014). This scale has two reverse items (Q6.4 and Q6.5). The scale measures to what extent respondent perceived the product as healthy, nutritious, low in calories, sugar and fat. Then, I formulated by my own two items to form the scale "Relative Healthiness" which measure to what degree a respondent thinks that the product is healthier and less harmful in comparison to the other products of the same category. I used also a scale to measure the general attitude toward the product in terms of appreciation, expected taste, willingness to try and expected success if launched. The scale was made up by items from the scales "Attitude Toward Consuming the Food" (Haws, Kelly L., Karen Page Winterich 2013) and "Product Evaluation" (Liu, Jla, Dirk Smeesters and Kathleen D. Vohs 2012). Then, I used one item

from the scale "Fairness of the Offer" (Hardesty David M., Jay P. Carlson and Wiliam O. Bearden 2002) to measure price fairness and one item from the scale "Purchase Intention" (Hardesty et al. 2002) to measure willingness to buy the product. Finally, the survey ends with some demographic questions about age, gender, education level and occupation.

I expected the respondents to judge the differentiated product as healthier, of higher quality and to have a better attitude toward it than the regular one. I expect that the presence of the disclosure will not influence responses, so the differentiated product will be perceived healthier regardless of the disclosure presence. Finally, I expect that the differentiated product presented with a high price will score significantly higher scores in the DVs. Generally I expect that: the IV "meaningless differentiation" has a significant main effect on the DVs "healthiness", "relative healthiness", "quality", "attitude" and "purchase intention"; the IV "Disclosure" hasn't a significant main effect on the same DVs; the IV "Price Level" has a significant main effect on the DVs and moderate positively the effect of "meaningless differentiation". For this reason, the analysis will consist of a 6x1One-Way ANOVA to check the effect of condition (six) on the DVs and 3x2 ANOVA to check the effect of Manipulation and Price Level on the DVs.

Sample

The questionnaire was spread online following a convenience sampling method. The sample was composed only of Italian people to define the boundaries of the experiment to only one geographical market, avoiding possible effects caused by cultural, linguistic and economic differences. Moreover, the prices chosen for the stimuli were computed using granola bar prices in the Italian market. The sample size was N=239 and all the respondent were evenly and randomly assigned to one of the six conditions. Every version of the product was roughly evaluated by 40 respondents. The sample is divided into 48,5 % of males and 51,5 % of females. The average age is 29, the 5% of the respondents are in the 17-20 range, the 73,2 % in the range 20-30 range, while the 21,8% were in the 30-65 range. The 51,5 % of the respondents is made up of students, the 28,5 % by employees, the rest is composed of entrepreneurs, unemployed and others. The educational level of the sample is the following: the 1,7% stopped their studies after middle school, the 23,8% has a high school diploma, the 36% has a Bachelor Degree, the 31,4 % has an MSc degree and the 7,1% has a PhD.

Analysis and Results

First, I measured the reliability of the multi-item scales using Cronbach's alpha for every condition. The results are in Table 2 in the Appendix. Overall, every marketing scale scored a good value for Cronbach's alpha: only two scales (Novelty in condition 2 and Healthiness in condition 3) had a value between 0,6 and 0,7 while most of them scored a value above 0,8. These results show us internal consistency between the items of the marketing scales and thus that responses are reliable. Then, I computed single scores for the variables that were measured using multi-item scales taking the average of the responses for every observation.

I created the following variables in order to perform the analysis in the next paragraphs: "*Price_Level*" (dummy variable: 0=low price, 1=high price), "*Differentiation*" (dummy variable: 0= no differentiation, 1=differentiation), "*Disclosur*e" (dummy variable: 0=no disclosure, 1=disclosure), "*Condition*"(categorical variable 1=control group, low price; 2=control group, high price; 3=implicit irrelevance, low price; 4=implicit irrelevance, high price; 5=explicit irrelevance, low price, 6=explicit irrelevance, high price) and "*Manipulation*" (categorical variable; 0 = regular product; 1 = differentiated product; 2 = differentiated product + disclosure).

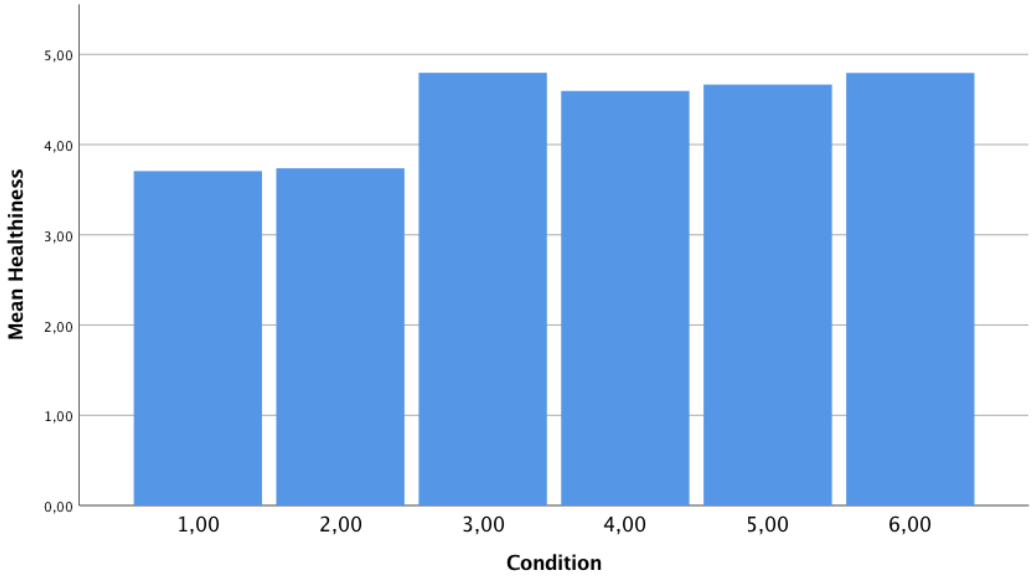
Table 3 - Means for the DVs by condition

Condition	Quality	Healthiness	HealthinessRel	Attitude	Purch_Int	PriceFairness
1,00	3,6047	3,7070	3,3721	3,8895	4,9767	5,2093
2,00	3,8333	3,7381	3,2262	3,9107	4,4286	4,4524
3,00	5,3875	4,7950	4,3500	5,0438	5,4750	5,4250
4,00	5,4615	4,5949	4,2436	4,8590	5,0769	5,3590
5,00	5,1351	4,6649	4,3784	4,8176	5,7838	5,4865
6,00	5,3026	4,7947	4,3289	4,8026	5,0789	5,0526
Total	4,7531	4,3607	3,9603	4,5335	5,1213	5,1548

Overall, stimuli 1 and 2 (non-differentiated products) were evaluated with average lower scores for all the DVs than stimuli 4,5,6, and 7. Average values for Stimuli 3 and 4 (differentiation, no disclosure) were not always higher than values for stimuli 5 and 6. This two information seems to confirm the expectations that we made before the experiment. It wasn't noticed any difference related to price level sadly. Differences between stimuli 1 vs 2, 3 vs 4 and 5 vs 6 don't seem to follow any clear trend. Sometimes the average values for quality, healthiness, healthiness_Rel and Attitude are higher for

the products with a low price (stimuli 1,3,5) and sometimes for the products with a high price (stimuli 2,4,6). Stimuli characterized by the low price received always higher values in the variable Price Fairness and Purchase Intentions in comparison to stimuli with a high price.

Graph 1 - Means of healthiness by condition



These other tables (Table 4,5, and 6) shows us clearer that on average the differentiated products were evaluated with a higher score for all the DVs while there isn't any clear trend correlated to Disclosure and Price Level.

Table 4 - Means of DVs by Differentiation

Differentiation	Quality	Healthiness	Healthiness Rel	Attitude	Purch_ Int	Price Fairness
0	3,7176	3,7224	3,3000	3,9000	4,7059	4,8353
1	5,3247	4,7130	4,3247	4,8831	5,3506	5,3312
Total	4,7531	4,3607	3,9603	4,5335	5,1213	5,1548

Table 5 - Means of the DVs by Disclosure

Disclosure	Quality	Healthiness	HealthinessRel	Attitude	Purch_Int	Price Fairness
0	4,5396	4,1915	3,7805	4,4070	4,9817	5,1037
1	5,2200	4,7307	4,3533	4,8100	5,4267	5,2667
Total	4,7531	4,3607	3,9603	4,5335	5,1213	5,1548

Table 6 - Means of the DVs by Price_Level

Price Level	Quality	Healthiness	HealthinessRel	Attitude	Purch_Int	PriceFairness
0	4,6708	4,3650	4,0083	4,5604	5,3917	5,3667
1	4,8361	4,3563	3,9118	4,5063	4,8487	4,9412
Total	4,7531	4,3607	3,9603	4,5335	5,1213	5,1548

Tables 7, 8 and 9 shows us that on average product differentiated have always higher value for attractiveness, novelty and uniqueness, while there isn't any clear trend correlated to Disclosure and Price Level. As a confirmation of this, Table 10 shows us that stimuli 1 and 2 were evaluated with average lower scores for the DVs Attractiveness, Novelty and Uniqueness than stimuli 3, 4,5 and 6. Average values for Stimuli 3 and 4 (differentiation, no disclosure) were not always higher than values for stimuli 5 and 6. Again, no difference related to price level was noticed.

Table 7 - Means by Differentiation

Differentiation	Attractiveness	Novelty	Uniqueness
,00	3,9294	2,0882	2,3588
1,00	5,1104	3,4773	3,9026
Total	4,6904	2,9833	3,3536

Table 8 - Means by Disclosure

Disclosure	Attractiveness	Novelty	Uniqueness
,00	4,5366	2,7957	3,1189
1,00	5,0267	3,3933	3,8667
Total	4,6904	2,9833	3,3536

Table 9 - Means by Price_Level

Price_Level	Attractiveness	Novelty	Uniqueness
,00	4,7333	2,7750	3,2458
1,00	4,6471	3,1933	3,4622
Total	4,6904	2,9833	3,3536

Table 10 - Means by Condition

Condition	Attractiveness	Novelty	Uniqueness
1,00	3,9535	2,0000	2,3837
2,00	3,9048	2,1786	2,3333
3,00	5,2500	3,4000	3,7500
4,00	5,1282	3,7179	4,1282
5,00	5,0811	3,0000	3,7027
6,00	4,9737	3,7763	4,0263
Total	4,6904	2,9833	3,3536

The first analysis performed was a one-way ANOVA with "Condition" as a factor (IV) and “Attractiveness”, “Novelty”, “Uniqueness”, "Quality", "Healthiness", "HealthinessRel", "Attitude", “Price Fairness” and “Purchase_Intentions” as DVs. The hypothesis tested for each DV are:

- $H_{0:}$ $\mu_1=\mu_2=\mu_3=\mu_4=\mu_5=\mu_6$
- H_1: at least one μ is different

The F-test shows that there is a significant effect of “Condition” on:

- Attractiveness ($F_{1,5} = 6,253$; $p < 0,001$)
- Novelty ($F_{1,5} = 9,276$; $p < 0,001$)
- Uniqueness ($F_{1,5} = 10,811$; $p < 0,001$)
- Quality ($F_{1,5} = 18,058$; $p < 0,001$)
- Healthiness ($F_{1,5} = 7,651$; $p < 0,001$)
- Healthiness_Rel ($F_{1,5} = 5,416$; $p < 0,001$)
- Attitude ($F_{1,5} = 6,245$; $p < 0,001$)
- Price_Fairness ($F_{1,5} = 2,394$; $p < 0,05$)
- Purchase_Intention ($F_{1,5} = 3,901$; $p < 0,005$)

For this reason, H_0 can be rejected for all the DVs. These results tells us that there is at least a mean of the six conditions that is significantly different from the others for all the DVs.

Table 11 – One-Way ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Attractiveness	Between Groups	77,972	5	15,594	6,253	,000
	Within Groups	581,115	233	2,494		
	Total	659,088	238			
Novelty	Between Groups	120,676	5	24,135	9,276	,000
	Within Groups	606,257	233	2,602		
	Total	726,933	238			
Uniqueness	Between Groups	135,560	5	27,112	10,811	,000
	Within Groups	584,314	233	2,508		
	Total	719,874	238			
Quality	Between Groups	144,793	5	28,959	18,058	,000
	Within Groups	373,643	233	1,604		

	Total	518,435	238			
Healthiness	Between Groups	54,922	5	10,984	7,651	,000
	Within Groups	334,508	233	1,436		
	Total	389,430	238			
HealthinessRel	Between Groups	58,348	5	11,670	5,416	,000
	Within Groups	502,024	233	2,155		
	Total	560,372	238			
Attitude	Between Groups	54,406	5	10,881	6,245	,000
	Within Groups	405,952	233	1,742		
	Total	460,357	238			
PriceFairness	Between Groups	29,864	5	5,973	2,394	,038
	Within Groups	581,408	233	2,495		
	Total	611,272	238			
Purch_Int	Between Groups	42,441	5	8,488	3,901	,002
	Within Groups	507,040	233	2,176		
	Total	549,481	238			

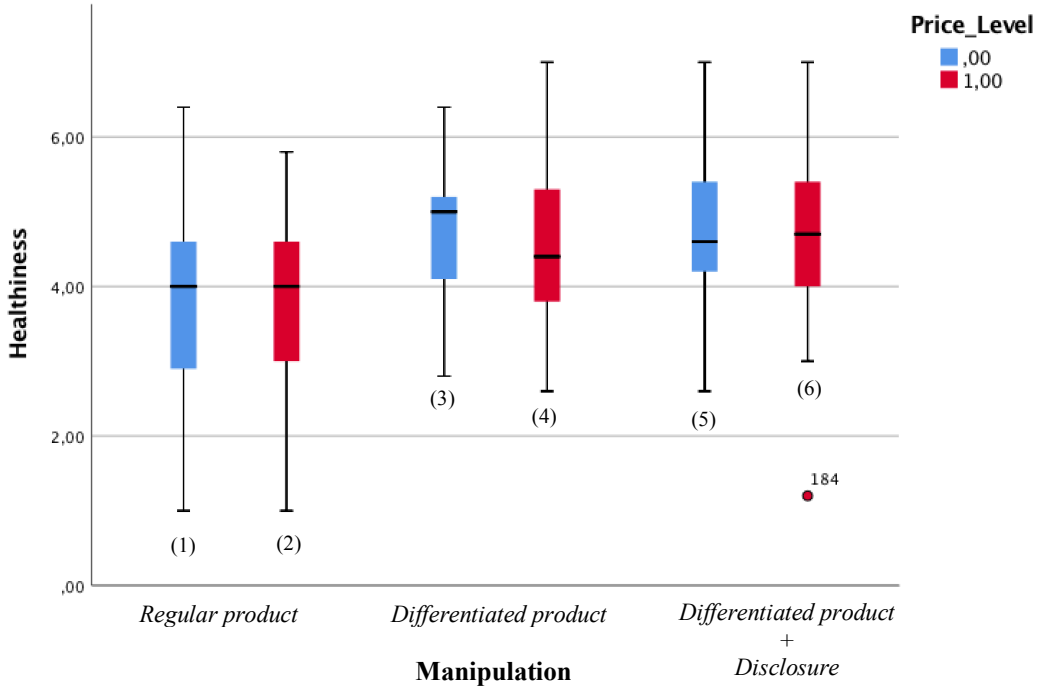
Then, performing The Bonferroni Test I checked between which specific conditions there are significant differences for all the variables (Appendix: Table 12). It showed that:

- There are significant differences between condition 1,2 and 3,4,5,6 for Quality, Healthiness, Attitude and of course no significant differences between condition 1 and 2 and between condition 3,4,5 and 6.
- For Healthiness_Rel and Purchase_Intention, there isn't a clear trend of the differences, because, for example, the mean of Healthiness_Rel for condition 1 wasn't significantly different from condition 2 and 4, but mean for condition 2 was significantly different from condition 4. Table X
- For Price Fairness no significant difference between the six conditions is observed.
- For Attractiveness, Novelty and Uniqueness no significant differences are observed between conditions 3,4,5, 6 and between conditions 1 and 2. For Uniqueness, significant differences are observed between conditions 1,2 and 3,4,5,6. Again, two controversial differences are noticed: for Attractiveness, condition 1 isn't significantly different from 2 and 6, but condition 2 is significantly different from condition 6; for Novelty, condition 1 isn't significantly different from 2 and 5, but condition 2 is significantly different from condition 5.

Using LSD test as a post-hoc test, the unclear trends noticed before for Healthiness_Rel, Attractiveness and Novelty is not observed, confirming that there are significant differences in the means between conditions 1,2 vs conditions 3,4,5,6 (Appendix: Table 13).

Indeed, these results support the assumptions that we can do observing the Boxplot in Figure 3. The box plots corresponding to the differentiated products (3 and 4) and the differentiated products with disclosure (5 and 6) are higher than the ones corresponding to the regular product (1 and 2). At the same time, the box plots corresponding to products with a high price (2, 4 and 6) aren't higher than the ones with low price (1,3 and 5) within the same manipulation and the box plots of the differentiated products without disclosure (5 and 6) aren't higher than the ones of the differentiated products with disclosure (3 and 4).

Figure 3 – Clustered Boxplot of healthiness by manipulation by price level



Unfortunately, Levene's test shows that the assumption of homogeneity of variance between the groups is violated for some DVs. Indeed, it tests the null hypothesis H_0: error variance of the dependent variable is equal across the groups. The risk associated with the violation of this assumption is that the null hypotheses for the effect of the IVs on the DVs can be falsely rejected. This hypothesis is rejected for the following variables:

- Attractiveness ($W_{1,5} = 4,690$; $p < 0,001$)
- Novelty ($W_{1,5} = 6,016$; $p < 0,001$)
- Uniqueness ($W_{1,5} = 2,482$; $p < 0,05$)
- Quality ($W_{1,5} = 3,425$; $p < 0,05$)
- Price_Fairness ($W_{1,5} = 3,864$; $p < 0,005$)
- Purchase_Intention ($W_{1,5} = 5,222$; $p < 0,001$)

For this reason, I performed a Kruskal-Wallis Test for the variables above. It is a nonparametric equivalent of the ANOVA which is robust to violations of homogeneity of variance assumption. The results (Table 14) tells us that "Condition" has a significant effect on the variables: Attractiveness, Novelty, Uniqueness and Quality with $p < 0,001$.

Table 14 – Kruskal-Wallis Test

	Attractiveness	Novelty	Uniqueness	Quality	PriceFairness	Purch_Int
Kruskal-Wallis H	25,633	41,796	46,007	60,631	6,803	12,578
df	5	5	5	5	5	5
Asymp. Sig.	,000	,000	,000	,000	,236	,028

Then, I performed a Mann-Whitney test as a post-hoc to compare means differences among the six condition groups in order to explain the significant main effect. The results of the test (Appendix: Table 15a-p) confirm the same significant differences observed in the Bonferroni test above.

At this point, I performed other analyses are performed to further support the results had so far. I performed three 3x2 ANOVAs, one for each DV. In these analyses is tested the effects of the factors (IVs) "Manipulation" and "Price_Level" on the DVs: "Healthiness", "HealthinessRel", "Attitude".

First, was tested the effect on "Healthiness". The results (Appendix: Table 16a) showed us that:

- Manipulation has a significant effect on the DV ($F_{1,5} = 18,685$; $p < 0,001$)
- Price_Level has not a significant effect on DV ($F_{1,5} = 0,007$; $p > 0,1$)
- No significant interaction effect is observed between Manipulation and Price_Level
- The Bonferroni post-hoc test confirms that regular version of the product (Manipulation = 0) scored a significantly lower value for healthiness compared to the differentiated version of it with and without disclosure (Manipulation 1 and 2). No significant difference is observed between the differentiated products regardless of disclosure presence (Appendix: Table 16b)

Second, was tested the effect on "Healthiness_Rel" (Appendix: Table 17a):

- Manipulation has a significant effect on the DV ($F_{1,5} = 13,389$; $p < 0,001$)
- Price_Level has not a significant effect on the DV ($F_{1,5} = 0,280$; $p >0,1$)
- No significant interaction effect is observed between Manipulation and Price_Level.
- The Bonferroni post-hoc test confirms that regular version of the product (Manipulation = 0) scored a significantly lower value for Healthiness_Rel compared to the differentiated version of it regardless of disclosure presence (Manipulation 1 and 2). No significant difference is observed between the differentiated products with and without disclosure (Appendix: Table 17b)

Last, was tested the effect on "Attitude" (Appendix: Table 18a):

- Manipulation has a significant effect on the DV ($F_{1,5} = 15,389$; $p < 0,001$)
- Price_Level has not a significant effect on the DV ($F_{1,5} = 0,121$; $p > 0,1$)
- No significant interaction effect is observed between Manipulation and Price_Level
- The Bonferroni post-hoc test confirms that regular version of the product (Manipulation = 0) scored a significantly lower value for Attitude compared to the differentiated version of it regardless of disclosure presence (Manipulation 1

and 2). No significant difference is observed between the differentiated products with and without disclosure (Appendix: Table 18b).

Finally, I ran two Linear Regressions to better explain and understand the effects observed so far. First, I ran a Linear Regression using "Healthiness" as DV and "Attractiveness", "Novelty" and "Uniqueness" as predictors. The model has a $R^2 = 0,44$ and the F-test shows that the model has a good fit ($F_{3,235} = 62,614$; $p < 0,001$). Overall, the IVs explain 44% of the variance of the DV. All the predictors are significant and have a positive effect on Healthiness (Appendix: Tables 19 a-c):

- Attractiveness (ß = 0,215; $t_{238} = 4,75$; $p< 0,001$)
- Novelty (ß = 0,131; $t_{238} = 2,011$; $p < 0,05$)
- Uniqueness (ß = 0,227; $t_{238} = 3,464$; $p < 0,05$)

Last, I ran a linear regression using "Healthiness" as a DV and "Differentiation", "Disclosure" and "Price_Level" as predictors. In this case, the model has a lower $R^2 = 0,138$ in comparison to the model before. Anyway, the F-test shows that the model has a good fit ($F_{3,235} = 12,558$; $p < 0,001$). The coefficients of the IVs confirmed all results collected so far (Appendix: Tables 20 a-c):

- Differentiation has significant positive effect on the DV (ß = 0,974; $t_{238} = 5,214$; $p < 0,001$)
- Disclosure has not a significant effect on the DV ($t_{238} = 0,18$; $p > 0,1$)
- Price_Level has not a significant effect on the DV ($t_{238} = - 0,093$; $p > 0,1$)

Interpretation

The outcomes of the analyses are significant evidence to support H_1 and H_2, while they can't support H_3. It proves that an irrelevant attribute can increase healthiness and quality perception of a product and make respondents have a better attitude toward it. Moreover, when they are provided with a disclaimer that reveals the irrelevance of the attribute, respondents still have a better attitude toward the product and consider it as healthier and of better quality. Unfortunately, price manipulation didn't produce any significant effect on product evaluation. Respondents didn't express significant different judgments between low price products and high price ones. These results don't support the thesis that

high prices induce respondents to judge a product as healthier than its cheaper version. Moreover, there isn't any significant difference in price fairness between conditions. This is controversial because it means that respondents judged the product offered at 1,90€ as fair as its identical version offered at 3,10€. This could have been explained by the fact that the irrelevant attribute can justify a higher price, but the fact that a high price regular product is perceived as fair as a high price differentiated product suggests us that there were some problems with price manipulation. Bonferroni, LSD and Mann- Whitney tests comparison tell us that the irrelevant attribute was able to make respondent perceive the granola bar as more unique than the regular one. Moreover, the linear regression shows us that when attractiveness, novelty and uniqueness increase, perceived healthiness of the product increase, too. These results are in line with past studies and give additional support to the thesis that irrelevant attributes that can gain consumers' attention can influence positively product evaluation (in this case healthiness). Indeed, the products that were more attractive, new and unique according to respondents were also the products perceived as more healthier. Moreover, the experiment proves that a disclaimer can't nullify the effect that the irrelevant attribute has on consumers' perceptions.

CHAPTER IV: GENERAL DISCUSSION

The irrelevant attribute "raw" gives information about the manufacturing process (skipping roasting step) and it is not relevant to express a judgement about healthiness (Berry, Burton and Howlett, 2017; Chrysochou and Grunert 2014). Neither, the fact that cocoa beans could preserve some nutrients when skipping the roasting process isn't useful information. Indeed, the sentence "In this way, cocoa beans lose less organoleptic properties and are not impoverished from a nutritional point of view" (Appendix: Figure 1c-d) gives an information only about cocoa beans treatment at a certain point of the production process and doesn't give us any relevant information to assess healthiness of the final product, which is the result of many other manufacturing processes. Moreover, the sentence doesn't specify which organoleptic properties and nutrients are preserved, to what extent they are present, how and why they could improve the healthiness of the final product and without referring to any reliable source.

It is possible to give different explanations of why and how the irrelevant attribute "raw" influenced participants' health assessment. First, the attribute made people perceive the product as salient, particular and different from the other different granola bars. Indeed, granola bar in conditions 3,4,5 and 6 scored significant higher values in attractiveness, novelty and uniqueness. The differentiated product gained respondent's attention and left a strong positive impression in their mind, drawing attention away from other important factors and misleading their judgement due to a "dilution effect" (Tetlock and Boettger, 1989; Hutchison and Alba, 1991). Respondents have probably interpreted the information that preservation of nutrients in cocoa beans means automatically that the product is healthy, regardless of other more relevant information such as nutritional values and without considering that healthiness is given by both benefits and drawbacks of the totality of the ingredients that compose the product.

Second, the Halo effect can reasonably explain why the information about skipping the roasting process influenced respondents' health assessment of the product. They overgeneralized from single process-related information (skipping the roasting process) to a broader set of characteristics that influenced healthiness evaluation. Thus, the information about the state of the nutrient content of cocoa beans after just one process

of the production chain influenced unduly the overall judgment of the final product, which should be evaluated on the basis of much other information.

Third, the word "raw" has a strong symbolic meaning that made respondents transcend objective information and rely more on stereotypical information. The semantic network of associations related to "raw" comprehends attributes such as devoid of cooking, minimally or not processed, not refined and pure. These concepts are likely to influence people to think about something genuine and healthy. This is similar to the experience of Berry et al. (2017) with the word "natural" and of Briz et al. (2008) and Sütterlin and Siegrist, 2015 with the word "fruit sugar".

The support for H2 proves that the effect of meaningless differentiation continues to influence healthiness assessment despite the presence of a disclaimer that informs about the irrelevance of the attribute. The disclosure in condition 5 and 6 (Appendix: Figure 1e-f) gave clear information about how to assess product healthiness and clearly state that any other characteristics are added only for marketing purposes. According to this information, people should have based their judgement on the nutritional facts table, which was the same in every condition. However, respondents continue evaluating the differentiated product as healthier, even though it had the same nutritional values as the regular product.

Again, some bias and heuristics can help us explain why and how this effect takes place. First, the conviction of the associations triggered by the word "raw" is difficult to be erased due to an anchoring effect (Tversky and Kahnemann, 1974). The exposure to the irrelevant attribute has a priming effect on respondents, which continue to judge the product as healthier, ignoring the disclaimer given. This behaviour can be also explained by the perseverance effect (Anderson, Lepper and Ross 1980) since participants clang to their opinion and weren't able to correct the false conclusion according to the information given by the disclaimer. The last consideration is related to the instrumental reasoning process (Fischer et al. 1999). Probably respondents continue basing their opinion on the irrelevant attribute to simplify the task of judging product healthiness and/or because they weren't able to give an assessment using the available information. The disclaimer state that respondents should assess healthiness checking calories, sugar and fat content in the nutritional facts table, which is a task that requires effort and knowledge to be performed

properly. Some respondents were not able to interpret nutritional facts, some others didn't want to make that effort and some others more didn't pay attention or read carefully the disclaimer.

Managerial and public health implications

The results of this thesis have some important implications for public health and marketing. For managerial practice, it proves that the use of an irrelevant attribute provides the brand's firm with an effective instrument for differentiating from competitors. The addition of an irrelevant attribute consequently serves to increase the consumer-oriented brand value. Indeed, the perception of the irrelevant attribute can improve brand image, perception of benefits and moreover product evaluation. The specific emphasis on ingredients with a positive symbolic meaning leads to a better health perception of food. They can evoke positive associations that have a positive impact on consumers' perception and behaviour.

These results are a spark for an ethical debate on how fair is that consumers can be influenced by misleading information when they evaluate the healthiness of food products. The finding of this thesis and past studies suggest that consumers are highly susceptible when decoding information that could make them make an unware purchase.

We can consider the use of irrelevant attributes fair when they are used only to improve product and brand image and attractiveness, to offer a showy product or to gain consumers' attention and curiosity in general. On the other hand, it turns into an unfair practice when it misleads consumers' assessment of characteristics that have an impact on health.

Limitations and Future Research

This thesis is a contribution to the marketing literature concerning meaningless differentiation, giving empirical evidence of its effect in healthiness assessment of food product. Despite some significant results obtained from the experiment, this work has some flaws and lacks. The resolution of these problems can offer some insight for future research.

Future experiments should improve price manipulation to discover any significant effects. For example, increasing the price difference between conditions could be useful to produce any significant differences in participant's responses.

The experiment in this thesis was run on a convenience sample of only Italian people, with the majority of them being students and in the 20-30 age group. Future research should run a similar experiment in different countries and on a sample with older people. Moreover, it would be interesting to base sampling criteria on different characteristics, for example, sportspersons, people on a special diet (e.g. vegan), people expert in specific product category or nutritionist.

Last, future experiment could be run collecting data with an alternative method to the online survey, for example: simulating a shopping experience in a grocery's store, collecting data directly on the field in supermarket or events.

CONCLUSION

The main objective of this thesis has been to deepen our understanding of meaningless differentiation in food products. In particular, I investigated how a "special" (i.e. attractive, new or unique) but the irrelevant attribute can influence consumers' perception of product healthiness. On the basis of the past studies about meaningless differentiation, I developed a theoretical framework in which a product with a new, unique or attractive attribute is able to influence positively healthiness perception and, additionally, when the irrelevance of the attribute is revealed, the consumers continue to assess the product as healthier than its regular version. The experiment that I run gives some significant support for the hypothesis proposed in Chapter III. It has been demonstrated that an irrelevant attribute is able to increase healthiness and quality perception of a food product and make consumers have a better attitude toward it. Moreover, a disclaimer revealing the irrelevance of the attribute wasn't able to mitigate this effect. The irrelevant attribute that characterized the product made participants perceived it more unique than its regular version and it was observed that perceived healthiness increased when perceived attractiveness, novelty and uniqueness increased, too. These results find an explanation in some biases and heuristics that occur in consumers' mind. First, the irrelevant attribute gained consumers' attention and, for this reason, made respondents perceived the product as different from the other and drew away attention from the other important attributes functional to judge healthiness (i.e. nutritional values). Second, the information given about the state of the nutrient content of just one ingredient after one step of the manufacturing process influenced unduly the overall judgement of the final product due to a halo effect. Third, the word "raw" that was used to differentiate the product has a strong symbolic meaning that aroused in respondents' mind associations related to the concepts of "genuine" and "healthy". Fourth, the disclosure of irrelevance wasn't effective due to an anchoring effect for which the associations triggered by the irrelevant attribute were difficult to be erased after their arousal. Fifth, probably respondents used the irrelevant attributes to form their opinion about healthiness because it simplified the task of judging the product and because they weren't able to give an objective assessment using the available information, for example, checking calories, sugar and fat in the nutritional facts table. This is also related to the fact that consumers are often unable to assess properly the

information that they receive from the advertising about food products. For this reason, they can be easily misled by irrelevant information that makes them overestimate the healthiness of the products. In the end, this thesis demonstrated that meaningless differentiation is able to improve product or brand image, perception of benefits and product evaluation. Specifically, it is effective to emphasize the ingredients that have a positive symbolic meaning. On the counterpart, this research wants to warn that consumers are highly susceptible when decoding information about products, especially when it is functional to make health-related decisions. I think it is properly to regulate better how to give information that has health-related aspects and that is fair to use meaningless differentiation just to differentiate the product, to gain attention and to arouse curiosity, while it is unfair when it can mislead consumers' assessment of characteristics that have an impact on health.

APPENDIX

Figure 1a-f: Manipulation of stimulus

1a. "Granola bar with dark chocolate.
A bar is ideal as a snack, to be enjoyed at any time of the day without sacrificing taste. With vitamins, minerals and fibers, these bars combine the nutritional qualities of cereals with the pleasure of dark chocolate.
Price (6 bars): € 1.90"

Valori nutrizionali	Per 100g	Per barretta (23g)
Energia kJ/kcal	1758/418	405/96
Grassi	12,1 g	2,8 g
- di cui saturi	5,2 g	1,2 g
Carboidrati	68,5 g	15,8 g
- di cui zuccheri	30,6 g	7,0 g
Fibre	3,6 g	0,8 g
Proteine	6,9 g	1,6 g
Sale	0,6 g	0,1 g

1b. "Granola bar with dark chocolate.
A bar is ideal as a snack, to be enjoyed at any time of the day without sacrificing taste. With vitamins, minerals and fibers, these bars combine the nutritional qualities of cereals with the pleasure of dark chocolate.
Price (6 bars): € 3,10"

Valori nutrizionali	Per 100g	Per barretta (23g)
Energia kJ/kcal	1758/418	405/96
Grassi	12,1 g	2,8 g
- di cui saturi	5,2 g	1,2 g
Carboidrati	68,5 g	15,8 g
- di cui zuccheri	30,6 g	7,0 g
Fibre	3,6 g	0,8 g
Proteine	6,9 g	1,6 g
Sale	0,6 g	0,1 g

1c. "Granola bar with dark raw chocolate.
A bar is ideal as a snack, to be enjoyed at any time of the day without sacrificing taste. With vitamins, minerals and fiber, these bars combine the nutritional qualities of cereals with the pleasure of dark raw chocolate.
Raw chocolate is the product obtained from the processing of cocoa beans by skipping the roasting process or by running it at a temperature not exceeding 42 ° C. In this way, cocoa beans lose less organoleptic properties and are not impoverished from the nutritional point of view (antioxidants, mineral salts and vitamins).
Price (6 bars): € 1.90"

Valori nutrizionali	Per 100g	Per barretta (23g)
Energia kJ/kcal	1758/418	405/96
Grassi	12,1 g	2,8 g
- di cui saturi	5,2 g	1,2 g
Carboidrati	68,5 g	15,8 g
- di cui zuccheri	30,6 g	7,0 g
Fibre	3,6 g	0,8 g
Proteine	6,9 g	1,6 g
Sale	0,6 g	0,1 g

1d. "Granola bar with dark raw chocolate.
A bar is ideal as a snack, to be enjoyed at any time of the day without sacrificing taste. With vitamins, minerals and fiber, these bars combine the nutritional qualities of cereals with the pleasure of dark raw chocolate.
Raw chocolate is the product obtained from the processing of cocoa beans by skipping the roasting process or by running it at a temperature not exceeding 42 ° C. In this way, cocoa beans lose less organoleptic properties and are not impoverished from the nutritional point of view (antioxidants, mineral salts and vitamins).
Price (6 bars): € 3,10"

Valori nutrizionali	Per 100g	Per barretta (23g)
Energia kJ/kcal	1758/418	405/96
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- di cui zuccheri	30,6 g	7,0 g
Fibre	3,6 g	0,8 g
Proteine	6,9 g	1,6 g
Sale	0,6 g	0,1 g

1e. "Granola bar with dark raw chocolate.
A bar is ideal as a snack, to be enjoyed at any time of the day without sacrificing taste. With vitamins, minerals and fiber, these bars combine the nutritional qualities of cereals with the pleasure of dark raw chocolate.
Raw chocolate is the product obtained from the processing of cocoa beans by skipping the roasting process or by running it at a temperature not exceeding 42 ° C. In this way, cocoa beans lose less organoleptic properties and are not impoverished from the nutritional point of view (antioxidants, mineral salts and vitamins). This kind of product is considered healthy when it contains low amounts of saturated fats, sugars and calories. Other features are added for marketing purposes only. In general, chocolate is a product to be consumed in moderation.
Price (6 bars): € 1.90"

Valori nutrizionali	Per 100g	Per barretta (23g)
Energia kJ/kcal	1758/418	405/96
Grassi	12,1 g	2,8 g
- di cui saturi	5,2 g	1,2 g
Carboidrati	68,5 g	15,8 g
- di cui zuccheri	30,6 g	7,0 g
Fibre	3,6 g	0,8 g
Proteine	6,9 g	1,6 g
Sale	0,6 g	0,1 g

1f. "Granola bar with dark raw chocolate.
A bar is ideal as a snack, to be enjoyed at any time of the day without sacrificing taste. With vitamins, minerals and fiber, these bars combine the nutritional qualities of cereals with the pleasure of dark raw chocolate.
Raw chocolate is the product obtained from the processing of cocoa beans by skipping the roasting process or by running it at a temperature not exceeding 42 ° C. In this way, cocoa beans lose less organoleptic properties and are not impoverished from the nutritional point of view (antioxidants, mineral salts and vitamins). This kind of product is considered healthy when it contains low amounts of saturated fats, sugars and calories. Other features are added for marketing purposes only. In general, chocolate is a product to be consumed in moderation.
Price (6 bars): € 3,10"

Valori nutrizionali	Per 100g	Per barretta (23g)
Energia kJ/kcal	1758/418	405/96
Grassi	12,1 g	2,8 g
- di cui saturi	5,2 g	1,2 g
Carboidrati	68,5 g	15,8 g
- di cui zuccheri	30,6 g	7,0 g
Fibre	3,6 g	0,8 g
Proteine	6,9 g	1,6 g
Sale	0,6 g	0,1 g

Table 1: Questionnaire

Questionnaire: Answer to what extent do you agree with the following statement about the product previously presented: (7-point Likert scale)
Attractiveness
Q1 - The product is attractive
Novelty
Q2.1 - The product is new
Q2.2 - The product is unusual
Uniqueness
Q3.1 - The product shown stands out from the other products in the same category
Q3.2 - The product shown is different from the other products in the same category
Price Fairness
Q4 - The price for the product shown seems fair to me
Quality
Q5.1 - The product appear to be of good quality
Q5.2 - The product seems to contain high quality ingredients
Healthiness
The product is:
Q6.1 - Healthy
Q6.2 - Nutritious
Q6.3 - Low in calories
Q6.4 - Has a lot of added sugar (reverse)
Q6.5 - Has a lot of fat/salt (reverse)
Healthiness Relative
Q7.1 - The product shown is healthier than other granola bars in the market
Q7.2 - The product shown is less harmful to my health than other granola bars in the market
Attitude
Q8.1 - I really like this product
Q8.2 - The product would taste good
Q8.3 - I would enjoy eating the product
Q8.4 - I would expect the product to be successful when it is launched

Purchase intention
Q9 - If I were going to buy this product, I would consider buying this product at the price shown
Demographic questions:
Q10.1 - Age (open question)
Q10.2 - Gender (M,F)
Q10.3 - Education level (Middle School, High School, Bachelor Degree, MSc Degree, Phd)
Q10.4 - Occupation (Student, Entrepreneur, Employee, Unemployed, Other)

Table 2: Cronbach's alpha

Condition	Variables	Cronbach's Alpha
	Novelty	
1		0,865
2		0,670
3		0,798
4		0,866
5		0,947
6		0,802
	Uniqueness	
1		0,944
2		0,854
3		0,952
4		0,915
5		0,929
6		0,877
	Quality	
1		0,913
2		0,872
3		0,817
4		0,861
5		0,906
6		0,915

Condition	Variables	Cronbach's Alpha
	Healthiness	
1		0,861
2		0,822
3		0,631
4		0,834
5		0,715
6		0,796
	Healthiness_Rel	
1		0,796
2		0,972
3		0,943
4		0,856
5		0,889
6		0,918
	Attitude	
1		0,909
2		0,856
3		0,868
4		0,882
5		0,901
6		0,907

Table 12 - Multiple Comparisons: Bonferroni

Dependent Variable	(I) Condition	(J) Condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Attractiveness	1,00	2,00	,04873	,34261	1,000	-,9674	1,0648
		3,00	-1,29651*	,34692	,004	-2,3254	-,2676
		4,00	-1,17472*	,34922	,013	-2,2104	-,1390
		5,00	-1,12759*	,35413	,025	-2,1779	-,0773
		6,00	-1,02020	,35162	,061	-2,0630	,0226
	2,00	1,00	-,04873	,34261	1,000	-1,0648	,9674
		3,00	-1,34524*	,34890	,002	-2,3800	-,3105
		4,00	-1,22344*	,35119	,009	-2,2650	-,1819
		5,00	-1,17632*	,35607	,017	-2,2324	-,1203
		6,00	-1,06892*	,35358	,042	-2,1175	-,0203
	3,00	1,00	1,29651*	,34692	,004	,2676	2,3254
		2,00	1,34524*	,34890	,002	,3105	2,3800
		4,00	,12179	,35539	1,000	-,9322	1,1758
		5,00	,16892	,36022	1,000	-,8994	1,2372
		6,00	,27632	,35775	1,000	-,7847	1,3373
	4,00	1,00	1,17472*	,34922	,013	,1390	2,2104
		2,00	1,22344*	,35119	,009	,1819	2,2650
		3,00	-,12179	,35539	1,000	-1,1758	,9322
		5,00	,04712	,36243	1,000	-1,0278	1,1220
		6,00	,15452	,35998	1,000	-,9131	1,2221
	5,00	1,00	1,12759*	,35413	,025	,0773	2,1779
		2,00	1,17632*	,35607	,017	,1203	2,2324
		3,00	-,16892	,36022	1,000	-1,2372	,8994
		4,00	-,04712	,36243	1,000	-1,1220	1,0278
		6,00	,10740	,36475	1,000	-,9744	1,1892
	6,00	1,00	1,02020	,35162	,061	-,0226	2,0630
		2,00	1,06892*	,35358	,042	,0203	2,1175
		3,00	-,27632	,35775	1,000	-1,3373	,7847
		4,00	-,15452	,35998	1,000	-1,2221	,9131
		5,00	-,10740	,36475	1,000	-1,1892	,9744
Novelty	1,00	2,00	-,17857	,34995	1,000	-1,2164	,8593
		3,00	-1,40000*	,35434	,002	-2,4509	-,3491
		4,00	-1,71795*	,35669	,000	-2,7758	-,6601
		5,00	-1,00000	,36171	,092	-2,0727	,0727
		6,00	-1,77632*	,35914	,000	-2,8415	-,7112
	2,00	1,00	,17857	,34995	1,000	-,8593	1,2164
		3,00	-1,22143*	,35637	,011	-2,2783	-,1645
		4,00	-1,53938*	,35870	,000	-2,6032	-,4755
		5,00	-,82143	,36370	,373	-1,9001	,2572
		6,00	-1,59774*	,36114	,000	-2,6688	-,5267
	3,00	1,00	1,40000*	,35434	,002	,3491	2,4509
		2,00	1,22143*	,35637	,011	,1645	2,2783
		4,00	-,31795	,36300	1,000	-1,3945	,7586
		5,00	,40000	,36793	1,000	-,6912	1,4912
		6,00	-,37632	,36541	1,000	-1,4600	,7074
	4,00	1,00	1,71795*	,35669	,000	,6601	2,7758
		2,00	1,53938*	,35870	,000	,4755	2,6032
		3,00	,31795	,36300	1,000	-,7586	1,3945
		5,00	,71795	,37019	,805	-,3799	1,8158
		6,00	-,05837	,36768	1,000	-1,1488	1,0321

	5,00	1,00	1,00000	,36171	,092	-,0727	2,0727
		2,00	,82143	,36370	,373	-,2572	1,9001
		3,00	-,40000	,36793	1,000	-1,4912	,6912
		4,00	-,71795	,37019	,805	-1,8158	,3799
		6,00	-,77632	,37255	,574	-1,8812	,3286
	6,00	1,00	1,77632*	,35914	,000	,7112	2,8415
		2,00	1,59774*	,36114	,000	,5267	2,6688
		3,00	,37632	,36541	1,000	-,7074	1,4600
		4,00	,05837	,36768	1,000	-1,0321	1,1488
		5,00	,77632	,37255	,574	-,3286	1,8812
Uniqueness	1,00	2,00	,05039	,34355	1,000	-,9685	1,0693
		3,00	-1,36628*	,34787	,002	-2,3980	-,3346
		4,00	-1,74448*	,35018	,000	-2,7830	-,7059
		5,00	-1,31898*	,35510	,004	-2,3721	-,2658
		6,00	-1,64259*	,35258	,000	-2,6883	-,5969
	2,00	1,00	-,05039	,34355	1,000	-1,0693	,9685
		3,00	-1,41667*	,34986	,001	-2,4543	-,3791
		4,00	-1,79487*	,35215	,000	-2,8393	-,7505
		5,00	-1,36937*	,35705	,002	-2,4283	-,3104
		6,00	-1,69298*	,35455	,000	-2,7445	-,6415
	3,00	1,00	1,36628*	,34787	,002	,3346	2,3980
		2,00	1,41667*	,34986	,001	,3791	2,4543
		4,00	-,37821	,35637	1,000	-1,4351	,6787
		5,00	,04730	,36121	1,000	-1,0240	1,1186
		6,00	-,27632	,35873	1,000	-1,3402	,7876
	4,00	1,00	1,74448*	,35018	,000	,7059	2,7830
		2,00	1,79487*	,35215	,000	,7505	2,8393
		3,00	,37821	,35637	1,000	-,6787	1,4351
		5,00	,42550	,36343	1,000	-,6523	1,5033
		6,00	,10189	,36097	1,000	-,9687	1,1724
	5,00	1,00	1,31898*	,35510	,004	,2658	2,3721
		2,00	1,36937*	,35705	,002	,3104	2,4283
		3,00	-,04730	,36121	1,000	-1,1186	1,0240
		4,00	-,42550	,36343	1,000	-1,5033	,6523
		6,00	-,32361	,36575	1,000	-1,4083	,7611
	6,00	1,00	1,64259*	,35258	,000	,5969	2,6883
		2,00	1,69298*	,35455	,000	,6415	2,7445
		3,00	,27632	,35873	1,000	-,7876	1,3402
		4,00	-,10189	,36097	1,000	-1,1724	,9687
		5,00	,32361	,36575	1,000	-,7611	1,4083
Quality	1,00	2,00	-,22868	,27473	1,000	-1,0435	,5861
		3,00	-1,78285*	,27818	,000	-2,6079	-,9578
		4,00	-1,85689*	,28002	,000	-2,6874	-1,0264
		5,00	-1,53048*	,28396	,000	-2,3727	-,6883
		6,00	-1,69798*	,28195	,000	-2,5342	-,8618
	2,00	1,00	,22868	,27473	1,000	-,5861	1,0435
		3,00	-1,55417*	,27977	,000	-2,3839	-,7244
		4,00	-1,62821*	,28160	,000	-2,4634	-,7930
		5,00	-1,30180*	,28552	,000	-2,1486	-,4550
		6,00	-1,46930*	,28352	,000	-2,3101	-,6285
	3,00	1,00	1,78285*	,27818	,000	,9578	2,6079
		2,00	1,55417*	,27977	,000	,7244	2,3839
		4,00	-,07404	,28497	1,000	-,9192	,7711
		5,00	,25236	,28884	1,000	-,6043	1,1090
		6,00	,08487	,28686	1,000	-,7659	,9356

	4,00	1,00	1,85689*	,28002	,000	1,0264	2,6874
		2,00	1,62821*	,28160	,000	,7930	2,4634
		3,00	,07404	,28497	1,000	-,7711	,9192
		5,00	,32640	,29062	1,000	-,5355	1,1883
		6,00	,15891	,28865	1,000	-,6972	1,0150
	5,00	1,00	1,53048*	,28396	,000	,6883	2,3727
		2,00	1,30180*	,28552	,000	,4550	2,1486
		3,00	-,25236	,28884	1,000	-1,1090	,6043
		4,00	-,32640	,29062	1,000	-1,1883	,5355
		6,00	-,16750	,29247	1,000	-1,0349	,6999
	6,00	1,00	1,69798*	,28195	,000	,8618	2,5342
		2,00	1,46930*	,28352	,000	,6285	2,3101
		3,00	-,08487	,28686	1,000	-,9356	,7659
		4,00	-,15891	,28865	1,000	-1,0150	,6972
		5,00	,16750	,29247	1,000	-,6999	1,0349
Healthiness	1,00	2,00	-,03112	,25994	1,000	-,8020	,7398
		3,00	-1,08802*	,26321	,001	-1,8686	-,3074
		4,00	-,88790*	,26495	,014	-1,6737	-,1021
		5,00	-,95789*	,26868	,007	-1,7547	-,1610
		6,00	-1,08776*	,26677	,001	-1,8789	-,2966
	2,00	1,00	,03112	,25994	1,000	-,7398	,8020
		3,00	-1,05690*	,26471	,001	-1,8420	-,2718
		4,00	-,85678*	,26645	,022	-1,6470	-,0666
		5,00	-,92677*	,27016	,011	-1,7280	-,1256
		6,00	-1,05664*	,26826	,002	-1,8522	-,2610
	3,00	1,00	1,08802*	,26321	,001	,3074	1,8686
		2,00	1,05690*	,26471	,001	,2718	1,8420
		4,00	,20013	,26964	1,000	-,5995	,9998
		5,00	,13014	,27330	1,000	-,6804	,9407
		6,00	,00026	,27143	1,000	-,8047	,8052
	4,00	1,00	,88790*	,26495	,014	,1021	1,6737
		2,00	,85678*	,26645	,022	,0666	1,6470
		3,00	-,20013	,26964	1,000	-,9998	,5995
		5,00	-,06999	,27498	1,000	-,8855	,7455
		6,00	-,19987	,27312	1,000	-1,0099	,6101
	5,00	1,00	,95789*	,26868	,007	,1610	1,7547
		2,00	,92677*	,27016	,011	,1256	1,7280
		3,00	-,13014	,27330	1,000	-,9407	,6804
		4,00	,06999	,27498	1,000	-,7455	,8855
		6,00	-,12987	,27673	1,000	-,9506	,6909
	6,00	1,00	1,08776*	,26677	,001	,2966	1,8789
		2,00	1,05664*	,26826	,002	,2610	1,8522
		3,00	-,00026	,27143	1,000	-,8052	,8047
		4,00	,19987	,27312	1,000	-,6101	1,0099
		5,00	,12987	,27673	1,000	-,6909	,9506
HealthinessRel	1,00	2,00	,14590	,31845	1,000	-,7985	1,0903
		3,00	-,97791*	,32245	,040	-1,9342	-,0216
		4,00	-,87150	,32458	,117	-1,8341	,0911
		5,00	-1,00629*	,32915	,037	-1,9825	-,0301
		6,00	-,95685	,32681	,056	-1,9261	,0124
	2,00	1,00	-,14590	,31845	1,000	-1,0903	,7985
		3,00	-1,12381*	,32429	,009	-2,0856	-,1620
		4,00	-1,01740*	,32641	,031	-1,9855	-,0493
		5,00	-1,15219*	,33096	,009	-2,1337	-,1706
		6,00	-1,10276*	,32863	,014	-2,0774	-,1281

	3,00	1,00	,97791*	,32245	,040	,0216	1,9342
		2,00	1,12381*	,32429	,009	,1620	2,0856
		4,00	,10641	,33032	1,000	-,8732	1,0861
		5,00	-,02838	,33481	1,000	-1,0213	,9646
		6,00	,02105	,33251	1,000	-,9651	1,0072
	4,00	1,00	,87150	,32458	,117	-,0911	1,8341
		2,00	1,01740*	,32641	,031	,0493	1,9855
		3,00	-,10641	,33032	1,000	-1,0861	,8732
		5,00	-,13479	,33687	1,000	-1,1339	,8643
		6,00	-,08536	,33458	1,000	-1,0777	,9069
	5,00	1,00	1,00629*	,32915	,037	,0301	1,9825
		2,00	1,15219*	,33096	,009	,1706	2,1337
		3,00	,02838	,33481	1,000	-,9646	1,0213
		4,00	,13479	,33687	1,000	-,8643	1,1339
		6,00	,04943	,33902	1,000	-,9560	1,0549
	6,00	1,00	,95685	,32681	,056	-,0124	1,9261
		2,00	1,10276*	,32863	,014	,1281	2,0774
		3,00	-,02105	,33251	1,000	-1,0072	,9651
		4,00	,08536	,33458	1,000	-,9069	1,0777
		5,00	-,04943	,33902	1,000	-1,0549	,9560
Attitude	1,00	2,00	-,02118	,28636	1,000	-,8705	,8281
		3,00	-1,15422*	,28996	,001	-2,0142	-,2943
		4,00	-,96944*	,29188	,016	-1,8351	-,1038
		5,00	-,92803*	,29598	,029	-1,8059	-,0502
		6,00	-,91310*	,29388	,032	-1,7847	-,0415
	2,00	1,00	,02118	,28636	1,000	-,8281	,8705
		3,00	-1,13304*	,29162	,002	-1,9979	-,2682
		4,00	-,94826*	,29352	,021	-1,8188	-,0777
		5,00	-,90685*	,29761	,039	-1,7895	-,0242
		6,00	-,89192*	,29552	,042	-1,7684	-,0155
	3,00	1,00	1,15422*	,28996	,001	,2943	2,0142
		2,00	1,13304*	,29162	,002	,2682	1,9979
		4,00	,18478	,29704	1,000	-,6962	1,0657
		5,00	,22618	,30107	1,000	-,6667	1,1191
		6,00	,24112	,29901	1,000	-,6457	1,1279
	4,00	1,00	,96944*	,29188	,016	,1038	1,8351
		2,00	,94826*	,29352	,021	,0777	1,8188
		3,00	-,18478	,29704	1,000	-1,0657	,6962
		5,00	,04141	,30292	1,000	-,8570	,9398
		6,00	,05634	,30087	1,000	-,8360	,9487
	5,00	1,00	,92803*	,29598	,029	,0502	1,8059
		2,00	,90685*	,29761	,039	,0242	1,7895
		3,00	-,22618	,30107	1,000	-1,1191	,6667
		4,00	-,04141	,30292	1,000	-,9398	,8570
		6,00	,01494	,30486	1,000	-,8892	,9191
	6,00	1,00	,91310*	,29388	,032	,0415	1,7847
		2,00	,89192*	,29552	,042	,0155	1,7684
		3,00	-,24112	,29901	1,000	-1,1279	,6457
		4,00	-,05634	,30087	1,000	-,9487	,8360
		5,00	-,01494	,30486	1,000	-,9191	,8892
PriceFairness	1,00	2,00	,75692	,34270	,423	-,2594	1,7733
		3,00	-,21570	,34701	1,000	-1,2448	,8134
		4,00	-,14967	,34930	1,000	-1,1856	,8863
		5,00	-,27718	,35422	1,000	-1,3277	,7734
		6,00	,15667	,35171	1,000	-,8864	1,1997

	2,00	1,00	-,75692	,34270	,423	-1,7733	,2594
		3,00	-,97262	,34899	,086	-2,0076	,0624
		4,00	-,90659	,35128	,157	-1,9484	,1352
		5,00	-1,03411	,35616	,061	-2,0904	,0222
		6,00	-,60025	,35366	1,000	-1,6491	,4486
	3,00	1,00	,21570	,34701	1,000	-,8134	1,2448
		2,00	,97262	,34899	,086	-,0624	2,0076
		4,00	,06603	,35548	1,000	-,9882	1,1203
		5,00	-,06149	,36031	1,000	-1,1301	1,0071
		6,00	,37237	,35784	1,000	-,6889	1,4336
	4,00	1,00	,14967	,34930	1,000	-,8863	1,1856
		2,00	,90659	,35128	,157	-,1352	1,9484
		3,00	-,06603	,35548	1,000	-1,1203	,9882
		5,00	-,12751	,36252	1,000	-1,2027	,9477
		6,00	,30634	,36007	1,000	-,7615	1,3742
	5,00	1,00	,27718	,35422	1,000	-,7734	1,3277
		2,00	1,03411	,35616	,061	-,0222	2,0904
		3,00	,06149	,36031	1,000	-1,0071	1,1301
		4,00	,12751	,36252	1,000	-,9477	1,2027
		6,00	,43385	,36484	1,000	-,6482	1,5159
	6,00	1,00	-,15667	,35171	1,000	-1,1997	,8864
		2,00	,60025	,35366	1,000	-,4486	1,6491
		3,00	-,37237	,35784	1,000	-1,4336	,6889
		4,00	-,30634	,36007	1,000	-1,3742	,7615
		5,00	-,43385	,36484	1,000	-1,5159	,6482
Purch_Int	1,00	2,00	,54817	,32003	1,000	-,4010	1,4973
		3,00	-,49826	,32405	1,000	-1,4593	,4628
		4,00	-,10018	,32620	1,000	-1,0676	,8673
		5,00	-,80704	,33079	,232	-1,7881	,1740
		6,00	-,10220	,32844	1,000	-1,0763	,8719
	2,00	1,00	-,54817	,32003	1,000	-1,4973	,4010
		3,00	-1,04643*	,32591	,023	-2,0130	-,0799
		4,00	-,64835	,32804	,739	-1,6212	,3245
		5,00	-1,35521*	,33261	,001	-2,3416	-,3688
		6,00	-,65038	,33027	,752	-1,6299	,3291
	3,00	1,00	,49826	,32405	1,000	-,4628	1,4593
		2,00	1,04643*	,32591	,023	,0799	2,0130
		4,00	,39808	,33197	1,000	-,5865	1,3826
		5,00	-,30878	,33648	1,000	-1,3067	,6891
		6,00	,39605	,33417	1,000	-,5950	1,3871
	4,00	1,00	,10018	,32620	1,000	-,8673	1,0676
		2,00	,64835	,32804	,739	-,3245	1,6212
		3,00	-,39808	,33197	1,000	-1,3826	,5865
		5,00	-,70686	,33855	,568	-1,7109	,2972
		6,00	-,00202	,33625	1,000	-,9993	,9952
	5,00	1,00	,80704	,33079	,232	-,1740	1,7881
		2,00	1,35521*	,33261	,001	,3688	2,3416
		3,00	,30878	,33648	1,000	-,6891	1,3067
		4,00	,70686	,33855	,568	-,2972	1,7109
		6,00	,70484	,34071	,595	-,3056	1,7153
	6,00	1,00	,10220	,32844	1,000	-,8719	1,0763
		2,00	,65038	,33027	,752	-,3291	1,6299
		3,00	-,39605	,33417	1,000	-1,3871	,5950
		4,00	,00202	,33625	1,000	-,9952	,9993
		5,00	-,70484	,34071	,595	-1,7153	,3056

Table 13 - Multiple Comparisons: LSD

Dependent Variable		(I) Condition	(J) Condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Attractiveness	LSD	1,00	2,00	,04873	,34261	,887	-,6263	,7237
			3,00	-1,29651*	,34692	,000	-1,9800	-,6130
			4,00	-1,17472*	,34922	,001	-1,8627	-,4867
			5,00	-1,12759*	,35413	,002	-1,8253	-,4299
			6,00	-1,02020*	,35162	,004	-1,7130	-,3274
		2,00	1,00	-,04873	,34261	,887	-,7237	,6263
			3,00	-1,34524*	,34890	,000	-2,0326	-,6578
			4,00	-1,22344*	,35119	,001	-1,9154	-,5315
			5,00	-1,17632*	,35607	,001	-1,8779	-,4748
			6,00	-1,06892*	,35358	,003	-1,7655	-,3723
		3,00	1,00	1,29651*	,34692	,000	,6130	1,9800
			2,00	1,34524*	,34890	,000	,6578	2,0326
			4,00	,12179	,35539	,732	-,5784	,8220
			5,00	,16892	,36022	,640	-,5408	,8786
			6,00	,27632	,35775	,441	-,4285	,9812
		4,00	1,00	1,17472*	,34922	,001	,4867	1,8627
			2,00	1,22344*	,35119	,001	,5315	1,9154
			3,00	-,12179	,35539	,732	-,8220	,5784
			5,00	,04712	,36243	,897	-,6669	,7612
			6,00	,15452	,35998	,668	-,5547	,8637
		5,00	1,00	1,12759*	,35413	,002	,4299	1,8253
			2,00	1,17632*	,35607	,001	,4748	1,8779
			3,00	-,16892	,36022	,640	-,8786	,5408
			4,00	-,04712	,36243	,897	-,7612	,6669
			6,00	,10740	,36475	,769	-,6112	,8260
		6,00	1,00	1,02020*	,35162	,004	,3274	1,7130
			2,00	1,06892*	,35358	,003	,3723	1,7655
			3,00	-,27632	,35775	,441	-,9812	,4285
			4,00	-,15452	,35998	,668	-,8637	,5547
			5,00	-,10740	,36475	,769	-,8260	,6112
Novelty	LSD	1,00	2,00	-,17857	,34995	,610	-,8680	,5109
			3,00	-1,40000*	,35434	,000	-2,0981	-,7019
			4,00	-1,71795*	,35669	,000	-2,4207	-1,0152
			5,00	-1,00000*	,36171	,006	-1,7126	-,2874
			6,00	-1,77632*	,35914	,000	-2,4839	-1,0687
		2,00	1,00	,17857	,34995	,610	-,5109	,8680
			3,00	-1,22143*	,35637	,001	-1,9236	-,5193
			4,00	-1,53938*	,35870	,000	-2,2461	-,8327
			5,00	-,82143*	,36370	,025	-1,5380	-,1049
			6,00	-1,59774*	,36114	,000	-2,3093	-,8862
		3,00	1,00	1,40000*	,35434	,000	,7019	2,0981
			2,00	1,22143*	,35637	,001	,5193	1,9236
			4,00	-,31795	,36300	,382	-1,0331	,3972
			5,00	,40000	,36793	,278	-,3249	1,1249
			6,00	-,37632	,36541	,304	-1,0962	,3436
		4,00	1,00	1,71795*	,35669	,000	1,0152	2,4207
			2,00	1,53938*	,35870	,000	,8327	2,2461
			3,00	,31795	,36300	,382	-,3972	1,0331
			5,00	,71795	,37019	,054	-,0114	1,4473

			6,00	-,05837	,36768	,874	-,7828	,6660
		5,00	1,00	1,00000*	,36171	,006	,2874	1,7126
			2,00	,82143*	,36370	,025	,1049	1,5380
			3,00	-,40000	,36793	,278	-1,1249	,3249
			4,00	-,71795	,37019	,054	-1,4473	,0114
			6,00	-,77632*	,37255	,038	-1,5103	-,0423
		6,00	1,00	1,77632*	,35914	,000	1,0687	2,4839
			2,00	1,59774*	,36114	,000	,8862	2,3093
			3,00	,37632	,36541	,304	-,3436	1,0962
			4,00	,05837	,36768	,874	-,6660	,7828
			5,00	,77632*	,37255	,038	,0423	1,5103
Uniqueness	LSD	1,00	2,00	,05039	,34355	,884	-,6265	,7273
			3,00	-1,36628*	,34787	,000	-2,0517	-,6809
			4,00	-1,74448*	,35018	,000	-2,4344	-1,0546
			5,00	-1,31898*	,35510	,000	-2,0186	-,6194
			6,00	-1,64259*	,35258	,000	-2,3373	-,9479
		2,00	1,00	-,05039	,34355	,884	-,7273	,6265
			3,00	-1,41667*	,34986	,000	-2,1060	-,7274
			4,00	-1,79487*	,35215	,000	-2,4887	-1,1011
			5,00	-1,36937*	,35705	,000	-2,0728	-,6659
			6,00	-1,69298*	,35455	,000	-2,3915	-,9945
		3,00	1,00	1,36628*	,34787	,000	,6809	2,0517
			2,00	1,41667*	,34986	,000	,7274	2,1060
			4,00	-,37821	,35637	,290	-1,0803	,3239
			5,00	,04730	,36121	,896	-,6644	,7590
			6,00	-,27632	,35873	,442	-,9831	,4305
		4,00	1,00	1,74448*	,35018	,000	1,0546	2,4344
			2,00	1,79487*	,35215	,000	1,1011	2,4887
			3,00	,37821	,35637	,290	-,3239	1,0803
			5,00	,42550	,36343	,243	-,2905	1,1415
			6,00	,10189	,36097	,778	-,6093	,8131
		5,00	1,00	1,31898*	,35510	,000	,6194	2,0186
			2,00	1,36937*	,35705	,000	,6659	2,0728
			3,00	-,04730	,36121	,896	-,7590	,6644
			4,00	-,42550	,36343	,243	-1,1415	,2905
			6,00	-,32361	,36575	,377	-1,0442	,3970
		6,00	1,00	1,64259*	,35258	,000	,9479	2,3373
			2,00	1,69298*	,35455	,000	,9945	2,3915
			3,00	,27632	,35873	,442	-,4305	,9831
			4,00	-,10189	,36097	,778	-,8131	,6093
			5,00	,32361	,36575	,377	-,3970	1,0442
HealthinessRel	LSD	1,00	2,00	,14590	,31845	,647	-,4815	,7733
			3,00	-,97791*	,32245	,003	-1,6132	-,3426
			4,00	-,87150*	,32458	,008	-1,5110	-,2320
			5,00	-1,00629*	,32915	,002	-1,6548	-,3578
			6,00	-,95685*	,32681	,004	-1,6007	-,3130
		2,00	1,00	-,14590	,31845	,647	-,7733	,4815
			3,00	-1,12381*	,32429	,001	-1,7627	-,4849
			4,00	-1,01740*	,32641	,002	-1,6605	-,3743
			5,00	-1,15219*	,33096	,001	-1,8042	-,5001
			6,00	-1,10276*	,32863	,001	-1,7502	-,4553
		3,00	1,00	,97791*	,32245	,003	,3426	1,6132
			2,00	1,12381*	,32429	,001	,4849	1,7627
			4,00	,10641	,33032	,748	-,5444	,7572
			5,00	-,02838	,33481	,933	-,6880	,6313

		6,00	,02105	,33251	,950	-,6341	,6762
	4,00	1,00	,87150*	,32458	,008	,2320	1,5110
		2,00	1,01740*	,32641	,002	,3743	1,6605
		3,00	-,10641	,33032	,748	-,7572	,5444
		5,00	-,13479	,33687	,689	-,7985	,5289
		6,00	-,08536	,33458	,799	-,7446	,5738
	5,00	1,00	1,00629*	,32915	,002	,3578	1,6548
		2,00	1,15219*	,33096	,001	,5001	1,8042
		3,00	,02838	,33481	,933	-,6313	,6880
		4,00	,13479	,33687	,689	-,5289	,7985
		6,00	,04943	,33902	,884	-,6185	,7174
	6,00	1,00	,95685*	,32681	,004	,3130	1,6007
		2,00	1,10276*	,32863	,001	,4553	1,7502
		3,00	-,02105	,33251	,950	-,6762	,6341
		4,00	,08536	,33458	,799	-,5738	,7446
		5,00	-,04943	,33902	,884	-,7174	,6185

Tables 15a - Mann-Whitney test between condition 1 and 2

	Attractiveness	Novelty	Uniqueness	Quality	Purch_Int	PriceFairness
Mann-Whitney U	847,000	835,000	871,500	833,500	782,500	747,500
Wilcoxon W	1750,000	1781,000	1774,500	1779,500	1685,500	1650,500
Z	-,501	-,616	-,284	-,616	-1,089	-1,408
Asymp. Sig. (2-tailed)	,616	,538	,777	,538	,276	,159

Tables 15b - Mann-Whitney test between condition 1 and 3

	Attractiveness	Novelty	Uniqueness	Quality	Purch_Int	PriceFairness
Mann-Whitney U	569,500	425,000	439,500	270,500	722,500	783,000
Wilcoxon W	1515,500	1371,000	1385,500	1216,500	1668,500	1729,000
Z	-2,732	-4,013	-3,877	-5,421	-1,299	-,727
Asymp. Sig. (2-tailed)	,006	,000	,000	,000	,194	,467

Tables 15c - Mann-Whitney test between condition 1 and 4

	Attractiveness	Novelty	Uniqueness	Quality	Purch_Int	PriceFairness
Mann-Whitney U	577,000	334,500	371,500	303,500	814,000	783,500
Wilcoxon W	1523,000	1280,500	1317,500	1249,500	1760,000	1729,500
Z	-2,479	-4,725	-4,388	-5,011	-,234	-,530
Asymp. Sig. (2-tailed)	,013	,000	,000	,000	,815	,596

Tables 15d - Mann-Whitney test between condition 1 and 5

	Attractiveness	Novelty	Uniqueness	Quality	Purch_Int	PriceFairness
Mann-Whitney U	548,000	580,500	463,500	375,500	557,500	693,000
Wilcoxon W	1494,000	1526,500	1409,500	1321,500	1503,500	1639,000
Z	-2,458	-2,109	-3,244	-4,080	-2,402	-1,022
Asymp. Sig. (2-tailed)	,014	,035	,001	,000	,016	,307

Tables 15e - Mann-Whitney test between condition 1 and 6

	Attractiveness	Novelty	Uniqueness	Quality	Purch_Int	PriceFairness
Mann-Whitney U	589,000	345,500	351,500	324,500	789,000	814,000
Wilcoxon W	1535,000	1291,500	1297,500	1270,500	1735,000	1760,000
Z	-2,200	-4,507	-4,451	-4,693	-,272	-,029
Asymp. Sig. (2-tailed)	,028	,000	,000	,000	,785	,977

Tables 15f- Mann-Whitney test between condition 2 and 3

	Attractiveness	Novelty	Uniqueness	Quality	Purch_Int	PriceFairness
Mann-Whitney U	413,500	474,000	411,500	296,000	608,000	628,000
Wilcoxon W	1316,500	1377,000	1314,500	1199,000	1511,000	1531,000
Z	-4,066	-3,437	-4,023	-5,114	-2,217	-2,027
Asymp. Sig. (2-tailed)	,000	,001	,000	,000	,027	,043

Tables 15g- Mann-Whitney test between condition 2 and 4

	Attractiveness	Novelty	Uniqueness	Quality	Purch_Int	PriceFairness
Mann-Whitney U	459,500	381,000	362,500	325,500	692,500	635,000
Wilcoxon W	1362,500	1284,000	1265,500	1228,500	1595,500	1538,000
Z	-3,466	-4,181	-4,368	-4,704	-1,225	-1,809
Asymp. Sig. (2-tailed)	,001	,000	,000	,000	,220	,070

Tables 15h- Mann-Whitney test between condition 2 and 5

	Attractiveness	Novelty	Uniqueness	Quality	Purch_Int	PriceFairness
Mann-Whitney U	420,500	620,000	435,500	402,000	468,000	541,500
Wilcoxon W	1323,500	1523,000	1338,500	1305,000	1371,000	1444,500
Z	-3,584	-1,567	-3,395	-3,715	-3,157	-2,411
Asymp. Sig. (2-tailed)	,000	,117	,001	,000	,002	,016

Tables 15j- Mann-Whitney test between condition 2 and 6

	Attractiveness	Novelty	Uniqueness	Quality	Purch_Int	PriceFairness
Mann-Whitney U	497,000	389,000	328,500	350,500	667,000	657,000
Wilcoxon W	1400,000	1292,000	1231,500	1253,500	1570,000	1560,000
Z	-2,952	-3,979	-4,572	-4,349	-1,290	-1,388
Asymp. Sig. (2-tailed)	,003	,000	,000	,000	,197	,165

Tables 15k- Mann-Whitney test between condition 3 and 4

	Attractiveness	Novelty	Uniqueness	Quality	Purch_Int	PriceFairness
Mann-Whitney U	751,500	708,500	683,500	738,000	679,000	755,000
Wilcoxon W	1531,500	1528,500	1503,500	1558,000	1459,000	1535,000
Z	-,291	-,705	-,954	-,420	-1,023	-,255
Asymp. Sig. (2-tailed)	,771	,481	,340	,675	,306	,799

Tables 15l- Mann-Whitney test between condition 3 and 5

	Attractiveness	Novelty	Uniqueness	Quality	Purch_Int	PriceFairness
Mann-Whitney U	736,000	604,000	716,000	656,000	635,500	716,500
Wilcoxon W	1439,000	1307,000	1419,000	1359,000	1455,500	1536,500
Z	-,043	-1,396	-,246	-,873	-1,120	-,248
Asymp. Sig. (2-tailed)	,966	,163	,805	,383	,263	,804

Tables 15m- Mann-Whitney test between condition 3 and 6

	Attractiveness	Novelty	Uniqueness	Quality	Purch_Int	PriceFairness
Mann-Whitney U	718,000	679,000	697,000	716,500	667,500	707,000
Wilcoxon W	1459,000	1499,000	1517,000	1457,500	1408,500	1448,000
Z	-,437	-,813	-,634	-,443	-,954	-,545
Asymp. Sig. (2-tailed)	,662	,416	,526	,658	,340	,585

Tables 15n- Mann-Whitney test between condition 4 and 5

	Attractiveness	Novelty	Uniqueness	Quality	Purch_Int	PriceFairness
Mann-Whitney U	708,000	509,500	620,000	612,500	528,500	665,000
Wilcoxon W	1488,000	1212,500	1323,000	1315,500	1308,500	1445,000
Z	-,145	-2,216	-1,064	-1,149	-2,093	-,614
Asymp. Sig. (2-tailed)	,884	,027	,288	,251	,036	,539

Tables 15o- Mann-Whitney test between condition 4 and 6

	Attractiveness	Novelty	Uniqueness	Quality	Purch_Int	PriceFairness
Mann-Whitney U	723,000	732,000	709,500	690,000	737,000	712,500
Wilcoxon W	1464,000	1512,000	1450,500	1431,000	1517,000	1453,500
Z	-,189	-,092	-,324	-,526	-,042	-,299
Asymp. Sig. (2-tailed)	,850	,927	,746	,599	,967	,765

Tables 15p - Mann-Whitney test between condition 5 and 6

	Attractiveness	Novelty	Uniqueness	Quality	Purch_Int	PriceFairness
Mann-Whitney U	681,500	512,500	623,500	651,500	529,000	643,500
Wilcoxon W	1422,500	1215,500	1326,500	1354,500	1270,000	1384,500
Z	-,236	-2,030	-,848	-,552	-1,916	-,647
Asymp. Sig. (2-tailed)	,814	,042	,397	,581	,055	,517

Table 16a - Tests of Between-Subjects Effects, Dependent Variable: Healthiness

Dependent Variable: Healthiness

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	54,922a	5	10,984	7,651	,000
Intercept	4577,338	1	4577,338	3188,322	,000
Manipulation	53,651	2	26,826	18,685	,000
Price_Level	,010	1	,010	,007	,933
Manipulation * Price_Level	1,115	2	,558	,388	,679
Error	334,508	233	1,436		
Total	4934,120	239			
Corrected Total	389,430	238			

Table 16b – Multiple Comparison: Bonferroni

Dependent Variable: Healthiness

(I) Manipulation	(J) Manipulation	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
,00	1,00	-,9738*	,18725	,000	-1,4254	-,5223
	2,00	-1,0083*	,18982	,000	-1,4660	-,5506
1,00	,00	,9738*	,18725	,000	,5223	1,4254
	2,00	-,0345	,19317	1,000	-,5003	,4313
2,00	,00	1,0083*	,18982	,000	,5506	1,4660
	1,00	,0345	,19317	1,000	-,4313	,5003

Table 17a - Tests of Between-Subjects Effects, Dependent Variable: HealthinessRel

Dependent Variable: HealthinessRel

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	58,348a	5	11,670	5,416	,000
Intercept	3781,363	1	3781,363	1755,009	,000
Manipulation	57,698	2	28,849	13,389	,000

Price_Level	,603	1	,603	,280	,597
Manipulation * Price_Level	,093	2	,047	,022	,979
Error	502,024	233	2,155		
Total	4308,750	239			

Table 17b – Multiple Comparison: Bonferroni

Dependent Variable: HealthinessRel

(I) Manipulation	(J) Manipulation	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
,00	1,00	-,9975*	,22939	,000	-1,5506	-,4443
	2,00	-1,0533*	,23254	,000	-1,6141	-,4926
1,00	,00	,9975*	,22939	,000	,4443	1,5506
	2,00	-,0559	,23665	1,000	-,6265	,5148
2,00	,00	1,0533*	,23254	,000	,4926	1,6141
	1,00	,0559	,23665	1,000	-,5148	,6265

Table 18a - Tests of Between-Subjects Effects, Dependent Variable: Attitude

Dependent Variable: Attitude

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	54,406a	5	10,881	6,245	,000
Intercept	4942,468	1	4942,468	2836,779	,000
Manipulation	53,623	2	26,812	15,389	,000
Price_Level	,211	1	,211	,121	,728
Manipulation * Price_Level	,485	2	,243	,139	,870
Error	405,952	233	1,742		
Total	5372,375	239			
Corrected Total	460,357	238			

Table 18b – Multiple comparison: Bonferroni

Dependent Variable: Attitude

(I) Manipulation	(J) Manipulation	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
,00	1,00	-1,0525*	,20628	,000	-1,5500	-,5551
	2,00	-,9100*	,20911	,000	-1,4143	-,4057
1,00	,00	1,0525*	,20628	,000	,5551	1,5500
	2,00	,1425	,21280	1,000	-,3706	,6557
2,00	,00	,9100*	,20911	,000	,4057	1,4143
	1,00	-,1425	,21280	1,000	-,6557	,3706

Table – 19a Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	,667a	,444	,437	,95968	,444	62,614	3	235	,000

Table – 19b ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	172,999	3	57,666	62,614	,000b
	Residual	216,431	235	,921		

	Total	389,430	238

Table 19c - Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2,201	,189		11,659	,000		
	Attractiveness	,215	,045	,280	4,750	,000	,680	1,471
	Novelty	,131	,065	,178	2,011	,045	,301	3,327
	Uniqueness	,227	,065	,308	3,464	,001	,299	3,347

Table 20a - Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	,372a	,138	,127	1,19507	,138	12,558	3	235	,000

Table 20b - ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53,807	3	17,936	12,558	,000b
	Residual	335,624	235	1,428		
	Total	389,430	238			

Table 20c - Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3,729	,150		24,786	,000		
	Differentiation	,974	,187	,365	5,214	,000	,748	1,338
	Disclosure	,035	,193	,013	,180	,857	,748	1,338
	Price_Level	-,014	,155	-,006	-,093	,926	1,000	1,000

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-SUMMARY OF THESIS-

Can irrelevant attributes mislead consumers' health assessment of food products?

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INTRODUCTION

Use of health and nutrition-related claims for food products is becoming very common, mainly because it seems to have a great influence on product evaluation and improve sales (Cao e Yan 2016; Rao e Wang 2016; Chrysochou and Grunert 2014). For example, process claims (i.e. how a given food is produced and processed) do not give specific information about the healthfulness of a product, but they are able to influence judgments about healthfulness more strongly than information about the content (e.g. nutritional facts and ingredients) (Siegrist and Sutterlin, 2017; Berry, Burton, Howlett, 2017). For example, the claim "organic" can convince consumers that organic food is safer and healthier than regular food, even if it defines just the production process (Bezawada and Pauwels, 2013; Olson, 2016). Indeed, it is possible to cite many sources that show contrary evidence against organic food beliefs (New York Daily News headline, Bravata 2012; Berezow and Hartsfield, 2012; Seufert et al., 2012; Smith-Spangler et al., 2012). Another common trend is the use of "natural" claims. Sales of "naturally" sweetened products are experiencing huge growth (Nielsen 2015). In this case, the claim "natural" according to FDA is not an official definition and it doesn't have any meaning when related to processed food, but it has a significant impact on consumer's food product healthfulness assessment (Berry et al., 2017).

The examples mentioned above show one main common misleading effect in product assessment, which is “meaningless differentiation” (Carpenter, Glazer and Nakamoto, 1994; Brown & Carpenter, 2000; Meyvis & Janiszewski, 2002; Miljkovic et al., 2009 ; Albrecht et al., 2011; Berry et al., 2017; Clement et al., 2018). Consumers value "special" (i.e. new, unique or attractive) characteristics of a product, even if they are irrelevant to judge specific product benefits, and judge the product more favourably (e.g. healthier) thanks to them. This happens for many reasons. Consumers can find difficult to interpret information and judge food product because they have limited nutrition knowledge (Parmenter E Wardle, 1999). For example, a Swiss study showed that more than half of the participants erroneously believed that brown sugar is healthier than white sugar (Dickson-Spilmann, Siegrist & Keller, 2011). Thus, when consumers lack the necessary knowledge to make informed decisions, they have to rely on substitutes for knowledge, relying on simple heuristics to make decisions (Tversky & Kahneman, 1974). Consumers often base their purchase decision on words, figures, illustrations and other attributes placed on the front product, instead of reading the exact facts about the

product, such as ingredients and nutritional facts (Nordfalt, 2009; Clement et al., 2018). It can also happen that people gather information from non-certified people and so disinformation spreads. For example, there are social media influencers in the food and fitness sector that promote food supplement and give dietary advice, even if they are not nutritionists.

This thesis aims to investigate the effect of meaningless differentiation on healthiness assessment of food product. I ran an experiment to test whether or not a product differentiated on a meaningless attribute is perceived by consumers as healthier than a regular version of it. Moreover, I investigated whether the disclosure of the irrelevance of the attribute can weaken the main effect or not and if a high strengthens the main effect. This thesis is a contribution to the scientific literature to better understand consumers' choice in food products and to better target the efforts of marketing in new product development, product positioning and advertising. On the other hand, this topic is also important for general health issues. Food products possess important nutrition attributes that have direct short- and long-term effects on human health and so it is important to investigate how marketing activities can influences choices that have an impact on consumers' diet.

LITERATURE REVIEW

Meaningless differentiation

Meaningless differentiation is when products or brands successfully differentiate on attributes that seem important and functional to give benefits, creating a connection between them and the product quality, but that on closer examination are not (Carpenter, Glazer and Nakamoto 1994; Berry et al., 2017; Clement et al., 2018; Albrecht et al., 2010; Miljkovic et al., 2009). Even if the attribute is irrelevant, consumers don't ignore it and it can influence the purchase decision. For example, in the '80s Procter & Gamble marketed the instant Folger's coffee claiming that is had "flaked coffee crystals" created through a "unique, patented process," implying, but not stating it explicitly in its advertising, that flaked coffee crystals improve the taste of the coffee. Indeed, the shape of the coffee grains is relevant for ground coffee (i.e. a greater surface area exposed during brewing release more flavour), but it is irrelevant for instant coffee (Carpenter et al., 1994).

Consumers rely on substitutes for knowledge such as heuristics, especially when they lack the proper knowledge to give an objective assessment (Carpenter et al., 1994). Assessment is mediated by a heuristic when relevant attributes are not readily

accessible, so consumers will rely on easy-to-judge attributes (Siegrist & Sutterlin, 2017). For this reason, a new salient attribute can simplify the decision-making process of consumers, allowing them to take a shortcut when judging a product (Carpenter et al., 1994). Indeed, when a reasonable decision can't be made based on relevant attributes, consumers will rely on trivial attributes. This is called "instrumental reasoning process" and explain how consumers take into consideration an irrelevant attribute independently from the existence of the other products attributes (Fischer et al., 1999). In this process, consumers adopt a simplifying strategy to solve complex problems (Payne, 1976) and to take decisions on easily justifiable, cognitively available arguments (Kunda, 1990; Shafir, Simonson, & Tversky, 1993).

Informativeness and Relevance principle in communication theory

According to the Informativeness principle of communications theory, the purpose of communication is to communicate something not already known (Clark 1985). Communication has two parts: a semantic component (the message's literal meaning) and a pragmatic component (the reason for the communication) (Harris and Monaco 1978). In cases in which the literal component is uninformative, individuals focus on the pragmatic and ask themselves why that information is present (Gruenfeld and Wyer 1992). In the same way, an irrelevant attribute attached to a brand is semantically uninformative and, consequently, consumers focus on the pragmatic component, speculating as to why the attribute is there at all. The mere existence of the irrelevant attribute implies it is beneficial and may lead buyers to value it.

According to Relevance principle, the receiver expects that the information given in communication are relevant at maximum. Then, the relevance of information is defined as a trade-off between conceptual effects and processing effort. The receiver has a limited amount of time and motivation and can achieve a limited amount of conceptual effects from any piece of information. Because of the trade-off, the process stops when a good enough interpretation has been reached. For this reason, claims, symbolic information, highlighted attribute (even if meaningless), are perceived as enough and be the reason for an unjustified decision, but not an irrational decision (Clement et al. , 2018).

Bias and Heuristics

Meaningless differentiation can leverage the health halo effect (Andrews, Burton & Netemeyer, 2000), which happens when the perception of an attribute influences the health evaluation of another (unrelated) attribute or the overall product (Sütterlin &

Siegrist, 2015, Clement et al., 2018). For example, claims related to the fat content such as "5% fat" or "30% less fat" are a completely true statement, but they are related to singular aspects of the product and they are not sufficient to judge the overall healthiness.

It has been showed that consumers tend to confirm the advertising claim by using experience due to confirmation bias (Carpenter et al., 1994). In other words, consumers try to test whether or not the differentiated product will give an expected additional benefit, but they will do it in a biased way. This is in line with the concept that acceptance is effortless than rejection (Gilbert, Tafarodi and Malone, 1993), so the associations created by the irrelevant attribute will be automatically accepted and their rejection would require more effort.

Some studies showed that causality is attributed more often to distinctive rather than common attributes, due to a base rate neglect bias (Einhorn and Hogarth, 1986; McGill, 1989). Similarly, irrelevant attributes that are unique, memorable and salient can mislead consumers and make them perceive a superior performance due to

THEORETICAL FRAMEWORK

The research work in this thesis has the following theoretical and empirical foundation: the effects of meaningless differentiation on product evaluation has been demonstrated by several studies (Carpenter et al., 1994; Meyvis & Janiszewski, 2002; Miljkovic et al., 2009; Albrecht et al., 2010; Berry et al., 2017; Clement et al, 2018) and it has been tested on different product categories; consumers don't have the right knowledge to assess healthiness of food product (Dickson-Spilmann et al., 2011; Sütterlin & Siegrist, 2015; Siegrist and Sütterlin, 2017); consumers are easily misled by irrelevant information communicated by advertising, packaging and claims, even if it is factually true, but irrelevant to assess some specific benefits (Chandon and Wansink, 2006; Berry et al., 2017; Sütterlin & Siegrist, 2015; Clement et al., 2018).

Attribute characteristics: Novelty, Uniqueness, Attractiveness

All the product features that are novel (Nowlis & Simonson, 1996; Wyer, 1970), attractive (Hutchinson & Alba, 1991; Ratneshwar, Mick, & Reitinger, 1990) and unique (Dhar & Nowlis, 1999; Zhou & Nakamoto, 2007) have an influence on product evaluation by consumers, since they are to trigger attention (Albrecht et al., 2011). The study by Wyer (1970) showed that new types of information fundamentally receive a higher significance in the perception process, so in the same way an irrelevant attribute can make a product to emerge, because of the novelty of the information conveyed (Carpenter et al., 1994;

Albrecht et al., 2010). Uniqueness is defined as “the degree to which customers feel the brand is different from competing brands” (Netemeyer et al., 2004, p.211). A unique but irrelevant attribute becomes important because it is a mark of differentiation and it makes the product or brand different from the others, making consumers paying more attention to it and giving to it a more favourable positioning (Miljkovic et al., 2009). Attractiveness refers to the degree to which a person view the feature of a product as desirable and pleasant (Wansink et al., 2006). It is able to generate positive associations related to the product and can increase the appeal of the product. Indeed, a positive relationship between attractiveness and perception of product quality has been found in several contexts (Schnurr et al. 2016).

Symbolic meaning

Attributes can have a symbolic meaning, which is a significance different from the literal sense that can signify ideas and quality (Sütterlin & Siegrist 2015). There is a strong influence of the symbolic significance of information on people's evaluation, showing a tendency to focus more on information with strong symbolic meaning, which is attributed to an aspect or a term used in labelling or claim. It transcends objective facts and shape perception through the use of stereotypical information (Siegrist and Sutterlin, 2017). For example, the claim "natural" forms "an aura of naturalness" and make consumers develop positive impressions about product healthiness.

Disclosure of irrelevance and price

Meaningless Differentiation can be implicit or explicit: the irrelevance of the special attribute can be revealed or not. According to Normative theory, when the irrelevance is revealed, the attribute should be completely ignored (Carpenter et al.,1994; Tversky & Kahneman, 1986). However, some studies indicate that the irrelevant attribute is not ignored in decision making after disclosure, even if it is perceived as useless. It still makes the product distinctive in consumers' mind and unique in comparison to competitors, so the differentiated product may still be favoured (Carpenter et al., 1994). The prior exposure to the irrelevant attribute triggers some positive associations that prompt consumers' mind also after the revelation of its irrelevance, due to an anchoring effect. Disclosure may be not effective also due to a "perseverance effect". Consumers have a basic tendency to cling to their beliefs and opinion, so the negation of a piece of information does not lead to the abandonment of a belief; rather, it leads to the devaluation of the negative information (Albrecht et al., 2011). Indeed that the correction of a false

conclusion is a very complex process and require a high processing intensity and efforts (Gilbert, Tafarodi, & Malone, 1993).

In Carpenter's study (1994) it has been observed that meaningless differentiation is effective even when the differentiated brand has a price higher than the competitors. Moreover, in some cases, a higher price increased preference for the differentiated brand. This happens because the price is an additional source of information to judge the product's quality and because high prices add distinctiveness, making the discount of the irrelevant attribute harder.

STUDY

I designed and ran an experiment as it follows. I selected a product as a stimulus, a granola bar with chocolate. They can be made up of different ingredients (cereal types, dried fruits, chocolate etc. etc.) and their nutritional values can vary a lot. So, granola bar can't be defined as a category made only of healthy products, but more realistically composed of both healthy and non-healthy products. The Granola Bar was manipulated based on three possible characteristics: differentiation, presence of disclosure and price level First, the product presented can be a regular one, granola bar with dark chocolate, or a meaninglessly differentiated one, granola bar with "raw" dark chocolate. It is important to highlight that all the products have the same nutritional facts table. Second, stimulus varies whether disclosure of the irrelevance of the attribute is given or not. The Raw Chocolate Granola Bar can be presented or not with a brief disclaimer saying that is useful to check saturated fats, sugars and calories content to assess healthiness, that other features are added for marketing purposes only and chocolate is a product to be consumed in moderation. The last manipulation is the price level. Every product can have a low or high price, respectively 1,90 € and 3,10€. They were chosen considering the prices for granola bars on Italian online grocery's stores. The experimental groups are:

	No differentiation)	No revelation of irrelevance	Revelation of irrelevance
Low Price	1. Regular product & low price	3. Differentiated product, no disclosure & low price	5. Differentiated product, disclosure & low price
High Price	2. Regular product & high price	4. Differentiated product, no disclosure & high price	6. Differentiated product, disclosure & high price

Each respondent randomly visualized only one product with a brief description, manipulated according to one of the six conditions. Then, she/he was asked to respond to some questions.

Hypotheses

H1: Respondent will evaluate the product differentiated on the meaningless attribute as healthier, of better quality and with a better attitude in comparison to its regular version.

H2: Disclosure of the irrelevance of the attribute will not weaken the healthiness perception of the differentiated product.

H3: A high price will strengthen the main effect of meaningless differentiation on healthiness assessment.

Why "Raw" Chocolate

Raw Chocolate is the product obtained from the processing of cocoa beans by skipping the roasting process or by running it at a temperature not exceeding 42 ° C (Eataly, "Cos'è il cioccolato crudo": https://www.eataly.net/it_it/magazine/eataly-racconta/cose-cioccolato-crudo/). For this reason, it is believed that cocoa beans lose less organoleptic properties and are not impoverished from a nutritional point of view. This argumentation is scarce and questionable. First, there isn't an official definition for "raw chocolate" according to the law (No European regulation: AIDEPI, "Chocolate regulations" http://www.aidepi.it/en/chocolate/164-regulations.html and no FDA regulation, "Code of Federal Regulations Title 21": "https://www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfcfr/CFRSearch.cfm?CFRPart=163), so the respect of this procedure can't be regulated, checked and guaranteed by a supervisory commission. Moreover, many scientists, journalists and dieticians have expressed their scepticism toward this product (Hosie, "Is healthy chocolate really good for you?": https://www.independent.co.uk/life-style/health-and-families/healthy-chocolate-good-for-you-snack-diet-health-weight-a7881296.html; Sharon, "The raw chocolate nosense": https://thechocolatejournalist.com/raw-chocolate-nonsense/). Indeed, it is impossible to find studies on Google Scholar or PubMed that proves healthier properties of the raw chocolate. Moreover, "raw" refers to something that is not cooked and generally not processed, a concept that is hard to apply to any chocolate products and, for this reason, can be deceiving. Whether we define it "raw" or not, chocolate is the mixture of chocolate liquor, cocoa butter and cocoa powder, which are products derived from cocoa beans transformed through different processes: fermentation, drying roasting, winnowing, grinding, mixing, blending, molding, conching, tempering (Chocolate Alchemy, "How to make chocolate": https://chocolatealchemy.com/how-to-make-

chocolate-the-complete-text-guide#chocolate-making-at-home-101-1). Finally, there is a more general consideration to do about healthiness assessment of food: the mere presence of good micronutrients doesn't mean automatically being healthy. It is needed to assess the product as all, considering both healthy and harmful characteristics of the product. For example, wine has some healthy micronutrients, but we can't ignore the fact that it contains alcohol, which is carcinogenic (World Health Organization, "Alcohol": https://www.who.int/news-room/fact-sheets/detail/alcohol)In the same way, even if raw chocolate had some additional micronutrients, it would remain anyway a product rich in fat and sugar and for this reason a product to be consumed moderately.

Data Collection

I used Qualtrics to create a survey and gather data, that respondent had to do online (https://impresaluiss.eu.qualtrics.com/jfe/form/SV_09B1vapdHlWCme9). Every respondent visualized randomly only one version of the product with a brief description and then answered some questions. Respondents were asked to express how much they agreed with some statement related to the product using a Likert-scale from 1 to 7 (1= totally disagree; 7= totally agree), every respondent was presented with the same questions. The statement expresses judgement related to the perception of attractiveness, novelty, uniqueness of the product, price fairness, perceived quality of the product, healthiness, relative healthiness in comparison to other products in the same category, attitude towards the product and purchase intention. To measure these variables I used both pre-validated and adapted Marketing Scales

Sample

The questionnaire was spread online following a convenience sampling method. The sample was composed only of Italian people in order to define the boundaries of the experiment to only one geographical market, limiting effects caused by cultural, linguistic and economic differences. The sample size was N=239 and all the respondent were evenly and randomly assigned to one of the six conditions. Every version of the product was roughly evaluated by 40 respondents.

Analysis and Results

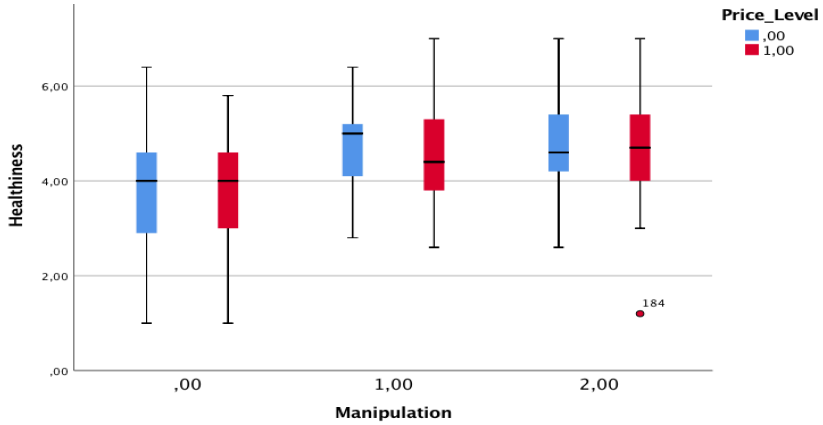
First, I measured the reliability of the multi-item scales using Cronbach's alpha for every condition. Overall, every marketing scale scored a good value for Cronbach's alpha, showing us internal consistency between the items and reliability of the responses. Then,

I computed single scores for the variables that were measured using multi-item scales taking the average of the responses for every observation.

I created the following variables in order to perform the analysis in the next paragraphs: "*Price_Level*" (dummy variable: 0=low price; 1=high price), "*Differentiation*" (dummy variable: 0=no differentiation, 1=differentiation), "*Disclosur*e" (dummy variable: 0=no disclosure, 1=disclosure), "*Condition*"(categorical variable 1=control group, low price; 2=control group, high price; 3=implicit irrelevance, low price; 4=implicit irrelevance, high price; 5=explicit irrelevance, low price, 6=explicit irrelevance, high price) and "*Manipulation*" (categorical variable; 0 = regular product; 1 = differentiated product; 2 = differentiated product + disclosure).

The first analysis performed is a 6x1One-Way ANOVA one-way ANOVA with "Condition" as a factor (IV) and "Attractiveness", "Novelty", "Uniqueness", "Quality", "Healthiness", "HealthinessRel", "Attitude", "Price Fairness" and "Purchase_Intentions" as DVs. The F-test shows that there is a significant effect of "Condition" on: Attractiveness ($F_{1,5}$=6,253; p<0,001); Novelty ($F_{1,5}$=9,276; p< 0,001); Uniqueness ($F_{1,5}$=10,811; p<0,001); Quality ($F_{1,5}$=18,058; p<0,001); Healthiness ($F_{1,5}$=7,651; p<0,001); Healthiness_Rel ($F_{1,5}$=5,416; p<0,001); Attitude ($F_{1,5}$=6,245; p<0,001); Price_Fairness ($F_{1,5}$=2,394; p<0,05); Purchase_Intention ($F_{1,5}$=3,901; p<0,005). For this reason, H_0 can be rejected for all the DVs. It means that there is at least a mean of the six conditions that is significantly different from the others for all the DVs. Then, performing The Bonferroni Test I checked that there are significant differences between condition 1,2 and 3,4,5,6 for Quality, Healthiness, Attitude and of course no significant differences between condition 1 and 2 and between condition 3,4,5 and 6.

Figure 1 – Clustered Boxplot of healthiness by manipulation by price level



At this point, are performed three 3x2 ANOVAs to further support the results previously obtained. In these analyses is tested the effects of the factors (IVs) “Manipulation” and “Price_Level” on the DVs: "Healthiness", "HealthinessRel", "Attitude”. First, was tested the effect on “Healthiness”. The results showed us that: manipulation has a significant effect on the DV ($F_{1,5}$ = 18,685; p < 0,001); Price_Level has not a significant effect on DV ($F_{1,5}$=0,007; p > 0,1); no significant interaction effect is observed between Manipulation and Price_Level. The Bonferroni post-hoc test confirms that regular version of the product (Manipulation = 0) scored a significantly lower value for healthiness compared to the differentiated version of it with and without disclosure (Manipulation 1 and 2). No significant difference is observed between the differentiated products regardless of disclosure presence. Then, was tested the effect on “Healthiness_Rel”: Manipulation has a significant effect on the DV ($F_{1,5}$=13,389; p<0,001); Price_Level has not a significant effect on the DV ($F_{1,5}$=0,280; p>0,1); No significant interaction effect is observed between Manipulation and Price_Level. The Bonferroni post-hoc test confirms that the regular version of the product (Manipulation=0) scored a significantly lower value for Healthiness_Rel compared to the differentiated version of it regardless of disclosure presence (Manipulation 1 and 2). No significant difference is observed between the differentiated products with and without disclosure. Lastly, was tested the effect on "Attitude": Manipulation has a significant effect on the DV ($F_{1,5}$=15,389; p< 0,001); Price_Level has not a significant effect on the DV ($F_{1,5}$=0,121; p>0,1); no significant interaction effect is observed between Manipulation and Price_Level. The Bonferroni post-hoc test confirms that the regular version of the product (Manipulation=0) scored a significantly lower value for Attitude compared to the differentiated version of it regardless of disclosure presence (Manipulation 1 and 2). No significant difference is observed between the differentiated products with and without disclosure. Finally, I ran two Linear Regressions to better explain and understand the effects observed so far. First, I ran a Linear Regression using "Healthiness" as DV and "Attractiveness", "Novelty" and "Uniqueness" as predictors. The model has a R^2 = 0,44 and the F-test shows that the model has a good fit ($F_{3,235}$=62,614; p<0,001). Overall, the IVs explain 44% of the variance of the DV. All the predictors are significant and have a positive effect on Healthiness: Attractiveness (ß=0,215; t_{238}=4,75; p< 0,001); Novelty (ß =0,131; t_{238}=2,011; p<0,05); Uniqueness (ß 0,227; t_{238}=3,464; p<0,05). Last, I ran a linear

regression using "Healthiness" as a DV and "Differentiation", "Disclosure" and "Price_Level" as predictors. In this case, the model has a lower R^2=0,138 in comparison to the model before. Anyway, the F-test shows that the model has a good fit ($F_{3,235}$=12,558; p<0,001). The coefficients of the IVs confirmed all results collected so far (Appendix: Tables 20 a-c): Differentiation has significant positive effect on the DV (ß= 0,974; t_{238}=5,214; p<0,001); Disclosure has not a significant effect on the DV (t_{238}=0,18; p> 0,1); Price_Level has not a significant effect on the DV (t_{238}=- 0,093; p>0,1)

Interpretation

The outcomes of the analyses are significant evidence to support H_1 and H_2, while they can't support H_3. It proves that an irrelevant attribute can increase healthiness and quality perception of a product and make respondents have a better attitude toward it. Moreover, when they are provided with a disclaimer that reveals the irrelevance of the attribute, respondents still have a better attitude toward the product and consider it as healthier and of better quality. Unfortunately, price manipulation didn't produce any significant effect on product evaluation. The irrelevant attribute was able to make respondents perceive the granola bar as more unique than the regular one. Moreover, the linear regression shows us that when attractiveness, novelty and uniqueness increase, perceived healthiness of the product increase, too. These results are in line with past studies and give additional support to the thesis that irrelevant attributes that are able to gain consumers' attention can influence positively product evaluation (in this case healthiness).

GENERAL DISCUSSION

The irrelevant attribute "raw" gives information about the manufacturing process and it is not relevant to express a judgement about healthiness (Berry et al., 2017; Chrysochou and Grunert 2014). The fact that cocoa beans could preserve some nutrients when skipping the roasting process is not useful; it gives information only about cocoa beans treatment at a certain point of the production process and doesn't give us any relevant information to assess the healthiness of the final product. It is possible to give different explanations of why and how the irrelevant attribute "raw" influenced participants' responses. First, the differentiating attribute left a strong positive impression in consumers' mind, drawing attention away from other important factors and misleading their judgement (Hutchison and Alba, 1991) Indeed, granola bar in conditions 3,4,5 and

6 scored significant higher values in attractiveness, novelty and uniqueness. Respondents have probably interpreted that preservation of nutrients in cocoa beans means automatically means that the product is healthy, regardless of other more relevant information such as nutritional values and without considering other possible negative characteristics. Second, respondents overgeneralized from single process-related information to a broader set of characteristics that influenced healthiness evaluation due to a halo effect. Thus, the information about the state of the nutrient content of cocoa beans after the first production process influenced unduly the overall judgment of the final product. Third, the word "raw" has a strong symbolic meaning. The semantic network of associations related to "raw" comprehends attributes such as devoid of cooking, minimally or not processed, not refined and pure. These concepts are likely to influence people to think about something genuine and healthy. This is similar to the experience of Berry et al. (2017) with the word "natural" and Sütterlin and Siegrist, (2015) with the word "fruit sugar".

The support for H2 proves that meaningless differentiation is effective despite the presence of a disclaimer that informs about the irrelevance of the attribute. The associations triggered by the word "raw" are difficult to be erased due to an anchoring effect (Tversky and Kahnemann, 1974). They had a priming effect on respondents, which continue to judge the product as healthier, ignoring the disclaimer given. This behaviour can be also explained by the perseverance effect (Anderson, Lepper and Ross 1980). Probably respondents continue basing their opinion on the irrelevant attribute to simplify the task of judging product healthiness and because they weren't able to give an assessment using the available information. The disclaimer state that respondents should assess healthiness checking calories, sugar and fat content in the nutritional facts table, which is a task that requires effort and knowledge to be performed properly.

Managerial and public health implications

From a managerial point of view, this thesis proves that the use of an irrelevant attribute provides the brand's firm with an effective instrument for differentiating from competitors. Moreover, the specific emphasis on ingredients with a positive symbolic meaning leads to a better health perception of food, because they evoke associations that have a positive impact on consumers' product perception.

These results are also a spark for an ethical debate on how to protect consumers from misleading information that can influences choices that have an impact on their health.

Limitations and Future Research

The experiment in this thesis was run on a convenience sample of only Italian people, with the majority of them being students and in the 20-30 age group. Future research should focus on different countries and a sample with older people. Moreover, it would be interesting to base sampling criteria on different characteristics, for example, sportspersons, people on a special diet (e.g. vegan), people expert in specific product category or nutritionist. Moreover, it should be improved the price manipulation to discover any significant effects.

CONCLUSION

The main objective of this thesis has been to deepen our understanding of meaningless differentiation in food products. In particular, I investigated how a "special" (i.e. attractive, new or unique) but the irrelevant attribute is able to influence consumers' perception of product healthiness. It has been demonstrated that an irrelevant attribute can increase healthiness and quality perception of a food product and make consumers have a better attitude toward it. Moreover, a disclaimer revealing the irrelevance of the attribute wasn't able to mitigate this effect. These results find an explanation in some biases and heuristics that occur in consumers' mind. First, the irrelevant attribute gained consumers' attention and for this reason and drew away attention from the other important attributes functional to judge healthiness (i.e. nutritional values). Second, the information given about the state of the nutrient content of cocoa beans after the first step of the manufacturing process influenced unduly the overall judgement of the final product due to a halo effect. Third, the word "raw" has a strong symbolic meaning that aroused in respondents' mind associations related to the concepts of "genuine" and "healthy". Fourth, the disclosure of irrelevance wasn't effective due to an anchoring effect for which the associations triggered by the irrelevant attribute were difficult to be erased after their arousal. Fifth, probably respondents used the irrelevant attributes to form their opinion about healthiness because it simplified the task of judging the product and because they weren't able to give an objective assessment using the available information, for example, checking calories, sugar and fat in the nutritional facts table. meaningless differentiation is able to improve product or brand image, perception of benefits and product evaluation.

Specifically, it is effective to emphasize the ingredients that have a positive symbolic meaning On the counterpart, this research wants to warn that consumers are highly susceptible when decoding information about products, especially when it is functional to make health-related decisions. I think it is properly to regulate better how to give information that has health-related aspects and that is fair to use meaningless differentiation just to differentiate the product, to gain attention and to arouse curiosity, while it is unfair when it can mislead consumers' assessment of characteristics that have an impact on health.

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