What features of green products packaging are more eye catching? An eye-tracking exploratory study about organic agricultural products.

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Abstract

Undoubtedly, consumers of green products have formed a market tribe that has strengthened its power in recent years. Apart from the ethical side of buying organic products, they are willing to pay more for a green product compared to a conventional one. In marketing literature, packaging is considered to be as a valuable feature of a product that may motivate consumers to proceed to a purchase. The purpose of the present study is to investigate how various packaging features (eco-labels, image, shape, color) of organic agricultural products affect consumers' eye reactions and asa result influence consumers' perception,attitude and buying behavior.

Keywords

Package marketing, eye-tracking, organic, agriculture, lab experiment, Greek SMEs

1. Introduction

Green marketing is an important field of academic research for at least three decades (Peattie, 1995; Polonsky and Mintu-Wimsatt, 1995; Schlegelmilch et al.,

1996; Fuller, 1999; Kalafatis et al., 2005; Devi Juwaheer et al., 2012). In an effort to provide an adequate definition of green marketing, Welford (2000) says it is the administrative process that recognizes, anticipates and satisfies the needs and desires of consumers in a profitable and environmentally sustainable way. Hence, green marketing involves various developments such as product modification, product packaging, or advertising communication campaigns (Polonsky, 2008).

Green or ethical consumers constitute a new global economy (Papadopoulos et al., 2010), who are willing to pay for a green product at a higher price (Veisten, 2007).Despite the fact that profit constitutes the major determinant of business approach, eco-friendly and sustainability dimensions are gaining a prominent role (Reitano et al., 2014). The Grand View Research (2018) estimates that the global green packaging market size is going to reach USD 237.8 billion by 2022. Consequently, companies should constantly search for new solutions to the environmental challenges with the ultimate aim at developing environmentally friendly products, recyclable and biodegradable packaging, and ways to reduce pollution caused by their operational processes (Kotler and Armstrong, 1995).

Packaging is one of the main features that gives competitive advantage to a product, with the ability to significantly increase product profits compared to a costly advertising campaign or promotional strategy (Barber, 2010). Regarding packaging characteristics, the color of the package is the most widely discussed feature (Imram, 1999) while package size and shape (Silayoi and Speece, 2007) as well as any package images (Tan et al., 2006) are equally important. Another feature that is frequently displayed on the package of green products is eco-labels. Eco-labels indicate the overall environmental approach and strategy followed by the company (Giridhar, 1998).

The purpose of this study is to investigate how packaging features (eco-labels, image, shape, color) of two organic agricultural products (feta cheese and olive oil) affect consumers' eye reactions and influence consumers' attitude and buying behavior. Agricultural products are considered as quality food that helps various European farming regions wishing to preserve the traditional way of life, enhance local producers and help small firms to grow economically (Gilg and Battershill, 1998). In Greece olive oil is used daily given that it is preferred when juxtaposed to other types of oils because of its healthiness and flavor (Siskos et al., 1995) while simultaneously the production of olive oil enhances the country's agricultural economy (Krystallis and Ness, 2004). Likewise, feta cheese is the most prominent type of cheese produced in Greece regarding both production and consumer acceptance (Moatsou and Govaris, 2011). Moreover, feta cheese is labelled as a Protected Designation of Origin (PDO) product.

Hence, in order to examine consumers' attitudes and buying behavior, an eye-tracking experiment has been conducted with 70 participants. After that, a secondary qualitative study took place with the form of semi-structured interviews, to deeply understand consumers' reactions, and buying behavior.

2. Theoretical background and Research Hypotheses/Questions Development

Eco-labels and packaging

Product packaging enables businesses to communicate with consumers at retailing stores (Rettie and Brewer, 2000, Silayoi and Speece, 2007; Simms and Trott, 2010) as well as during product use and consumption (Underwood, 2003). However, organic or bio products promote their ethical aspect with the use of various eco-labels.

Eco-labels reflect a critical topic in marketing research since they affect consumers' behavior (Testa et al., 2013, Thogersen et al., 2010, Hornibrook et al., 2015).Previous studies highlight the significant influence of product environmentally sustainable information on purchase intention (Milson 2012; 2015).The perceptual process theory (Mowen and Minor, 2001) suggests that consumers shape perceptions of diverse food products through the elaboration of the visual stimuli on product packages (Venter et al., 2011). Perception can be defined as a series of action through which consumers sense, choose and elaborate on information to which they are exposed to with ultimate purpose to decode or understand this information or stimulus (Mowen and Minor, 2001). Food packaging traits and consumer's memory, involvement, anticipations and incentives are some of the factors that influence perception. Once perceptions are formed, then they are recognized as reality, since they represent what consumers believe is the truth (Schiffman and Kanuk, 2009). Finally, after the formation of product perceptions, these perceptions are transformed into attitudes that influence consumers' product choice (Ampuero and Vila, 2006). In this context, eco labels are considered a significant factor that affects the perceptual process.

There are several categories of eco-labels, including mandatory and voluntary ones. An example of mandatory ecolabelling is the European energy eco-label demonstrating the energy consumption of electrical appliances with a scale from A to F, where A indicates a minimum energy consumption and F indicates a maximum (Rubik and Frankl, 2005). Voluntary eco-labels are categorized according to ISO certification into 3 types (Type I, Type II, and Type III). Type I is the one to which the eco-label term is mostly referred to and involves the product evaluation by third party environmental organizations. Type II refers to self-declaration information by the company itself, about the environmentally friendly product characteristics (e.g. simple reference that the packaging is biodegradable). Finally, Type III refers to

voluntary programs in which the company participates and provides quantified environmental product data (Global Ecolabelling Network, 2017). The present study deals with voluntary eco-labels.

Eco-labels can impact consumer purchase decisions (Thogersen et al., 2010, Thorgersen 2002, Rashid, 2009) as they can be used ideally to communicate the specific features and benefits of green products (D'Souza et al., 2006). However, literature supports that consumers often feel confused about the various "green" terms used in eco-labels (Robertson and Marshall, 1987; Muller, 1985; West, 1995; Casewell and Modjuszka1996; Wessells et al., 1999; Thorgersen 2000). Thus, green products should be communicated in a simple and easy to understand manner, so as consumer can comprehend all the benefits of using ecological products (Pickett-Baker and Ozaki, 2008). Otherwise, green products will hardly be commercially successful (Pickett et al., 1995; Cherian and Jacob, 2012).

Whitson and Henry (1996) examined the impact of eco-labels on consumers purchase decisions by conducting a market segmentation. Their research indicated that there is a group of people sensitive to the price of the product. Likewise, there is a portion of consumers who are willing to buy products with ecological features at a higher price (Ozzane and Vlosky, 1997). However, Sedjo and Swallow (1999) support the idea that the existence of an eco-label on a product, does not guarantee that consumers are willing to pay a higher price for it.

Considering the characteristics of consumers who are willing to buy eco-labeled green products, demographic factors are of crucial significance (Moon et al., 2002). According to evidence, the intention to buy such a product depends on the age of the consumer; since younger consumers are willing to pay more for green eco-labeled products, as opposed to older consumers. Similarly, research supports that women and university graduates have positive attitude towards eco-labeled products (Grankvist, Dahlstrand and Biel, 2004). Considering the above, we set the following research questions:

RQ1: *Do eco labels draw consumers' attention on packages of organic agricultural products?*
RQ2: *Do consumers take into consideration eco-labels in their buying decisions?*
RQ3: *Are consumers aware of eco-labels on product packages?*
RQ4: *Are consumers willing to buy an eco-labeled product at a higher price compared to a conventional one?*

Product Image

Product image depicted on the package is one of the main features used by marketers. Product imagepossesses a prominent role in the design of the package

for nearly allproducts on the market (Simmonds and Spence, 2017) given that it grabs consumer attention (Underwood et al., 2001) and influences consumer brand beliefs (Underwood and Klein, 2002).

Images on the package can play a strategic role when they are perceivable at the point of sale while they increase consumer consciousness about a product (Lidon et al., 2018) due to their vividness compared to words (Underwood et al., 2001). Packaging traits that are more attractive to consumers' eyes, remain in consumers' minds and ultimately are considered as the features that are identified with the product itself (Guerrero et al., 2000).

In the case of low involvement products, package images strongly influence consumer decision making (Kupiec and Revell, 2001). In the buying behavior of such products, some consumers mainly rely on the visual elements on the package in order to find basic product information (e.g., McWilliam, 1997). In this context, Piqueras-Fiszman et al. (2013) conducted eye-tracking experiments and found that the images on jam jars, illustrating the type of product, drew more attention compared to textual information.

Moreover, nature-related images raise positive feelings among consumers (Frumkin, 2003), while at the same time lead to favorable attitude towards the product (Park et al., 1986). Hence, product images appeared in packages, have a positive effect on consumers and raise their purchase intention (Simmons, Martin, and Barsalou, 2005). Taking into consideration the above, we formulate the following question:

RQ5:*Will product images draw more attention compared to textual information?*

Packaging Color

Color is an important trait of marketing communications because it can provoke emotions and attitudes and affect consumers' perceptions and behavior. Packaging color is considered as one of the most significant features that affect product sales (Singh, 2006) given that it helps consumers to picture the product in mind and to distinguish competitive brands (Aydin and Ozer, 2005). In marketing, color is the most extensively discussed characteristic of package studies (Imram, 1999).

Blue is the color that stimulates the sympathetic nervous system of humans while at the same time is related to high quality, (Aslam, 2006) calmness, and relaxation (Kido, 2000; Cimbalo et al., 1978). Likewise, green color reflects peace, calmness affordability, casualness, good taste and pureness (Aslam, 2006).

On the other hand, red is regarded as a sad color (Cimbalo et al., 1978) that reflects fear, lust, anger and jealousy (Aslam, 2006). Similarly, purple,elicits low levels of arousal (Valdez and Mehrabian, 1994) andmirrors anger and jealousy (Aslam, 2006).

Furthermore, color is related to culture, meaning that companies should choose packaging colors that are consistent with a specific cultural context (Madden, Hewett and Roth, 2000). Wiegersma and Van der Elst (1988) conducted a cross-cultural study and found that blue is the most preferred color collectively across different cultures. Greece is a country that is identified with blue and green colors, because of the endless sea, clear sky and forests.

Moreover, considering that organic farming products can be associated with a simple and calm lifestyle where the factor of harmony with the natural environment plays a decisive role, we ask the following question:

RQ6:*Are blue and green packages preferred over red and purple?*

Packaging shape

Regarding the general fondness of humans towards the shape of objects, evidence supports that rounded objects are more preferable (Bar and Neta, 2006, 2007; Leder, Tinio and Bar, 2011), while angled objects are appeared as potential threats (Bar and Neta, 2006, 2007, 2008).

A study about consumer preferences between rounded or angled car interior design concluded that consumers prefer rounded shapes (Leder and Carbon, 2005). Similarly, a rounded design is mostly preferred for exterior car design too (Carbon, 2010).

Package shape is considered a crucial trait that impacts on imagery and identity of various brands like Coca-Cola, Absolut, or Perrier (Lindsay, 1997). Regarding the food and beverage industry, a recent study showed that rounded package shape is mostly preferred for chocolate packs and water bottles (Westermanet al., 2012). Finally, a preference for rounded motifs in water and vodka packaging is also highlighted by a recent study of Westerman et al. (2013). These motifs account for higher market chances, are more attractive, more enjoyable and less disturbing to consumers.

However, Meyers (1981) supports that the preference of package shape may depend on the theory of “image mold”. According to this theory, some products are associated with package shapes. An experimental study about the preference of shape for cheese packaging concluded that consumers are in favor of rectangular packaging shape (Eldesouky et al., 2016).

Considering the above we set the following research questions:

RQ7a:*Which package shape (rounded vs angled) of organic agricultural products will be preferred by consumers?*

RQ7b:*Which package shape (rounded vs angled) of organic agricultural products will positively influence the participants’ intention to purchase?*

2.1 Materials and Methods

2.1.1Eye tracking

Eye tracking is a human-computer interaction mechanism to analyze subjects' eye movement when looking at various stimuli (Duchowski, 2007). Marketing researchers conduct eye-tracking experiments to analyse human visual and attention processes regarding texts, images and general content (i.e. online games) (Duchowski, 2007).

A recent study by Horsley *et al.* (2014) supports that eye tracking research is becoming progressively more widespread in many disciplines, including marketing, management and psychology. Also, eye-tracking is a very reliable and accurate research method as it relies solely on physiological data and enables marketers to understand consumers' cognitive engagement and then tailor the information to create effective marketing strategies (Duchowski, 2007). Eye movements constitute an objective measure of consumer's attention (Hoffman and Subramaniam, 1995; Spence and Driver, 1994, 2004). Previous studies support that there is a tight connection between the eye and the mind in such a way that information processing and eye movements take place concurrently (Rayner and Castelhano, 2008, p. 13).

However, many marketing scholars choose to couple their eye-tracking experiments with either surveys (Pieters et al., 2002), word association (Piqueras-Fiszman et al., 2013), or interviews (Nikolaus and Bendlin, 2015) as an attempt to gain a deeper understanding on the participants fixations.

In this study we will concentrate on the Area of interest (AOI) analysis which is the most common investigation in social and marketing applications (Piqueras-Fiszman et al., 2013; Horsley *et al.,* 2014). Area of interestanalysis involves the use of eye-tracking software to estimate fixation time, frequency and return among the diverse items or parts. Area of interest analyses are used to examine the differences between ranges of groups (Horsley *et al.,* 2014). Our study intends to address whether there are significant differences between diverse attributes of package design, such as shape, color, the existence of eco-labels, the existence of images on the package, and the text related to bio attributes.

3. Methodology

Consumer behavior is being analysed by marketers either with the use of quantitative (i.e. surveys), or qualitative (i.e. interviews) methods. Lab experiments like electroengephalography (EEG) (e.g.Uva et al., 2015)or eye tracking (e.g. Nikolaus and Bendlin, 2015) have only recently gained researchers' attention in the field of

marketing. In this study a hybrid research methodology is employed to ensure the results' validity and reliability: a lab experiment with an eye tracker combined with interviews like past research papers (Piqueras-Fiszman et al., 2013; Nikolaus and Bendlin, 2015). Thus, while the eye-tracker will provide an answer to *'what'* happens, the interviews will give us information to *'why'* such a reaction happens.

3.1 Participants

Seventy Greek participants (31 male and 39 female) with ages ranging from 18 to 57 years volunteered to take part in this study. No incentive for participation was provided. All participants reported no color-blindness while one participant was excluded from the experiment as he reported suffering from attention distraction. Thus, the final number of participants is sixty-nine. The participants were recruited via an email recruiting pool provided by Aristotle University of Thessaloniki. It is very common for university students to become the guinea pigs for research purposes. However, since we are interested in having a sample with a variety of age and educational level between participants, the university students were asked to bring their parents or acquaintances of older age. To take part in the experiment participants had to be regular consumers of feta cheese and olive oil. The lab experiment took place within two weeks and we managed to utilize around ten participants per working day. Given that previous samples of past eye tracking studies on marketing and consumer behavior ranged from 40 to 60 participants (Muñoz-Leiva et al., 2019; García-Madariaga et al., 2019; Meißner et al., 2016; Piqueras-Fiszman et al., 2013; Hervet et al., 2011; Clement, 2007) we consider the sample size for this research both adequate and sufficient.

3.2 Apparatus

Tobii Pro Studio version 3.4.5 was used to record the participants eye movement. Viewing was not binocular; instead the Tobii Pro screen-based eye tracker (Figure 1) was used to monitor eye movements thus allowing participants' freedom of movement. Infrared (940nm) video-based technology was used by the system to monitor true gaze position on a display despite head motion. Eye positions were sampled at 120 Hz which means that the Tobii eye tracker tracks where the participants look 120 times per second, therefore providing detailed research into the timing and duration of fixation. The Tobii computer screen that was used was 22 inches with a 16:9 Aspect Ratio.

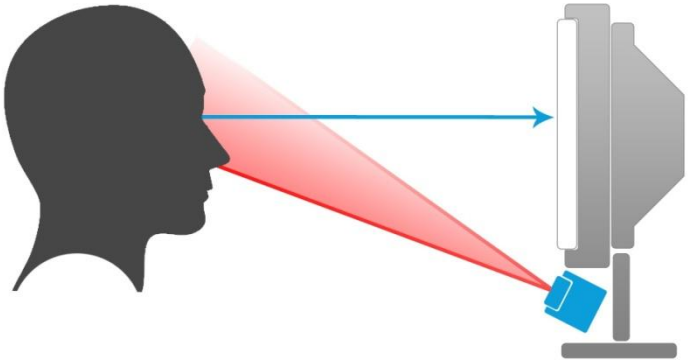

Figure 1: Tobii Pro Computer

3.3 Stimuli

As stimuli, various images of feta cheese and olive oil packages were created by a Graphic Designer from an Advertising Agency. The aim of the different packages is to convey sensory information by means of four design attributes: 1) the package's shape (rounded vs. square,), 2) the package's color (blue vs. red and purple vs. green), 3) the existence or absence of an image on the package, 4) the existence or absence of an eco-label on the package. The 16 possible fully crossed combinations (2 x 2 x 2 x 2) were created. All the images (860 x 600 pixels) were presented against a black background for individual presentation. The images of feta cheese (Figure 2) and olive oil (Figure 3) were randomly presented to the participants following an experimental shuffle. Distractions were used between each of the studied images.

Figure 2: The 16 feta cheese packages shown to participants

Figure 3: The 16 olive oil packages shown to participants

3.4 Procedure

The study was conducted in a quiet soundproof room under standard illumination conditions. Each participant was seated 64cm from the eye tracker and screen (valid for Tobii T Series Eye Trackers). After calibration, general instructions for the task were verbally communicated to each participant to ensure they fully understood what was asked. The images were presented individually for 2.5sec each since this is the average amount of time spent by consumers when looking at a package (Spence and Piqueras-Fiszman, 2013). In total there were 32 images with different feta cheese and olive oil packages. After each image a multiple-choice question was presented on screen and participants were asked to use the mouse and select the correct answer. The questionnaire was used as a distractor. The whole task lasted approximately 12 minutes.

4. Data analysis

To analyse fixations and compare them across the 16 feta cheese packages and 16 olive oil packages, various areas of interest (AOIs) were defined. The number of areas of interests is not equal among all 16 packages because there are some attributes present in one package but absent in another one. For example, eco-labels appear on some packages but are absent from others. The areas of interests are defined as: 1) the information area with a photo of the product (feta or olives); 2) the shape of the package; 3) the main text including the area of origin; 4) the existence of an eco-label; 5) the text were the word bio is mentioned; 6) the word feta (see Figure 4 as an example of a package's areas of interests for feta cheese). The measure that was considered in the analyses was the sum of the duration (ms) of all fixations, which was calculated for each area of interest of each package.

Figure 4: Areas of Interest (AOIs) defined for this specific package: 1) Feta, 2) color, 3) shape, 4) bio, 5) text of the area of origin, 6) ecolabel

4.1 Results

Study 1a: Eye tracking data analysis for feta cheese

To determine which variations had a significant impact on attention captured by each area of interest, analyses of variance (ANOVAs) were performed on the total fixation duration data for each area of interest.

After checking the data, the regularity of data between groups (histograms and Kolmogorov test p>.05) and homogeneity of variations between groups (Levene's test p> .05) was verified.

The analysis of variance was performed with the independent variables being the pictures representing various packaging styles and characteristics (bio text, color,Fetatext, image, area of origin text , shape,eco label) and a dependent variable being the fixation time that was recorded through the eye-tracker. From the sum

square (SS), mean square (MS), and F, statistically significant differences in fixation time were found between all groups (see Appendix, Table 3).

Separate post hoc tests were performed using the Bonferroni corrected coefficient as a cutoff point, for each independent variable (picture). SPSS offers Bonferroni-adjusted significance tests for pairwise comparisons. This adjustment is available as an option for post hoc tests and for the estimated marginal means feature. There were statistically significant differences within the groups. The results are explained for each picture separately.

Picture 1

According to the post hoc test (corrected criterion Bonferroni a=.008), statistically significant differences were found within the groups: bio text - color (t(69)= 3.505, p<.008), bio text - shape (t(69)= 3.820 , p<.008), color–Feta text (t(69)= -6.291, p<.008), Feta text - shape (t(69)= 6.260 , p<.008), color - area of origin text (t(69)= -5.390 , p<.008), area of origin text - shape (t(69)= 5.498 , p<.008). The post hoc test shows that the most significant features for the first package are the word bio in the text, the word Feta, and the place of origin (POP) compared to the color (red) and the shape (square shape).

Picture 2

According to the post hoc test (corrected criterion Bonferroni a=.01), statistically significant differences were found within the groups color - area of origin text (t(69)= -2.842, p<.01), color - Feta text (t(69)= -3.329, p<.01), area of origin text - shape (t(69)= 2.806, p<.01), Feta text - shape (t(69)= 3.372 , p<.01), bio text - Feta text (t(69)= -3.144 , p<.01). Hence, the post hoc test indicates that fixation duration is significant for the place of origin (POP) and the word Feta for the second picture, compared to the word bio, the color (blue) and the shape (square).

Picture 3

According to the post hoc test (corrected criterion Bonferroni a=.01), statistically significant differences were found within the groups. color - area of origin text (t(69)= -3.691, p<.01), color - Feta text (t(69)= -3.237, p<.01), area of origin text - shape (t(69)= 3.737, p<.01). The post hoc test shows that there is significance for the place of origin (POP) and the word Feta for the third picture, compared to the color (red) and the shape (square).

Picture 4

According to the post hoc test (corrected criterion Bonferroni a=.008), statistically significant differences were found within the groups. bio text - area of origin text (t(69)= -2.949, p<.008), Feta text - eco label (t(69)= 2.897, p<.008), bio text - Feta text (t(69)= -3.365, p<.008), color - Feta text (t(69)= -3.309, p<.008), Feta text - shape

(t(69)= 2.907, p<.008). The post hoc test illustrates that fixation duration is significant for the place of origin (POP) and the word Feta for the fourth picture, compared to the word bio, the eco-label, the color (blue) and the shape (square).

Picture 5

According to the post hoc test (corrected criterion Bonferroni a=.008), statistically significant differences were found within the groups. eco label - area of origin text (t(69)= -3.443, p<.008), Feta text - eco label (t(69)= 3.040, p<.008). Like the previous pictures, the place of origin (POP) and the word Feta are significant compared to the eco-label for the fifth picture.

Picture 6

According to the post hoc test (corrected criterion Bonferroni a=.007), statistically significant differences were found within the groups. color - Feta text (t(69)= -4.105, p<.007), Feta text- shape (t(69)= 2.973, p<.007), image - Feta text (t(69) = 4.957, p < .007), bio text - Feta text (t(69) = -3.865, p < .007). In picture 6, the word Feta and the image of feta cheese are significant compared to the word bio and the shape (square).

Picture 7

According to the post hoc test (corrected criterion Bonferroni a=.008), statistically significant differences were found within the groups. image - area of origin text (t(69)= -4.387, p<.008), image -shape (t(69)= -2.871, p<.008), Feta text - image (t(69)= 3.753, p<.008). The post hoc test shows that the place of origin (POP), the shape (square) and the word Feta are significant compared to the image of feta cheese for the seventh picture.

Picture 8

According to the post hoc test (corrected criterion Bonferroni a=.008), statistically significant differences were found within the groups.color - image (t(69)= 2.961, p<.008), image- area of origin text (t(69)= -4.867, p<.008), image - shape (t(69)= -4.447, p<.008), Feta text - image (t(69)= 5.517, p<.008), bio text -image (t(69)= 3.163, p<.008). In picture 8, the post hoc tests shows that the color (blue), the place of origin (POP), the shape (square), the word bio and the word Feta are significant compared to the image of feta cheese.

Picture 9

According to the post hoc test (corrected criterion Bonferroni a=.007), statistically significant differences were found within the groups. color - image (t(69)= 3.385, p<.007), Feta text- image (t(69)= 4.475, p<.007), eco label - Feta text (t(69) = 3.349, p < .007), image - area of origin text (t(69)= -4.560, p<.007), image - shape (t(69) = -

4.695, $p < .007$), bio text - image ($t(69) = 3.346$, $p < .007$). In picture 9, the color (red), the word Feta, the eco-label, the place of origin (POP), the word bio and the and shape (rounded) are significant compared to the image of the feta cheese.

Picture 10

According to the post hoc test (corrected criterion Bonferroni a=.008), statistically significant differences were found within the groups.color - Feta text ($t(69)= -4.325$, $p<.008$), color - area of origin text ($t(69)= -3.601$, $p<.008$). The post hoc test for the tenth picture shows that the word Feta and the place of origin (POP) report significant fixation durations compared to the color (red).

Picture 11

According to the post hoc test (corrected criterion Bonferroni a=.007), statistically significant differences were found within the groups. color - Feta text ($t(69)= -4.332$, $p<.007$), Feta text - shape ($t(69)= 5.414$, $p<.007$), eco label - Feta text ($t(69) = 4.999$, $p < .007$), eco label - area of origin text ($t(69)= -2.992$, $p<.007$), area of origin text - shape ($t(69) = 3.359$, $p < .007$), bio text - Feta text ($t(69) = -3.472$, $p < .007$). In picture 11, the word Feta is significant compared to the shape (rounded), the word bio and the color (red), but the eco-label is significant compared to the place of origin (POP).

Picture 12

According to the post hoc test (corrected criterion Bonferroni a=.007), statistically significant differences were found within the groups.color - Feta text ($t(69)= -5.103$, $p<.007$), Feta text - shape ($t(69)= 4.995$, $p<.007$), eco label - Feta text ($t(69) = - 4.105$, $p < .007$), color - area of origin text ($t(69)= -3.046$, $p<.007$). The post hoc test shows that the word Feta, the shape (rounded) and the place of origin (POP) are significant compared to the eco-label and the color (red) for the twelfth picture.

Picture 13

According to the post hoc test (corrected criterion Bonferroni a=.008), statistically significant differences were found within the groups. color - Feta text ($t(69)= 2.662$, $p<.008$), Feta text - shape ($t(69)= 4.773$, $p<.008$), eco label - Feta text ($t(69) = - 2.967$, $p < .008$). For picture 13, the post hoc test shows that the color (blue) and the word Feta is significant compared to the eco-label. In picture 13, the word Feta is significant compared to the color (blue), the shape (rounded) and the eco-label.

Picture 14

According to the post hoc test (corrected criterion Bonferroni a=.008), statistically significant differences were found within the groups. color - area of origin text ($t(69) = - 3.934$, $p < .008$), color-Feta text ($t(69)= - 4.488$, $p<.008$), Feta text - shape ($t(69)= 5.005$, $p<.008$), bio text - Feta text ($t(69) = - 2.667$, $p < .008$), area of origin text -

shape (t(69) = 2.646, p < .008). In picture 14, the place of origin (POP), the word Feta are significant compared to the shape (rounded) and the color (blue), but the word bio is significant when compared to the word Feta.

Picture 15

According to the post hoc test (corrected criterion Bonferroni a=.007), statistically significant differences were found within the groups. color - area of origin text (t(69) = - 3.417, p < .007), color-Feta text (t(69)= - 4.315, p<.007), Feta text - shape (t(69)= 5.639, p<.007), eco label - shape (t(69)= 4.973, p<.007) and area of origin text - shape (t(69)=4.595 , p<.007), Feta text - eco label (t(69)= 3.37, p<.007), bio text - area of origin text (t(69)= -3.23 , p<.007), bio text - eco label (t(69)= -2.976, p<.007), bio text - Feta text (t(69)= -4.323, p<.007), color - eco label (t(69)= -3.272 , p<.007). In picture 15, the place of origin (POP), the eco-label and the word Feta are significant compared to the color (blue), the word bio and the shape (rounded).

Picture 16

According to the post hoc test (corrected criterion Bonferroni a=.008), statistically significant differences were found within the groups. color - area of origin text (t(69) = - 4.688, p < .008), color -Feta text (t(69)= -6.243, p<.008), Feta text - shape (t(69)= 8.312, p<.008), image - shape (t(69)= 2.724, p<.008) and area of origin text - shape (t(69)=6.078 , p<.008). In picture 16, the place of origin (POP), the word Feta and the image of feta cheese are significant compared to the shape (rounded) and he color (blue).

Figure 5: Heatmap showing the attention paid to specific features on one of the package designs (feta cheese)

Figure 6: Gaze plot showing a representative eye movement from one participant on one of the package designs (feta cheese)

Study 1b: Eye tracking data analysis for oil packages

After checking the data, the regularity of data between the (histograms and Kolmogorov test p>.05) and the homogeneity of variations between the groups (Levene's test p> .05) was verified.

The analysis of variance was performed with independent variables the pictures (bio text, color, brand name, image, area of origin text, shape, eco label) and dependent variables being the fixation time. From the sum square (SS), mean square (MS), and F, statistically significant differences in the fixation time were found between all groups (see Appendix, Table 4).

Separate post hoc tests were performed using the Bonferroni corrected coefficient as a cut off point, for each independent variable (picture). There were statistically significant differences within the groups that are presented separately for each picture.

Picture 1:

According to the post hoc test (corrected criterion Bonferroni a=.008), statistically significant differences were found within the following groups: bio text - color (t(69)= 5.371 , p<.008) , bio text- shape(t(69)= 5.509 , p<.008), bio text - area of origin text (t(69)= 3.441 , p<.008),color - brand name (t(69)= -6.935 , p<.008), brand name - shape (t(69)= 7.124 , p<.008), p<.008) ,brand name - area of origin text (t(69)= 3.795

, p<.008). The results for the first picture indicate that the participants paid more attention to the text over the color, the shape and the place of origin. However, when comparing the color with the brand name and the place of origin, participants looked at the brand name of the olive oil.

Picture 2:

According to the post hoc test (corrected criterion Bonferroni a=.007), statistically significant differences were found within the groups. bio text - area of origin text (t(69)= 3.909, p<.007), bio text - shape (t(69)= 5.913 , p<.007), color - brand name (t(69)= -6.051, p<.007), brand name - area of origin text (t(69)= 4.466 , p<.007) , brand name - shape (t(69)= 6.906, p<.007). The results for picture 2 are the same as in picture 1. Participants looked at the text over the place of origin and the shape; and they preferred looking at the brand name of the olive oil compared to the color, the place of origin and the shape.

Picture 3:

According to the post hoc test (corrected criterion Bonferroni a=.007), statistically significant differences were found within the groups. bio text - shape (t(69)= 3.177, p<.007), brand name - shape (t(69)= 5.376 , p<.007). In picture 3 statistical significance was found only between two pairs of groups. In both groups shape is losing over the text and the brand name.

Picture 4:

According to the post hoc test (corrected criterion Bonferroni a=.006), statistically significant differences were found within the groups. bio text - color (t(69)= 4.105, p<.006), brand name - area of origin text (t(69)= 3.021 , p<.006), brand name - shape (t(69)= 7.334, p<.006). In picture 4 statistical significance was found between three pairs of groups. The text gathered more fixation time over color and the brand name was looked more compared to the place of origin and the shape.

Picture 5:

According to the post hoc test (corrected criterion Bonferroni a=.008), statistically significant differences were found within the groups. bio text - color (t(69)= 2.952, p<.008), bio text - shape (t(69)= 5.029 , p<.008),brand name - shape (t(69)= 5.171, p<.008). In picture 5, again the text is significant over the color and the shape and the brand name of the olive oil over the shape.

Picture 6:

According to the post hoc test (corrected criterion Bonferroni a=.007), statistically significant differences were found within the groups. bio text - brand name (t(69)= -2.877, p<.007), color - brand name (t(69)= -3.354 , p<.007), brand name - shape

($t(69) = 5.289$, $p < .007$). Interestingly, in picture 3 the brand name is significant over the text, the color and the shape.

Picture 7:

According to the post hoc test (corrected criterion Bonferroni a=.007), statistically significant differences were found within the groups. bio text - color ($t(69)= 4.238$, $p<.007$), color - brand name ($t(69)= -7.609$, $p<.007$), area of origin text - brand name ($t(69)= 5.524$, $p<.007$). In picture 7, the text gained the participants' attention compared to the color, and the brand over the color and the place of origin.

Picture 8:

According to the post hoc test (corrected criterion Bonferroni a=.006), statistically significant differences were found within the groups.bio text - brand name ($t(69)= -3.801$, $p<.006$), color - brand name ($t(69)= -6.039$, $p<.006$), color - area of origin text ($t(69)= -3.207$, $p<.006$), brand name - image ($t(69)= -3.323$, $p<.006$), shape -image ($t(69)= 3.950$, $p<.006$). In picture 8, participants focused on the brand name compared to the text and the color. The place of origin was significant compared to the color, the shape over the image and the image over the brand name.

Picture 9:

According to the post hoc test (corrected criterion Bonferroni a=.006), statistically significant differences were found within the groups. bio text - area of origin text($t(69)= 3.073$, $p<.006$), brand name - shape ($t(69) = 3.672$, $p < .006$). Only two statistically significant differences were found for picture 9. The text was looked at more compared to the place of origin and the brand name over the shape.

Picture 10:

According to the post hoc test (corrected criterion Bonferroni a=.008), statistically significant differences were found within the groups. brand name - shape ($t(69)= 3.945$, $p<.008$). In picture 10, only one statistically significant difference was found. The brand name gained people's attention compared to the shape.

Picture 11:

According to the post hoc test (corrected criterion Bonferroni a=.007), statistically significant differences were found within the groups. color - brand name ($t(69)= -3.773$, $p<.007$), brand name - area of origin text ($t(69) = 3.039$, $p < .007$), brand name - shape ($t(69)= 3.839$, $p<.007$). In picture 11, participants looked at the brand name compared to the color, the place of origin and the shape.

Picture 12:

According to the post hoc test (corrected criterion Bonferroni a=.006), statistically significant differences were found within the groups. bio text - brand name ($t(69) = -4.517$, $p < .006$), color - brand name ($t(69)= -5.230$, $p<.006$), eco label - shape ($t(69)= 3.965$, $p<.006$), eco label - area of origin text ($t(69)= 3.936$, $p<.006$). In picture 11, participants focused on the brand name over the text and the color. They also looked at the eco-label compared to the shape of the bottle and the place of origin of the olive oil.

Picture 13:

According to the post hoc test (corrected criterion Bonferroni a=.007), statistically significant differences were found within the groups. image - brand name ($t(69)= -4.811$, $p<.007$). In picture 13, one significant difference was found regarding the brand name compared to the image of olives.

Picture 14:

According to the post hoc test (corrected criterion Bonferroni a=.008), statistically significant differences were found within the groups. bio text - shape ($t(69)= 5.118$, $p<.008$), color - shape ($t(69)= 4.972$, $p<.008$). In picture 14, both the text and the color are more significant when compared to the shape.

Picture 15:

According to the post hoc test (corrected criterion Bonferroni a=.007), statistically significant differences were found within the groups. bio text - shape ($t(69)= 3.633$, $p<.007$), color - brand name ($t(69) = - 4.153$, $p< .007$), eco label - shape ($t(69) = 4.623$, $p< .007$). In picture 15, participants looked at the text compared to the shape, they also looked at the brand name over the color and the eco-label over the shape.

Picture 16:

According to the post hoc test (corrected criterion Bonferroni a=.006), statistically significant differences were found within the groups. bio text - eco label ($t(69) = 3.107$, $p< .006$), color - eco label ($t(69)= 3.739$, $p<.006$),color - shape ($t(69)= 3.521$, $p<.006$), image - brand name ($t(69)= - 3.086$, $p<.006$). In picture 16, participants fixated on the text and the color over the eco-labels. However, the looked at the color compared to the shape and the brand name compared to the image of olives.

Figure 8: Heatmap showing the attention paid to specific features on one of the package designs (olive oil)

Figure 9: Gaze plot showing a representative eye movement from one participant on one of the package designs (olive oil)

Study 2: Semi-structured interviews

After the eye-tracking experiment,a qualitative study in the form of semi structured interviews took place. Previous studies have combined qualitative and quantitative

methodologies in order to come up with more in-depth conclusions (Nikolaus and Bendlin, 2015; Veen et al., 2015). Eye tracking experiment and semi-structured interviews present diverse information about consumer's assessment of a product. Eye tracking technique provides information that may be unconsciously from the participants' point of viewgiven that highlights these package attributes that grab consumers' attention when purchase a product. On the other hand, semi structured interviews yield information about participants' conscious thoughts after having assessed the product. Furthermore, semi-structured interviews may provide information about what has been communicated from each package design.

Twelverespondents were asked supplementary questions in the form of semi-structured interviews. Seven of them were female and five were male, with ages ranging from 24 to 52 years old.

During the interview, personal heatmaps (example shown in Figure 4) and gaze-plots (example shown in Figure 5) for each respondent were presented to justify their eye-movement. The implementation of qualitative research techniques in combination with projective techniques provide a better understanding of the respondents' perceptions (Donoghue, 2000; Piqueras-Finszman et al., 2013; Nikolaus and Bendlin, 2015). Semi-structured interviews are considered useful in the sense that helped collect answers like "why consumers prefer one type of packaging feature over another?" (De Ruyter and Scholl, 1998). An interview guide was used to help researchers collect a comparative dataset by asking all participants the same questions. Each interview lasted between 12 to 17 minutes.

Eco Labels

Considering the impact of eco-labels on product packaging, most of the interviewees noticed the eco-label (10/12 for the feta cheese and 11/12 for the olive oil). The ones who didn't notice the eco-labels made the following comments:

"I did not look at it at all, I was impressed by the color and the packaging only".

(Man, 28 years old, biologist)

"I did not see the eco-label because I did not wear my glasses. People over 40 typically suffer from presbyopia. That's why companies should change the fonts and size of eco-labels. I do not go shopping with my eye-glasses on".

(Woman, 44 years old, unemployed)

One participant who noticed the existence of the eco-label said:

"I recognize the eco-labels. However, I believe it is necessary to have both the text BIO and the eco-label on the package".

(Woman, 44 years old, unemployed)

In the same vein, another participant said:

"No, I do not recognize them (eco-labels). That's why I want the information to be in text (on the package)".

(Woman, 51 years old, civil servant)

Regarding whether or not consumers take into consideration the eco-labels on their buying decisions, 9 out of 12 participants agreed that they consider eco-labels when they go shopping. However, they are a bit hesitant towards the truthfulness of eco-labels.

"Yes (I consider eco-labels on my buying decision), but as far as I know the controls for product certification are not so strict".

(Woman, 27 years old, medical doctor)

"Yes, of course I would buy an eco-labeled product. But if its effect is not equal to the conventional product, I will return to the conventional".

(Woman, 44 years old, unemployed)

Some participants focused on the higher price of eco-labeled products. They said:

"I have no financial means to buy eco-friendly products".

(Man, 32 years old, private employee)

"No, I do not consider buying these products at all, because they are more expensive".

(Man, 28 years old, biologist)

Considering their intention to buy an eco-labeled product at a higher price (given that they can financially afford it) compared to a conventional one, all respondents stated that they are willing to make such a purchase.

"I would buy an eco-product at a higher price, depending of course on the difference of the price. However, I understand that eco-products require higher quality production process".

(Man, 27 years old, pharmacist)

"If I'm sure about the origin and the quality of the eco-product, I would buy it regardless of the higher price".

(Man, 32 years old, agronomist)

"If the eco-product is effective and high in quality, I don't care about the price".

(Woman, 44 years old, unemployed)

Product Image

Considering the impact of image vs text on the product packaging, only 4 out of 12 noticed the image of the feta cheese on the package but 11 out of 12 noticed the

image of olives on the olive oil package. For both products though, participants agreed that the feature “text” is used as substitute for “image”.

11 out of 12 participants read the text.

“I read the text. I read the PDO of Mytilene, I am interested in this information”.

(Woman, 26 years old, medical doctor)

“I noticed the image because it is a typical feature of the olive oil packages. I prefer the packages with an illustration of the product compared to a package with no image at all”

(Woman, 52 years old, Nursery teacher)

Regarding the text, 8 out of 12 participants read what was on the olive oil package.

“I read the text to get all the information I needed; I wanted to know the size of the bottle”.

(Woman, 26 years old, archeologist)

Color

Regarding the color of the package, 11 out of 12 prefer the blue package for the feta cheese package and the same number of interviewees prefer the dark green color for the olive oil package. The participants consider the red color deterring, and the purple color is irrelevant to olive oil. Finally, one of them supported that blue package fits well with Greece and Greek products and dark green fits with the true color of the olive oil.

“I starkly prefer the blue package. The red threatened me”.

(Woman, 24 years old, agronomist)

“I prefer the blue because the red bothers me, blue is a calm color”.

(Man, 27 years old, pharmacist)”

"I prefer the blue. It refers to Greece and the sea”.

(Man, 35 years old, medical doctor)

Shape

Considering the shape of the package the respondents preferred the angled package (11/12 for the feta cheese and 9/12 for the olive oil). There appears to be two reasons for this preference. The first one lies in their habitual use. Participants are used to buying feta cheese in angled packages and olive oil in angled bottles. Furthermore, they declared that the rounded package often reminds other products like yoghurt or ice-cream.

“I prefer the angled package. I'm used to it. The shape of feta cheese is square, so the shape of the package should be angled”.

(Man, 32 years old, agronomist)

“I like the angled package more, because I am used to it. The other package relates to yogurt”.

(Woman, 51 years old, civil servant)

The second reason why they prefer the angled package design is because of its usability. The angled package shape reflects the shape of the slice of feta cheese, so it can be cut more easily for serving.

“I prefer the angled design. It is easier to use it, because it helps cut the slice rectangular to serve”.

(Man, 35 years old, medical doctor)

As for the olive oil package, respondents said that the rounded package looked more premium and more expensive.

“I prefer the angled package. Rounded packages generally look more expensive”.

(Woman,27 years old, medical doctor)

“The rounded package looks more premium, more attractive, more expensive”.

(Woman, 26 years old, agronomist)

Regarding the research questions and the hypotheses, Table 1 shows an overview of the main findings.

Table 1: An overview of the RQs

RQ/Hypothesis	Results for the feta cheese	Results for the olive oil	Explanation
RQ1: *Do eco-labels draw consumers' attention on packages of organic agricultural products?*	Yes	No	Eco-labels grabbed participants' attention compared to all other package features.
RQ2: *Do consumers take into consideration eco-labels in their buying decisions?*	Yes	Yes	Most of them do but many reported that they would like to see the eco attributes of the product explained in text.
RQ3: *Are consumers aware of eco-labels on product packages?*	Yes	Yes	Most of them are; even though there is a misunderstanding due to variety of different eco-labels.
RQ4: *Are consumers willing to buy an eco-labeled product at a higher price compared to a conventional one?*	No	No	Few of them are, many of them are not but they insisted that it depends on both the degree of the higher price and the effectiveness of the product.
RQ5: Will p*roduct images draw more attention compared to textual information?*	No	Yes	The image of the feta cheese gathered considerably less attention compared to the text.
RQ6: Are blue and olive color preferred over red and purple?	Yes	Yes	Most respondents mentioned that the red color frightened them for this specific product and purple is irrelevant to olive oil.
RQ7a:*Which package shape (rounded vs angled) of organic agricultural products will be preferred by consumers?*	Angled	Angled	Eye-tracking data shows that participants did not pay attention to the shape of the package; whereas interviews reveal that the angled shape is preferred over rounded shape.
RQ7b:*Which package shape (rounded vs angled) of organic agricultural products will positively influence the respondents' intention to purchase?*	Angled	Angled	Although the qualitative data provide no connection between package shape and intention to purchase, it is safe to assume that rounded shape has no relation to purchase behavior for the feta cheese as it is not preferred by participants when compared to the angled shape.Likewise, for the olive oil package, participants agreed that they would buy the angled bottle because the roundedone looks more expensive.

5. Conclusions

In this study we chose not to use an existing feta cheese and olive oil brand name to avoid false associations. Thus, we used the word Feta as the product's name for the feta cheese and the word ONE for the olive oil brand name; and even placed them in the middle of the package in bold and big font size (as seen in Figures 2 and 8). The statistical analysis shows that the word Feta and the word ONE grabbed the participant's attention compared to all the other features of the package. However, the place of origin reported significant results when compared to all the other features only for the feta cheese; the analysis of the olive oil packages shows that the place of origin was not looked at by consumers. Interestingly, interviewees agreed that they do care about the place of origin when buying feta and olive oil; some of them even said that they care about it more than they care about eco-labels.

The word bio in the text ("product of bio agriculture") and the eco-label, when present, grabbed the participants' attention compared to all other features. Specifically, participants always preferred to look at the text no matter what the product was. However, for the olive oil packages, they only focused on the eco-label twice (out of eight times).

Regarding the illustration of the product on the package, it was not at all noticed on the olive oil packages, but for the feta cheese the image is significant when compared to some features (i.e. shape and color), and not significant when compared to others (i.e. place of origin, the word Feta). Indeed, the interviews reveal that participants will read the text and avoid looking at the image because the text provides all the information they need for the product.

Surprisingly, the data shows that neither the shape nor the color of the package are significant compared to the rest of the features in nearly all sixteen packages for both products. On the other hand, most of the interviewees said that they prefer the blue color and the angled shape when it comes to feta cheese packaging; and the dark green color and angled bottle for olive oil.

The findings indicate that people are more interested in the brand name when buying feta cheese and olive oil and seem not to care about the shape nor the color of the package (Table 2). From a managerial point of view, there is evidence that the information that is better attended to is expected to drive consumer decision-making. Hence, managers should emphasize more on highlighting the brand name, informational text and the place of origin as it seems to add value on the package along with any eco/bio features, rather than investing in changing the package shape or color. Specifically, the evidence supports the idea that the shape is mostly a habitual preference that cannot be changed easily. The appearance or absence of an

image seems to be of little importance when it comes to packaging, thus managers can choose to opt in or out for this one.

Lastly, there is evidence to support the idea that buyers pay attention to the presentation of eco-labels, but they also want the eco features to be presented in the form of text. Thus, managers should make sure that the one does not substitute the other, rather they complete each other (Table 2).

As a final remark, it appears that the bigger font size is preferable among consumers, especially for agricultural products.

Table 2: Summary of the main findings

Key findings	***Managerial implications***
Consumers pay attention to the brand name	Highlight the brand name. Bigger font size.
Image on product package is not significant	This extra space can be used to include more text over images.
Consumers care about the place of origin	The place of origin for agricultural products should be properly highlighted.
Eco-labels are attractive, but text is also required	An eco-label should not substitute text. Informational text always grabs consumers' attention.
Consumers prefer soft colors	There must be an association between the color and the product itself.
Angled packages are preferred	Consumers rely on the habitual use when they buy products. Olive oil and feta cheese are associated with angled packages.

6. Limitations and further study

Although our findings shed some light into the packaging of bio feta cheese and olive oil, we acknowledge some limits. For example, the laboratory setting, the forced exposure to the packages, and the immediate response measures limit the generalizability of this study.

Another limitation is that we were unable to use real packages. Rather we created pictures of different package designs. If we had the opportunity to use a portable eye-tracker we would be able to test real packages instead of computer representations. For example, the shape and texture cannot be fully appreciated through a flat image on a screen. In fact, a very interesting recommendation for future research is to compare the differences between the data obtained from real

packages compared to package designs as representations. In a real life experiment it is likely that the effects of touch-inviting elements of the package would also be significant.

Another limitation is the amount of time exposed to the pictures (2.5 seconds for each picture) which affects the average fixation duration on the pictures. For example, for billboard advertisements studies have found that the size of the advertisement influences participants' looking times (Rayner *et al.,* 2001). Likewise, the exposure time may vary depending on the purchase situation. For instance, new entry consumers (e.g. recent parents) may need more time for evaluating a product compared to other consumers, or shopping in a new store with unfamiliar offers may lead consumers to concentrate more on the process of product package evaluation. Similarly, the size of the package might influence participants' fixation duration. Hence, a future study with different time interval for exposure is suggested.

It is possible that the most important limitation lies in the fact that this study focused only on two specific Greek products that are widely known to the public; even though product type has been identified as an important factor in green and social advertising research (Royne*et al.,* 2012).

Lastly, the presentation of the price on the package was intentionally avoided for this study. However, participants were asked about the price during the interview. It would be beneficial to examine whether consumers pay more attention to the price rather than the rest of the package features and whether their attitude changes when different prices are shown.

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Appendix

Table 3: ANOVA results for all 16 feta cheese packages

Item		*SS*	*df*	*MS*	*F*	*Sig*
Picture 1	*Model*	30606.840	5	6121.368	21.535	0.000*
	Error	98068.660	414	284.257		
Picture 2	*Model*	3528.011	4	882.003	5.358	0.000*
	Error	45435.589	415	164.622		
Picture 3	*Model*	2920.040	4	730.010	5.416	0.000*
	Error	37198.760	415	134.778		
Picture 4	*Model*	5275.248	5	1055.050	4.654	0.000*
	Error	78209.752	414	226.695		
Picture 5	*Model*	6357.571	5	1271.514	3.802	0.002*
	Error	115377.429	414	334.427		
Picture 6	*Model*	7388.082	6	1231.347	5.430	0.000*
	Error	93889.918	413	226.787		
Picture 7	*Model*	8437.821	5	1687.564	5.412	0.000*
	Error	107575.679	414	311.814		
Picture 8	*Model*	8973.393	5	1794.679	6.447	0.000*
	Error	96042.440	414	278.384		
Picture 9	*Model*	11358.392	6	1893.065	6.863	0.000*
	Error	114201.322	413	275.849		
Picture 10	*Model*	4171.793	5	834.359	2.578	0.026*
	Error	111650.707	414	323.625		
Picture 11	*Model*	11998.739	6	1999.790	6.791	0.000*
	Error	121911.261	413	294.472		
Picture 12	*Model*	10192.396	6	1698.733	3.876	0.001*
	Error	181451.604	413	438.289		
Picture 13	*Model*	8641.276	5	1728.255	4.196	0.001*
	Error	142115.390	414	411.929		
Picture 14	*Model*	9525.417	4	2381.354	10.386	0.000*
	Error	63282.583	415	229.285		
Picture 15	*Model*	23474.196	6	3912.366	9.123	0.000*
	Error	177551.518	413	428.868		
Picture 16	*Model*	13025.098	5	2605.020	7.651	0.000*
	Error	117466.402	414	340.482		

**p<.001*

Table 4: ANOVA results for all 16 olive oil packages

Item		*SS*	*df*	*MS*	*F*	*Sig*
Picture 1	*Model*	38817.080	5	13992.082	19.944	0.000*
	Error	134292.153	345	701.554		
Picture 2	*Model*	40732.584	6	6788.764	18.011	0.000*
	Error	156042.273	414	628.098		
Picture 3	*Model*	26631.184	6	6346.132	8.283	0.000*
	Error	221836.816	414	766.131		
Picture 4	*Model*	17403.248	7	3664.928	8.941	0.000*
	Error	134304.752	484	409.883		
Picture 5	*Model*	18629.279	5	4761.687	10.995	0.002*
	Error	116910.888	345	433.083		
Picture 6	*Model*	9064.438	6	2045.787	4.705	0.000*
	Error	132940.380	414	434.836		
Picture 7	*Model*	21797.984	6	4524.767	14.453	0.000*
	Error	104069.679	414	313.078		
Picture 8	*Model*	25686.393	7	5874.630	11.430	0.000*
	Error	155066.607	484	513.988		
Picture 9	*Model*	14397.512	7	2850.065	6.942	0.000*
	Error	143109.862	484	410.849		
Picture 10	*Model*	21001.698	5	8895.569	9.452	0.000*
	Error	153317.802	345	941.159		
Picture 11	*Model*	9228.653	6	2034.636	5.757	0.000*
	Error	110618.861	414	353.443		
Picture 12	*Model*	13966.135	6	3762.352	5.967	0.001*
	Error	161501.294	414	630.536		
Picture 13	*Model*	15720.676	5	4.133.621	6.442	0.001*
	Error	168385.324	345	641.628		
Picture 14	*Model*	18229.763	6	4127.354	12.959	0.000*
	Error	97066.808	414	318.502		
Picture 15	*Model*	18689.941	7	3866.97	10.029	0.000*
	Error	128591.934	484	385.59		
Picture 16	*Model*	46168.098	7	6595.52	14.486	0.000*
	Error	219909.59	484	455.29		

**p<.001*