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Influence of electronic word-of-mouth and brand image on purchase intention

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Abstract

This study aims to assess the influence of electronic word-of-mouth and brand image on purchase intention. The purpose is also to contribute to the marketing literature and gather insights to help companies developing better strategies. The research approach relied on an experimental design and on a questionnaire to collect data and their analysis was done through SPSS. This study proved that good electronic word-of-mouth has a positive influence on purchase intention, brand image does not have a negative moderator role on purchase intention and experience products have a stronger moderator role on purchase intention than search products.

Keywords: electronic word-of-mouth, brand image, purchase intention, product type

1. Introduction

Due to technological developments, nowadays consumers not only communicate with each other through the internet, but also collect information and evaluate products online. Notwithstanding, they create voluntarily online content about brands which cannot be controlled by the brands themselves. Online product reviews exhibited on the different platforms should be seen as an opportunity for companies to take advantage of electronic word-of-mouth and reach more consumers (Vital 2016).

This study aims to understand the influence of e-WOM on purchase intention; the relationship among e-WOM, brand image and purchase intention; and the relationship among e-WOM, product type and purchase intention. For this purpose, an empirical test was done to Portuguese consumers and it does not focus on a specific brand or product because the goal of this study is to have insights that can be applied to any company. The findings will help marketers to understand the power of e-WOM and online consumer reviews and to design strategies in order to benefit from them.

Purchase intention has been extensively investigated as it greatly influences the sales ratios and profitability of companies (Nuseir 2019). The impact of word-of-mouth has also been analysed as it is considered more effective than other traditional marketing tools, for instance personal selling and advertising media (Alrwashdeh, Emeadwali and Aljuhmani 2019). The Internet has greatly influenced this mode of communication and consumers' preferences and behavioural intention (Torlak, et al. 2014). In Portugal, according to Internet World Stats website, there were 8 015 519 Internet users in December 2018 that corresponds to 78.2% of the population. As a consequence, electronic word-of-mouth (e-WOM) is more available and accessible than traditional WOM and online customer reviews have emerged as a valuable information source for consumers to evaluate products before their purchase (Cui, Lui and Guo 2012). International research have shown that nearly 95% of shoppers “read online reviews before making a

purchase” (G2.com, Inc 2019) and 84% of buyers “trust reviews they read online as much as personal recommendations” (G2.com, Inc 2019).

Regarding brand image, it is a source of competitive advantage for companies and it positively influences consumer willingness to pay premium prices (Kotler, Wong, et al. 2005, 556, 638). Thus, brand image (that is related to brand equity) can impact a firm’s future profits and long-term cashflow and also marketing success (Yoo and Donthu 2001). Several studies were keenly interested in analysing the relationship among e-WOM, brand image and purchase intention as mentioned in the following chapter. However, they were limited to specific countries, industries, and products. Thus, these three variables were studied not only in different contexts but also the research models included different moderators. Just the study conducted by Alrwashdeh, Emeadwali and Aljuhmani (2019) included product type as moderator, since the classification into search and experience products is a practical method to investigate more efficiently the potentials of the Internet as a marketing channel (Luan, et al. 2016).

An experimental design and a questionnaire were applied to Portuguese consumers in order to put into practice the experiment and the data analysis was performed through the IBM software SPSS version 26.

The content of this dissertation is organised in five chapters. In this first chapter, there were introduced the research problem, the proposed objectives, a brief contextualisation, and the methodological approach pursued. Chapter 2 describes the literature review and includes main concepts definition, research hypothesis, and the conceptual framework. Then, chapter 3 presents the methodology and explains the population and sample, the instruments used and the data collection and analysis process. Chapter 4 presents the results and it is discussed whether the information is in accordance with the literature review and if the hypothesis were validated. Finally, in chapter 5 conclusions with the main findings are stated and also the limitations and recommendations for future researches in the field of marketing are given.

2. Literature Review

2.1. Purchase intention

Purchase intention is the complex process of making a buying decision and it involves “perceptions, behaviours and attitudes of the consumer toward the product or service itself or even the seller” (Torlak, et al. 2014). Since consumers are influenced by others during the buying process, marketing literature is concerned in understanding the relationship between word-of mouth and purchase intention (Nuseir 2019).

2.2. Electronic word-of-mouth and online consumer reviews

The widespread use of Internet made electronic word-of-mouth emerge. Thorsten Hennig-Thurau et al. (2004) defined e-WOM as “any positive or negative statement made by potential, actual, or former customers about a product or company which is made available to multitude of the people via the Internet”.

Online consumer reviews constitute one of the most valuable types of e-WOM communication. In the last years, online reviews have turn out to be a key source of information that allow consumers to identify products that are in accordance with their needs and preferences and to make better purchase decisions (B. Hernández-Ortega 2020). According to Kostyra et al. (2016), online reviews are a quick and easy way of accessing information about the value of a product derived from the experiences and opinions of customers. They can consequently reduce consumers’ choice risk. Online consumer reviews are mainly present in “discussion forums, review websites, retail websites and social networking sites” (Hernández-Ortega 2019).

Furthermore, they can be either in the format of a written opinion describing the usage experience or as a grade/ rating, indicating the level of customer satisfaction (Statista 2019). So, in a qualitative online review the consumer is able to comment, complain, and assess the products. Regarding a quantitative online review, it is a visual appealing way of displaying a

statistical overview that can be understood by all consumers. According to Chintagunta, Gopinath and Venkataraman (2010), a quantitative online consumer review is comprised by three dimensions: valence, volume, and variance. All the consumer’s evaluations are aggregated and presented in the format of a rate, from 1 to 5 stars for example, the number of consumer ratings is shown below and the review may even display bars with the frequency of each score (Figure 1).



Figure 1. Example of a quantitative online consumer review (www.amazon.com)

So, valence characterizes the extent to which consumers are pleased with a product and a positive rate can be seen as a recommendation to future consumers purchase the product in question. Also, it can be interpreted as a source of information about product’s quality (Cui, Lui and Guo 2012). Volume can be defined as the total number of customer ratings. It is used to measure awareness among consumers (Cui, Lui and Guo 2012).

Kostyra et al. (2016) described variance as “the variation in ratings along the rating scale and is observable through the number of customer ratings for each valence level. Variance represents the degree of disagreement or heterogeneity among customers' evaluations”.

This study focuses on quantitative online reviews and will only consider the effect of valence and volume of online reviews as other studies previously did (Amble and Bui 2011; Chevalier and Mayzlin 2006; Cui, Lui and Guo 2012; Dellarocas, Zhang and Awad 2007; Dhar and Chang 2009; Duan, Gu and Whinston 2008; Ho-Dac, Carson and Moore 2013) [Appendix 1]. In the

literature, the studies that evaluated the variance dimension did not attained a consistent result [Appendix 1]. In addition, Chintagunta, Gopinath and Venkataraman (2010) found out that variance is not important in the prediction of sales (so, they do not affect purchase intention).

2.3. e-WOM influence on purchase intention

Recent researches have shown that e-WOM has a significant direct effect on purchase intention (Alrwashdeh, Emeadwali and Aljuhmani 2019; Jalilvand and Samiei 2012). Chevalier and Mayzlin (2006) analysed the impact of online product reviews on the sales of two online bookshops and concluded that they significantly affected other consumers' purchase behaviour.

As abovementioned, the valence and volume of online reviews are the two factors considered significant when studying online consumer reviews. Chintagunta, Gopinath and Venkataraman (2010), Clemons, Gao and Hitt (2006), Cui, Lui and Guo (2012), Dellarocas, Zhang and Awad (2007) concluded that valence is significant in the prediction of sales (and therefore, in the purchase intention of consumers). Also, Kostyra et al. (2016) concluded that valence has a positive direct effect on product choice. However, what is a low or high valence is not consensual. In the case of online ratings, a research (Reviewtrackers 2018) has found that 80 percent of consumers say "the star ratings they trust the most are 4.0, 4.5, and 5 stars". Therefore, a high valence can be considered more than 4-star ratings. A low valence is a negative valence and, therefore, represented by 1 star or 2 stars. Chen, Wang and Xie (2011) confirmed that negative word-of-mouth is more influential than positive word-of-mouth. According to a study (Reviewtrackers 2018), negative reviews have persuaded 94 percent of consumers to avoid a business. Thus, a consumer is "21 percent more likely to leave a review after a negative experience than a positive one".

Amblee and Bui (2011), Chevalier and Mayzlin (2006), Cui, Lui and Guo (2012) and Dellarocas, Zhang and Awad (2007) proved that online reviews volume has a significant relationship with sales too. However, a low or high number of reviews is a subjective concept.

According to Statista (2019), “online shoppers in the United States expect a significant number of reviews when looking at a product online - the average number of expected reviews was 112, with younger shoppers expecting more reviews than older ones”. In this study, it is going to be considered a low value less than 100 reviews and a high value more than 100 reviews.

After analysing the literature, the following hypothesis was stated.

H1: Good e-WOM positively influences purchase intention.

2.4. The relationship among e-WOM, brand image and purchase intention

The concept of brand image has taken a relevant position in the marketing research as the fast growth of online social media and online product reviews on e-commerce platforms has diminished companies’ control over brand management (Chakraborty and Bhat 2018). Brand image is how a brand is perceived by consumers (Aaker, 1996, 71). A brand can be defined as a “name, term, sign, symbol, or design, or a combination of them, intended to identify the goods or services of one seller or group of sellers and to differentiate them from those of competitors” (Kotler and Keller 2012, G1). So, brand image is a set of brand associations in consumer memories (Keller 1993) and it is composed by three main elements: product attributes, the benefits/consequences of using a brand, and brand personality (Plummer 2000).

Since online reviews are a mean to consumers share their brand and product experiences, it is crucial for marketers to understand their effect on consumers’ attachment to brands (Chakraborty and Bhat 2018). Therefore, they will affect the image of the brand and will determine future purchasing intention and behaviour of consumers because individuals will decide whether a brand continues to suit them or not (Bian and Moutinho 2011).

It is acknowledged that e-WOM is a crucial factor for any brand’s marketing mix and several researchers have proven that interpersonal influences impact brand image and consumers’ purchase intention (Nuseir 2019). According to a study made by Jalilvand and Samiei (2012),

e-WOM has “considerable effects on brand image and indirectly leads to intention to purchase”. Torlak et al. (2014) and Kazmi and Mehmood (2016) concluded that the impact of e-WOM and brand image on the purchase intention is positively correlated and the effect is significant. However, according to Kostyra et al. (2016), the importance of brand for customer choice decreases when online consumer reviews are available. This happens because it seems that “OCRs reduce the uncertainty and substitute the traditional function of brand as indicator of quality”. Ho-Dac, Carson and Moore (2013) concluded that, in one hand, online reviews have no significant impact on the sales of strong brand, and in the other hand, they had a significant impact on weak brands’ sales. So, the following hypothesis was stated.

H2: Brand image negatively moderates the effect of e-WOM on purchase intention.

However, it is important to underline that this study will assess more specifically the impact of e-WOM through online reviews valence and volume on brand image and the impact of brand image on purchase intention.

2.5. The relationship among e-WOM, product type and purchase intention

Electronic word-of-mouth might not have the same effect on all products since product and consumer-specific characteristics can significantly differ case by case (Zhu and Zhang 2010). However, products can be classified according to their nature into search products and experience products (Nelson 1970).

Search products, such as electronics and clothes, possess specific attributes that can be assessed before the purchase or consumption. Generally, consumers are more likely to employ a systematic decision-making process when evaluating technical or performance aspects of a product (Cui, Lui and Guo 2012). Thus, information about search products can be easily obtained on the Internet and it ensures that similar products can be compared (Peterson, et al. 1997). Products’ ratings and evaluations by other consumers are highly displayed online. As a

consequence, the valence of reviews for search products considerably impacts individuals' purchase decisions (Cui, Lui and Guo 2012).

Experience products are dominated by attributes that cannot be evaluated before the purchase or trial (as consumers need feeling or experiencing them), or “for which information search is more costly and/or difficult than direct product experience, such as travel packages and dinners at new restaurants” (Bei, Chen and Widdows 2004). Usually, consumers evaluate this type of products taking into account affective cues such as aesthetic features of the product. So, the evaluation of experience products is more subjective, and it is more difficult to determine if a product has quality or not (Cui, Lui and Guo 2012). On online channels, it is not possible to come into contact with these products and consequently those assessing experience goods have a tendency to observe other-based decisions (Liu, Huang, and Zhang 2016). Furthermore, “in such cases, extrinsic cues such as the popularity of a product as indicated by the volume of reviews become more important for consumers” (Cui, Lui and Guo 2012).

Hence, online consumer reviews' volume and valence are expected to impact differently the purchase intention of search and experience products. Some researchers acknowledge that WOM effect is greater for experience goods than for search goods (Park and Lee 2009). Alrwashdeh, Emeadwali and Aljuhmani (2019) study shows that product type strengthens the positive relationship between e-WOM and purchase intention. So, the following hypothesis was stated.

H3: Experience products have a stronger moderator role on the effect of e-WOM on purchase intention than search products.

2.6. Conceptual Framework

This study aims to analyse the relationship between e-WOM and purchase intention, and the moderating effect of brand image and product type.

In order to clearly define the direction of the research, hypothesis were stated. They are an attempt to explain the phenomena involved and to contribute to the extension of knowledge in this area. Therefore, in the figure below, it is represented the theoretical framework of this study that shows how these variables may directly associate with each other.

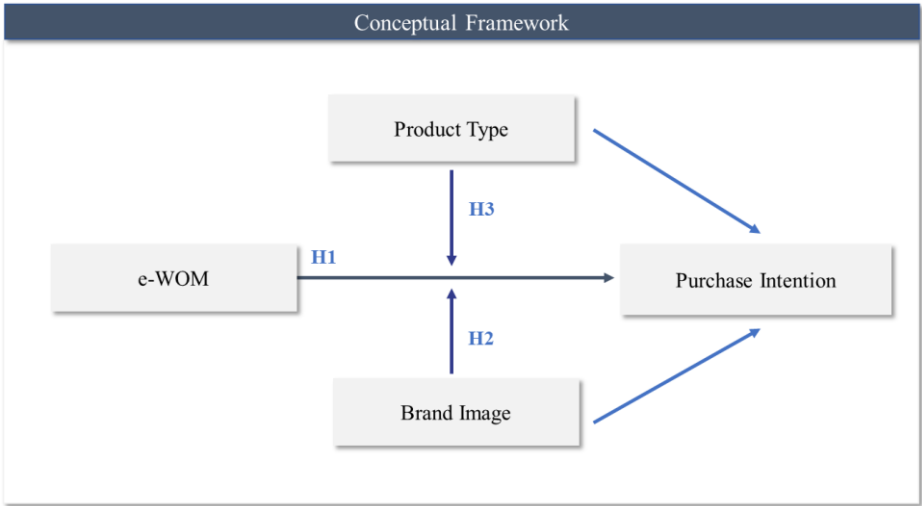


Figure 2. Conceptual Framework

3. Methodology

The theoretical approach presented before was fundamental to define how the hypothesis should be empirically tested. In this chapter, it is explained the process required to put into practice the objectives of the study. The main topics considered are the population and sampling method chosen, the measurement of the experiment and the data collection and analysis procedure.

3.1. Population and sampling

This study involved Portuguese from several regions of the country. The target population were all the individuals with more than 18 years old. This age constraint was defined since the study is about purchase intention of adults and not including minors avoids delicate ethical issues. Convenience sampling method, one of the non-probabilistic sampling methods, was used in this study. Therefore, the respondents were selected as they were immediately available.





3.2. Measurement

It was developed an online survey to collect data from a large sample in a short span of time. The survey involved an experimental design and a questionnaire, and it can be consulted in Appendix 2.

3.2.1. Experimental design

In an experiment, conditions are controlled so that the independent variable(s) can be manipulated to test a hypothesis about a dependent variable. This experimental design is a statistical (full factorial) true experimental and is composed by six questions. The participants had access to only one of the multiple scenarios of each question and the answers were based in the observation of one/two images that were displayed. It was assured that each scenario was randomised in order to reduce the risk of bias in the outcomes. Thus, each scenario had an equivalent number of respondents and it was defined that were necessary at least 10 respondents (ideally 20) for each. In the table below, it is shown a summary of the scenarios created.

Table 1- Scenarios of the experimental design

Question 1	<p>Question: “What is the probability of buying a product that is evaluated like this?” Image: online consumer review (rating) Variables: Valence (high/low) and Volume (high/low) Scenarios: 4</p> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%; border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p>[1]  4,6 out of 5 14 356 customer ratings</p> </div> <div style="width: 50%; border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p>[3]  4,6 out of 5 13 customer ratings</p> </div> <div style="width: 50%; border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p>[2]  2,7 out of 5 13 customer ratings</p> </div> <div style="width: 50%; border: 1px solid black; padding: 5px;"> <p>[4]  2,7 out of 5 14 356 customer ratings</p> </div> </div>
Question 2	<p>Question: “What is the probability of buying this product that is evaluated like this?” Image: male white polo Variables: Branded product or non-branded product (no visible logo) Scenarios: 2</p>
Question 3	<p>Question: “What is the probability of buying this product that is evaluated like this?” Images: male white polo of <i>Lacoste</i> + online consumer review (rating) Variables: Branded product * Valence (high/low) and Volume (high/low) Scenarios: 4</p>

Question 4	<p>Question: “What is the probability of buying this product that is evaluated like this?”</p> <p>Images: male white polo with no brand logo + online consumer review (rating)</p> <p>Variables: Not branded product * Valence (high/low) and Volume (high/low)</p> <p>Scenarios: 4</p>
Question 5	<p>Question: “What is the probability of buying this product that is evaluated like this?”</p> <p>Images: book + online consumer review (rating)</p> <p>Variables: Experience product * Valence (high/low) and Volume (high/low)</p> <p>Scenarios: 4</p>
Question 6	<p>Question: “What is the probability of buying this product that is evaluated like this?”</p> <p>Images: tablet + online consumer review (rating)</p> <p>Variables: Search product * Valence (high/low) and Volume (high/low)</p> <p>Scenarios: 4</p>

3.2.1. Questionnaire

The data gathered from the questionnaire allowed to draw conclusions that complement the insights from the experiment design. It is organized in five groups and the first four groups are related to the following variables: electronic word-of-mouth, purchase intention, brand image, and product type [Appendix 3]. The last section of the questionnaire included demographic information about the respondents, such as gender, age, educational level, and occupation.

The five-point Likert scale was the measure chosen to evaluate each question. The questionnaire was adapted from previous studies published in the marketing literature to suit the research context. Since all the studies focused on a specific product and the goal of this study is to have a broader scope and study the impact of both experience and search products, the scales used in this research are mostly derived from literature, but some items of other studies scales were also applied. Regarding the measurement of research constructs, the e-WOM section has three (out of seventeen) items adapted from the scale developed by Huang, Hsiao and Chen (2012). Three out of seven scale items of purchase intention (and behaviour) section were taken from Alrwashdeh, Emeadwali and Aljuhmani (2019). Brand image section includes twelve items, seven of them were adapted from Salinas and Pères (2009) study. However, the product type section has a 4-items scale developed by the author due to the lack of studies that involves this moderator in this particular context.

A factor analysis was performed in SPSS version 26 in order to assess internal consistency of the questionnaire as it is made of multiple Likert questions that form a scale. This scale can only be used in other studies if it is determined reliable.

Univariate descriptives and correlation matrix's coefficients, significance levels, KMO measure of sampling adequacy were some of the outputs. There were extracted 13 factors and the first 4 factors/ components represented 38.48% of total variance explained [Appendix 4]. The four factors correspond to the number of dimensions of the questionnaire: e-WOM, brand image, purchase intention and product type. The rotation method used was the Varimax. Coefficients with an absolute value below 0.3 were suppressed and coefficients greater than 0.7 indicate a strong positive correlation. KMO measure of sampling adequacy has a value of 0.719, so as it is higher than 0.5 is a good value [Appendix 5].

The reliability analysis (Table 2) of the measurement items was done using Cronbach's alpha. It was utilised an alpha equal to 0.05.

Table 2. Reliability analysis

	Cronbach's Alpha	Number of items	Items
Factor 1 – e-WOM	0.854	17	EW9, PI3, EW16, EW11, EW14, EW13, EW8, PT1, EW10, EW17, EW12, PT4, PT2, EW1, PT3, PI1,EW15
Factor 2 – Brand Image	0.771	8	BI2, BI1, BI9, BI8, BI4, BI10, BI6, BI3
Factor 3 – Consumer buying behaviour	0.393	9	Gender, EW7, PI4, EW2, EW5, BI11, EW4, PI7, BI7
Factor 4 – General conditions	0.572	7	PI5, PI6, Age, Occupation, EW6, Educational level, EW13

The acceptable value of alpha in reliability analysis is 0.7., therefore, only factor 1 that corresponds to e-WOM and factor 2 that corresponds to brand image complied with it. Consequently, the scale should be revised and adapted in order to be used in future research.

3.3. Data collection and analysis

Before having distributed the survey to the participants, a pre-test was done in order to evaluate if the questions were easily understood and whether there were errors in the structure or content. The pre-test was presented to 4 individuals in order to test the 4 scenarios. At the end, it was needed to redo some questions. In the survey's beginning, the respondents were informed not only about the main goals of this study, but also about the average time to complete the survey (measured during the pre-tests), and they were also guaranteed about the confidentiality of the answers. Qualtrics was the platform employed to apply the online survey since it was not necessary to spend financial resources and was possible to randomise the scenarios (contrary to Google Forms). The survey was easily shared through a link on social network groups and personal accounts. The data was gathered during a week, from 27th of April to 4th of May.

4. Results and Discussion

4.1. Sample profile

From a total of 177 respondents, only 137 completed 100% of the survey. Consequently, this analysis considered only the individuals that answered all the questions. The sample is composed by 66,4% (91) females and 33,6% (46) males [Appendix 6]. The respondents' age is predominantly in the range 18-30 (78,1%) and the other ranges that stand out are the following: between 41-50 (10,2%) and between 51-60 (8%) [Appendix 7]. Regarding the educational level, the majority of the respondents has a bachelor's degree (or is concluding it) and represent 47,4% of the sample or has a master's degree (or is concluding it) and represent 43,1% [Appendix 8]. Considering the type of occupation, 55,5% are students and 35% are employees [Appendix 9].

4.2. Experimental design results

The experimental design was analysed through several statistical tests: a t-test, a one-way ANOVA, and two-way ANOVAs.

- *Impact of brand image on purchase intention*

To assess the impact of brand image on purchase intention a t-test was performed. It determines if there is a significant difference between the means of branded products and non-branded products. In order to have a valid result from an independent t-test the data had to pass six assumptions (Lund Research Ltd 2018) that are explained in Appendix 10.

The t-test was performed, and the p-value (0.576) is higher than the significance level (0.05), therefore, the null hypothesis is not able to be rejected (with 95% of confidence), and the means of both groups are equal. So, there is no evidence that brand image has an effect on purchase intention (the null is that there is no effect).

The purchase intention for both branded and non-branded is virtually the same, being 3.12 ± 0.135 for branded products while for non-branded products is 3.01 ± 0.118 [Appendix 11].

- *The effect of e-WOM on purchase intention*

For studying this effect, a one-way ANOVA was used, since quantitative online reviews have four levels (so more than 2 levels in order to use a t-test). The levels represent: 1) High Valence and High Volume; 2) High Valence and Low Volume; 3) Low Valence and Low Volume; 4) Low Valence and High Volume. The same assumptions apply to an ANOVA as for a t-test. The six assumptions are obeyed as it was explained in Appendix 12.

There was a significant main effect of online reviews on purchase intention (since $\text{sig} = 0.00 < 0.05$) and there was a large effect size, represented by the partial eta-squared = 0.55 that is larger than 0.14 [Appendix 13]. This result was already expected as electronic word-of-mouth is very influential as it is perceived as being more authentic than for example ads from a company.

Both dimensions are important to give summarised information to consumers. The volume of online reviews represent the popularity of the product on an online platform and the valence the rate/ score. On the one hand, consumers intent to buy products based on reviews with high valence and volume and also high valence low volume (Table 3).

Table 3. Purchase intention (1-5) based on online review’s valence and volume

		Valence	
		Low	High
Volume	Low	2.29	3.67
	High	2.24	4.19

So, individuals use the online reviews of other customers to help in their decision and if they are good, they are more likely to purchase the product evaluated. On the other hand, negative reviews characterised by low valence and low volume and low valence high volume detain individuals from buying a particular product [Appendix 14]. Consumers may consider it imprudent as the majority of people are risk averse.

Therefore, the first hypothesis is verified: good e-WOM positively affects purchase intention.

- Brand image influence on the effect of e-WOM on purchase intention

To study this relationship, a two-way ANOVA was performed. The same assumptions are hold as before [Appendix 15]. In the experimental design the distinction between branded product and non-branded product was implicit in the questions. Therefore, in the database there was no column with this information. As the respondents answered both scenarios (instead of one) and the output was a random online review numerated between 1 and 4 and the consumer purchase intention between 1 and 5 for both cases, the data had to be rearranged and a dummy variable was created: 1- branded product, 2- non-branded product.

Regarding the results, the main effect of brand image (dummy variable) on purchase intention was not significant (sig. = 0.943 > 0.05) and the effect size was considered very small (partial

eta squared is $0.002 < 0.01$). So, brands seem to have lost relevance in consumers' decisions as they are not meeting the changing consumer needs in today's marketplace. In the case of online consumer reviews' main effect on purchase intention it was significant (since $\text{sig.} = 0.009 < 0.05$) and the effect size was very large (partial eta squared is $0.969 > 0.14$). Consequently, this corroborates the fact that is very important for consumers to buy products based on online ratings and feedback from others. Thus, this new reality highly impacts business sales and revenues.

But more important than evaluating these factors separately is studying the interaction effect. Notwithstanding, the influence of brand image with the online consumer review on purchase intention was not significant ($\text{sig.} = 0.484$ is higher than the level of significance $=0.05$), and consequently, the effect size is small (partial eta squared = 0.019) [Appendix 16]. In Torlak et al. (2014) and Kazmi and Mehmood (2016) papers this relationship was significant. Despite that, the effect of brand image on purchase intention is slightly stronger when there are online consumers reviews available (partial eta squared = $0.019 > 0.002$). The main reason for this outcome is that there are two sources of information and they together complement each other and seem more trustworthy to consumers. Nevertheless, this finding is different from the one presented by Kortyra et al. (2016) that defended that brands lose importance when there are online consumer reviews displayed.

As it can be observed in the following graphic, there is a disordinal interaction between brand image (dummy variable) and online consumer reviews when the purchase intention is positive. Notwithstanding, there is an ordinal interaction between brand image (dummy variable) and online consumer reviews when the purchase intention is negative. Only the main effect of online review was significant in both cases.

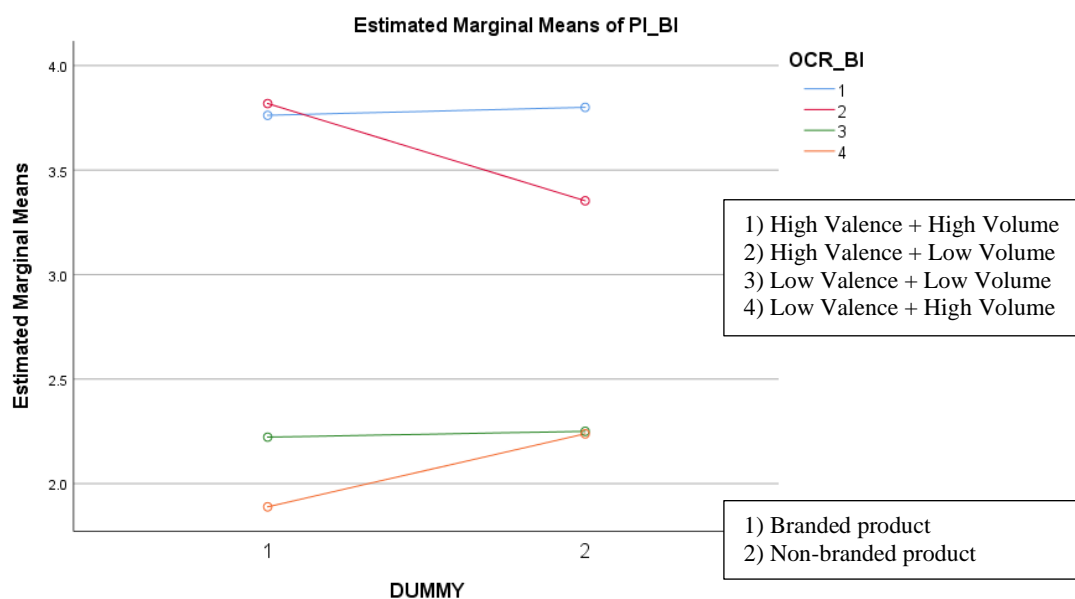


Figure 3. Interaction effect of brand image and online consumer review scenario

For consumers, positive valence/ good electronic word-of-mouth is one of the criteria to buy products (purchase intention is higher than 3 in a scale from 1 to 5) as they are perceived as having more credibility. Negative valence (when purchase intention is smaller than 3 in a scale from 1 to 5) detain consumers from buying products. Consumers do not want to take the risk of purchasing something that other people gave a low score. The other criteria used to examine an online review is volume: high volume is good when valence is high and bad with valence is low. A high volume is synonym of products' popularity on online platforms.

The next table compares the purchase intention of brand-products and non-branded products taking into consideration the multiple scenarios of an online consumer review.

Table 4. Purchase intention (1-5) scenarios

Online Consumer Review Scenario	[1] Branded products	[2] Non-branded products	Variation of mean of purchase intention of a non-branded product compared to a branded product
[1] High Valence + High Volume	3.76	3.8	+ 0.04
[2] High Valence + Low Volume	3.82	3.35	- 0.47
[3] Low Valence + Low Volume	2.22	2.25	+ 0.03
[4] Low Valence + High Volume	1.89	2.24	+ 0.35
Total	2.87	2.86	- 0.01

When consumers buy a product with no brand, they depend a lot more on online consumers reviews to help in the decision-making process than if a product had a brand that they are aware of the quality or even loyal. Therefore, the purchase intention is higher if the valence and volume is also high. However, if a high rated product with no brand has low volume of reviews is much less preferred in comparison to a branded product. So, in this case popularity is key and this may be explained as consumers need a high number of people to trust and to consider that a product is worthy to be bought. Considering online reviews with low rate (despite the volume is high or low), although consumers do not intent to purchase products in a general way, they have a higher purchase intention to buy non-branded products in comparison to branded products. This may be justified as usually products with well-known brands are more expensive than weaker-brand products, so consumers do not want to invest more in something than it is not guaranteed better and it is evaluated with the same value. Overall, the purchase intention of a branded product is similar to a non-branded having online reviews present as showed previously. This finding is not in accordance with Ho-Dac, Carson e Moore 2013 study. Therefore, the second hypothesis of this study is not verified.

- Product type influence on the effect of e-WOM on purchase intention

To study this relationship, a two-way ANOVA was performed. The same assumptions are hold as before [Appendix 17]. In the experimental design the distinction between experience product and search product was implicit in the questions. Therefore, in the database there was no column with this information. As the respondents answered both scenarios (instead of one) and the output was a random online review numerated between 1 and 4 and the consumer purchase intention between 1 and 5 for both cases, the data had to be rearranged and a dummy variable was created: 1- experience product, 2- search product.

Regarding the results, the main effect of product type (dummy variable) on purchase intention was not significant ($\text{sig.} = 0.292 > 0.05$) and the effect size was considered large (partial eta squared is $0.351 > 0.14$). Hence, whether consumers intent to buy either search or experience products, since there are only two available categories, they will have to buy from one of them. In the case of online consumer reviews' main effect on purchase intention it was significant (since $\text{sig.} = 0.034 < 0.05$) and the effect size was very large (partial eta squared is $0.924 > 0.14$). Subsequently, this supports the fact that is very critical for consumers to buy products based on online ratings and feedback from others. Business profits are affected by this type of word-of-mouth.

But more important than evaluating these factors separately is analysing the interaction effect. The influence of product type with the online consumer review on purchase intention was significant ($\text{sig.} = 0.011$ is higher than the level of significance $=0.05$), and the effect size is moderate ($0.06 < \text{partial eta squared} = 0.082 < 0.14$) [Appendix 18]. Alrwashdeh, Emeadwali e Aljuhmani (2019) study also indicated a significant effect of product type between e-WOM on consumer purchase intention.

As it can be observed in the following graphic, there is an ordinal interaction between product type (dummy variable) and online consumer reviews. Only the main effect of online review was significant.

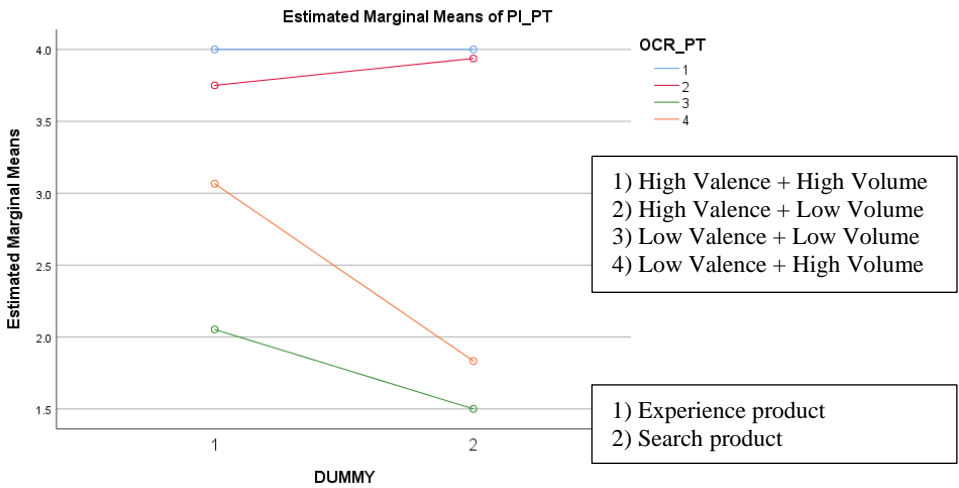


Figure 4. Interaction effect of product type and online consumer review scenario

Positive valence represents good electronic word-of-mouth and is one of the online review dimensions that consumers take into consideration when they buy products (purchase intention is higher than 3 in a scale from 1 to 5) as they are perceived as having more trustworthiness. When purchase intention is smaller than 3 in a scale from 1 to 5, the online review has a negative valence and it detain consumers from buying products as may be considered a risky action. Volume is the other dimension considered and high volume is good when valence is high and bad with valence is low. A high volume is associated to products' popularity on online platforms. The next table relates purchase intention of search products and experience products and the four scenarios of an online consumer review.

Table 5. Purchase intention (1-5) scenarios

Online Consumer Review Scenario	[1] Experience products	[2] Search products	Variation of mean of purchase intention of an experience product compared to a search product
[1] High Valence + High Volume	4	4	0
[2] High Valence + Low Volume	3.75	3.94	-0.19
[3] Low Valence + Low Volume	2.05	1.5	+0.55
[4] Low Valence + High Volume	3.07	1.83	+1.24
Total	3.19	2.77	+0.42

It was expected that high valence and volume reviews were the ones that influenced the most consumers to purchase, followed by reviews with high valence and lower popularity. Nevertheless, considering an online product review with low valence and high volume, for both cases, consumers preferred it over one with lower volume of negative scores. It can be perceived by consumers as being more trustworthy as includes a wider range of customers' evaluations. Thus, the purchase intention of search products is much lower when they have a negative rate than in comparison with experience products. As the choice of a search product is mainly based on its technical features, a low valence can be interpreted as low quality. Therefore, consumers do not intent to buy a product with a negative score. Valence assumes a crucial role in influencing the purchase intention of this type of product.

Regarding experience products, as their evaluation is more subjective (based on affective cues), consumers are not so rigorous with the score. Therefore, consumers still have the intention to buy an experience product even it has a negative valence. So, volume is the crucial dimension to influence purchase intention of consumers. These findings are according to Cui, Lui and Guo (2012) study results.

Overall, the purchase intention of an experience product is higher than the purchase intention of a search product when online reviews are displayed as Park and Lee (2009) study indicated. Consequently, the third hypothesis of this study is verified.

4.3. Questionnaire results

The following table summarises the main insights gathered about e-WOM, purchase intention, brand image and product type. In Appendix 19, there are the statistics descriptives for each item.

Table 6. Questionnaire Results

e-WOM 17 items	Individuals get to know about products and their characteristics mainly through websites (3.67/5) and ads & publicity (3.60/5).
	When consumers have the opportunity to buy a product, that they searched or came across online, through the internet or in the physical store, they still prefer to buy it in physical store. The respondents answered that when they buy in the traditional way is in a frequent basis (3.83/5) while buying online is only occasionally (2.61/5).
	Consumers answered that they frequently see online product reviews and evaluations (3.65/5).
	They agree that online reviews give information that they did not know about (3.79/5) and OCRs are important in the decision-making process (3.73/5). Consumers also agree that OCRs diminish the risk and uncertainty associated to the decision and buying process (3.54/5).
	Consumers prefer to buy products with a high score, i.e. between 4 and 5 stars (4.18/5) and that have a high number of reviews (4.08/5). However, if a product has a low score or a low number of reviews, they are neutral.
Purchase Intention 7 items	Consumers agree that is very important to them to make the right choice (4.47/5). They also agree that they take a while to inform themselves online about the advantages and disadvantages of the products/ brands (3.51/5) and take into consideration what other consumers share online about products/brands (3.64/5).
	Consumers agree that if they have a positive experience with a product they bought, they intent to buy it again (4,15/5). Thus, it is probable that they recommend to other people (4.24/5). However, if the experience is negative, consumers are more intended to evaluate/comment it online (2.72/5) than if the experience was positive (2.42/5).

Brand Image	Consumers are neutral regarding the brand image of a product they buy (3.09/5). They are indifferent if a brand is well-known/ strong or common or white-labelled (3.15/5). Thus, consumers are also indifferent whether brands are popular online (e.g. on websites and social media).
11 items	Consumers prefer brands that are associated to: 1) quality (4.28/5), 2) trust since they do not disappoint and consumers have already used it and will continue to do it (4.28/5), 3) affordable price (4.05/5), 4) similar personality (3.93/5), 5) products with the best technical features in the marketplace (3.91/5), 6) great reputation (3.75/5), 7) stability in the marketplace (3.5/5), 8) social status (2.3/5).
Product Type	Considering search products, consumers value more the rating (the valence) of the online review (3.93/5) rather than its popularity (3.15/5) that is represented by the number of consumer reviews. Regarding experience products, valence, and volume both contribute equality and positively to purchase intention (3.07/5).
4 items	

Comparing the data from other researches about online reviews with this one, the consumers of this sample consult less online reviews before making a purchase: 73% against 95% (G2.com, Inc 2019) [item EW8] and the trust rate is also lower, 61.8% vs. 84% (G2.com, Inc 2019) [item EW10]. The reasoning behind it is that Portuguese are still very conservative and traditional in the way they shop and inform themselves. However, in the future, the tendency is to these values increase as Internet is going to revolutionise even more the way we live. Furthermore, it was confirmed that the younger consumers aged between 18-30 years old are the ones that demand products with more reviews [item EW14]. The volume of reviews may be perceived by them as a synonym of authenticity and transparency [Appendix 20].

Considering negative reviews, 65,4% rather than the 95% defended by Reviewtrackers (2018) answered that they avoid buying products with a low score [item EW17]. This difference of values is because Portuguese are not so demanding, and they are more flexible. Notwithstanding, the percentage is still high because a low rate can be the result of low product quality or the lack of transparency about technical features information and, as a consequence, the majority of consumers do not feel comfortable buying products with bad reputation and that may not bring the benefits expected. Also, it was proved that the probability of a consumer to write a negative review is higher than a positive review: about 5.6% [items PI5-PI6]. A bad

experience always impacts more than a positive because expectations are not met taking into account the amount payed for the individual.

As the experimental design results also showed, there is a positive impact of high rated OCRs on purchase intention. The conclusions about product type are also similar (however, in the experimental design, experience product's purchase intention is only influenced by volume) and the consumers answered that there is no significant difference in the purchase intention of branded and non-branded products.

5. Conclusions

The purpose of this study was to contribute to the marketing research and examine the influence of e-WOM on purchase intention by including in the model brand image and product type as moderators. Nowadays, people of all ages have access to technological devices connected to the internet and are more interested in informing themselves about other consumers' experiences with products. As e-WOM is gaining importance, brands should leverage their knowledge about this type of communication channel in order to increase awareness and retention.

5.1. Main findings

This study confirmed that there is a significant main effect of online consumer reviews on purchase intention. Therefore, good e-WOM positively affects purchase intention and the first hypothesis was verified. Online consumer reviews' valence and volume were the dimensions used to study the variation of purchase intention more specifically.

Regarding brand image interaction effect with online consumer reviews on purchase intention, it was considered not significant. Furthermore, there is a similar purchase intention for both branded and non-branded products. Consequently, the second hypothesis is rejected because brand image does not negatively moderate the effect of e-WOM on purchase intention: weaker

brands/ non-branded products are not more purchased due to online reviews than stronger brands. Considering product type interaction effect with online consumer reviews on purchase intention, it was considered significant. Experience products have a stronger moderator role on the effect of e-WOM on purchasing intention than search products. As a consequence, the third hypothesis is verified.

5.2. Limitations and future research

This study has some limitations. First of all, the majority of participants of the empirical analysis were young adults and the sample was smaller than 200 people. Therefore, the sample should had been more representative of the overall population. However, due to time and resources constraints it was not possible. The experimental design should have been done differently: respondents should have been accessed to only one of the scenarios of brand image and product type. Furthermore, this study focused on quantitative online consumer reviews. Since written statements provide insights to consumers that complement the information from ratings, it would be interesting to investigate to what extent qualitative online consumer reviews and other types of electronic word-of-mouth impact purchase intention. Furthermore, purchase intention could be examined according to two channels: physical stores vs. online shopping. In future researches, it would be interesting to validate this theoretical model and apply the scales after being revised and adapted to the different industries and countries.

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7. Appendixes

Appendix 1. Overview of previous literature on OCR dimensions - *Kostyra et al. 2016*

Study	Object of study	Online Customer Review				Key findings regarding online customer reviews	Product	Type of good ^a	Experimental data ^b
		Valence	Volume	Variance	Interaction				
Amblee and Bui (2011)	Effect of reviews on sales rank	X	X			<ul style="list-style-type: none"> • Valence not significant • Volume significant 	Short stories	e	
Chen et al. (2011)	Differential and interaction effects of WOM and observational learning	X	X			<ul style="list-style-type: none"> • Negative word-of-mouth more influential than positive WOM • Observational learning has a positive effect on sales, whereas negative observational learning has no effect • WOM shows a diminishing effect over lifetime 	Cameras	s	
Chevalier and Mayzlin (2006)	Effect of reviews on relative sales	X	X			<ul style="list-style-type: none"> • Relative sales improve with better valence for Amazon but not for BN • Volume improves relative sales for Amazon 	Books	e	
Chintagunta et al. (2010)	Impact of reviews on box office sales	X	X	X	x	<ul style="list-style-type: none"> • Valence is important in the prediction of sales, not volume and variance • Interactions are not important 	Movies	e	
Clemons et al. (2006)	Predictive power of electronic WOM for product sales growth	X	X	X		<ul style="list-style-type: none"> • Logarithm of volume is not significant • Variance is significantly correlated with sales growth • Average valence is significant • After splitting valence, only mean top quartile remains significant 	Beer	e	
Cui et al. (2012)	Effect of online reviews on new product sales (search vs. experience good)	X	X			<ul style="list-style-type: none"> • Valence and volume are significant • Valence has a stronger impact than volume on search goods • For experience goods, this relation switches 	Consumer electronics & video games	e/s	
Dellarocas et al. (2007)	Ability of electronic WOM to forecast box office sales	X	X			<ul style="list-style-type: none"> • Valence and volume show a significant relationship with future box office sales 	Movies	e	
Dhar and Chang (2009)	Predicting sales with electronic WOM	X	X			<ul style="list-style-type: none"> • Valence significant for a one week-ahead prediction in a fixed effects model • Volume (of customer reviews) is not implemented in the model 	Music albums	e	
Duan et al. (2008)	Impact of electronic WOM on box office revenue	X	X			<ul style="list-style-type: none"> • Valence does not influence sales • Volume is significantly associated with revenue 	Movies	e	
Ho-Dac et al. (2013)	Explanatory power of OCRs and brand equity for Blu-Ray and DVD revenue	X	X			<ul style="list-style-type: none"> • OCRs have a significant impact on the sales of weak brands • OCRs have no significant impact on the sales of strong brands • OCRs aid the transition from a weak to a strong brand 	Blu-Ray & DVD	s	
Jang et al. (2012)	Influence of reviews on consideration set and choice; estimation of the monetary value of review change	X	X	X		<ul style="list-style-type: none"> • Monetary value of increase in valence is positive • Monetary value of increase in volume (less important) and impact of variance depends on prior perceived quality 	Hotels	e	ed
Kostyra and Reiner (2012)	Impact of OCRs design on OCRs evaluation	X				<ul style="list-style-type: none"> • Valence has a significant and positive effect on choice 	Games	e	ed
Moe and Trusov (2011)	Dynamics of online product ratings	X	X	X		<ul style="list-style-type: none"> • Rating dynamics can substantially affect future ratings • Rating dynamics can have direct and indirect effects • Positive direct effect of valence on sales • No direct effect of variance and volume on sales 	Bath, fragrance, and beauty products	e/s	
Sun (2012)	Effect of reviews on sales rank	X	X	X	x	<ul style="list-style-type: none"> • Impact of volume is positive and significant for Amazon • Valence is significant for Amazon but not for BN • Interaction of valence and variance is 	Books	e	

Study	Object of study	Online Customer Review				Key findings regarding online customer reviews	Product	Type of good ^a	Experimental data ^b
		Valence	Volume	Variance	Interaction				
Zhu and Zhang (2010)	Impact of OCRs on sales	X	X	X		significant; higher variance increases relative sales when valence is low, and higher valence increases relative sales when variance is low • Valence and variance are significant for less popular games with an online mode • Volume is significant for popular and less popular games with an online mode	Console games	e	
This Study	Effect of OCRs on product choice	X	X	X	X	• Valence has a positive, direct effect on product choice • Volume positively moderates high valence (only) • Variance negatively moderates high and medium valence • Online customer reviews draw importance from brand relevance, price sensitivity, and technical product characteristics • Average willingness-to-pay for a one-star increase in online customer reviews is €48.96 for an eBook reader	eBook reader	s	ed

BN = Barnes & Noble; WOM = word-of-mouth.
 OCRs = online customer reviews.
^a e = experience good and s = search product.
^b ed = experimental data are used.

Appendix 2. Survey

Caro (a) Participante,

O objetivo deste inquérito é entender como é que a intenção de compra de um indivíduo é influenciada pela opinião e avaliação dos produtos por parte de outros consumidores e como é que a marca e o tipo de produto podem impactar a intenção de compra. A análise deste inquérito é destinada à realização de uma dissertação final de Mestrado em Gestão (Nova SBE).

Todos os dados constantes do inquérito serão tratados de forma confidencial e anónima, sendo os resultados do mesmo sempre reportados de forma agregada, e não individualizando qualquer resposta.

Idade mínima de preenchimento: 18 anos.

Duração aproximada: 6 minutos.

R1

Imagine que procura um produto na Internet e que este está avaliado da seguinte forma...

Clique na imagem



Qual é a probabilidade de o comprar?



R2

Imagine que quer comprar um pólo branco masculino.
Considerando a seguinte imagem...

Clique na imagem



Qual é a probabilidade de o comprar?



R3

Considere o seguinte produto



Imagine que o procura num website de compras online e está avaliado da seguinte forma...

Clique na imagem



Qual é a probabilidade de o comprar?



R4

Considere agora este produto



Ele está avaliado pelos consumidores de um website de compras online da seguinte forma...

Clique na imagem



Qual é a probabilidade de o comprar?



R5

Imagine que quer comprar um livro através de um website (exemplo: Amazon.com)
O livro que escolheu tem a seguinte avaliação.

Clique na imagem



Depois desta informação, seria provável comprá-lo?



R6

Imagine agora que pretende investir o dinheiro num tablet. O tablet que escolheu tem a seguinte avaliação.

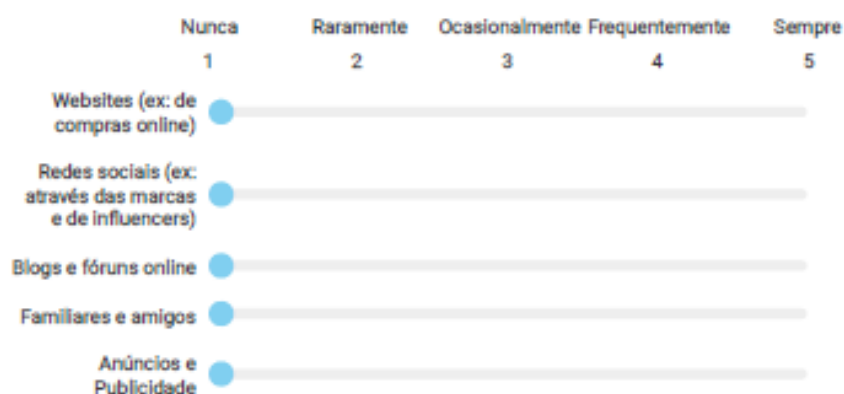
Clique na imagem



Depois desta informação, seria provável comprá-lo?



Toma conhecimento sobre os produtos e suas características através de:



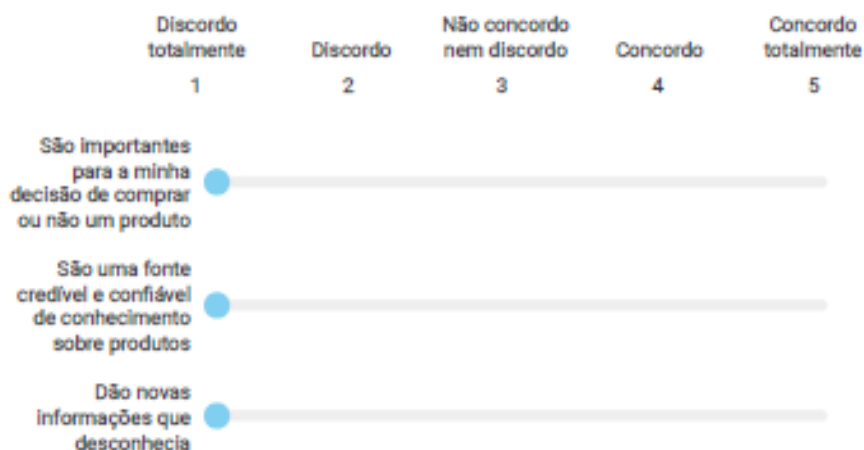
Quando sou influenciado (em websites e redes sociais) para comprar um produto que pode ser adquirido online...



Costumo ver comentários e avaliações de produtos na Internet.



Os comentários online sobre os produtos...





Tendo em conta o formato de avaliação de um produto presente nesta imagem, responda à questão seguinte.



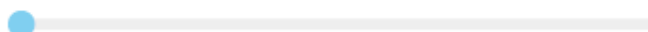
Indique o grau de concordância com as seguintes afirmações.



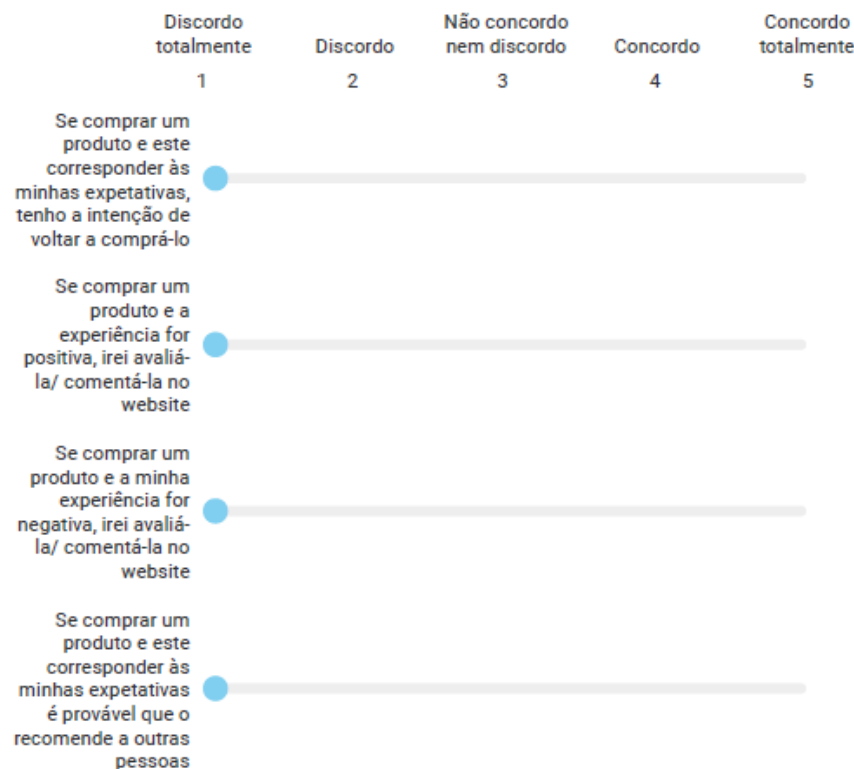
Na intenção de compra....



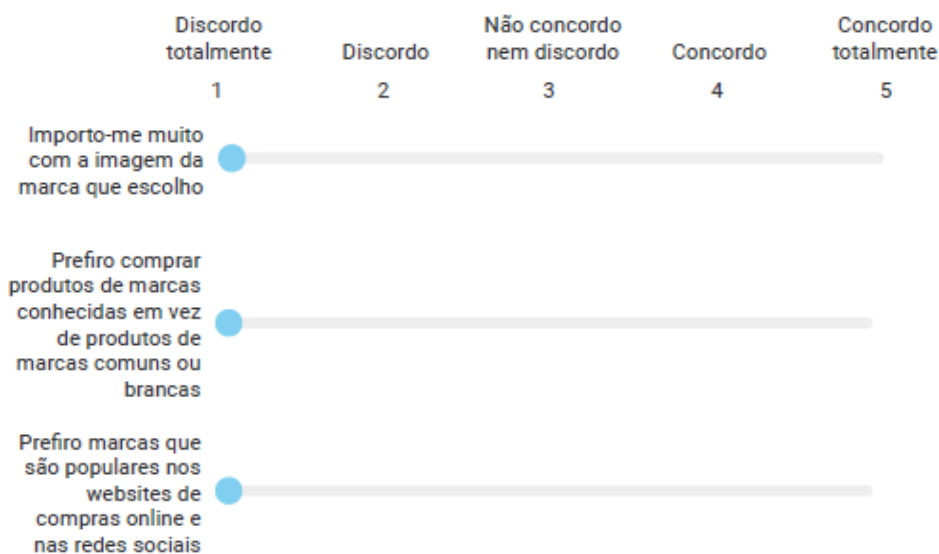
Tenho em consideração as opiniões que os outros partilham online sobre os produtos/ marcas



Indique o grau de concordância quanto às seguintes afirmações.



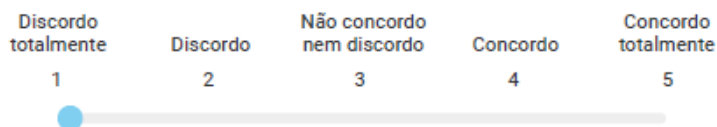
Comparando as marcas existentes no mercado para um mesmo produto, percebo que...



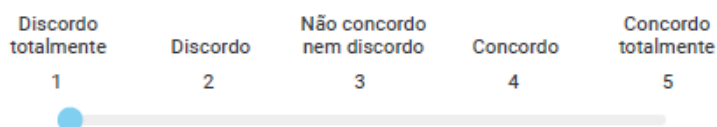
Prefiro escolher marcas que ...



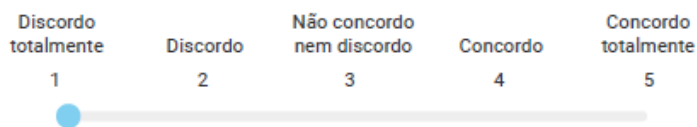
Quando quero comprar um produto cujas características técnicas e performance são importantes (ex: aparelho tecnológico), tenho a intenção de comprar um que tenha boa avaliação num website de compras online.



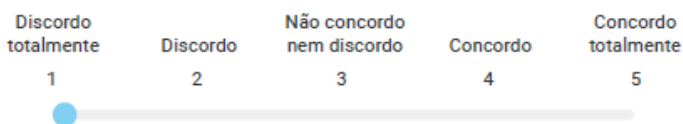
Quando quero comprar um produto cujas características técnicas e performance são importantes (ex: aparelho tecnológico), tenho a intenção de comprar aquele que é considerado um dos mais populares na sua categoria num website de compras online.



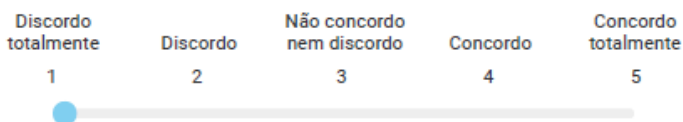
Quando quero comprar um produto que é caracterizado por ser subjetivo (ex: filme), tenho a intenção de comprar um que tenha boa avaliação num website de compras online.



Quando quero comprar um produto que é caracterizado por ser subjetivo (ex: filme), tenho a intenção de comprar um que tenha boa avaliação num website de compras online.



Quando quero comprar um produto que é caracterizado por ser subjetivo (ex: filme), tenho a intenção de comprar aquele que é considerado um dos mais populares na sua categoria num website de compras online.



Dados Pessoais

Género

- Feminino
- Masculino

Idade

- 18 - 30 anos
- 31 - 40 anos
- 41 - 50 anos
- 51 - 60 anos
- > 61 anos

Nível de Escolaridade (concluído ou a concluir)

- Até ao 9º ano
- Secundário
- Licenciatura
- Mestrado
- Doutoramento
- Outro

Ocupação

- Estudante
- Trabalhador - estudante
- Trabalhador por conta de outrem
- Trabalhador por conta própria
- Reformado
- Desempregado
- Outro

Appendix 3 - The measurement of research constructs

Item	e-WOM
<i>You know about products and their characteristics through:</i>	
EW1	Websites (namely online shopping websites)
EW2	Social media (e.g. from the brands and influencers)
EW3	Blogs and forums
EW4	Family and friends
EW5	Advertisements and publicity
<i>When I am influenced (online) to buy a product that can be bought through the internet:</i>	
EW6	I buy it online
EW7	I buy it in the physical store
EW8	<i>I usually see product reviews and ratings on the internet</i>
<i>Online reviews about products...</i>	
EW9	Are important to decide whether to buy a product or not
EW10	Are a credible and trustworthy source of knowledge about products
EW11	Give new information that I did not know about
EW12	Are generally easy to understand (clear and objective)
EW13	Mitigate the risks and uncertainty of the decision-making process
Indicate if you agree or not with the following statements	
EW14	I prefer to buy products with a high number of reviews
EW15	If a product has reduced number of reviews, I will not buy it
EW16	I prefer to buy products with a high rating (4 to 5 stars)
EW17	If a product has a low rating (1 to 3 stars), I will not buy it
Purchase intention & decision	
PI1	It is very important to me to make the right choice
PI2	I take a lot of time informing myself about the advantages and disadvantages of the products/ brands that are written online
PI3	I take into consideration the opinions of other consumers that share online about products/ brands
PI4	If I buy a product and it is according to my expectations, I have the intention of buying it again
PI5	If the experience with the product purchased is positive, I will rate it/ make a review on the website
PI6	If the experience with the product purchased is negative, I will rate it/ make a review on the website
PI7	If I buy a product and it is according to my expectations, it is probable that I recommend it to other people
Brand Image	
BI1	I really care with the image of the brand that I choose
BI2	I prefer to buy products from well-known brands instead of common brands and white-labelled products
BI3	I prefer popular brands on online shopping websites and social media
I prefer to choose brands that:	
BI4	Have more quality
BI5	Have a price more appealing
BI6	Have the products with the best technical characteristics in the market
BI7	Do not let me down (I have already utilised, and I will continue to do it)
BI8	Have a better reputation in their sector
BI9	Are a source of social status

- BI10** Are stable in the market
- BI11** Have something that I identify myself with (similar personality)

Product Type	
PT1	When I want to buy a product that its technical features and performance are important (e.g. electronic devices), I intent to purchase one that has a good evaluation (rating)
PT2	When I want to buy a product that its technical features and performance are important (e.g. electronic devices), I intent to purchase one that is popular in its category
PT3	When I want to buy a product that is subjective (e.g. a film), I intent to purchase one that has a good evaluation (rating)
PT4	When I want to buy a product that is subjective (e.g. a film), I intent to purchase one that is popular in its category

Appendix 4. Reliability analysis – variance explained by the four main factors.

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.787	18.109	18.109	7.787	18.109	18.109	6.984	16.241	16.241
2	3.473	8.076	26.185	3.473	8.076	26.185	3.784	8.800	25.041
3	2.932	6.819	33.004	2.932	6.819	33.004	3.026	7.037	32.079
4	2.353	5.472	38.476	2.353	5.472	38.476	2.751	6.397	38.476

Appendix 5. Reliability analysis - KMO and Bartlett’s Test

KMO and Bartlett’s Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.719	
Barlett’s Test of Sphericity	Approx. Chi-Square	2346.598
	Df	903
	Sig.	0.000

Appendix 6 – Sample profile - Gender

		Gender			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	91	66.4	66.4	66.4
	2	46	33.6	33.6	100.0
	Total	137	100.0	100.0	

Appendix 7 – Sample profile - Age

		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	107	78.1	78.1	78.1
	2	2	1.5	1.5	79.6

	3	14	10.2	10.2	89.8
	4	11	8.0	8.0	97.8
	5	3	2.2	2.2	100.0
	Total	137	100.0	100.0	

Appendix 8 – Sample profile – Educational level

		Educational_level			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	13	9.5	9.5	9.5
	3	65	47.4	47.4	56.9
	4	59	43.1	43.1	100.0
	Total	137	100.0	100.0	

Appendix 9 – Sample profile – Occupation

		Occupation			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	76	55.5	55.5	55.5
	2	9	6.6	6.6	62.0
	3	48	35.0	35.0	97.1
	4	1	.7	.7	97.8
	5	1	.7	.7	98.5
	6	2	1.5	1.5	100.0
	Total	137	100.0	100.0	

Appendix 10. T-tests assumptions – The effect of brand (image) on purchase intention

Table 4 – T-test Assumptions

Assumption #1	The dependent variable, in this case purchase intention, was measure on a continuous scale from 1 to 5.
Assumption #2	The independent variable, brand image, consisted of two independent groups: branded product and non-branded product.
Assumption #3	Observations should be independent, so there is no relationship of observations in each group and between groups. Therefore, independence is related to the sampling procedure. These observations are a random sample of the population.
Assumption #4	There should be no significant outliers. Since it was used a Linkert scale (1 to 5), there are not really high or low values.

Assumption #5

The dependent variable should be approximately normally distributed for each group of the independent variable.

Kolmogorov-Smirnoff and Shapiro-Wilk were the two tests of normality used in SPSS. Both p-values (0.00) were smaller than the significance level (0.05) and, therefore, we can reject with 95% confidence the null hypothesis that states the data are from a normally distributed population. Histograms were plotted to observe the distributions, confirming the previous findings. Since the sample size is higher than 30, the results are still valid because the model estimates are asymptotically normally distributed due to the Central Limit Theorem.

Tests of Normality

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
R2.0		Statistic	df	Sig.	Statistic	df	Sig.
R2.1	1	.242	68	.000	.882	68	.000
	2	.206	69	.000	.889	69	.000

a. Lilliefors Significance Correction

Assumption #6

There needs to be homoscedasticity. Levene’s test was performed in SPSS. Since the p-value (0.148) is higher than the significance level of 0.05, the null hypothesis cannot be rejected (with 95% of confidence) and therefore, there is homogeneity of variances.

Levene's Test for Equality of Variances

		F	Sig.	t	df	Sig. (2-tailed)
R2.1_1	Equal variances assumed	2.120	.148	.576	135	.565
	Equal variances not assumed			.576	132.259	.566

Appendix 11. Purchase intention of branded and non-branded products

Group Statistics

R2.0		N	Mean	Std. Deviation	Std. Error Mean
R2.1_1	1	68	3.12	1.113	.135
	2	69	3.01	.978	.118

Appendix 12. ANOVA assumptions - The effect of e-WOM on purchase intention

Table 4 – ANOVA Assumptions

Assumption #1	The dependent variable, in this case purchase intention, was measure on a continuous scale from 1 to 5.
Assumption #2	The independent variable, brand image, consisted of two independent groups: branded product and non-branded product.
Assumption #3	Observations should be independent, so there is no relationship of observations in each group and between groups. Therefore, independence is related to the sampling procedure. These observations are a random sample of the population.
Assumption #4	There should be no significant outliers. Since it was used a Linkert scale (1 to 5), there are not really high or low values.

Assumption #5

The dependent variable should be approximately normally distributed for each group of the independent variable.

Kolmogorov-Smirnoff and Shapiro-Wilk were the two tests of normality used in SPSS. The p-values (0.00) were smaller than the significance level (0.05) and, therefore, we can reject with 95% confidence the null hypothesis that states the data are from a normally distributed population. Histograms were plotted to observe the distributions, confirming the previous findings. Since the sample size is higher than 30, the results are still valid because the model estimates are asymptotically normally distributed due to the Central Limit Theorem.

Tests of Normality

	R1.0	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
R1.1	1	.275	32	.000	.794	32	.000
	2	.267	36	.000	.866	36	.000
	3	.239	31	.000	.877	31	.002
	4	.304	38	.000	.774	38	.000

a. Lilliefors Significance Correction

Assumption #6

There needs to be homoscedasticity. Levene's test was performed in SPSS. Since the p-value (0.133) is higher than the significance level of 0.05, the null hypothesis cannot be rejected (with 95% of confidence) and therefore, there is homogeneity of variances.

Levene's Test of Equality of Error Variances^{a,b}

		Levene Statistic	df1	df2	Sig.
R1.1	Based on Mean	1.900	3	133	.133
	Based on Median	1.058	3	133	.369
	Based on Median and with adjusted df	1.058	3	127.643	.370
	Based on trimmed mean	1.610	3	133	.190

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Dependent variable: R1.1

b. Design: Intercept + R1.0

Appendix 13. Main effect of e-WOM on purchase intention

Tests of Between-Subjects Effects

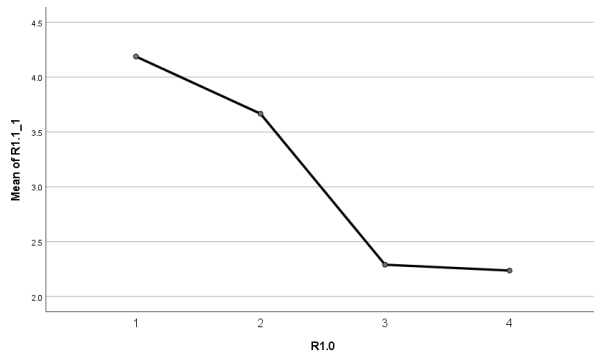
Dependent Variable: R1.1

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^b
Corrected Model	97.986 ^a	3	32.662	54.212	.000	.550	162.637	1.000
Intercept	1303.531	1	1303.531	2163.590	.000	.942	2163.590	1.000
R1.0	97.986	3	32.662	54.212	.000	.550	162.637	1.000
Error	80.131	133	.602					
Total	1478.000	137						
Corrected Total	178.117	136						

a. R Squared = .550 (Adjusted R Squared = .540)

b. Computed using alpha = .05

Appendix 14. Influence of e-WOM levels (four scenarios of OCR) on purchase intention.



Appendix 15. ANOVA Assumptions - Brand image influence on the effect of e-WOM on purchase intention.

Assumption #1	The dependent variable, in this case purchase intention, was measure on a continuous scale from 1 to 5.
Assumption #2	The independent variable, brand image, consisted of two independent groups: branded product and non-branded product.
Assumption #3	Observations should be independent, so there is no relationship of observations in each group and between groups. Therefore, independence is related to the sampling procedure. These observations are a random sample of the population.
Assumption #4	There should be no significant outliers. Since it was used a Linkert scale (1 to 5), there are not really high or low values.

The dependent variable should be approximately normally distributed for each group of the independent variables .

Kolmogorov-Smirnoff and Shapiro-Wilk were the two tests of normality used in SPSS. The p-values = 0.00 were smaller than the significance level (0.05) and, therefore, we can reject with 95% confidence the null hypothesis that states the data are from a normally distributed population.

Assumption #5

Tests of Normality

	DUMMY	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
PI_BI	1	.191	68	.000	.887	68	.000
	2	.188	69	.000	.910	69	.000

a. Lilliefors Significance Correction

Tests of Normality

	OCR_BI	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
PI_BI	1	.273	36	.000	.850	36	.000
	2	.317	28	.000	.830	28	.000
	3	.263	34	.000	.868	34	.001
	4	.223	39	.000	.855	39	.000

a. Lilliefors Significance Correction

The histograms were plotted to observe the distributions, confirming the previous findings. Nevertheless, since the sample size is higher than 30, the results are still valid because the model estimates are asymptotically normally distributed due to the Central Limit Theorem.

Assumption #6

There needs to be homoscedasticity. Levene’s test was performed in SPSS. Since the p-value = 0.675 is higher than the significance level of 0.05, the null hypothesis cannot be rejected (with 95% of confidence) and therefore, there is homogeneity of variances.

Levene's Test of Equality of Error Variances^{a,b}

		Levene Statistic	df1	df2	Sig.
PI_BI	Based on Mean	.696	7	129	.675
	Based on Median	.594	7	129	.760
	Based on Median and with adjusted df	.594	7	119.740	.760
	Based on trimmed mean	.626	7	129	.733

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Dependent variable: PI_BI

b. Design: Intercept + DUMMY + OCR_BI + DUMMY * OCR_BI

Appendix 16. Main effects and interaction effects - Brand image influence on the effect of e-WOM on purchase intention.

Tests of Between-Subjects Effects

Dependent Variable: PI_BI

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^e
Intercept	Hypothesis	1121.885	1	1121.885	41.797	.007	.933	41.797	.982
	Error	80.607	3.003	26.841 ^a					
DUMMY	Hypothesis	.005	1	.005	.006	.943	.002	.006	.050
	Error	2.717	3.096	.878 ^b					
OCR_BI	Hypothesis	81.532	3	27.177	31.055	.009	.969	93.165	.976
	Error	2.625	3	.875 ^c					
DUMMY * OCR_BI	Hypothesis	2.625	3	.875	.821	.484	.019	2.464	.224
	Error	137.427	129	1.065 ^d					

a. .987 MS(OCR_BI) + .013 MS(Error)

b. .987 MS(DUMMY * OCR_BI) + .013 MS(Error)

c. MS(DUMMY * OCR_BI)

d. MS(Error)

e. Computed using alpha = .05

Appendix 17. ANOVA Assumptions – Product type influence on the effect of e-WOM on purchase intention

Assumption #1	The dependent variable, in this case purchase intention, was measure on a continuous scale from 1 to 5.
Assumption #2	The independent variable, brand image, consisted of two independent groups: branded product and non-branded product.
Assumption #3	Observations should be independent, so there is no relationship of observations in each group and between groups. Therefore, independence is related to the sampling procedure. These observations are a random sample of the population.
Assumption #4	There should be no significant outliers. Since it was used a Linkert scale (1 to 5), there are not really high or low values.

The dependent variable should be approximately normally distributed for each group of the independent variables .

Kolmogorov-Smirnoff and Shapiro-Wilk were the two tests of normality used in SPSS. The p-values = 0.00 were smaller than the significance level (0.05) and, therefore, we can reject with 95% confidence the null hypothesis that states the data are from a normally distributed population.

Assumption #5

Tests of Normality

	DUMMY	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
PI_PT	1	.190	68	.000	.903	68	.000
	2	.201	69	.000	.872	69	.000

a. Lilliefors Significance Correction

Tests of Normality

	OCR_PT	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
PI_PT	1	.271	35	.000	.841	35	.000
	2	.344	32	.000	.802	32	.000
	3	.276	37	.000	.771	37	.000
	4	.183	33	.006	.884	33	.002

a. Lilliefors Significance Correction

The histograms were plotted to observe the distributions, confirming the previous findings. Nevertheless, since the sample size is higher than 30, the results are still valid because the model estimates are asymptotically normally distributed due to the Central Limit Theorem.

Assumption #6

There needs to be homoscedasticity. Levene's test was performed in SPSS. Since the p-value = 0.367 is higher than the significance level of 0.05, the null hypothesis cannot be rejected (with 95% of confidence) and therefore, there is homogeneity of variances.

Levene's Test of Equality of Error Variances^{a,b}

		Levene Statistic	df1	df2	Sig.
PI_PT	Based on Mean	1.100	7	129	.367
	Based on Median	.831	7	129	.563
	Based on Median and with adjusted df	.831	7	118.686	.563
	Based on trimmed mean	1.037	7	129	.409

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Dependent variable: PI_PT

b. Design: Intercept + OCR_PT + DUMMY + OCR_PT * DUMMY

Appendix 18. Main effects and interaction effects – Product type influence on the effect of e-WOM on purchase intention.

Tests of Between-Subjects Effects

Dependent Variable: PI_PT

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^e
Intercept	Hypothesis	1240.443	1	1240.443	28.842	.011	.902	28.842	.940
	Error	134.533	3.128	43.008 ^a					
DUMMY	Hypothesis	5.439	1	5.439	1.625	.292	.351	1.625	.149
	Error	10.053	3.003	3.347 ^b					
OCR_PT	Hypothesis	123.004	3	41.001	12.230	.034	.924	36.691	.736
	Error	10.057	3	3.352 ^c					
DUMMY * OCR_PT	Hypothesis	10.057	3	3.352	3.833	.011	.082	11.500	.810
	Error	112.818	129	.875 ^d					

a. MS(DUMMY) + .998 MS(OCR_PT) - .998 MS(DUMMY * OCR_PT)

b. .998 MS(DUMMY * OCR_PT) + .002 MS(Error)

c. MS(DUMMY * OCR_PT)

d. MS(Error)

e. Computed using alpha = .05

Appendix 19. Questionnaire results

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
EW_1	3.67	.979	137
EW_2	2.72	1.050	137
EW_3	2.36	1.206	137
EW_4	3.60	1.018	137
EW_5	2.88	1.088	137
EW_6	2.61	.918	137
EW_7	3.83	.974	137
EW_8	3.65	1.047	137
EW_9	3.73	.935	137
EW_10	3.09	.827	137
EW_11	3.79	.799	137
EW_12	3.36	.976	137
EW_13	3.54	.985	137
EW_14	4.08	.841	137
EW_15	2.77	.899	137
EW_16	4.18	.833	137
EW_17	3.27	1.115	137

PI_1	4.47	.708	137
PI_2	3.51	1.092	137
PI_3	3.64	.873	137
PI_4	4.15	.723	137
PI_5	2.42	1.129	137
PI_6	2.70	1.239	137
PI_7	4.24	.743	137
BI_1	3.09	.996	137
BI_2	3.15	1.049	137
BI_3	2.66	1.009	137
BI_4	4.28	.615	137
BI_5	4.05	.869	137
BI_6	3.91	.809	137
BI_7	4.26	.728	137
BI_8	3.75	.906	137
BI_9	2.30	1.127	137
BI_10	3.50	1.001	137
BI_11	3.93	.997	137
PT_1	3.89	.952	137
PT_2	3.15	.936	137
PT_3	3.07	1.052	137
PT_4	3.07	1.086	137
Gender	1.34	.474	137
Age	1.55	1.098	137
Educational_level	3.34	.645	137
Occupation	1.89	1.109	137

Appendix 20. Purchase intention of buying a product with a high volume

Report

EW_14

Age	Mean	N	Std. Deviation
18-30	4.20	107	.818
31-40	3.50	2	.707
41-50	3.71	14	.825
51-60	3.64	11	.924
>61	3.67	3	.577
Total	4.08	137	.841

