

Analyzing Consumer Responses to *Warwashing* Amidst the Russia-Ukraine Conflict: A  
Comparative Study of Portuguese and Danish Perspectives

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## **Abstract**

The ongoing Russia-Ukraine conflict has had significant repercussions for businesses, with many scaling back operations in Russia due to international sanctions. However, some companies continue operating there while making superficial gestures to appear supportive of the oppressed side (a practice known as "warwashing"). These actions conflict with profit motives and contribute to consumer skepticism and potential boycotts.

This study examines how Portuguese and Danish consumers respond to warwashing, aiming to assess if cultural differences influence reactions. A quantitative survey, including nine questions based on literature and key differences between the two countries, was conducted using a deductive approach. Results were analyzed via JMP statistical software, with paired t-tests applied. Findings reveal a significant difference in reactions between Portuguese and Danish consumers, with Danish consumers showing a heightened response, engaging more frequently in impactful actions. This aligns with Hofstede's cultural model, which portrays Danes as more open to change and expecting transparency.

Boycott theory is also supported, suggesting that Danes are more inclined to boycott products and services, while Portuguese consumers show less faith in the effectiveness of such actions. This cross-country comparison reaffirms Hofstede's Cultural Value Dimensions, providing insight into real-world cultural differences. Additionally, the study highlights the concept of collective action, where individuals avoid certain products or services as a form of protest, revealing variations in the prevalence of this behavior across different societies.

**Keywords:** warwashing, boycott, Russia, social media, consumer behavior.

## 1. Introduction

The Russia-Ukraine war started in 2014, but the conflict escalated on 24/2/2022 with the invasion of Ukraine, which became the largest attack on a European country since World War II. Two years after the initial invasion, estimated fatalities are over 11,000, according to Statista (2024), and the casualties are more than double. The impacts of this event extend from humanitarian to a refugee crisis, with long-term effects on demographics, but also affect other dimensions such as environmental and economic ones. According to a study conducted by Yale University<sup>3</sup>, one of those economic consequences was the withdrawal of operations that some companies pertained in Russia. Others were subsequently added to an initial list of only some dozens of companies. There are presently over 1,000 companies that have publicly announced that they would voluntarily curtail operations in Russia, in some cases totally and in others to a bare minimum legally required by international sanctions. Some others, however, are still operating in Russia and actively hiring in that country, and others are conducting business as usual. The decisions of the boards of these companies have an effect on consumers' purchasing decisions. While some seem indifferent to the event, others are sensitive to these decisions and boycott the purchases of those who decide to remain. Consequently, we have witnessed other firms that, despite continuing their operations as usual in Russia, engage in superficial gestures or actions to portray themselves as supportive of the oppressed part of this conflict (war washing) or peace efforts while potentially engaging in actions that contradict those gestures, such as profiting from the presence in Russia and that wait to contribute for the economy of the country.

In July 2022, Lego, the Danish plastic toy brand, withdrew all its operations in Russia while closing 81 stores due to the war conflict with Ukraine (Zakir-Hussain, 2022). The company feared a backlash from continuing to operate in Russia and felt pressure from customers to abandon the country to show its sympathy towards the Ukrainian population. Auchan and Leroy Merlin, for example, were considered to be allegedly supplying the Russian military fighting Ukraine<sup>4</sup>, and Heineken, Unilever, and Mondelez are being accused of breaking promises to leave Russia<sup>5</sup>, even with consumers boycotting or threatening to boycott their products<sup>6</sup>. The initial statements of firms like these led consumers to think that they were standing against the war and would do everything possible not to contribute to the continuous development of the economy of Russia. However, that was not what actually happened, leading to another situation of “washing” that may fall in the “color wash” category, that is, the use of an umbrella

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<sup>3</sup> Available at <https://som.yale.edu/story/2022/over-1000-companies-have-curtailed-operations-russia-some-remain>, consulted 4/4/2024.

<sup>4</sup> According to <https://www.business-humanrights.org/en/latest-news/russia-auchan-allegedly-supports-soldiers-fighting-in-ukraine-despite-french-management-denials-recent-investigation-reveals-more-proofs/>, consulted 4/4/2024.

<sup>5</sup> See <https://edition.cnn.com/2023/07/10/business/russia-companies-leaving-putin/index.html>, consulted at 4/4/2024.

<sup>6</sup> See <https://www.reuters.com/business/retail-consumer/mondelez-singled-out-boycott-over-russia-business-memo-2023-06-16/>, consulted 4/4/2024.

term for the profit-driven practice of companies and brands to deceptively communicate unsubstantiated values in products and services in order to appeal and market them better to socially and environmentally aware consumers (Parkman & Krause, 2018). Still, the way consumers are more sensitive to the causes and the way they understand their individual attitudes and behaviors are likely to have substantial repercussions that may vary from culture to culture and from country to country, and as such, we may have countries for whom some causes are more sensitive than others, and consumers that are more sensitive to values than others (Albrecht et al. 2013). In any case, being subject to a boycott is a situation that any firm would wish to avoid due to effects that can harm the brand sales directly (consumption of the brand is withheld) or indirectly (other products of the same company suffer side effects) (Friedman, 1991) and these effects may be prolonged throughout time, even when the reason for boycott extinguishes or diminishes (Ettenson & Klein, 2005).

This research aims to establish a cross-cultural study of consumer behavior between Portuguese and Danish consumers based on social media warwashing during events surrounding the Russia-Ukraine war. It will analyze the similarities and differences among these consumers to anticipate and predict what drives and impacts consumers' attitudes toward warwashing events and conflicts in Russia and Ukraine. Moreover, it will examine if cultural aspects play a significant role and see whether there is a disequilibrium concerning credibility towards social media warwashing for consumers in Portugal and Denmark. Concerning the similarities and differences, another interesting research point will be examining and evaluating different warwashing strategies. Are consumers more likely to boycott certain warwashing strategies than others? This study attempts to close a research gap that has not yet been studied. The war conflict in Eastern Europe is very recent, and not much research has been conducted up until now. Consumer behavior is a widely studied social, psychological, and economic area. However, there does not seem to be any existing literature or research regarding how consumer behaviors change when a force majeure event such as war occurs. Therefore, studying whether wars impact consumers in Portugal and Denmark differently than in more ordinary events is fascinating. For this reason, it can potentially add to the existing literature on the general topic. This study aims to contribute by providing a very contemporary point of view evaluating two countries that are rarely compared.

Considering this, this research will answer the following research question: how do Portuguese and Danish consumers respond to social media warwashing amid the Russia-Ukraine war conflict? The research question implies a two-sided perspective in which a comparative analysis between Portuguese and Danish consumers will effectively answer this research question.

## **2. Literature Review**

### **2.1 Colorwashings**

Much literature has already been piloted about the term "greenwashing". In its essence, greenwashing means that organizations lie about their activities and practices for being environmentally sustainable when they are not. Furthermore, previous research suggests that companies only have serious reputational ramifications if the consumers are convinced that the firm deliberately tried to greenwash to gain an advantage or preference (de Jong et al., 2020). Bluewashing is another type of washing that corporations do. It is similar to greenwashing but focuses more on benefitting societies and communities. A study on sustainable fashion marketing on Instagram during Black Friday indicates significant pressure on firms to follow the velocity of trends like Black Friday (Sailer et al., 2022). Contrarily to greenwashing and bluewashing, pinkwashing is a newer phenomenon that encompasses firms lying about activities or practices towards LGBT rights, as well as actions to support democracies and liberty for individuals in general. Nowadays, customers are more aware of pinkwashing, and consumers lose trust, get confused, and even boycott products/services that are believed to be pinkwashing (Schoier & de Luca, 2017).

For this study, it will be thought-provoking to dig deeper and explore whether or not this is universal or if consumers react differently across countries such as Portugal and Denmark.

### **2.2 Warwashing**

Now that we have established the existing literature on color washings and gained a better understanding, this study will also benefit from introducing warwashing as a term. This research paper is concentrated on warwashing. Although the concept of warwashing has not been used before, and this is the first study officially labeling warwashing, it is essential to have a clear grasp of what it implies. It is linked to the other washings previously described, and it denotes that firms try to take advantage of washing activities and operations related to war events.

For example, in the case of the Russia-Ukraine war, warwashing has multiple facets. On the one hand, the literature suggests that companies keeping operations in Russia risk running major setbacks and an elevated threat of consumers declining brand favorability (Frisbie, 2022). Therefore, many worldwide firms, such as Mercedes-Benz and Carlsberg, have pulled activities out of Russia (Ivanova & Gibson, 2022). Some companies not pulling out of Russia try to wash their activities or deny claims against them, as is the case of Auchan, McDonald's, Pepsi, Bajaj Auto, Benetton, or Kawasaki, for example, to name a few, with the three first - at least - to have promised to review their presence in that country, which eventually did not translate in any abandonment.

Additionally, warwashing also revolves around companies claiming to aid Ukraine and its population. As mentioned, Carlsberg is one of the companies that pulled out of Russia. At the same time, the company has faced challenges from consumers to communicate its support to Ukrainians while

running the risk of losing Russian customers (Obitsø, 2022). On the Portuguese side, Farfetch also informed us that it would suspend the delivery of its luxury products in Russia. In this regard, we can say that several corporations were very clear and timely in communicating their intentions to stand up for their values. Consumer pressure has led some firms to advertise their help to Ukraine on social media without providing help but to gain a positive image from the general public. This way, many firms felt pressured to affirm their positions. However, the literature on the topic differs from traditional washings in that it focuses more on washing related to firms claiming to support victims of war or pulling out activities in war countries. Actually, this was the option many companies took as an alternative to a firmer and more committed decision of pulling out their investments from Russia. This may imply that the outcomes of warwashing in the Russia-Ukraine conflict are different and complex, which is an additional reason to study this topic.

Using the concept of warwashing will enable this research paper to analyze the topic more effectively. The ongoing war between Russia and Ukraine may involve companies trying to warwash. Using the term "warwashing" may provide a more precise answer to how Danish and Portuguese consumers react in this very peculiar case.

### **2.3 Social media washing**

Digitalization has evolved tremendously over the last 20 years, and corporations are heavily exploiting social media platforms to communicate with clients and potential customers. Concurrently, this also implies that firms' greenwash, bluewash, and pinkwash on social media have become the primary outlets for washings. Previous literature has found that within Europe (namely the UK, France, Germany, and Turkey), there have been different levels of consumer engagement in "green" products/services as a result of online greenwashing (Topal et al., 2019). For example, customer engagement in green products or services increased in Germany from 2012 to 2017, implying that greenwashing on social media did not play a significant role. On the other hand, customer engagement for the French population remained unchanged. Finally, English and Turkish customers lowered their engagement in green products/services during the period due to greenwashing awareness. This shows that online washings greatly affect consumers when deciding to trust green products or services. This literary evidence demonstrates that washings can occur in different countries. This study can use the literature to distinguish between Portugal and Denmark, suggesting that there may be major differences between the countries.

### **2.4 Theory of Washing Typologies**

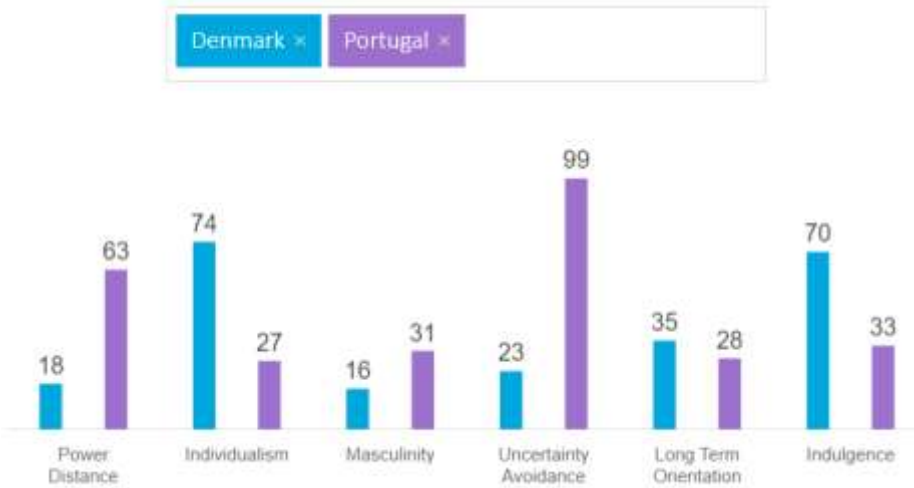
Existing theory and literature also point towards four types of firms regarding greenwashing and other washings. On the one hand, a firm can choose to communicate or not. On the other hand, a firm either has a bad or a good environmental performance (Delmas & Burbano, 2011). Firms that do not communicate and have bad environmental performances are called "silent brown firms". In contrast,

companies that do not communicate but have good environmental performance are named "silent green firms". Firms that perform positive communication but have bad environmental performances are "greenwashing firms," while firms that positively communicate and have good environmental performances are called "vocal green firms".

**2.5 Geert Hofstede's cultural dimensions**

Much of the existing literature has been focused on culture. An intriguing component of culture is that it can predict outcomes in consumer behavior. For instance, culture shapes consumer perception and cognition, ultimately resulting in different preferences, choices, and decisions for consumers in various cultures (Kastanakis & Voyer, 2014). For this reason, in addition to washings and how Portuguese and Danish consumers react to them, it is relevant to observe whether cultural dimensions indicate any correlation.

Cultural analyst Geert Hofstede is widely regarded as a pioneer in establishing a framework for cross-cultural dimensions. Hofstede's cultural framework consists of six dimensions: power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence (Hofstede et al., 2010). According to Hofstede, Portugal and Denmark are culturally contrasting countries (see Figure 1). For instance, Portugal only scored 27 on individualism, while Denmark scored 74. Another huge gap lies in uncertainty avoidance: Portugal scored 99 compared to Denmark's 23. The dimension "indulgence" also displays dissimilarities between the countries, as Portugal scored 33 to Denmark's 70.



**Figure 1-** Hofstede's cultural dimensions - Denmark and Portugal. Source: Hofstede-Insights

Source: authors’ own work based on Hofstede et al. (2010).

The dimensions clearly show that Portugal and Denmark, though they are both European countries, possess cultures that are, in fact, very diverse. While all six of Hofstede's dimensions give insight into

Portuguese and Danish culture, not all may be relevant in explaining consumer behavior differences. The two most fascinating dimensions regarding consumer behavior are uncertainty avoidance and indulgence.

### **2.5.1 Uncertainty avoidance**

Uncertainty avoidance refers to how members of a particular culture deal with ambiguous or unknown situations (Hofstede et al., 2010). It is highly relevant to consumer behavior and different washings as it involves uncertainty and unpredictability about societies.

Portugal scores 99 on uncertainty avoidance, which implies a need for members to battle uncertainty by implementing effective and traditional methods to mitigate risks. On the other extreme, Denmark scores 23. A low score on uncertainty avoidance is often characterized by a minimal need for attempting to predict uncertainty. Existing literature illuminates that Portugal's high uncertainty avoidance results in Portuguese people being less open to change and innovation and adopting information technologies. Contrarily, Danes are more open to it and more confident in risky situations (Yildirim et al., 2016). When facing unexpected events, Danes are more likely to implement new and innovative measures that cope with the issues quickly. Divergent opinions, views, and actions that vary from traditional procedures are encouraged over outdated procedures. Based on the study, the Portuguese should use traditional measures to cope with warwashing, while Danes may resort to altering actions. Thus, comparing the scores on uncertainty avoidance, Portuguese individuals may be less likely to cut off products from previously trusted warwashing firms. At the same time, Danish citizens may act faster and take more radical actions to make changes.

### **2.5.2 Indulgence**

Hofstede's cultural dimension, indulgence, is "the extent to which people try to control their desires and impulses" (Hofstede et al., 2010). Desires and impulses are critical components of consumer behavior, and therefore indulgence may explain differences between Portugal and Denmark related to warwashing.

Denmark scores 70 on Hofstede's indulgence dimension, implying that the country's culture is rather indulgent. In turn, Portugal scored just 33, representing a more restrained country culture. There is a clear difference between Denmark and Portugal in this dimension. According to the theory, Danish people are generally more likely to follow their impulses while breaking down inhibitions to realize a desire. In contrast, Portuguese individuals tend to control/restrain their desires, often having a more pessimistic approach when exposed to events such as warwashing. The literature argues that Danes, possessing an indulgent culture, have higher online shopping expenditures than Portuguese consumers, given that an indulgent culture is usually more optimistic than a restrained one. Data demonstrates this difference as Denmark's online shopping expenditures amounted to 7.388 billion euros in 2012 compared to Portugal's 1.200. The study considered total internet users (4.989.108 to 5.950.449),

resulting in the Danish online shopping expenditure per internet user being 1,480.830 euros compared to Portugal's 201.670 euros. Ultimately, the high indulgence score led Danes to purchase more online than Portuguese consumers (Yildirim et al., 2016).

On the other hand, Danes often perceive being capable of controlling their personal lives through their actions when facing concerns (Hofstede et al., 2010). That is to say that Denmark is indulgent, and Portugal is comparatively restrained; Danish consumers have a higher will to confront firms exercising warwashing on social media than Portuguese consumers. It indicates that Portuguese individuals may be more accepting of social media warwashing because they are less inclined to act heavily on such events.

Based on the cultural patterns, it would seem like social media warwashing will have a lesser reaction on Portuguese consumers than on Danish consumers. The insightfulness of Geert Hofstede's cultural dimensions can be coupled and compared to the survey results in this research project. Relationships can then be extracted, confirmed, or rejected using the predictability of these dimensions. Moreover, it would similarly be useful to connect the dimensions to a consumer boycott theory/study comparing Portuguese and Danish consumers' tendencies to boycott a product or service.

## **2.6 Boycott, environment and sustainable behavior**

In addition to Hofstede's cultural dimensions theory, incorporating the tendency for Portuguese and Danish consumers to boycott a product or service aids another perspective on the predictability of how these consumers are affected by social media warwashing. A 2014 research study laid empirical evidence of citizen boycotting in European countries. The study examines the proportion of the population that had boycotted products in the previous 12 months. In Portugal, 1.258 citizens responded, and 6.7% of the sample testified to having boycotted at least one product during the period. 93.3% denied that they had boycotted at least one product in the past 12 months (Baptista & Rodrigues, 2018).

In contrast, out of the 1.499 Danish respondents, 26.5% of the sample boycotted a product in the last 12 months, while 73.5% did not boycott any products in the given time frame. Considering all 40.001 respondents, 23.1% declared that they did boycott a product, while 76.9% did not boycott a product. Consequently, Danish consumers boycotted products by 3.4 percentage points (26.5%-23.1%) more than the average respondent. Contrarily, Portuguese consumers boycotted products 16.4 percentage points (6.7%-23.1%) less than the average, which is a notable distinction.

Linking these results to warwashing on social media provides intriguing food for thought. One would be persuaded to believe that Danish customers are more sensitive than Portuguese. As they tend to boycott products more than Portuguese consumers, they are also expected to take more frequent actions when faced with warwashing affairs than the Portuguese. This behavior may indicate that Danish consumers are more aware of implementing fierce procedures when exposed to warwashing online, unlike the Portuguese, whose boycott links heavily with uncertainty avoidance and indulgence. As

mentioned in the cultural dimensions, Portugal's and Denmark's uncertainty avoidance and indulgence levels are likely to predict that Portuguese consumers would be more prone to shy away from acting, disbelieving that their individual actions will have any repercussions. Contrarily, Danish consumers would generally confront issues related to warwashing. If boycotting statistics in the two countries accompany the cultural dimensions, they may lean towards predicting that Danish consumers will be affected more heavily than Portuguese consumers.

Another study researches environmentally friendly actions by citizens in 28 European countries six months before the study (Bassi, 2023). Danish citizens amassed an average of 5.8 actions, ranking third of all sampled countries. On the other hand, Portuguese citizens only accumulated an average of 3.05 actions and ranked 25<sup>th</sup> out of 28 countries. This study displays that Danes consider themselves to take more environmentally friendly actions than the Portuguese on average.

Since Danes appear more environmentally conscious than the Portuguese, this may indicate a stronger will for Danes to take action against warwashing. Perhaps Portuguese citizens do not view environmental actions as a top priority. Again, this evidence links well with cultural dimensions such as uncertainty avoidance and indulgence and boycott literature concerning Portuguese consumers possibly not being as concerned about warwashing as Danish consumers or eventually being more skeptical as for the effectiveness of the results of their eventual decisions on this regard, namely if these are propelled in social media. On the other hand, Danes seem to be more inclined to act as a consequence of a misbehavior that they identify, as it was concluded in the previously mentioned study.

Based on the literature review, it will be appropriate and useful for this research to establish and set up four hypotheses.

*H<sub>1</sub>*: Danish consumers are affected significantly more than Portuguese consumers by social media warwashing.

This first alternative hypothesis will be accepted if the research concludes that there is a correlation but rejected if there is no significant correlation between Portuguese and Danish consumers exposed to warwashing on social media. Contrarily, the null hypothesis shows that Danish consumers are not affected significantly more than the Portuguese. This second alternative hypothesis can only be accepted but will not necessarily be if *H<sub>1</sub>* is accepted.

*H<sub>2</sub>*: Danish consumers tend to be more skeptical towards social media warwashing than Portuguese consumers.

*H<sub>3</sub>*: Danish consumers will take significantly greater actions than Portuguese consumers when exposed to social media warwashing.

*H4*: Danish consumers are more willing to boycott firms suspected of warwashing than Portuguese consumers.

### **3. Methods**

#### **3.1 Scope of research**

This research focuses on Portuguese and Danish consumers, comparing two contrasting cultures and sets of consumers to identify and analyze the differences and similarities. While the existing literature has been acknowledged, it must be considered with a grant of salt as conclusions may differ when comparing the general consumer view of warwashing or other countries' consumer behaviors to Portuguese and Danish consumers.

#### **3.2 Data collection**

It made sense to conduct a cross-cultural study to analyze and compare the perceptions of Portuguese and Danish consumers. This study made used a survey (Appendix). Using a cross-cultural study on both Portugal and Denmark rooted in the Russia-Ukraine conflict, this research paper allows for the in-depth analysis and comparison between Portuguese and Danish consumers, which was the study's main objective. The time horizon of the research was cross-sectional, implying that it provided a snapshot at a specific time (when the questionnaires ended in November 2023). The goal is to explore the phenomenon while being open to various outcomes primarily rooted in objective quantitative data. This cross-cultural study was conducted using the cross-sectional research design focusing on a specific point in time while collecting data from a wide array of respondents (Saunders et al., 2016). The research largely used primary data in a quantitative approach with the aim of more generalizability rather than profundity.

Since the research mainly focuses on quantitative data collection, it was appropriate to perform questionnaires that supported the study with various insights from Portuguese and Danish consumers. The main purpose of the questionnaires was to collect data on these consumers and analyze response patterns. This research acknowledges that biases may occur when collecting primary data. Therefore, it was essential to carefully implement the questionnaire with questions in the proper order while avoiding writing errors leading to forced/preferred answers (Saunders et al., 2016). The questionnaire was performed virtually by paper and pen using an online link posted in different forums, platforms, and public areas. It was designed so respondents could choose their preferred language (Portuguese, Danish, or English). The survey was available to be answered for three weeks on surveymonkey.com, aiding enough time to acquire enough responses. The responses from the survey (both virtual and physical) were then inserted into an Excel sheet to be analyzed. Care was taken to eliminate errors and misunderstandings by properly translating and unifying the three questionnaire versions to avoid errors.

Respondents picked their nationality (Portuguese or Danish), gender (male, female, or other), and age group omitting possible respondents under 18 years old. Age was divided into several groups: "18-

29 years old", "30-44 years old", "45-59 years old", and "60+ years old". These two variables would then be used to differentiate between Portuguese and Danish consumers while also allowing sorting by gender and age for a more complete analysis. Multiple pilot tests were performed to ensure that the survey was free of major errors. Initially, a front page explaining the purpose of the research was shown alongside a brief description of warwashing, including examples related to the Russia-Ukraine war. Respondents were informed that all questions must be considered in light of the conflict in Ukraine and firms' warwashing on social media.

Moreover, respondents were informed of the anonymity of the questionnaire. The questionnaire consisted of nine questions. This was based on the questionnaire needing to provide the research with enough data and information to be analyzed effectively. Additional questions could have been included, but these would have come with the risk of becoming redundant and/or not relating to the research question and increasing the risk of respondents losing concentration, resulting in exiting the questionnaire before completion and, ultimately, leaving a bias due to lower completion rate. The questions (apart from the last) adopted Likert's 7-point scale, ranging from 1 (being the lowest point) to 7 (being the highest point).

We used a non-probability sampling method. To avoid selection bias by collecting data from online respondents, the survey was also conducted by hand, where random Portuguese and Danish citizens were asked to answer in public areas at various times of the day.

### **3.3 Paired *t*-test/data analysis**

A paired *t*-test, or dependent *t*-test, is a statistical method used to compare the means of two related groups or conditions. It is typically employed when the same subjects or items are measured under two different conditions or at two different points in time. The paired *t*-test determines whether the mean difference between the two conditions is statistically significant. The research paper utilized paired *t*-tests to analyze possible significant relationships and differences between Portuguese and Danish consumers. The statistical inference mainly applied statistical tools and software such as Microsoft Excel and John's Macintosh Project (JMP) 17. The statistical inference involved different statistical measures such as the mean, median, distribution, and standard deviation analysis. Furthermore, JMP also enabled the researcher to analyze relationships and hypotheses by performing paired *t*-tests using *p*-values, which indicate how likely particular observations are if the null hypotheses are true. This study uses a 5% significance level, which is the benchmark for research, meaning that there is a 5% (0.05) chance of falsely rejecting a null hypothesis even though it was true.

The statistical inference is used in this research to better understand how Portuguese and Danish consumers are affected by social media warwashing and to measure differences supported by clear statistical evidence. The answers will be compared and analyzed using paired *t*-tests and a scatter (XY plot) using the abovementioned *p*-values and significance level.

## 4. Results

### 4.1 Descriptive analysis

As previously mentioned, the survey incorporated nine questions, and during the three weeks of data collection, the total observations accounted for 218 responses. The distribution can be seen in Table 1.

	<b>Portuguese</b>	<b>Danish</b>	<b>Total</b>
No. of responses	104	114	218
— <b>Female</b>	49	64	113
~ 18-29	13	25	38
~ 30-44	11	19	30
~ 45-59	12	10	22
~ 60+	13	10	23
— <b>Male</b>	50	45	95
~ 18-29	16	20	36
~ 30-44	11	10	21
~ 45-59	15	4	19
~ 60+	8	11	19
— <b>Other</b>	5	5	10
~ 18-29	2	3	5
~ 30-44	1	2	3
~ 45-59	2	0	2
~ 60+	0	0	0

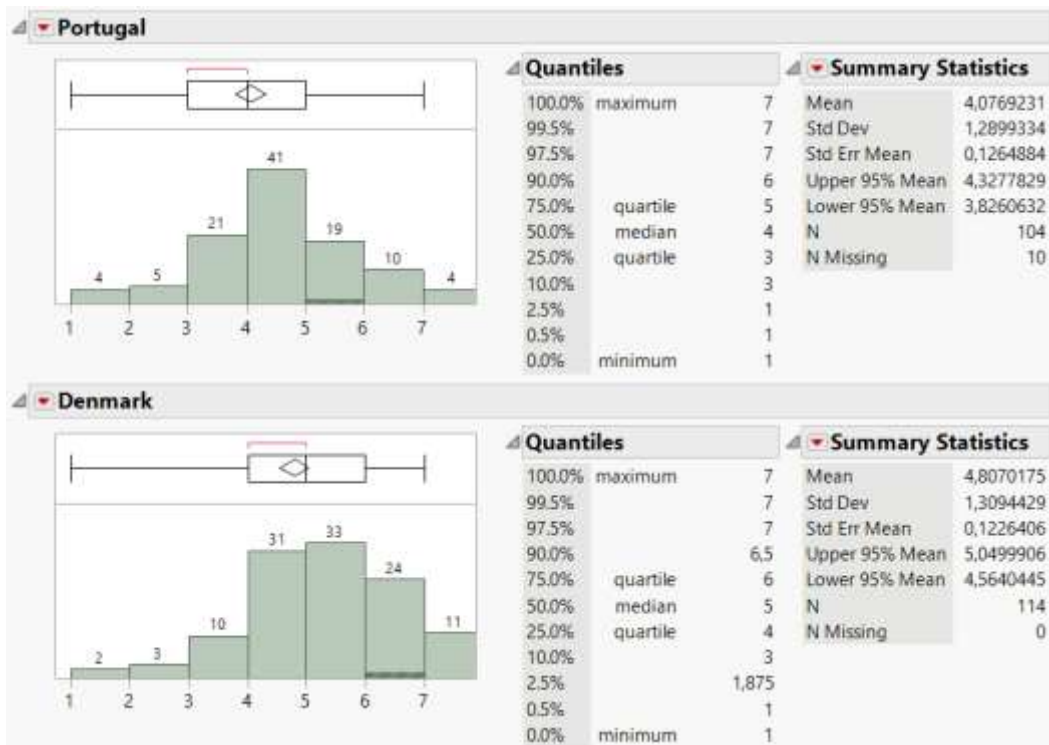
*Table 1 – Sample characteristics*

Source: authors' own work.

The survey questions can be divided into three sections: "Consumer priorities" (questions 1-3), "consumer empowerment" (questions 4-6), and "types of warwashing" (questions 7-9).

#### 4.1.1 Consumer priorities

Question 1 of the survey dictates whether or not warwashing is a priority for Danish and Portuguese consumers when buying products or services. As can be observed from the histogram in Figure 2, both Danish and Portuguese consumers follow a normal distribution. Portuguese consumers appear to be more centered, while Danish consumers are skewed to the right side of the figure. The median for Portugal is 4, while Denmark's is 5. The data for Portugal showcase a mean score of 4.07. In contrast, Danish data score a mean of 4.8, indicating that Danish consumers are relatively more likely to have warwashing as a priority when buying products or services than Portuguese consumers. The standard deviations are similar at 1.29 for Portugal and 1.31 for Denmark, implying a similar average spread from the mean.



**Figure 2 - Warwashing as a priority**

Source: authors' own work.

Question 2 of the survey assessed if consumers would avoid products or services from warwashing firms even if cheaper alternatives existed. The average response for Portuguese consumers is 3.54, while it is 4.34 for Danish consumers. Both means are lower than the ones in question 1. Not every consumer seems prepared to act at the expense of acquiring cheaper products or services. Furthermore, like the first question, Danish consumers generally seem less willing to compromise on price when faced with more affordable warwashed products or services than Portuguese consumers.

The last component of consumer priorities is question 3. It relates to consumers' likelihood of informing family and friends about warwashing behavior on social media.

Only the Portuguese data set follows a normal distribution, as the Danish data set can be described as bimodal with two peaks. As can be observed by the distribution of the two data sets, Danish consumers seem to be more widespread. The standard deviation for Portuguese consumers is 1.4 and 1.69 for Danish consumers. The bimodal distribution displays this distinction by its shape.

#### **4.1.2 Consumer empowerment**

The first component of consumer empowerment relates to question 4. It revolves around the willingness of consumers to do an in-depth exploration of companies suspected of warwashing. The mean in Portugal is 4.05 compared to Denmark's 4.49. The means are quite contrasting, and they would

lead to believe that there is a significant difference. However, this can only be identified with certainty after analysis. Also worth noting is that only a single Danish consumer picked option "1". The standard deviations are fairly similar at 1.31 and 1.35, respectively.

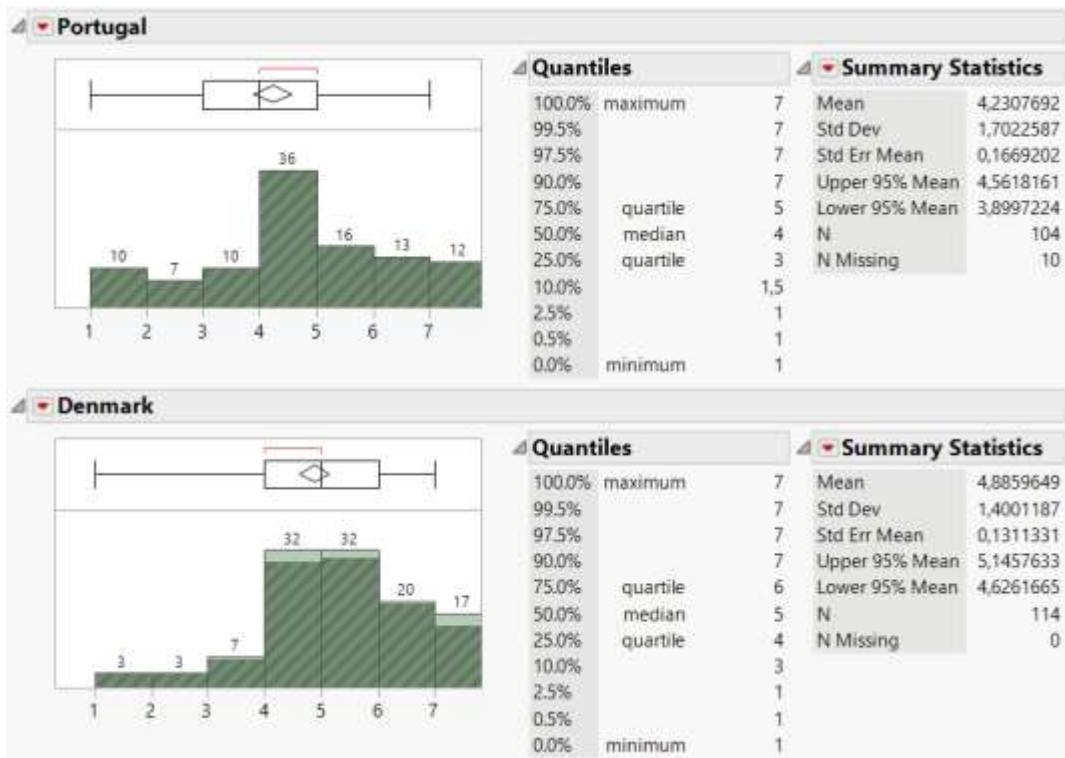
Concerning boycotting and question 5, what is interesting to observe is that only one respondent from each country strongly disagreed with the statement. There is a tendency for respondents to use the highest scores on the scale, with 10 of the Portuguese respondents strongly agreeing and 11 of the Danish respondents similarly agreeing. The Portuguese median is 4, compared to Denmark's 5. The average for Portugal is 4.13, and for Denmark, it is 4.66. The relatively high standard deviation may be caused by respondents using the top value more in this question than in others, indicating that both consumer sets are willing to boycott a warwashing brand even though they had a preference for it.

Question 6 is very much related to question 5. It concerns consumers' belief that their actions can help prevent warwashing firms. It is worth noting that, unlike previous questions, both Portuguese and Danish consumers have used option "1" to a large extent. 14 out of 104 (13.5%) of the Portuguese sample population chose the lowest value, suggesting that they strongly disagree with their actions being capable of preventing warwashing. For Denmark, 6 out of 114 (5.3%) responded the same way. The mean for Portugal is 3.06, while it is 3.51 for Denmark. These are the lowest values, yet both Portuguese and Danes disagree with the statement.

#### **4.1.3 Types of warwashing**

Considering whether consumers are more attentive and distrustful towards advertising on social media than other platforms aids an insight into whether or not warwashing on social media is a worse type of warwashing than other platforms. The median for Portugal and Denmark is 4 for both. Nevertheless, the means are very diverse. Portuguese consumers have an average answer of 3.72 compared to Danish consumers' 4.27. This implies that Danish consumers are more attentive and distrustful of advertising and potential warwashing on social media than on other platforms compared to Portuguese consumers. The standard deviations are relatively high at 1.42 for Portugal and 1.52 for Denmark, implying that average consumer opinions are spread away from the mean, often picking choices "1", "2", "6," and "7.

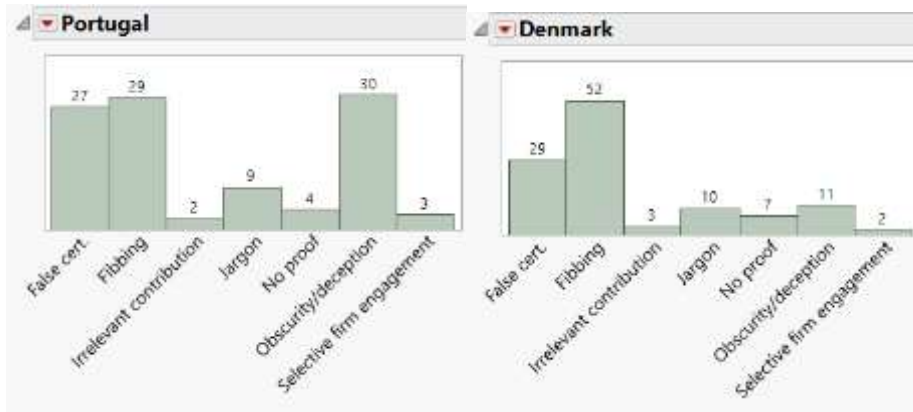
Figure 3 displays that Portuguese data is widely dispersed, with a standard deviation of 1.7 compared to Denmark's 1.4. The median for Portuguese consumers is 4, while it is 5 for Danes. Both means are higher than the previous questions at 4.23 for Portugal and 4.89 for Denmark. This indicates that both consumer sets prefer transparent firms over tacit firms, suggesting they prefer companies that are open about their activities and contributions.



**Figure 3 - Transparent to tacit firms**

Source: authors' own work.

Question 9 asked respondents which type of warwashing they consider the most serious (Figure 4). The data illustrates that Portuguese consumers consider obscurity/deception as the most serious warwashing technique, with 30 out of 104 responses, the equivalent to 28,8%. On the other hand, Danish consumers do not consider obscurity the most serious type. Only 11 out of 114 (9,6%) respondents answered "obscurity/deception". For Danish consumers, fibbing is the dominant technique of serious warwashing, with 52 observations out of 114 (45.6%) followed by 29 observations of false certification. Common for both sets of consumers is that none of them perceive "no proof", "irrelevant contribution," or "selective firm engagement" to be very serious.



**Figure 4 - Warwashing techniques**

Source: authors' own work.

## 4.2 Data analysis

The paired *t-test p-values* for questions 1 to 8 can be seen in Table 2

**Table 2 Independent samples *t-test* results for mean comparison**

Question	Mean		<i>t</i> -value	<i>p</i> -value
	Portuguese	Danish		
<u>Question 1</u> : Warwashing is my priority when buying products or services.	4.076	4.769	- 3.744	0.0003
<u>Question 2</u> : I will not buy products or services from warwashing firms even if they are cheaper than alternatives.	3.557	4.317	- 4.184	0.0001
<u>Question 3</u> : I will likely inform my friends and family about warwashing behavior from firms.	4.038	3.961	.3493	0.7275
<u>Question 4</u> : I am willing to do an in-depth exploration into companies I suspect warwash.	4.048	4.461	- 2.303	0.0233
<u>Question 5</u> : I am likely to boycott a brand that I have a preference for if I knew the firm had warwashing activities.	4.134	4.586	- 2.369	0.0197
<u>Question 6</u> : I believe that my actions can help prevent firms from warwashing.	3.057	3.490	- 2.416	0.0174
<u>Question 7</u> : I am more attentive and distrustful towards advertising on social media than on other platforms.	3.721	4.317	- 2.924	0.0042

<b>Question 8:</b> I am likelier to buy from transparent companies that openly declare their contribution rather than tacit companies regarding warwashing.	4.230	4.855	- 2.767	0.0067
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Source: authors' own work based on Hofstede et al. (2010).

#### 4.2.1 Consumer priorities

As presented in 4.1.1 in question 1, Danish consumers had a comparatively larger mean than Portuguese consumers. We found evidence that the difference was not just by coincidence. The paired *t-test's p-value* for question 1 is less than 0.0001, much lower than our pre-set significance level of 5% (see Figure 5).

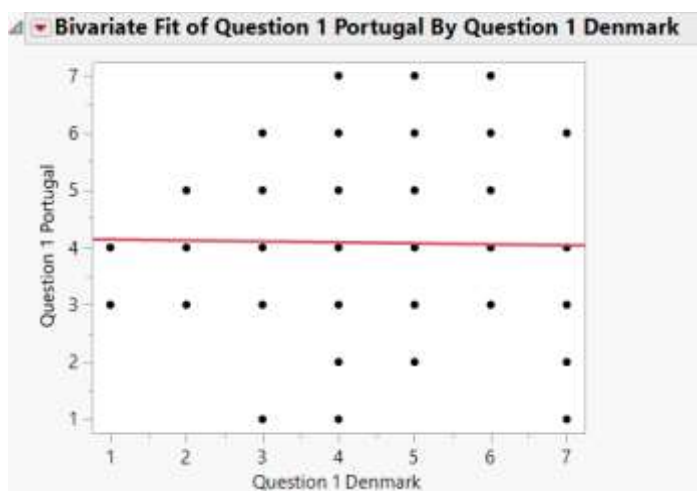


Figure 5 - Scatter plot for Question 1

Source: authors' own work based on Hofstede et al. (2010).

If there were to be a clear correlation between Portuguese and Danish consumers, then the black dots would tend to follow the red fit line. This is not the case, and we can deduce that there is a meaningful difference in question 1 and that it is not due to a happenstance. This difference implies that we can confirm the second alternative hypothesis in Danes being more likely than the Portuguese to have warwashing as a priority. Portuguese individuals are more "neutral" towards the question, whereas Danes lean more towards agreeing.

It is important to assess how the independent variables of age and gender affect the dependent variable. Danish females aged 18-29 have an average mean of 5.16 compared to Danish males aged 60+, with a mean of only 4.09, far from the average of 4.8. The same pattern was found and analyzed in the Portuguese data, with women aged 18-29 having an average of 4.46 compared to men aged 60+, with an average of 3.5. Observing all the data for question 1, a larger discrepancy between women and men

in Denmark compared to Portugal was evident (see Figure 6). In Denmark, females had a higher mean than men (4.94 to 4.56) than in Portugal (4.02 to 4.1). The data analysis revealed that females in Denmark are more likely to have warwashing as a priority than males. On the other hand, Portuguese males are more likely to have warwashing as a priority than females. However, Danish consumers seem to place greater emphasis than Portuguese consumers when it comes to having warwashing as a priority when buying products or services.

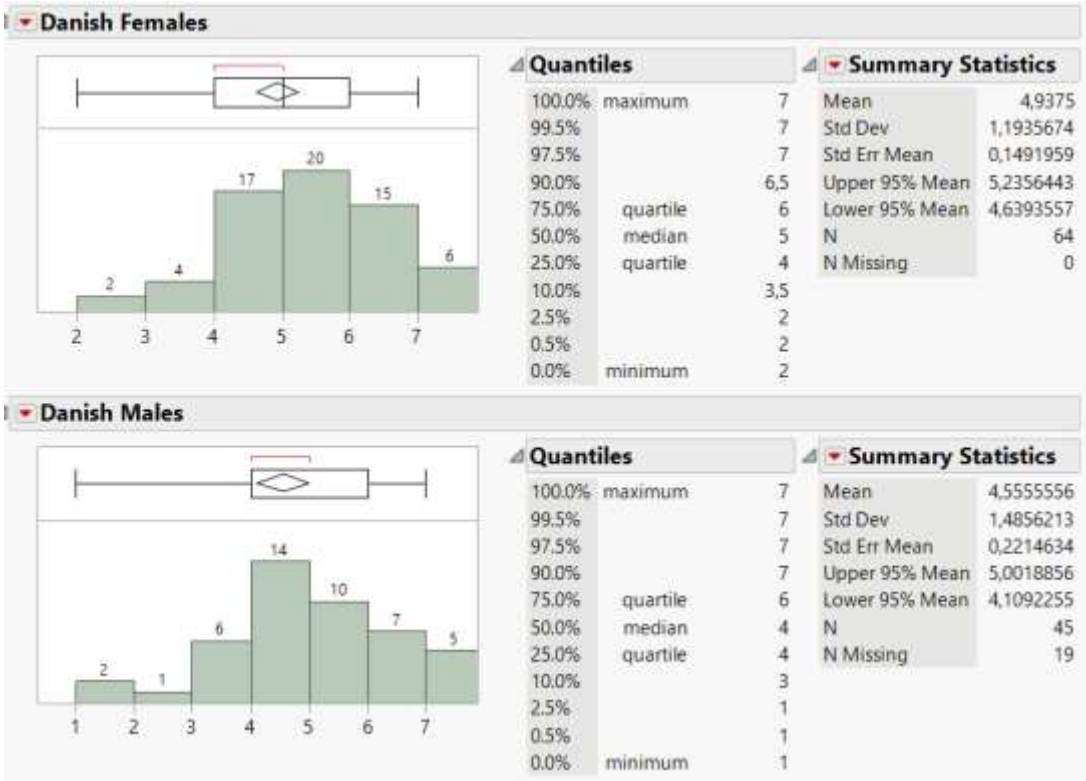


Figure 6 - Danish genders compared for Question 1

Source: authors' own work based on Hofstede et al. (2010).

For question number 2, both standard deviations were comparable to the ones in question 1, which predicts that respondents may have only altered the answer slightly from question 1, if at all. Using JMP to compute the data shows a similar result to question 1. The paired *t-test's p-value* for question 2 is also <0.0001%. Hence, we can deduce a correlation between the two sets of consumers regarding the willingness to buy/avoid cheaper warwashed products or services. The analysis explains that there is less than a 0.0001 chance of such an occurrence, given that the null hypothesis is true. So, in correspondence with the significance level at 5%, it is undoubtful that there is a clear correlation and tendency for Danes to avoid cheaper warwashed products/services.

There were only minor intra-related differences for question 2. Once again, Danish females aged 18-29 scored the highest with a mean of 4.68, while similarly, Portuguese females scored only 3.38 in

contrast. Moreover, Portuguese males aged 18-29 scored significantly higher, with a mean of 4.25. A contrasting pattern is already unfolding as Danish females appear to have higher mean scores than males. Contrarily, Portuguese males seem to have elevated means compared to Portuguese females. It is thought-provoking to couple the tendency mentioned above for Danish individuals to act faster and avoid warwashing firms with the results of question 2. Cultural dissimilarities seem to impact and influence the outcome of responses in question 2. As was laid out before, Hofstede's cultural dimensions and the additional literature on culture point to Danish consumers being far more frequent purchasers online than the Portuguese, combined with less importance on risky situations. It can be seen that the cultural aspect has an impact.

To analyze the last question of consumer priorities, the results indicate a *p-value* of 0.636. This indicates no correlation between Portuguese and Danish consumer responses concerning informing friends and family about warwashing behavior on social media. Nonetheless, on average, Portuguese consumers are more likely than Danish consumers to advise their peers about warwashing, which is somewhat surprising given that Danish consumers have had much greater means in the previous two questions. The *p-value* is considerably higher than the 5% significance level; therefore, deducing any correlation or meaningful difference is impossible. For this reason, survey question number 3 supports the null hypothesis for  $H_1$  and  $H_3$ .

It is also worth noting that Danish females have the highest mean of 4.72, and there is a clear tendency for younger Danish consumers to inform peers about warwashing. In comparison, older Danish consumers are not very engaged. Analyzing the means of just 3.4 for Danish females aged 60+ and 2.73 for Danish males aged 60+ provides a nuanced portrait of younger Danes taking more action than older Danes. Conversely, Portuguese responses do not seem to be affected by age groups much.

To sum up the "consumer priorities", it becomes apparent that there are vast variations in the Portuguese and Danish consumer sets. Questions 1 and 2 point to Danes considering warwashing a priority and being reluctant to buy warwashing products at a cheaper cost. These distinctly argue against the null hypotheses, whereas question 3 cannot provide any profound testimony that Portuguese and Danish consumers are unlike.

#### **4.2.2 Consumer empowerment**

To start the analysis of consumer empowerment and how empowered Portuguese and Danish citizens feel toward social media warwashing, question 4 was analyzed. A result of 0.012 appears when computing the *p-value*. Thus, it can now be deduced with certainty that there is a correlation between Portuguese and Danish respondents. Danish respondents are more likely than Portuguese respondents to explore and investigate firms they suspect of warwashing. This may be related to the literature review regarding country culture and Portuguese individuals being more accepting. At the same time, Danes

consider more extreme measures to fight warwashing, while Portuguese citizens are more pessimistic towards it. The data confirm the alternative hypothesis 3 in Danes taking greater actions.

Another discovery can be observed in that for question 4, Danish females aged 18-29 do not score the highest (4.4). Danish males in the "30-44" age group have the highest mean of 4.7. For Portuguese consumers, females aged 18-29 score the highest, with 4.46, while Portuguese females aged 60+ score 4.23. Additionally, what is remarkable about this data is that the highest and lowest averages are the same gender and age group. As previously mentioned, responses from Danish males aged 30-44 have a mean of 4.7. Alternatively, Portuguese consumers aged 30-44 have a mean of merely 3.36. This can be explained by a couple of outliers answering "1", but it is an interesting occurrence nevertheless. If, by experiment, we remove the outliers, the new mean increases to 3.63

Regarding boycotting as a means of consumer empowerment, it is also appropriate to analyze question 5. Here, the *p-value* was computed to a value of 0.01. As this value is less than the significance level, it can be concluded that there is a correlation that is not due to a coincidence. That is to say that Danish consumers are more likely to boycott brands that they have a preference for compared to Portuguese respondents. Both means are above four, highlighting that, on average, both data sets skew more toward agreeing to boycott. However, based on the analysis, Danish consumers are far more likely to take boycotts into action to discontinue ties with warwashing brands. This confirms the alternative hypothesis 4. The results may have to do with the Portuguese being more loyal to brands while preferring what is old, known, and structured. As mentioned, Danish culture scores low on uncertainty avoidance and being indulgent rather than restrained. Furthermore, when connected to the boycott theory that the literature review laid out, there appears to be congruence between the theory stating and predicting that Danish consumers are more likely to boycott products than Portuguese consumers. The sustainable and ethical behavior theory also supports this claim by Denmark being one of the top countries in this category, as boycotting is an exceedingly ethical action towards warwashing.

Once again, Danish females in the age group "18-29" score the highest mean of 5.08, and there is a clear trend in this group agreeing most to questions. Portuguese females in the same age group have a mean of 4.31, which is substantially lower. An enthralling notion of the data is that Danish females constantly have higher means than Danish males, while, for Portugal, a clear picture of gender differences cannot be depicted. Equal for both Portugal and Denmark is that there is a trend of the means decreasing as age increases. While a correlation is undoubtedly noticeable, it is vital not to get ahead of oneself. Inherently, correlation does not imply causation, and we cannot strictly say that age is the deciding factor, as there may be latent variables.

To analyze consumer empowerment fully, question 6 helped provide a view of how actions can prevent warwashing. The paired *t-test's p-value* resulted in 0.0087, meaning that we reject the null hypothesis that there is no correlation between Portuguese and Danish consumers in question 6 due to

the set significance level. In other words, the Portuguese sample population disagrees more with the question than the Danish respondents. Both data sets have an average below four, indicating that they disagree with the statement. Nonetheless, the Danish mean is closer to the value "4" while the Portuguese mean is closer to the value "3". What can be derived from this is that Portuguese and Danish consumers ultimately hold different opinions when evaluating whether they believe their actions can prevent warwashing. The evidence supports alternative hypothesis 3 as Danes are likely to take more actions due to a stronger belief in them having an impact. It may be related to Hofstede's cultural dimension because Portuguese culture is more pessimistic than Danish culture, which believes in immediate and radical change through action.

Based on assumptions, one would be led to believe that the younger age groups are more optimistic than older age groups in preventing warwashing by actions and will, therefore, have higher means. However, this is only partly true. Independent of age group, Danish females scored almost the same mean in question 6. Even more captivating is that a reverse order is evident for Portuguese women as "45-59" and "60+" score higher than the two youngest age groups. The only significant relationship for males in both Denmark and Portugal samples appears to be the "60+" age groups scoring lowest in both countries with 2.91 and 2.38.

To assess "consumer empowerment", all three categories/questions (4, 5, and 6) related to consumer empowerment show resounding evidence that Danish consumers generally feel more empowered towards warwashing than Portuguese consumers. The data implies that Danish consumers feel that their actions make changes relatively more than Portuguese consumers feel.

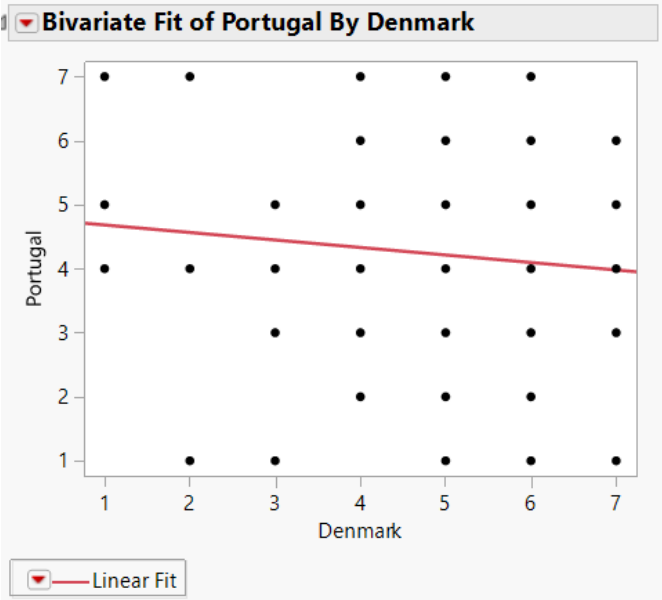
#### **4.2.3 Types of warwashing**

Question 7 laid out whether or not social media advertising (and potential warwashing) is a more suspect type of advertisement than other platforms. Initially, Danish individuals looked more concerned than Portuguese respondents, and the durability of this argument could be computed, analyzed, and tested using the *p-value* through JMP. The *p-value* of question 7 comparing Portugal and Denmark is 0.0021, which is low enough for the research to deduce a correlation that did not occur by happenstance. Hence, there is evidence beyond a reasonable doubt that Danish consumers are indeed more attentive and distrustful towards social media advertising than other platforms compared to the Portuguese sample population. Danish consumers are more likely to agree with the statement, while Portuguese consumers are more likely to disagree.

If the data is explored deeper, some interesting information comes to light. What becomes palpable is that for both data sets, there are huge differences when comparing age groups. For instance, Portuguese and Danish females aged 18-29 have means of 4.38 and 4.84. On the other hand, Portuguese and Danish females aged 60+ score only 2.54 and 2.6, far from any other age groups. The same pattern can be analyzed for Portuguese and Danish males aged 18-29, scoring 4.25 and 4.8 compared to

Portuguese and Danish males in the 60+ group, accounting for averages of 2.625 and 2.3, also far from any other age groups. These results may be due to younger people being targeted more on social media and being more active users (Auxier & Anderson, 2021). The youth, especially Gen Y and Gen Z, are more aware of how firms can manipulate social media. In contrast, older people (baby boomers) and Gen X can be ignorant about this subject. The younger age groups may be more attentive to firms attempting to warwash on social media without giving proof, providing references to work, and trying to hide other activities.

Transparency seemed to be preferred over tacticity by both Portuguese and Danes in question 8. By computing in JMP, it is possible to see whether the gap between the sets is significant. Doing this results in a *p-value* of 0.0034. The value is less than 5%, so there appears to be a substantial correlation. A closer look at the X/Y scatter plot confirms that the dots do not follow the red fit line, indicating that there is a correlation:



**Figure 7 - Scatter plot Q8**

Source: authors’ own work based on Hofstede et al. (2010).

The correlation relies on the fact that Danish consumers prefer transparent companies relatively more than Portuguese consumers. This implies that it is not enough for firms to be tacit for Danes and that transparency is highly preferred. Looking back at the literature review and washing typologies, Danish and Portuguese consumers prefer vocal green firms over silent firms that may be more suspect of being silent brown firms.

The data shows that the youngest age groups have the highest means in both countries. Portuguese females aged 18-29 score 4.77, while similar Danish females score 5.4. Portuguese males in the same

age group score 4.94 compared to similar Danish males scoring 4.8. Danish females aged 18-29 consistently score highest in Danish data, while Portuguese males aged 18-29 tend to have the highest mean. The rest of the age groups do not show any striking differences. However, there is a major difference: Portuguese females aged 60+ have a significantly lower mean than Danish females of similar age. The Portuguese scored 3.62, while the Danes scored 4.6. The difference may be attributed to cultural dimensions such as indulgence. Portuguese individuals are comparably more restrained, whereas Danish citizens are more inclined to confront warwashing.

Regarding question 9, it is, likewise, possible to further analyze if there is a correlation between Portuguese and Danish consumers and their perception of the most serious warwashing technique. Consequently, when computed, the paired *t-test p-value* shows a value of 0.9766. This value is far more than the 5% significance level. The outcome enlightens sufficient evidence to deduce that the observation is the same as the expected distribution, and there are no noteworthy dissimilarities.

It can be deduced that "types of warwashing" have provided several answers. Questions 7 and 8 confirm that Danish consumers are more likely to consider social media advertising more suspect and prefer transparent companies relatively more than Portuguese consumers. No significant evidence was found in question 9 concerning which type of warwashing technique is more serious.

This comparative research case study deduces that Danish consumers are more likely to have warwashing as a priority, initiate greater actions when exposed to warwashing, believe that their actions make a difference, and are more suspect of non-transparent firms. Only questions 3 and 9 show no correlation in meaningful dissimilarities concerning informing friends/family about warwashing and most serious warwashing techniques. For this reason, the first alternative hypothesis can be confirmed as Danes are affected relatively more than the Portuguese. Danish females emerged as scoring the highest overall means of all groups, and, in general, Danish females scored higher than Danish males. On the other hand, there did not seem to be a relationship between Portuguese females and males. However, the study deduced that the "60+" age group scored much lower means than other age groups.

Based on the survey, the null hypotheses can be rejected. The survey's data presentation and data analysis show a significant correlation between how Portuguese and Danish consumers are affected by social media warwashing. Simultaneously, all alternative hypotheses can be confirmed.

H.	Test	P-values	Status
1	Paired t-tests	0,0001; 0.0001; 0.6362; 0.0116; 0.0098; 0.0087; 0.0021; 0.9766	Confirmed
2		0.0021	Confirmed
3		0.0001; 0.6362; 0.0116; 0.0098; 0.0087	Confirmed
4		0.0098; 0.0087; 0.0034	Confirmed

### ***Table 3 - Hypotheses overview***

Source: authors' own work based on Hofstede et al. (2010).

The hypotheses overview (see Table 3) shows the survey question *p-values* for each hypothesis. For example, hypothesis 1 incorporates more than one question, with the lowest score being 0.0001, meaning the hypothesis is supported. Hypothesis 2 includes only the *p-value* for question 7 related to social media use, while hypothesis 3 *p-values* consist of survey questions 2 (0.0001), 3, 4, 5, and 6 corresponding to consumers taking actions. Finally, hypothesis 4 is composed of survey questions 5, 6, and 8 (0.0034) in accordance with boycotting.

## **5. Discussion**

This research started by informing about firms taking advantage of different color-washing methods due to war events like the Ukraine-Russia conflict and establishing a new notion called "warwashing". With the guidance of the introduction, literature review, and data sections, this research can draw several conclusions. The literature review helped explain why differences are observed and regulated five hypotheses, aiding guidance in answering the primary research question. The posed hypotheses helped in answering the research question.

To definitively answer the research question and bear in mind the survey, Portuguese and Danish consumers are differently affected when exposed to social media warwashing. Danish consumers are affected more than Portuguese consumers. For example, the nine survey questions claim and verify that Danish consumers are more prone to having warwashing as a priority while also being more likely to not buy from warwashing firms despite cheaper alternatives. Additionally, Danes are affected in a way that makes them willing to perform a greater degree of exploration into suspect companies and boycott more often than the Portuguese. On the other hand, Portuguese consumers are affected in a manner that makes them believe less that their actions can prevent warwashing than Danish consumers. Lastly, Danish consumers appear more attentive and distrustful of social media advertising than their counterparts. They are more likely to purchase from transparent firms rather than tacit ones related to warwashing communication.

Connecting the literature review to the results provided multiple theoretical findings. Firstly, Hofstede's cultural dimensions accurately predicted that Danish consumers are influenced more than Portuguese consumers, as it confirms differences in Danes taking greater action, having more optimism in change, and demanding transparency. The boycott theory from the literature review also confirms the results predicting a greater tendency for Danes to boycott products and services. This theory finds that Danish consumers should have higher scores in questions 5 and 6 related to boycotting, which was

indeed the case. Therefore, the boycott theory successfully predicted the survey outcome and confirmed the results.

Furthermore, the results also support the literature suggesting that Danes take more environmentally friendly actions than Portuguese. All the literature suggested in the survey that Danish consumers would be affected more than Portuguese consumers. The theory about environmentally friendly actions also supported the hypothesis that Danes are affected relatively more than Portuguese. Ultimately, the theoretical findings and results of Danes being affected more than Portuguese confirmed the components of the literature review to be true.

Based on the paper, some curiosities can be discussed. For example, how should companies cope with differences between Portuguese and Danish consumers on social media? Considering the data results, managers and corporations must adapt their social media use in correspondence. On the one hand, firms need to consider Portuguese consumers, and here, they may not need huge alterations on social media. Firms need to acknowledge that, while warwashing is still a topic, companies do not necessarily need to be extremely transparent with consumers like Danish consumers. The data shows that Danes require more transparency from companies on social media. Therefore, social media managers mainly dealing with Danish consumers might be better off paying great attention to clearly communicating activities connected to potential warwashing. Suppose a company has both Portuguese and Danish consumers. In that case, it arguably needs to assess which consumer segment is more valuable and then use that strategy to avoid being accused of warwashing. Alternatively, companies could split their social media activities by language, only exposing Portuguese and Danish consumers to advertisements in their language. However, this option must be evaluated in terms of the time, error tendency, and costs of having social media in numerous languages.

Another curiosity to discuss is what warwashing types companies should be extra aware of to avoid. The data shows that fibbing is a very serious technique coupled with social media being more distrustful of Danish consumers. Therefore, companies dealing with Danish consumers must avoid any type of activity resembling fibbing while being more transparent, preferably making social media pages transparent and not being tacit about key activities. If companies fail to do so, serious consequences are likely to follow, such as boycotting. Conversely, Portuguese social media managers may need to avoid obscurity, but they may not need to be as transparent and vocal in activities as Danish managers. Independent of nationality, irrelevant contributions with high levels of transparency and communication are not likely to become a major concern for managers. However, although such activities should still be avoided, the consequences are unlikely to be grave.

At last, is it sustainable for companies to engage in warwashing? While the short-term outcomes and economic benefits of warwashing activities are unknown, the paper illustrates strong evidence that companies will receive backlashes if caught. The long-term consequences of warwashing are not to be

taken lightly. In the long run, if firms are caught, evidence shows that Danish and Portuguese consumers are more willing than not to boycott (albeit Danes comparatively more). Other consequences may follow, such as deeper exploration into company activity by consumers in the future. The loss of consumers and sales will have a deep and embedded impact on companies and a tarnished reputation, which characterizes a very unsustainable firm. So even though companies may gain short-term, the long-term consequences are enormous, making warwashing an unsustainable business practice.

## **6. Conclusion**

Based on this research, it becomes evident that warwashing is a topic that matters for organizations, especially regarding consumer behaviors. It appears that firms not only need to ignore warwashing but also try to avoid it actively. As a concept, warwashing is a problem for firms since this study shows differences across two cultures. Therefore, warwashing remains a dynamic concept that organizations must be wary of, seeing that consequences may vary across consumer segments. Evidence shows that major backlashes, such as boycotting, occur if these differences are disregarded. Simultaneously, organizations need less cultural standardization when operating in multiple countries, even if these countries are situated on the same continent. With all the pandemonium in the world contemporarily, warwashing is a phenomenon that managers must confront. Warwashing matters so much for organizations, resulting from consumers being more aware of sustainable business practices and easier access for consumers to investigate firm activities. What is also intriguing to note is that major companies like Carlsberg have taken initiatives and realized that consumers are demanding action regarding the Russia-Ukraine war. Pulling out activities in regions is just one way of actively engaging against warwashing, and it is important to fathom that warwashing is not only concerned with greenwashing during war events. Warwashing is the combination of different colored washings. Hence, the concept is constructed differently than traditional washings, focusing on washing during special events (war) rather than a specific type of washing.

### **6.1 Limitations and future lines of research**

While this research paper accounts for and analyzes how Portuguese and Danes are affected by social media warwashing, it does not cover everything related to the subject and has limitations. The fact that the study is cross-sectional and not longitudinal implies that the data was only collected at one point in time, and, inherently, it is not possible to compare results over time to see if there is any noticeable evolution. Another limitation was the limited access to existing cultural data compared to Portugal and Denmark. The existing cultural data was scarce and usually either accounted for differences between bigger European countries or comparisons between continents. Finally, there was a limitation in "warwashing" as an unstudied phenomenon, implying a shortage of specific literature on the topic.

A suggestion for further research is to investigate why the differences occur. With more time and the absence of a word limit, adding other demographic control variables such as income, religion, ethnicity,

and education would be intriguing to make the research more robust and deliver potential unforeseen insights. Conducting a longitudinal study to compare in time will also contribute to more nuanced insights. A third suggestion revolves around the managerial decisions corporations should consider when war events are ongoing and what initiatives should be taken to be transparent about activities. Nonetheless, this research paper contributes to the existing literature on greenwashing, bluewashing, and pinkwashing by merging them into a new concept called "warwashing". This concept is highly relevant to the present day. It is more specific than traditional washings, providing new and original insights that may be used as a reference for future research.

## References

- Auxier, B. & Anderson, M. 2021. Social Media Use in 2021. Pew Research Center. Retrieved March 7, 2023, from <https://www.pewresearch.org/internet/2021/04/07/social-media-use-in-2021/>
- Albrecht, C. M., Campbell, C., Heinrich, D., & Lammel, M. (2013). Exploring why consumers engage in boycotts: Toward a unified model. *Journal of Public Affairs*, 13(2), 180-189.
- Baptista, N. T. & Rodrigues, R. G. 2018. Clustering consumers who engage in boycotting: New insights into the relationship between political consumerism and institutional trust. Springer. Retrieved January 28, 2023, from <https://ubibliorum.ubi.pt/bitstream/10400.6/4714/1/Baptista,%20Rodrigues%20-%202018%20-%20Clustering%20consumers%20who%20engage%20in%20boycotting%20New%20insights%20into%20the%20relationship%20between%20political%20consumer.pdf>
- Bassi, F. 2023. European Consumers' Attitudes towards the Environment and Sustainable Behavior in the Market. MDPI. Retrieved January 28, 2023, from <https://doi.org/10.3390/su15021666>
- Bhandari, P. & Nikolopoulou, K. 2020. What Is a Likert Scale? Guide & Examples. Scribbr. Retrieved November 24, 2022, from <https://www.scribbr.com/methodology/likert-scale/>
- Check, J., & Schutt, R. K. 2012. *Research methods in education*. Thousand Oaks, CA: Sage.
- Creswell, J. W. 2013. *Qualitative inquiry & research design: choosing among five approaches* (3rd ed.). Los Angeles: Sage.
- de Jong, M. D. T., Huluba, G., & Beldad, A. D. 2020. Different Shades of Greenwashing: Consumers' Reactions to Environmental Lies, Half-Lies, and Organizations Taking Credit for Following Legal Obligations. *Sage journals, Journal of Business and Technical Communication*, 34(1), 38–76. <https://doi.org/10.1177/1050651919874105>
- Delmas, M. A., & Burbano, V. C. 2011. The Drivers of Greenwashing. *Sage journals, California Management Review*, 54(1), 64–87. Retrieved July 29, 2022, from <https://doi.org/10.1525/cmr.2011.54.1.64>
- Ettenson, R., & Gabrielle Klein, J. (2005). The fallout from French nuclear testing in the South Pacific: A longitudinal study of consumer boycotts. *International marketing review*, 22(2), 199-224.
- Friedman, M. (1991), "Consumer boycotts: a conceptual framework and research agenda", *Journal of Social Issues*, Vol. 47 No. 1, pp. 149-68.

- Frisbie, S. 2022. For Companies That Stayed in Russia, the Risk of Reputational Blowback is Strong When and Where Awareness is High. Morning Consult. Retrieved July 29, 2022, from <https://morningconsult.com/2022/05/12/companies-russia-brand-favorability/>
- Greer, J. & Bruno, K. 1997. Greenwash: The Reality Behind Corporate Environmentalism. Rowman & Littlefield Publishers / Apex.
- Hofstede, G., Hofstede, G. J., & Minkov, M. 2010. Cultures and organizations: software of the mind : intercultural cooperation and its importance for survival. 3rd ed. New York ; London, McGraw-Hill.
- Ivanova, I. & Gibson, K. 2022. These are the companies that have pulled out of Russia since its invasion of Ukraine. CBS News. Retrieved July 29, 2022, from <https://www.cbsnews.com/news/russia-ukraine-corporations-pull-out-invasion/>
- Kastanakis, M. N. & Voyer, B. G. 2014. The effect of culture on perception and cognition: a conceptual framework. Journal of Business Research. Retrieved March 12, 2023, from DOI: 10.1016/j.jbusres.2013.03.028
- Obitsø, O. 2022. Carlsberg-slogan er blevet en del af krigen i Ukraine. Markedsføring. Retrieved July 29, 2022, from <https://markedsforing.dk/artikler/nyheder/carlsberg-slogan-er-blevet-en-del-af-krigen-i-ukraine/>
- Parkman, I. D., & Krause, A. J. (2018). The diamond model of authentic green marketing: Evidence from the sustainable architecture industry. *Business and Society Review*, 123(1), 83-118.
- Sailer, A., Wilfing, H., & Straus, E. 2022. Greenwashing and bluewashing in black friday-related sustainable fashion marketing on instagram. MDPI, Sustainability (Switzerland), 14(3) Retrieved July 29, 2022, from doi:10.3390/su14031494
- Saunders, N. K. M, Lewis, P. & Thornhill, A. 2016. Research methods for business students (seventh edition). New York: Pearson.
- Schoier, G., & Luca, P.D. 2017. Cause-Related Marketing: A Qualitative and Quantitative Analysis on Pinkwashing. International Federation of Classification Societies, 321-332.
- Statista (2024). Number of civilian casualties in Ukrain during Russia's invasion, available at <https://www.statista.com/statistics/1293492/ukraine-war-casualties/> konsulted 4/4/2024.
- Topal, İ., Nart, S., Akar, C., & Erkollar, A. 2019. The effect of greenwashing on online consumer engagement: A comparative study in France, Germany, Turkey, and the United Kingdom. *Bus Strat Env*, 2020; 29: 465– 480. Retrieved July 29, 2022, from <https://doi.org/10.1002/bse.2380>
- Yildirim, E., Arslan, Y., & Barutçu, M. 2016. The role of uncertainty avoidance and indulgence as cultural dimensions on online shopping expenditure. Research Gate. Retrieved March 13, 2023, from [https://www.researchgate.net/publication/290964723\\_THE\\_ROLE\\_OF\\_UNCERTAINTY\\_AVOIDANCE\\_AND\\_INDULGENCE\\_AS\\_CULTURAL\\_DIMENSIONS\\_ON\\_ONLINE\\_SHOPPING\\_EXPENDITURE](https://www.researchgate.net/publication/290964723_THE_ROLE_OF_UNCERTAINTY_AVOIDANCE_AND_INDULGENCE_AS_CULTURAL_DIMENSIONS_ON_ONLINE_SHOPPING_EXPENDITURE)
- Zakir-Hussain, M. 2022. Lego pulls out of Russia 'indefinitely' and closes 81 stores. Independent. Retrieved July 27, 2022, from <https://www.independent.co.uk/news/world/europe/lego-russia-stores-boycott-ukraine-b2122041.html>.

## **Appendix - Survey**

Please state to what extent do you agree with the following statements, using a scale from 1- strongly disagree to 7- strongly agree

Question 1: Warwashing is a priority for me when I buy products or services.

Question 2: I will not buy products or services from warwashing firms even if it is cheaper than alternatives.

Question 3: I am likely to inform my friends and family about warwashing behavior from firms.

Question 4: I am willing to do in-depth exploration into companies I suspect warwash.

Question 5: I am likely to boycott a brand that I have a preference for if I knew the firm had warwashing activities.

Question 6: I believe that my actions can help prevent firms from warwashing.

Question 7: I am more attentive and distrustful towards advertising on social media than on other platforms.

Question 8: I am more likely to buy from transparent companies that openly declare their contribution rather than tacit companies regarding warwashing.

**Please select the option that best reflects your opinion.**

Question 9: Which warwashing technique do you consider to be most serious?

Possible options: No proof, irrelevant contribution, fibbing, obscurity/deception, false certifications, jargon to confuse customers and selective firm engagement.