Eco-Friendly Choices: Understanding Consumer Responses to Sustainable Packaging in Supermarkets

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Dissertation written under the supervision of Professor Nuno Moreira da Cruz

Dissertation submitted in partial fulfilment of requirements for the MSc in Management with Specialization in Strategy, Entrepreneurship & Impact, at the Universidade Católica Portuguesa, 3 January 2024.

ABSTRACT

This study investigates the impact of sustainable packaging on consumer purchase intentions in supermarkets, drawing from an extensive literature review on consumer behavior, packaging, and green packaging. A survey was conducted with 89 participants, and the data were analyzed using regression models in R. The results indicate that participants placing higher importance on sustainable and plastic-reducing packaging exhibit a stronger inclination toward choosing products with sustainable packaging. Educational level emerged as a significant factor, with participants holding Bachelor's and Master's degrees showing a greater preference for sustainable packaging. Age also played a role, as younger participants expressed a higher preference for sustainable options. The study highlights the importance of visual product characteristics and the positive association between sustainable packaging and consumer choices. However, challenges such as environmental impact and the need for increased consumer awareness were identified. The findings emphasize the need for future research to explore the influence of product prices and include various types of supermarkets in the analysis. The study contributes valuable insights for academics and practitioners seeking to understand and promote sustainable choices in the context of food packaging. As consumers increasingly prioritize sustainability, businesses embracing eco-friendly practices are likely to thrive in a conscientious market.

Keywords: Sustainable Packaging, Purchase Intentions, Supermarkets, Consumer Behavior, Packaging Materials, Consumer Preferences, Green Packaging, Packaging Trends

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SUMÁRIO

Este estudo investiga o impacto das embalagens sustentáveis na intenção de compra do consumidor em supermercados, baseando-se em uma extensa revisão de literatura sobre comportamento do consumidor, embalagens e embalagens ecológicas. Foi conduzida uma pesquisa com 89 participantes, e os dados foram analisados por meio de modelos de regressão no R. Os resultados indicam que participantes que atribuem maior importância a embalagens sustentáveis e à redução de plástico mostram uma inclinação mais forte para escolher produtos com embalagens sustentáveis. O nível educacional surgiu como um fator significativo, com participantes com bacharelado e mestrado mostrando uma preferência maior por embalagens sustentáveis. A idade também desempenhou um papel, com participantes mais jovens expressando uma preferência maior por opções sustentáveis. O estudo destaca a importância das características visuais do produto e a associação positiva entre embalagens sustentáveis e escolhas do consumidor. No entanto, foram identificados desafios, como o impacto ambiental e a necessidade de aumentar a conscientização do consumidor. Os resultados enfatizam a necessidade de pesquisas futuras para explorar a influência dos preços dos produtos e incluir diversos tipos de supermercados na análise. CO estudo contribui com insights valiosos para acadêmicos e profissionais que buscam entender e promover escolhas sustentáveis no contexto de embalagens de alimentos. À medida que os consumidores priorizam cada vez mais a sustentabilidade, empresas que adotam práticas ecológicas têm mais chances de prosperar em um mercado consciente.

Palavras-chave: Embalagem Sustentável, Intenções de Compra, Supermercados, Comportamento do Consumidor, Materiais de Embalagem, Preferências do Consumidor, Embalagem Sustentável, Tendências de Embalagem

Título: Escolhas Ecológicas: Compreendendo as Respostas do Consumidor às Embalagens Sustentáveis em Supermercados

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ACKNOWLEDGEMENTS

First, I thank Professor Nuno Moreira da Cruz for his support and guidance throughout my research journey.

I also want to thank my family for their constant and eternal support, excellent advice, and always motivating me to be the best version of myself.

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INTRODUCTION

As sustainability takes center stage in consumer consciousness, deciphering the dynamics of buying intention becomes imperative for businesses striving to align with eco-conscious preferences. In the era of heightened environmental awareness, consumers are increasingly attuned to the ecological impact of their purchasing decisions, seeking products that harmonize with their sustainability values. The role of packaging, a ubiquitous aspect of the consumer experience, has come under scrutiny as businesses grapple with the imperative to adopt eco-friendly practices.

While sustainability takes precedence in the consumer landscape, the relationship between environmentally conscious choices and purchasing decisions is particularly pronounced. While numerous studies have explored the factors shaping buying intention, deepening into the differentiated dynamics within the supermarket context becomes substantial. Supermarkets, as pivotal players in the retail sphere, offer a unique setting to investigate the multifaceted influences on consumer behavior, providing valuable insights into the interplay of sustainability and purchasing choices.

The supermarket setting, marked by its diverse product offerings and dynamic consumer interactions, serves as an alluring backdrop for my inquiry. The traditional metrics influencing the purchase intention, as studied by scholars such as Timmer (2004), Oliver & Lee (2010), Watanabe, Torres and Alfinito (2019) and Jung, Sharma and Mattila (2022), provide a foundation for my exploration. However, my investigation extends beyond the conventional boundaries, pivoting towards the central role of sustainable packaging and its implications for both consumers and businesses.

This paper seeks to bridge the gap between theoretical insights into purchase intention and the practical realities within supermarkets. By examining the relationship between sustainable packaging practices and consumer purchase intention, I am aiming to contribute to a deeper understanding of how environmental consciousness shapes the choices made within the aisles of supermarkets. The subsequent sections will provide a comprehensive examination of the theoretical frameworks underpinning buying intention, laying the groundwork for our exploration of the specific dynamics at play in the realm of sustainable packaging and its impact on consumer behavior within supermarkets.

THEORETICAL BACKGROUND

1.1 Deciphering Buying Intention

In the upcoming exploration, I will delve into existing studies to gain a comprehensive understanding of the concept of "buying intention". By drawing upon previous research, the aim is to unravel the significance and nuances associated with this term, examining its varied dimensions and the factors that contribute to its definition within the context of consumer behavior and decision-making.

So, what does buying intention imply? According to Wu, Yeh and Hsiao (2011), buying intention outlines the possibility of consumers to plan or be willing to buy a specific product or service in the future. Similarly, Cronin, Brady and Hult (2000) argue purchase intention demonstrates the consumer's trend to buy goods or services in the same store and share their experience with friends and family.

In addition, according to Sahi, Sekhon and Quareshi (2016), purchase intention delineates a state wherein the customer and the seller are poised to engage in a transaction. This process initiates with the evaluation of the product, wherein individuals draw upon their existing experiential knowledge and seek external information for a comprehensive assessment (Chen & Deng, 2016). In essence, it signifies a crucial juncture in the interaction between consumers and sellers, where informed decision-making becomes pivotal, influenced by a combination of personal experiences and external inputs.

Furthermore, purchase intention, as articulated by Zeithaml, Berry and Parasuraman (1996), represents a facet of behavioral intention. It serves as a precursor, providing insight into the prospective actions of the consumer.

1.2 What Influences Buying Intention?

After the exploration of previous research on what buying intention implies, I want to draw attention on the factors that are influencing the buying intention of consumers. The exploration of factors influencing consumers' buying intention has been a subject of inquiry in numerous studies. Scholars and researchers have delved into this complex question, aiming to dissect the

various elements that contribute to and shape the purchasing decisions of consumers. In the existing body of literature, a multitude of variables and determinants have been identified and examined, reflecting the diverse and versatile nature of the factors impacting buying intention.

Exploring the complexity of customer purchase intention reveals a diverse landscape influenced by diverse factors, as elucidated by Oliver & Lee (2010). The complexity extends beyond mere simplicity, encompassing a spectrum of variables that shape consumers' buying intentions. Situational factors emerge as pivotal determinants, incorporating the evaluation of store image, product pricing, and consumer satisfaction. Delving deeper into the realm of purchase intention, motivational aspects come into play. This dimension encompasses the values, beliefs, and cultural elements embedded within the consumer society. As consumers navigate the purchasing journey, these multifarious elements intertwine, creating a differentiated tapestry that guides consumers' intention to buy.

Furthermore, demographic characteristics play a pivotal role in shaping consumer purchase intention, with age being a significant factor influencing behavioral patterns. Variances in behavior across different age groups highlight the dynamic nature of consumer preferences. For instance, a nineteen-year-old consumer may exhibit distinct purchasing behaviors compared to a twenty-six-year-old counterpart, as elucidated by Jeddi (2010). Gender, another crucial demographic variable, has also been a subject of exploration in relation to purchase decisions. Studies, such as the one conducted by (Mitchell & Walsh, 2004) indicate that men tend to be more risk-taking in their purchasing choices and rely more on individual decision-making compared to women. Additionally, Shahnaei (2012) delved into the impact of educational levels on green purchasing behaviors, revealing that a higher level of education positively influences environmentally conscious purchasing among the studied consumers. These findings collectively emphasize the multiplex nature of demographic characteristics in shaping consumer behavior and purchase intention.

Examining the focus of this research on supermarkets, numerous studies have been conducted to explore the relationship between supermarkets and purchase intention. These studies provide valuable insights into the factors influencing consumer behavior within the supermarket context.

The structure of a supermarket seems to be important as it influences the purchasing behavior of customers. For example, Timmer (2004) found that supermarkets are using a wide and robust logistics structure which depends on an accurate understanding of their consumers in order to avoid food waste or shortage. These findings reinforce the relevance of studying about the purchase intention of supermarket customers.

Watanabe, Torres and Alfinito (2019) found customers' satisfaction and the evaluation of store image positively affect purchase intention. Therefore, it is necessary for supermarkets to focus on aspects related to layout, service and products' variety and quality in order to increase satisfaction and purchase intention.

Moreover, authenticity emerges as a significant factor shaping consumers' purchase decisions. In a comprehensive study conducted by Jung, Sharma, and Mattila (2022), their findings indicate that perceived supermarket credibility serves as a positive and indirect mediator in the relationship between supermarket type and purchase intention. This relationship is further differentiated by the moderating effects of familiarity and price level. Consequently, the research suggests that supermarket credibility holds substantial influence over consumers' buying decisions.

In their extensive analysis of data derived from a study on customer satisfaction among Swedish consumers, Nilsson & Wall (2017) discovered a robust connection between stated repurchase intention and satisfaction across various product categories. The findings of their research underline the significance of customer satisfaction as a key determinant influencing consumers' expressed willingness to repurchase products within diverse product categories. This relationship highlights the interplay between satisfaction and repurchase intention, shedding light on the dynamics that contribute to consumer decision-making in the Swedish market.

Furthermore, delving into the scope of consumer behavior, the visual characteristics of products emerge as pivotal factors influencing purchase intention. In a comprehensive study conducted by Farooq, Habib and Aslam (2015), each of the four elements constituting packaging—design, graphics, color, and material—revealed a significant positive association with purchase intention. This relationship between these visual components and consumers' propensity to make a purchase underscores the versatile nature of the decision-making process, where aesthetic attributes contribute substantially to shaping consumer preferences and intentions.

The same line of argument is used by Ranjbarian (2009), stating in his research that packaging is becoming an effective tool to capture the consumer purchase intention. Rundh (2005), describes that packaging can attract consumer attention towards the product and it can influence the consumer perception about that particular product. According to Underwood, Klein and Burke (2001) and Silayoi & Speece (2004) packaging is the unique image of your product which helps consumer to identify your products in hundreds of other brands. Furthermore, according to Schoell (1985), packaging has both positive and negative impact on your product either it can improve your product image or it can be a cause of your product failure.

Related to the fact that packaging is influencing the consumer behavior, Ferrell (1987) and Frontiers (1996), delineate in their researches that when consumers are going to purchase a product, most of their decisions are made at the spot.

1.3 Food Packaging

While the previous section provided insights into the dynamics that shape consumer behavior within the supermarket context, this section now deepens on food packaging and its influence on the buying intention of consumers. While analyzing this relationship using existing research, I investigated the repercussions of packaging on the environment and considered packaging possibilities, which are innocuous for the environment. As consumers increasingly scrutinize the ecological footprint of their purchasing decisions, understanding the complexities and implications of food packaging becomes paramount.

Shaikh, Yaqoob and Aggarwal (2021) underscore a significant environmental concern related to food packaging. They emphasize that a predominant portion of food packaging comprises materials such as polystyrene and non-biodegradable plastics. The enduring nature of these materials poses a challenge, as they do not readily decompose, contributing to long-term environmental issues. This concern revolves around the persistent presence of these packaging materials in various ecosystems, potentially leading to adverse ecological consequences over an extended period.

Over the past few decades, there has been a substantial increase in the consumption of packaged foods. In 2020, the global packaged food market reached a significant valuation of $1.9 trillion,

driven by a notable 5% annual growth rate. Forecasts indicate that this upward trajectory is set to continue, with expectations that the market will expand to an estimated $3.4 trillion by the year 2030 (Kan & Miller, 2022). Majid et al. (2018) observed that the sustained growth of the packaged food industry is driven by the conveniences, advancements, and benefits offered by packaging. Among the advantages of food packaging is its role in providing essential information to customers, encompassing details about the product's contents, storage conditions, and shelf life. Additionally, food packaging serves as a crucial tool in maintaining food safety, enhancing the overall shelf life of products, and mitigating food waste and loss, as emphasized in studies by Verghese et al. (2015), Han et al. (2018), and White & Lockyer (2020).

However, while food packaging provides crucial benefits, it also raises significant concerns about its environmental impact throughout its life cycle. The raw materials employed in packaging contribute to environmental challenges by emitting greenhouse gases into the atmosphere. During the extraction and production of certain packaging materials, processes may release gases like carbon dioxide or methane, which are known as greenhouse gases. These gases can contribute to climate change and other environmental issues when released into the Earth's atmosphere (Chandegara et al., 2015). Simultaneously, the extraction and utilization of these materials contribute to the depletion of natural resources, as highlighted in the study conducted by Hopewell et al. (2009).

According to Kan & Miller (2022), the manufacturing process of packaging poses environmental challenges, consuming substantial amounts of energy and water, which subsequently contributes to pollution and waste. Moreover, the prevalent design of most food packaging for single-use purposes exacerbates the environmental impact, as these materials are often discarded after a short period. This linear approach to packaging, as highlighted by Geueke et al. (2018), results in a lack of circularity in the existing packaging waste management industry, necessitating a reevaluation of sustainable practices to mitigate environmental repercussions.

However, an alternative solution has emerged in the form of green packaging. Green packaging entails the utilization of biodegradable materials derived from plants, animals, and other organic fibers in the production of packaging. These materials not only possess recyclable properties but are also predisposed to degradation, aligning with principles of sustainability (Guillard et

al., 2018). The adoption of green packaging not only contributes to environmental harm reduction but also promotes sustainable development, ensuring harmlessness to both the environment and the human body throughout its entire lifecycle, as emphasized by Singh & Pandey (2018).

In his study, Maziriri (2020) outlined three primary characteristics of green packaging. These include the reduction in the use of hard-to-decompose materials, the utilization of environmentally friendly packaging, and the incorporation of packaging processes with low energy consumption.

Is this form of packaging also contemporary in the supermarket industry? It is not surprising that efforts to improve sustainability or reduce the environmental footprint of packaging are getting an increasing amount of attention across the supermarket industry. The goal behind green packaging is to assist in minimizing the overall impacts associated with production and delivery of foods. The package not only has to fulfill its required functions, but also the way in which the package fulfills these functions may contribute toward the reduction of the environmental impacts associated with the product itself (Selke, 2012).

As a result of my preceding review about the existing literature about consumer behavior regarding buying intention and its influences, packaging and alternative forms of common packaging, especially with regard to the supermarket industry, I developed the following research question:

Does the sustainable packaging of food influence the purchase intention of consumers in supermarkets?

METHODOLOGY

In order to answer this research question, I created a survey to test the research question in real life. The survey aims to empirically examine the real-life implications of the relationship between sustainable food packaging and consumer purchase intention in the supermarket setting. The survey questions can be found in the appendix. I had 89 responses that I used in my analysis. Some responses were incomplete and therefore I deleted them from the dataset.

37% of the participants are man, whereas the rest, meaning 63%, are woman. No one answered with “non-binary” or “prefer not to say”. Most of the participants are between 25 and 34 years old (56%). Second most is the age group 18-24 years old (33%). There is no participant under 18 years old. The rest belongs to the age groups 35-44 years old, 45-54 years old, 55-64 years old and 65+ years old. For Question 3, asking how important it is for the respondents that the packaging of foods in the supermarket is sustainable, 37% replied it is “moderately important” for them. The next biggest group is “very important” with 27%, followed by “slightly important” (18%) and “extremely important” (12%). Only 6% replied with “not important at all”. For Question 4, asking about how important it is for the respondents that the packaging of foods in the supermarket contains less plastic, I obtained similar results as for Question 3. For 36% of the respondents it is “very important” that the packaging of foods in the supermarket contains less plastic. 27% of all respondents saying it is “moderately important” for them, followed by “extremely important” (21%) and “slightly important” (13%). 2 respondents answered with “not important at all”, which equals 2%. For Question 5, 26% of the participants answered that it is “extremely” or “somewhat unlikely” that the packaging of foods in the supermarket influences their purchase decision. More than half of all respondents (58%) said it is “somewhat” or “extremely likely” that the packaging of foods influences their purchase decision. The rest (15%) replied that it is “neither likely nor unlikely”. For Question 6, for 37% of all respondents it is “somewhat likely” that they would buy the product form the picture. The picture in Question 6 contains a product with plastic packaging. For 27% it is “somewhat unlikely” and for 25% it is “neither likely nor unlikely”. The two smallest groups are “extremely likely” (9%) and “extremely unlikely” (2%). For the second picture (Question 7), which contains the sustainable packaging, namely cardboard packaging, for the majority (83%) it is “somewhat” or “extremely likely” to buy this product. None of the participants answered with “extremely unlikely” that they would this product. “Somewhat likely” (8%) and “neither likely nor unlikely” (9%) are the third and fourth most chosen answers. Question 8 regarding the question if the respondents would rather buy the product with plastic packaging or the one with sustainable packaging is answered by 83% of the participants with Product 2 (sustainable packaging). This means, 74 participants said they would rather buy Product 2, whereas 15 said they would rather buy Product 1. With regards to the level of education of the respondents, I identified 54% completed a Bachelor’s Degree, whereas 29% completed a Master’s Degree. 10% finished high school and none of the participants have less than a high school degree. 4% exhibit a Ph.D. or higher. Last but not least, 33% of the respondents have an total annual household income of less than $25,000 (Question 10). 22% have stated an total annual

household income of $25,000-$50,000. 18% classified themselves in the range of $50,000-$100,000, whereas 7% and 8% of the participants answered with $100,000-$200,000 and more than $200,000 of total annual household income respectively. Unfortunately, 11 respondents did not want to reveal their household income and answered with “prefer not to say”.

In order to test my research question, I included my data from the survey into the statistical computing and graphics software program R. R is an open-source programming language widely used for statistical computing and graphics due to its flexibility and extensive statistical packages. Regression analysis was chosen to examine the relationships between variables and address the research question effectively.

2.1 Descriptive Statistics

To offer a comprehensive overview of the data, a set of summary statistics has been generated utilizing the statistical software R as mentioned above. These summary statistics serve as a valuable analytical tool, providing a detailed examination of key variables and their respective distributions. Readers are encouraged to refer to the dedicated appendix section (Appendix 2), where the summary statistics table is presented. In the summary statistics, I included the data for Question 3, Question 4, Question 5, Question 6 and Question 7. We can see that every variable has 89 observations and the means of all of the questions are between 3 and 4, meaning for Question 3 and Question 4 that the average is between the answers “moderately important” and “very important”. As stated already above, Question 3 of my survey asked how important it is for participants that the packaging of foods in the supermarket is sustainable. Question 4 is about how important it is for participants the packaging of foods in the supermarket contains less plastic. The mean for “Q3” is 3.225 and for “Q4” 3.607. Therefore, we can say that, on average, it is more important for participant that the packaging of foods in the supermarket contains less plastic compared to that the packaging of foods in the supermarket is sustainable. The mean for “Q5” is 3.404, for “Q6” 3.236 and for “Q7” 3.090. All of these questions have the possible answers ranging from “extremely unlikely” to “extremely likely”. Therefore, the average answers are between “neither likely nor unlikely” and “somewhat likely”. Question 5 asked if sustainable packaging of foods in the supermarket influence the purchase decision of the participants. Question 6 and 7 both asked how likely it is to buy the product seen on the picture. There is one picture with a product with plastic packaging and the same product with sustainable packaging.

In order to work with the answers I got in the survey I transformed the categorical variables into a format conducive to regression modeling. Microsoft Excel was utilized for initial data handling tasks. I handled incomplete responses, and prepared the dataset for regression analysis within R. In order to run the regression, I convert the answers from the survey in numerical values in order to include them in the regression models. Therefore, each possibly answer, ranging from “extremely unlikely” to “extremely likely” as in Question 5, is transformed into a number, ranging from 1 to 5. Thereby, it was possible to run a regression and interpret possible influences of particular questions on other particular questions.

2.2 Regression Models

In R, I run two regression models, the first examining if each of the possible answers from Question 1, 2, 3, 4, 9 and 10 influence the answers for Question 8. Therefore, I test if the importance for the participants of packaging of foods being sustainable in the supermarket and the importance of packaging of foods containing less plastic in the supermarket influence the decision by respondents to rather buy Product 1 or Product 2 in Question 8. Furthermore, I included the Gender, Age, Level of education and Household income into the model to test if these variables are influencing the decision of rather buying the product with plastic packaging or the product with sustainable packaging. These variables were chosen based on their relevance to the research question and findings from the literature review. The results from both models can be found in in Appendix 2.

When we look at the first model, we can see two significant coefficients, namely “Q93” and “Q94”. Furthermore, the constant is also significant. The notation "Q93" signifies that it corresponds to the third numerical value within the set of possible answers for Question 9. Question 9 is about the highest degree or level of education the participants have completed. Since there was no one who answered with less than high school, I transformed the answer High school to 1, Trade school to 2, Bachelor’s Degree to 3, Master’s Degree to 4 and Ph.D. or higher to 5. Therefore, the coefficients for “Q93” and “Q94” are about the group that have completed a Bachelor’s Degree and Master’s Degree respectively. The coefficient for “Q93” is positive and significant at the 5% level. It tells us that if a respondent has completed a Bachelor’s Degree as highest level of education, the probability that this respondent to choose Picture 1 increase, on average, by 38.7%, ceteris paribus, compared to respondents who has

completed High school as highest level of education. For “Q94”, which represents the group of respondents who completed a Master’s Degree as highest level of education, the coefficient is also positive and significant, but at the 10% level. The coefficient tells us that if the participant has completed a Master’s Degree as highest level of education, the probability that this respondent chose Picture 1 increase, on average, by 45.4%, ceteris paribus, compared to respondents who has completed High school as highest level of education. Therefore, we can conclude that these two categories (Bachelor’s and Master’s Degree) significantly influence the intention of participants to rather buy a product with plastic packaging or a product with sustainable packaging in a sense that respondents from these groups prefer the sustainable packaging.

The second model in Regression table 1 doesn't account for every group associated with each answer possibility from the questions. Instead, it only features a single coefficient for a particular variable. This model contains the variables “Q3”, “Q4”, Gender, Age, “Q9” and “Q10”. We can observe that “Q4” and “Q9” are significant at the 1% and 10% level respectively. “Q4”, namely Question 4, is about the importance for participants that the packaging of foods in the supermarket contain less plastic. The coefficient is positive and significant at the 1% level as I already mentioned. The coefficient tells us that the probability that participants choose Product 2 (sustainable product) increases, on average, by 18.7%, ceteris paribus, the more important it is for participants that the packaging of foods in the supermarket contains less plastic. This means the sustainable packaging of foods influences the buying intention. Furthermore, the coefficient for “Q9” (Question 9) tells us the probability that the participants chose Picture 2 increases, on average, by 9.4%, ceteris paribus, the higher the level of education of each participant. In Model 1, where the adjusted R^2 is 0.223, it is noteworthy that this particular model effectively accounts for 22.3% of the variations observed in "Q8". This percentage signifies the extent to which the model succeeds in elucidating the variability of responses associated with "Q8”. Moving on to Model 2, a marginal decrease in the R2 value is observed in comparison to Model 1. Specifically, the R^2 for Model 2 is 0.212, denoting that this model explains approximately 21.2% of the variability of "Q8." This modest reduction suggests a shift in the model's explanatory power but still underscores its significance in capturing a substantial portion of the observed variations in responses to "Q8”.

In the regression analysis presented in Regression table 2 (Appendix 2), I conducted a regression with “Q6” (Question 6) and “Q7” (Question 7) as dependent variables. The

independent variables considered in this analysis include “Q5” (Question 5), Gender, Age, Level of education, and Household income. By examining the relationship between these variables, I aimed to gain a deeper understanding of the factors influencing responses to “Q6” and “Q7”. Question 6 and Question 7 are asking about how likely it is for participants to buy the product from the respective question. Question 6 contains a product with plastic packaging, whereas Question 7 a product with sustainable packaging. The inclusion of demographic factors such as Gender, Age, Education level, and Household income provides a comprehensive perspective on the potential influences on the respondents' answers to these questions.

In Regression table 2 (Appendix 2), I adopted a methodology analogous to the one used in Regression table 1. Initially, I scrutinized the influence of each potential answer across the questions included in the model on its corresponding dependent variable. Following this, I proceeded to conduct a comprehensive analysis, evaluating the effect of each variable as a whole. In Models 1 and 2 of the table of Regression model 2, each effect corresponds to all the potential answer possibilities from the survey, providing a comprehensive overview of their individual impacts. Conversely, Models 3 and 4 streamline the analysis, consolidating the influence of each dependent variable (“Q5”, Gender, Age, “Q9”, and “Q10”) into a singular coefficient. When we look at the coefficients from Model 1, we can see just one significant coefficient, “Q102” with a significance level of 1%. “Q102” is about the survey question of the total annual household income of the participants. There are 6 possible answers, but nobody replied with “prefer not to say” so we have only 5 possible categories ranked form 1 (less than 25K) to 5 (>200k). The Variable "Q102" pertains to Question 10, which specifically relates to household income, and in this context, it corresponds to Group 2 (25k-50k). Therefore, the coefficient tells us that if a participant is has an total annual household income of 25k-50k, the buying intention of this participant to buy the product from Question 6 (plastic packaging) becomes, on average, more unlikely compared to answer group 1 (less than 25k), all other constant. When we look at Model 2, we can observe 5 significant coefficients. These include “Q53”, “Q55”, “Age5”, “Age6” and “Q92”. The coefficient “Q53” is about Question 5 (“On a scale from 1-5, does sustainable packaging of foods in the supermarket influence your purchase decision?”) and describes answer group 3 (“neither likely nor unlikely”). The answer groups are ranked from 1 (“extremely unlikely”) to 5 (“extreme likely”). The coefficient means that if a participant chose “neither likely nor unlikely” for Question 5, the buying intention of this participant to buy the product from Question 7 (sustainable packaging) becomes, on average, more likely compared to answer group 1 (“extremely unlikely”), all other constant. The

coefficient is significant at the 5% level. The coefficient for “Q55” can be interpreted in similar ways to “Q53”. “Q55” is also significant, but on the 10% level. It tells us that if a participant chose “extremely likely” for Question 5, the buying intention of this participant to buy the product from Question 7 (sustainable packaging) becomes, on average, more likely compared to answer group 1 (“extremely unlikely”), all other constant. Now we will look at the coefficient for “Age5”, which is negative and significant at the 1% level. The question about the age of the participants (“How old are you?”) is divided in 6 groups ranging from 18-24 to 65+. There was no respondent under 18, why this group is not part of the analysis. “Age 5” then describes age group 55-64. Therefore, if a participant is belonging to the age group 55-64, the buying intention of this participant to buy the product from Question 7 (sustainable packaging) becomes, on average, less likely compared to age group 1 (18-24), all other constant. The same holds for the age group 6 (“Age6”). The coefficient is also negative and significant, but at the 10% level. If a participant is belonging to the age group 65+, the buying intention of this participant to buy the product from Question 7 (sustainable packaging) becomes, on average, less likely compared to age group 1 (18-24), all other constant. Finally, we can see a significant coefficient for “Q92” in Model 2 of Regression table 2. The coefficient is positive and significant at the 5% level. "Q92" denotes the second response category for Question 9, signifying participants who have completed the Trade school as highest level of education. The potential response options for Question 9 span from 1 (High school) to 5 (Ph.D. or higher). Since there were no answers for the categories “less than high school” and “prefer not to say”, these categories are not included in the analysis. The coefficient of "Q92" tells us that if a participant has completed the Trade school as highest level of education, the buying intention of this participant to buy the product from Question 7 (sustainable packaging) becomes, on average, more likely compared to participants who completed High school as highest level of education, all other constant.

Now, delving into Model 3 and 4 within Regression Table 2, a comprehensive examination was undertaken to scrutinize the impact of each variable, with a singular coefficient, on the likelihood of participants choosing between the product with plastic packaging (as explored in Model 3) and the alternative with sustainable packaging (as investigated in Model 4). These two models therefore only include the variables “Q5”, “Gender”, “Age”, “Q9” and “Q10”. When we look at Model 3, we see that the coefficient for “Q5” is negative and significant at the 1% level. This means, the buying intention of a participant to buy the product from question 6 (plastic packaging) becomes, on average, less likely, all other constant, the more likely it is

for a participant that sustainable packaged foods in the supermarket influence their purchase decision. If we now look at Model 2, we can observe two significant coefficients, namely “Q5”, similar to Model 3, and “Age”. The coefficient for “Q5” is positive and significant at the 1% level, whereas the coefficient for “Age” is negative and significant at the 10% level. The coefficient for “Q5” tells us that the more likely it is for a participant that sustainable foods in the supermarket influence their purchase decision, the more likely, on average, the buying intention of a participant to buy the product from Question 7 (sustainable packaging), all other constant. Regarding the coefficient for “Age”, which is negative and significant, we can say that the older a participant is, the less likely, on average, it is that this participant would buy product with the sustainable packaging (Question 7), all other constant.

When we now look at the R^2 values across the diverse models in Regression table 2, we can observe that in the R^2 of Model 1, namely 0.245, tells us that 24.5% of the variations within responses to "Q6” are explained by the model. Shifting our focus to Model 2, its adjusted R^2 of 0.178 signifies an explanatory capacity of 17.8% concerning the variability observed in "Q7”. Moving to Model 3, an adjusted R^2 of 0.210 can be found, meaning that this model explains 21% of the variations within "Q6”. Both Models, 3 and 4, applying a distinctive approach by consolidating the influence of each dependent variable (“Q5”, Gender, Age, “Q9”, and “Q10”) into one single coefficient. Specifically, Model 4 yields an adjusted R^2 of 0.078, capturing 7.8% of the variability present in responses to "Q7". A noteworthy aspect emerges when scrutinizing the adjusted R^2 values of Models 1 and 2, where each effect corresponds to all potential answer possibilities from the survey questions. These models not only provide a comprehensive overview of individual impacts but also exhibit higher adjusted R^2 values. In contrast, Model 3 and 4, which consolidate the influence of each dependent variable into one singular coefficient, present comparatively lower adjusted R^2 values. This distinction underscores the differences in explanatory power between the models, highlighting the importance of considering the comprehensive impact of various subcategories of different variables versus the consolidated effect of the specific variables.

GENERAL DISCUSSION

This study aimed to investigate the influence of sustainable packaging on the purchase intention of consumers in supermarkets. The study examined existing literature about consumer behavior

regarding buying intention and its influences, packaging and alternative forms of common packaging, especially with regard to the supermarket industry, in order to build the theoretical foundation of my research. Subsequently, a survey was conducted and the collected data were analyzed using regression models in R to address the research question.
The findings of the study revealed several interesting insights into the relationship between sustainable packaging and purchase intention. Notably, participants who places higher importance on the sustainability of packaging and the reduction of plastic in food packaging demonstrated a stronger inclination towards choosing products with sustainable packaging. This is especially interesting since its proves that the level of how important it is for consumers that the packaging of foods is sustainably leads to actions in their consumer behavior in the sense that they prefer to buy product with sustainable packaging in a real life environment. This disproves the theory that many people who are proclaiming to protect the environment with sustainable actions but when it comes to their own consumer behavior, they doesn't tend to consume the most sustainable option.

Besides the previous result of my research, the level of education also emerged as a significant factor influencing consumer preferences for sustainable packaging. Participants with higher educational qualifications, such as Bachelor's and Master's degrees, showed greater preference for products with sustainable packaging.

The study also examined the impact of age on purchase intention concerning sustainable packaging. The results indicated that younger participants were more likely to express a preference for sustainable packaging compared to older participants. Similarly, for older participants, especially participants older than 65 years old, it is less likely that they buy products with sustainable packaging.

Furthermore, the study explored the role of income in shaping consumer behavior. While there was a significant association between certain income brackets and preferences for sustainable packaging, the results were not consistent across all income groups. This suggests that economic factors alone may not be the sole determinants of sustainable purchasing behavior and other psychological and sociocultural factors might contribute to these choices.

Moreover, the study validates the significance of the visual characteristics of products, aligning with previous research highlighting the positive association between packaging elements

(design, graphics, color, and material) and purchase intention (Farooq, Habib and Aslam, 2015). This connection is further emphasized when considering the positive response of participants to sustainable packaging, indicating that the eco-friendly aspect becomes a visual cue influencing their purchasing decisions.

3.1 Implications

There are some broader implications of the findings for the supermarket industry. The increasing global market for packaged food, valued at $1.9 trillion in 2020 (Kan & Miller, 2022), signifies the importance of understanding consumer preferences and aligning products with sustainable packaging to meet evolving demands. The study emphasized the huge potential for supermarkets to contribute to environmental sustainability by adopting green packaging practices and offering a diverse range of environmentally friendly products. Furthermore, there are some managerial implications of this study that are significant for supermarkets seeking to align with consumer values and enhance their competitive edge. The research underlines the importance of prioritizing sustainable packaging practices to foster positive consumer perceptions and influence purchase intentions positively. First of all, supermarkets can strategically position themselves by adopting sustainable packaging practices. Investing in eco-friendly materials and clearly communicating these efforts to consumers can enhance the store image, contributing to increased satisfaction and, consequently, higher purchase intentions (Watanabe, Torres, & Alfinito, 2019).

Additionally, given the rising consumer awareness of environmental issues associated with packaging, supermarkets should consider implementing educational initiatives. Providing information about the benefits of sustainable packaging, the materials used and the environmental impact could serve to further enhance consumer satisfaction and purchase intentions (Boz, Korhonen and Koelsch Sand, 2020). Another possible implication for supermarkets is to collaborate with suppliers to source and promote products with sustainable packaging. Building partnerships with suppliers committed to eco-friendly packaging aligns with consumer values and contributes to a positive store image (Maziriri, 2020). Last but not least, creating marketing messages that highlight the commitment to sustainable practices can be a powerful tool. Emphasizing the positive environmental impact of choosing products with sustainable packaging can resonate with environmentally conscious consumers, potentially influencing their purchase decision (Jung, Sharma & Mattila, 2022).

It is crucial to acknowledge the challenges associated with the adoption of sustainable packaging for supermarkets and its in-house or external suppliers. Environmental concerns related to the life cycle of packaging materials, such as energy consumption and waste generation during manufacturing, need to be addressed to ensure the overall sustainability of these practices. Additionally, this study highlighted the need to increased awareness and education regarding sustainable packaging to further enhance its acceptance among consumers.

3.2 Limitations

Identifying certain limitations contained in this study is imperative for a sophisticated interpretation of the findings. Primarily, a notable constraint lies in the absence of specific price considerations when probing participants about their likelihood of purchasing products with either plastic packaging (Question 6) or more sustainable packaging (Question 7). The omission of price-related variables in these questions might limit the depth of insights into participants' decision-making processes, as pricing often stands as a pivotal factor influencing consumer choices. I did not include the price in the questions since I did not want to have this bias in my analysis. But, future iterations of the study could benefit from incorporating pricing dimensions to provide a more holistic understanding of the dynamics shaping participants' preferences in relation to packaging options. Given the differentiated landscape of consumer preferences, particularly in the context of environmentally friendly choices, it becomes imperative to consider the influence of pricing on purchasing decisions. As highlighted by Wong et al., (1996)), the affordability of green-packaged products juxtaposed with the cost-effectiveness of conventional alternatives adds an additional layer of complexity to the consumer decision-making process. To unravel the complexity surrounding the impact of pricing, it is advisable to incorporate product prices into the analysis, especially in Question 6 and 7. By introducing this dimension, the study can explore whether the observed conclusions hold true when accounting for variations in product costs. For instance, if products with sustainable packaging carry a higher price tag, it prompts an interesting inquiry into whether consumers' preferences and intentions remain consistent or undergo discernible shifts in the presence of cost differentials. Thus, integrating pricing considerations into future iterations of the study would offer a more differentiated and holistic understanding of the dynamics guiding consumer behavior in the area of sustainable packaging. The same applies to Question 8 of my survey, asking about what product would a participant rather buy if the two pictures contain the exact same product but

with different packaging. If we also include a price here, how does this effect the answers by the respondents? If the product with the sustainable packaging is more expensive, does this influence the choices made by the participants? Answers to these questions can give more insights into the question asked in this research and should tried to be answered in future research.

Another limitation in the design of the survey is the lack of including different types of supermarkets. According to Saber & Weber (2019), supermarkets perform significantly better in translating sustainability to the store level than discounters. In light of this, future research efforts could benefit from exploring participants' preferences regarding shopping venues, specifically investigating whether individuals exhibit distinct inclinations for supermarkets versus discounters. By incorporating this variable into the research framework, an in-depth analysis can be conducted to ascertain its potential influence on the overarching research question. In essence, considering participants' store preferences provides an additional layer of insight into how sustainable packaging in supermarkets may influence purchase intentions, contributing to a more detailed and comprehensive understanding of consumer behavior in relation to environmentally friendly packaging. Expanding on this discussion, it would be plausible to extend the categorization of shopping venues to include corner shops as an additional category in the previously mentioned question regarding participants' preferences for supermarkets or discounters. This question can be asked in a survey in order to draw conclusions on the different types of supermarkets with regard to the influence of sustainable packaging on the buying intention on consumers. By incorporating corner shops into this classification, the research can capture a more diverse spectrum of shopping behaviors and preferences, allowing for a sophisticated exploration of how sustainable packaging in various retail settings influences consumers' purchase intentions. This inclusive approach provides an opportunity to uncover potential variations in consumer responses based on the specific retail context, thereby enriching the depth of insights gained from the study.

Additionally, it's imperative to acknowledge the limitation arising from the relatively low representation of respondents aged 45 and above in this study, constituting only 7% of the total participants. This scarcity in the older age demographic necessitates a cautious interpretation of the regression results pertaining to the variable "Age". The small sample size within this age group underscores the need for future research efforts to deliberately target a larger and more diverse group of participants in order to increase participants aged 45 and above. By expanding

the survey's reach to include a more comprehensive representation of individuals in this age group, subsequent studies could offer a more robust and reliable understanding of the effects across various age groups concerning the influence of sustainable packaging on the purchase intention.

This study further exhibits a potential limitation in the absence of attention check questions in the survey design. Attention check questions serve as a valuable tool to ensure participants are engaged and responding attentively. Their inclusion helps identify respondents who may be completing the survey without full concentration, reducing the risk of introducing biases or inaccuracies into the data.

Moreover, it is essential to note that the survey was administered to individuals from diverse nationalities without specifically ask for the nationalities which makes it challenging to categorize participants into specific cultural groups. Cultural background constitutes a significant factor in understanding consumer behavior, as highlighted by Hofstede (1980) in his seminal work, where he identified four dimensions of cultural variation through the analysis of over 116,000 questionnaires from IBM. These dimensions encompass masculinity-femininity, uncertainty avoidance, power distance, and individualism-collectivism. Subsequently, Hofstede & Bond (1988) introduced a fifth dimension, long-term orientation, particularly relevant in the context of Asian cultures. The distinctions in cultural dimensions, such as individualism-collectivism, hold substantial implications for consumer behavior. Collectivist cultures emphasize group identity and conformity to group norms, while individualistic cultures prioritize independence, with personal goals taking precedence over group objectives (Singelis, Triandes and Gelfand, 1995). The significance of exploring the role of individualism-collectivism in shaping purchase intention of consumers has been underlined by Frank, Enkawa and Schvaneveldt (2015), emphasizing the need to consider cultural diversity among consumers. Given the potential impact of cultural differences on purchase intention, it would be valuable to gather information about participants' cultural origins. This approach aligns with the recommendation to investigate how diverse cultural backgrounds may influence consumers' attitudes and behaviors regarding the sustainable packaging of foods in supermarkets. By incorporating this dimension into the research design, a better understanding of the cultural factors shaping purchase intention can be obtained.

In addition, it is crucial to acknowledge a potential limitation in the choice of products used in the survey, as illustrated in the survey questions 6, 7 and 8 in Appendix 1, where the product used are tomatoes. While Question 8 explicitly phrases the scenario as two identical products, Questions 6 and 7, assessing the likelihood of purchasing the product with or without sustainable packaging, introduce a potential source of bias. This arises from participants' individual preferences for tomatoes, which may influence their responses. For instance, participants with a dislike for tomatoes might be inclined to rate the likelihood as low, irrespective of the packaging, while those with a strong preference for tomatoes could express a higher likelihood to purchase. This variation in taste preferences introduces a layer of complexity that could impact the accuracy and reliability of the data in relation to purchase intention based on packaging preferences. To address this concern, future research may consider using a broader range of products or explicitly accounting for participants' food preferences in the survey design to enhance the validity of responses related to sustainable packaging.

The study shows another constraint, revolving around the assumption concerning the sustainability of paper packaging compared to plastic packaging. The survey probes participants about their inclination to purchase products with either plastic or cardboard packaging, presupposing that plastic packaging is inherently unsustainable while paper packaging is deemed sustainable. However, this binary categorization oversimplifies the complexities of sustainability in packaging materials. Notably, Gregson & Crang (2015) shed light on the challenges associated with waste management, emphasizing that a substantial portion of exported waste often bypasses recycling facilities. Instead, it finds its way into landfills or undergoes incineration due to leakage along the value chain or the incapacity of certain waste destinations to effectively recycle the received waste, reinforced by issues of unsolicited and contaminated waste. This raises critical questions about the assumed sustainability of paper packaging, urging a more sophisticated exploration of the environmental impact associated with different packaging materials. Consequently, future research could benefit from a comprehensive examination of the entire life cycle of various packaging materials, considering factors such as production, transportation, and end-of-life disposal, to provide a more accurate and holistic assessment of their sustainability. In doing so, the study would be better positioned to unravel the dynamics of consumer preferences in the context of sustainable packaging, moving beyond simplified assumptions to capture the multifaceted realities of environmental impact in the packaging industry.

Last but not least, it is worth considering the implementation of longitudinal studies to provide a more comprehensive and dynamic perspective on the evolution of consumer perceptions and behaviors over time. These studies could serve as tools for tracking changes in response to evolving environmental awareness and shifting trends in packaging preferences. By conducting surveys and observations at multiple points in time, researchers can capture the details of how attitudes and actions unfold, allowing for a better understanding of the relationship between sustainable packaging and consumer behavior. Such an approach not only enhances the depth of insights but also facilitates the identification of patterns and trends that may remain elusive in cross-sectional studies. Additionally, longitudinal studies enable researchers to explore the impact of external factors and interventions on consumer choices, contributing to a more robust understanding of the long-term implications of sustainable packaging initiatives in the marketplace.

CONCLUSION

In conclusion, the study investigated the influence of sustainable packaging on consumer purchase intentions in supermarkets, building on a extensive literature review and utilizing regression models to analyze the survey data with the help of R. The findings revealed a connection between a preference for sustainable packaging and heightened consumer purchase intent, particularly among those valuing packaging sustainability and plastic reduction. Educational qualifications played a role, with participants holding Bachelor's and Master's degrees showing a stronger preference for sustainable packaging. Younger participants also exhibited a greater inclination toward sustainable options compared to older respondents. The study has significant implications for the supermarket industry and their suppliers, emphasizing the potential for strategic positioning through the adoption of sustainable packaging practices. The global market for packaged food underlines the importance of aligning products with evolving consumer demands. However, the study acknowledged limitations, including the absence of specific price considerations in certain survey questions, potential bias introduced by the focus on one particular commodity as the product used in the pictures with different packaging in the survey, and the need for a more diverse participant representation. To enhance future research, the study suggested incorporating pricing dimensions, addressing the limited representation of participants aged 45 and above, and exploring participants' nationalities to

understand the impact of cultural differences. Despite these limitations, the study provides valuable insights into the relationship between sustainable packaging and consumer behavior, offering opportunities for supermarkets and their suppliers to strategically position themselves, enhance customer satisfaction, and contribute positively to the environment.

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APPENDICES

Appendix 1: Survey Protocol

Introduction Text

Dear Participants!

My name is Jonas Wechselberger and this is a survey for my Master's Dissertation at the Católica Lisbon School of Business & Economics.

This survey is about consumer behavior regarding sustainable packaging of products in supermarkets and takes less than 4 minutes. The data collected from this survey will be used for research purposes only and will not be shared beyond the scope of this thesis.

Thank you for your participation!

Demographics

Q1. Please indicate your gender.

a) Man
b) Non-binary
c) Women
d) Prefer not to say

Q2. How old are you?

a) Under 18
b) 18-24 years old
c) 25-34 years old
d) 35-44 years old
e) 45-54 years old
f) 55-64 years old
g) 65+ years old

Main Construct Questions

Q3. On a scale from 1-5, how important is for you that the packaging of foods in the supermarket is sustainable?

a) 1 – Not important at all
b) 2 – Slightly important
c) 3 – Moderately important
d) 4 – Very important
e) 5 – Extremely important

Q4. On a scale from 1-5, how important is for you that the packaging of foods in the supermarket contains less plastic?

a) 1 – Not important at all
b) 2 – Slightly important
c) 3 – Moderately important
d) 4 – Very important
e) 5 – Extremely important

Q5. On a scale from 1-5, does sustainable packaging of foods in the supermarket influence your purchase decision?

a) 1 – Extremely unlikely
b) 2 – Somewhat unlikely
c) 3 – Neither likely nor unlikely
d) 4 – Somewhat likely
e) 5 – Extremely likely

Intermediate Text

In the next two questions in my survey I asked the participants about two exact same products, but with different packaging and their intention to buy these products.

Q6.

On a scale from 1-5, how likely is it that you would buy this product?

a) 1 – Extremely unlikely
b) 2 – Somewhat unlikely
c) 3 – Neither likely nor unlikely
d) 4 – Somewhat likely
e) 5 – Extremely likely

Q7.

On a scale from 1-5, how likely is it that you would buy this product?

a) 1 – Extremely unlikely
b) 2 – Somewhat unlikely
c) 3 – Neither likely nor unlikely
d) 4 – Somewhat likely
e) 5 – Extremely likely

Q8. If the two pictures contain the exact same product, what product would you rather buy?

a) The Product from Picture 1
b) The Product from Picture 2

Demographics

Q9. What is the highest degree or level of education you have completed?

a) Less than high school degree
b) High school
c) Trade school
d) Bachelor's Degree
e) Master's Degree
f) Ph.D. or higher
g) Prefer not to say

Q10. What is your total annual household income?

a) Less than $25,000
b) $25,000 - $50,000
c) $50,000 - $100,000
d) $100,000 - $200,000
e) More than $200,000
f) Prefer not to say

Appendix 2:

Table 1: Summary statistics

Summary Statistics

Statistic	N	Mean	St. Dev.	Min	Max
Q3	89	3.225	1.063	1	5
Q4	89	3.607	1.040	1	5
Q5	89	3.404	1.084	1	5
Q6	89	3.236	1.023	1	5
Q7	89	3.090	0.900	1	5

Table 2: Regression table 1

	Dependent variable:	
	Q8	
	(1)	(2)
Q32	-0.338	
	(0.290)	
Q33	-0.089	
	(0.287)	
Q34	-0.261	
	(0.297)	
Q35	-0.228	
	(0.307)	
Q42	-0.389	
	(0.492)	
Q43	-0.318	
	(0.479)	
Q44	0.005	
	(0.478)	
Q45	0.204	
	(0.493)	
Q3		-0.007
		(0.051)
Q4		0.186***
		(0.055)
Gender2	0.074	0.092
	(0.109)	(0.090)
Age2	-0.159	
	(0.123)	
Age3	0.266	
	(0.256)	
Age4	0.040	
	(0.317)	
Age5	0.118	
	(0.253)	
Age6	-0.394	
	(0.310)	
Q92	0.389	
	(0.317)	
Q93	0.371**	
	(0.177)	

Q94	0.427*	
	(0.241)	
Q95	0.409	
	(0.318)	
Q102	-0.052	
	(0.113)	
Q103	0.190	
	(0.161)	
Q104	-0.022	
	(0.223)	
Q105	0.274	
	(0.196)	
Age		-0.024
		(0.041)
Q9		0.094*
		(0.050)
Q10		0.043
		(0.040)
Constant	1.710***	0.723***
	(0.444)	(0.240)
Observations	78	78
R2	0.445	0.273
Adjusted R2	0.223	0.212
Residual Std. Error	0.350 (df = 55)	0.352 (df = 71)
F Statistic	2.005** (df = 22; 55)	4.443*** (df = 6; 71)
Note:		*p<0.1; **p<0.05; ***p<0.01

Table 3: Regression table 2

	Dependent variable:			
	Q6	Q7	Q6	Q7
	(1)	(2)	(3)	(4)
Q52	0.569	0.650		
	(0.763)	(0.709)		
Q53	0.260	1.717**		
	(0.743)	(0.691)		
Q54	-0.513	0.981		
	(0.699)	(0.650)		
Q55	-0.904	1.440*		
	(0.808)	(0.751)		
Q5			-0.495***	0.234**
			(0.105)	(0.101)
Gender2	-0.054	-0.126	0.053	-0.090
	(0.281)	(0.261)	(0.239)	(0.230)
Age2	0.506	-0.290		
	(0.328)	(0.305)		
Age3	0.479	-0.642		
	(0.639)	(0.594)		
Age4	-0.355	0.740		
	(0.867)	(0.806)		
Age5	-0.869	-1.694***		
	(0.654)	(0.608)		
Age6	-0.052	-1.352*		
	(0.844)	(0.785)		
Q92	1.352	1.996**		
	(0.827)	(0.769)		
Q93	-0.022	0.572		
	(0.463)	(0.431)		
Q94	-0.225	0.480		
	(0.601)	(0.558)		
Q95	-0.243	-0.171		
	(0.806)	(0.749)		
Q102	-0.764***	-0.330		
	(0.284)	(0.264)		
Q103	-0.313	0.144		
	(0.410)	(0.381)		
Q104	-0.542	0.494		
	(0.592)	(0.550)		
Q105	-0.110	0.305		
	(0.495)	(0.460)		
Age			-0.085	-0.193*
			(0.113)	(0.108)
Q9			0.076	0.007
			(0.133)	(0.128)
Q10			-0.133	0.041
			(0.104)	(0.100)
Constant	3.561***	1.886***	5.120***	2.601***
	(0.736)	(0.685)	(0.583)	(0.561)
Observations	78	78	78	78
R2	0.422	0.370	0.262	0.138
Adjusted R2	0.245	0.178	0.210	0.078
Residual Std. Error	0.919 (df = 59)	0.854 (df = 59)	0.940 (df = 72)	0.905 (df = 72)
F Statistic	2.391*** (df = 18; 59)	1.929** (df = 18; 59)	5.103*** (df = 5; 72)	2.306* (df = 5; 72)
Note:				*p<0.1; **p<0.05; ***p<0.01