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Sustainability as a Strategy

The B-Corp Certification's Effect on Consumers'
Willingness to Pay

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Abstract

Title: “Sustainability as a Strategy: The B-Corp Certification’s Effect on Consumers’ Willingness to Pay”

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As more companies are becoming B-Corp certified, the effects of this certification on consumers are of increasing importance. By becoming certified, companies can show that they meet a high standard of verified performance, accountability, and transparency on various factors.

This research aims to understand the effect that the B-Corp certification has on willingness to pay (WTP) of consumers, in comparison to when another certification, or no certification is presented. The product used for the comparison is a crunchy muesli box. Furthermore, the mediating role of value perception is tested. Knowledge on what the certification means, and consumer decision-making styles are tested as moderators.

By analyzing data collected through an online questionnaire, several hypotheses were tested. Findings have shown that there is no direct influence of various sustainability certifications on WTP. There is no significant mediating effect of value perception on WTP. Decision-making styles do not moderate the relation between the certifications and WTP. Finally, when information about B-Corps was given to respondents, their WTP for the B-Corp stimulus was significantly higher. It is therefore advised to B-Corps to include B-Corp information in communication strategies to be able to ask a price premium.

Keywords: B-Corp, Sustainability Certification, Willingness to Pay, Value Perception

Sumário

Título: "A sustentabilidade como estratégia": O Efeito da Certificação B-Corp na Disponibilidade dos Consumidores para Pagar"

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À medida que mais empresas estão a obter a certificação B-Corp, os efeitos desta certificação nos consumidores são de importância crescente. Ao obterem a certificação, as empresas podem demonstrar que cumprem um elevado padrão de desempenho verificado, responsabilidade e transparência em vários factores.

Esta investigação visa compreender o efeito que a certificação B-Corp tem na vontade de pagar (WTP) dos consumidores, em comparação com quando é apresentada outra certificação, ou quando não é apresentada qualquer certificação. O produto utilizado para a comparação é uma caixa de muesli crocante. Além disso, o papel mediador da percepção de valor é testado. São testados os conhecimentos sobre o significado da certificação, e os estilos de tomada de decisão dos consumidores como moderadores.

Ao analisar os dados recolhidos através de um questionário online, várias hipóteses foram testadas. Os resultados demonstraram que não há influência directa de várias certificações de sustentabilidade no ETA. Não há um efeito mediador significativo da percepção de valor no ETA. Os estilos de tomada de decisão não moderam a relação entre as certificações e as ETA. Finalmente, quando foi dada informação sobre a B-Corps aos inquiridos, o seu ETA para o estímulo da B-Corp foi significativamente mais elevado. Aconselha-se portanto à B-Corps a incluir informação sobre a B-Corp nas estratégias de comunicação para poder pedir um prémio de preço.

Palavras-chave: B-Corp, Certificação de Sustentabilidade, Vontade de Pagamento, Percepção de Valor

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Glossary

B-Corp	Benefit Corporation
B-Lab	Benefit Lab
CPV	Consumer Perceived Value
CSR	Corporate Social Responsibility
DMS	Decision-making Style
DV	Dependent Variable
ISO	International Organization for Standardization
IV	Independent Variable
NA	Not Applicable
ANOVA	Analysis of Variance
PERVAL	Perceived Value
VP	Value Perception
WTP	Willingness to Pay

1 Introduction

1.1 Background

In recent years, the concept of corporate social responsibility (CSR) has gained significant attention. Consumers are becoming more aware of the impact that businesses have on the environment and society. One way that commitment to CSR can be demonstrated is by becoming certified as a benefit corporation, or B-Corp. B-Corps are for-profit companies that meet rigorous standards of social and environmental performance, transparency, and accountability (B-Lab, n.d.).

The B-Corp certification process involves a thorough audit of a company's performance operations and policies. This includes its treatment of employees, impact on the environment, and contributions to community. When the standards of the B Lab are successfully met, companies are awarded the B-Corp certification. This signals to consumers that the company is committed to being a socially responsible and sustainable business (Diez-Busto, Sanchez-Ruiz, Fernandez-Laviada, 2021). The certification's main aim is to recognize and support businesses who are using their business as a force for good and is not necessarily a means to increase willingness to pay for a B-Corp's products or services (B-Lab, n.d.).

However, as consumers become more aware of the B-Corp certification and the values it represents, it is possible that they might be willing to pay a price premium for products and / or services provided by B-Corp certified companies. By having more companies become certified, the footprint of all combined B-Corps will become increasingly large. For that reason, the effects of the certification on consumers' willingness to pay will be analyzed in this research. The overall goal being to find evidence that becoming certified has advantages, even beyond the social and environmental mark B-Corps are leaving.

Guarna et al. published research in which they find that B-Corps enjoy a rate of financial success that is higher than average, but also recognize that there is a lack of recognition among consumers of the B-Corp logo limiting the effects of the certification (Guarna & Shpenev, 2019). The impact of the B-Corp certification on consumers' willingness to pay is an important and understudied topic. This research aims to further understand the effects on consumers.

1.2 Problem Statement

This main goal of this research is to understand what the effects of the B-Corp certification are on consumers' willingness to pay. Additionally, the goal is to understand how various certifications influence the perceived value of products presented, if decision-making styles influence how much consumers would be willing to pay, and if the willingness to pay is increased when consumers are presented with relevant information about B-Corps. The problem statement can be summarized as:

Can the B-Corp certification increase value perception and make consumers willing to pay more for the same product in comparison to products with another, or no certification?

This problem statement will be explained in depth by the following research questions:

RQ1: Does the B-Corp sustainability certification impact consumers' willingness to pay?

RQ2: Does consumers' knowledge on what the B-Corp certification means influence their willingness to pay?

RQ3: What consumer decision making style can B-Corp companies target to drive their business?

1.3 Relevance

There are several reasons why understanding the impact of the B-Corp certification on consumers' willingness to pay is relevant.

First, with over 3,500 companies, more than 150 industries, and over 70 countries, the certificate is becoming more and more known around the world (B-Lab, n.d.). As these numbers continue to grow, understanding the potential impact of the certification on consumer behavior becomes increasingly important.

Second, the B-Corp certification has the potential to influence consumer purchasing decisions and drive market demand for socially responsible and sustainable products and services. Companies could be incentivized to pursue the certification and adopt sustainable business practices if consumers are willing to pay a price premium for products and / or services from B-Corps.

Third, the B-Corp certification could work beneficial to both companies and consumers. The certification can be used as differentiation from competition by companies. For consumers, the certification can provide assurance that they are supporting companies that align with their

values and are committed to being socially responsible and sustainable. Overall, the relevance of studying the impact of the B-Corp certification on consumers' WTP lies in its potential to influence both business and consumer behavior and contribute to the development of a more sustainable and responsible business environment.

1.4 Research Methods

To be able to answer the main research questions, both primary and secondary data were collected. Secondary data was collected mainly through academic journals. The topics of importance in this research were studied to get a broader and more in-depth understanding of the influences on WTP. This analysis led to finding constructs that allowed quantitative research into the topics at hand, from reliable sources. The secondary data research allowed to better understand the topic and form a path for the primary data collection and analysis.

Primary data was collected through an online questionnaire. In this questionnaire, respondents were first either given information about B-Corps or not, to then be exposed to either one of three muesli boxes. The box would contain a B-Corp logo, ISO 14001 logo, or no certification. After being presented these stimuli, respondents were asked to rate their agreeableness to several statements derived from literature collected in secondary data research. Overall, the questionnaire tested willingness to pay among several stimuli, and allowed an understanding of underlying characteristics of respondents who answered the questions.

1.5 Dissertation Outline

Throughout this paper, several chapters explaining key information will be presented. In the following chapter, relevant literature will be presented per topic. Theories will be discussed to eventually present the relevance of the various constructs to this research. Furthermore, based on the relevant literature hypotheses will be stated and a conceptual framework presented. In the third chapter of this paper, methodological choices will be explained. The research approach, data collection and statistical tests will be detailed with the aim of answering the hypotheses. The fourth chapter will present the results of the statistical tests done to answer the hypotheses, and a discussion thereof. Furthermore, this chapter will also highlight how the data was cleaned, and general information of the data collected. The final chapter aims to conclude the information presented in the foregoing chapters. In this chapter, limitations in this research and indications for further research will make up the final part of the paper.

2 Literature Review

This chapter will present an overview and analysis of academic literature that is relevant to the main research questions. Various journals and studies have been taken in consideration, as to strive for a complete understanding of the topics at hand. This chapter will focus on sustainability certifications first. By doing so, we can understand academic progress in this relatively new field and see where this research can build on. Second, literature around psychographics or consumer decision-making styles will be reviewed. Thirdly, value perception will be reviewed. Finally, several articles on willingness to pay will be presented. In each of the subchapters, several theories will be presented to select those that hold most relevancy to this research. Based on the selected models, a conceptual framework for this research will be presented. Besides the conceptual framework, the hypotheses will also be presented in the final part of this chapter.

2.1 Certifications

As sustainability is becoming an increasingly important topic of discussion and strategy, companies are searching for ways to become recognized as being sustainable. One way to do so is by obtaining a B-Corp certification. Companies with these certifications have been voluntarily audited conducted by an entrepreneurial non-profit enterprise called B Lab. These audits revolve around social and environmental topics (Diez-Busto, 2021). Relatively little research has been done on the effects of the certificate on company growth, and perception of consumers. Paelman et al. discuss that the B-Corp certificate has a significantly positive effect on turnover of these companies (Paelman, 2020). Harjoto et al. argue that small enterprises are very likely to allocate resources to obtain the certificate as it can provide them competitive advantage in highly competitive markets (Harjoto, 2019). Though it might thus seem that B-Corp certification provides strategic advantage, Parker et al. argue that they find a negative relation between the B-Corp certification and sales growth in their study of North American small firms, firms younger than 10 years and employing less than 10 people (Parker, 2019). Since the objective of this research is to compare the effects of certifications on the willingness to pay of consumers, a comparable certification must be selected. Another type of certification with big impact is issued by the International Organization for Standardization (ISO). The two main certificates that the ISO grants are the ISO 14001, and the ISO 9001. The ISO 14001 certification is held by more than 310,000 companies worldwide, in a variety of countries and sectors. The ISO 9001 is held by more than 880,000 companies (Fonseca, 2021). Fonseca et

al. discuss that both certificates are very widely used and pose various strategic benefits to companies holding them. The difference between them is that the ISO 9001 is a Quality Management System which allows companies a systematic approach to meet consumer objectives and providing high quality. Whereas the ISO 14001 is an Environmental Management System, which gives companies a systematic approach on how to measure and improve their environmental impact (Standards Stores, n.d.). Since the B-Corp certification is more focused on environmental issues than quality management, the ISO 14001 will be used in this research. This represents a closer substitute to the B-Corp certification.

2.2 Consumer Decision-Making Styles

Companies' marketing efforts are ensured to have the greatest impact possible when a segmentation approach is used. Consumers are more diversified than ever, and segmentation allows that marketing efforts match the needs of a targeted group. There are several bases consumer markets can be segmented on. Characteristics can be geographic, demographic, psychographic or behavioral. Geographic characteristics can be region or population density, demographics can be age or gender, psychographics can be interests or activities, and behavioral characteristics can be brand loyalty or usage rate (Goyat, 2011). Goyat et al. discuss that there is a dominance of psycho- and demographic factors for segmentation.

Lin argues that where demographics are needed to target consumers, psychographics are needed to understand them. Since a high-income individual could have a very different perspective on climate change than a low-income individual, it is important to know both demographic and psychographic variables of the consumers researched (Lin, 2002).

Orth et al. have used a psychographic method to evaluate the consumer lifestyle segments of their sample. In this method, aspects such as functional benefit, price/value for money, social benefit, positive emotions benefit, and negative emotions benefit have been assessed. The operational model in this research states the high Cronbach's alphas of the aspects researched and identifies various lifestyle clusters that consumers can be long to (Orth, 2004). Though the research by Orth et al. is very applicable to this research, it operates at a brand level, which may be harder to do for the relatively new concept of a B-Corp. It is more applicable to this research to discover what process a consumer goes through in the purchase of a B-Corp product, which of these styles leads to the highest willingness to pay. Barber et al. measured psychographics to assess purchase intention and willingness to pay (WTP) in relation to wine. In their research, several psychographic factors such as self-transcendence value, conservation

value, and environmental consequences have been taken into consideration (Barber, 2012). The research explores the environmental consequence of a purchase theme, but it does not identify clear clusters or groups of consumers which can be targeted. To provide marketing managers with a roadmap on how to address segments with tailored marketing strategies, Mittal et al. have assessed consumer decision-making styles. They argue that there are four distinct consumer segments with their own decision-making styles. The segments being OPEX (Optimizing-Extenders), BALAD (Balanced Diligent), SNAP (snap deciders, and CUFD (Confused, Uncertain, Foot-Draggers) (Mittal, 2017). Through an extensive framework combining psychographics, demographics, personality traits and other consumer level aspects, they were able to discover four key factors. Mittal et al. derived their consumer decision-making framework from research by Kendall et al. Consumer decision-making style can be defined as a mental orientation characterizing a consumer's approach to making choices (Kendall, 1986). In their research, eight consumer types are tested. These are: Perfectionistic ('High-Quality Conscious'), Novelty-Fashion Conscious, Brand Conscious ('Price Equals Quality'), Recreational ('Hedonistic'), Impulsive ('Careless'), Price Conscious ('Value for Money'), Confused by over choice, and Habitual ('Brand-Loyal') consumers. In this research, we are aiming to find what type of consumer is willing to pay most for a product that is from a B-Corp certified brand. The model proposed by Kendall et al. helps identify the consumer-decision making styles that correspond to the highest willingness to pay. For that reason, this eight-factor model will be used. In their research, Kendall et al. also presents a model with 3 questions per factor. In this shorter model, Cronbach's alphas are slightly lower but are still at an acceptable level. To reduce the length of the questionnaire used to collect data for this research, the 3-question model is used.

2.3 Value Perception

Over the last thirty years, research on the topic of consumer perceived value (CPV) has seen a renewed interest (Zeithaml, 2020). The term consumer value can be explained as the overall assessment of features offered by a product, based on consumers' perception of what is received in relation to what is given (Zeithaml, 1988), though other definitions of the term focused on the relationship between only price and quality (Monroe, 1990). Since Monroe published their article in the 1990s, the concept has evolved to being a multidimensional construct, since more dimensions have been added and discussed to better understand the subject at hand (Lou, 2022). For example, Chi et al. have measured CPV based on different

individuals, products, and situations, thereby using different dimensions of the subject (Chi, 2019). In this research, perceived value of the sustainability certification will be assessed on a consumer good. Meaning that the CPV of the various certifications in a pre-purchase, retail environment influences the willingness to pay. Sanchez-Fernandez et al. highlight the difference between customer and consumer value, where the first is the pre-purchase judgment of which the expectations of customers come, and the latter is the post-purchase assessment (Sanchez-Fernandez, 2006).

Sweeney et al. have developed a 19-item measure, PERVAL, which is used to determine CPV of a fast-moving consumer good in a retail purchase situation. The measure can be used to determine what levels of consumption determine consumers' purchase attitude and behavior. Four value dimensions, being social, emotional, price/value and quality/performance for money have emerged (Sweeney, 2001). In another study, the reliability and validity of the PERVAL scale was tested in different contexts and countries, with the goal of developing and assessing whether a short form of the scale would work. Walsh et al. assessed the scale and developed the 12-item PERVAL-Short scale, being almost 40% shorter than the original (Walsh, 2014). Both the 19-item, and the 12-item scales work well across the four PERVAL dimensions, and the 12-item scale displays a good model fit, evidence of partial metric invariance, and predictive validity. It is further mentioned in the research that the 12-item scale is a robust version of the original scale, but that the 12-item scale should be the preferred choice for researchers. To decrease the length of the data collection method used for this research, the 12-item scale proposed by Walsh et al. will be used.

2.4 Willingness to Pay (WTP)

Willingness to pay can be referred to as the maximum price that a consumer is willing to pay for a product or service (Netemeyer et al, 2018). Literature has identified several key motivators that drive willingness to pay. Service quality, as discussed by Fullerton, customer satisfaction, as discussed by Homburg et al., and product life and type as discussed by Chatterjee & Kumar. Although these motivators have been identified, it has become increasingly difficult for companies to find the motivators behind the willingness to pay corresponding to their product (Ligas & Chaudhuri, 2012). As mentioned, in this research the focus will be on the pre-purchase stage. Zhang et al. discuss that here, willingness to pay is an outcome of interactions and communications. That way, a unique value is created which drives the willingness to pay for a product or service. In this research, not only are the influences of

sustainability certifications tested, but the depth of the influence will be assessed to determine competitive advantage gained by the certifications. Nadeem et al. introduce a large construct model in their assessment of willingness to pay in the sharing economy. In this, they present questions that revolve around how respondents would be willing to pay more in relation to other brands. Rather than only asking what price consumers would be willing to pay for stimuli presented during data collection, the assessment presented by Nadeem et al. will also be used. This way, the extent to which preference of certified brands reaches can be assessed.

2.5 Conceptual Framework

Based on the literature, the following conceptual framework has been developed:

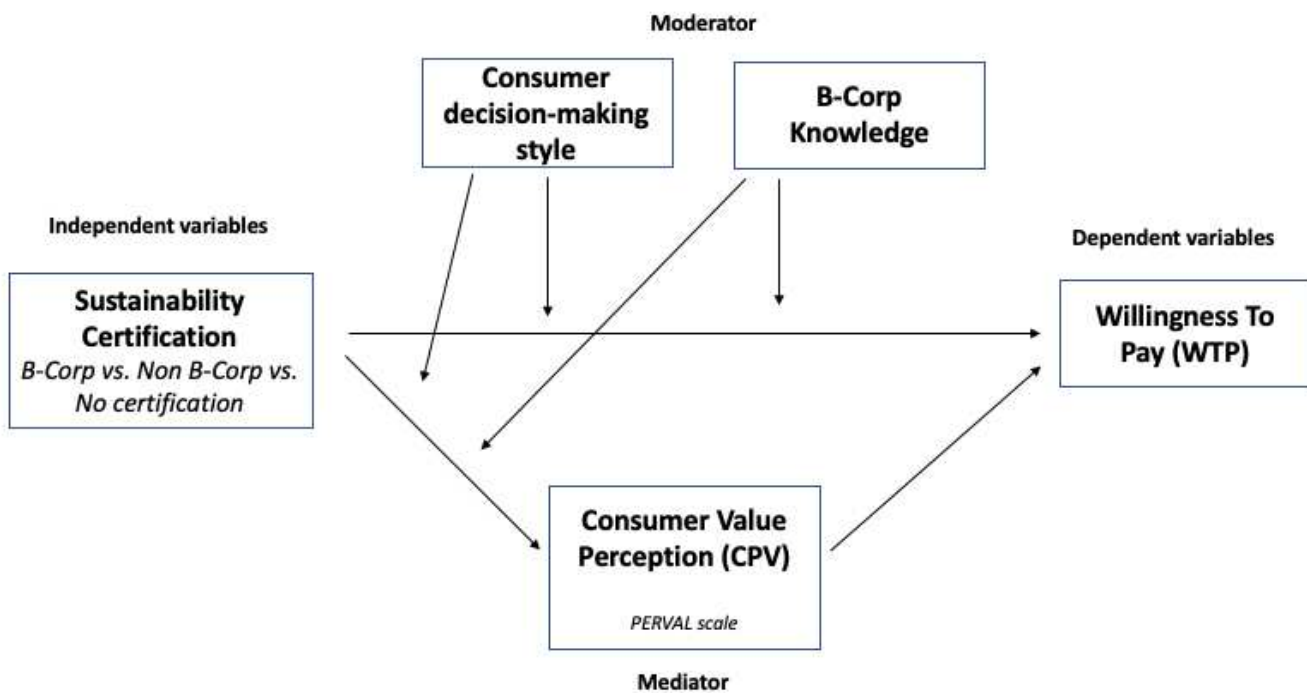


Figure 1 : Conceptual framework

As mentioned in the introductory part of this chapter, the hypotheses are presented below:

H1: Sustainability certification positively impacts the willingness to pay

H1a: The B-Corp certification will have a higher willingness to pay, than the ISO certification

H2: Consumer decision-making styles moderate the relationship between sustainability certification and WTP

H3: Value perception mediates the relationship between sustainability certification and WTP

H4: B-Corp knowledge will moderate the relationship between sustainability certification and WTP

3 Methodology

In the following chapter, the methodological choices used in this research will be presented and explained. First, choices and motivations behind research approach specifications will be presented. Second, the data collection methods will be presented, after which the data analysis section will be discussed.

3.1 Research Approach

For the research approach, several theories will be used. Based on these theories, there are several choices that are to be highlighted within this subchapter of the methodology. First, the focus will be on the objective of the research resulting in a research method, followed by the research type.

Kothari presents research objectives as discovering answers to questions through the application of scientific procedures. Even though researchers set out to develop a paper with their own specific purpose, the main objectives can be categorized in four purposes. These are exploratory or formulative research studies, descriptive research studies, diagnostic research studies, or hypothesis-testing research studies (Kothari, 2004, p2). This thesis will aim to understand the working of the conceptual model as presented in the Literature review chapter. This means that the hypotheses of causal relationships between variables will be tested, a study form which is known as a hypothesis-testing research study.

When discussing the types of research, Kothari mentions the existence of quantitative and qualitative research. In this research, it is important to gain an understanding of the quantities in which consumers are willing to pay a price premium, but it is also important to uncover reasoning behind this willingness. The first will indicate what stimuli achieve a higher willingness of the majority of consumers, whereas the reasoning can give an insight into what exactly drives this willingness and how to further exploit this. It is for that reason, that this research will use the mixed methods highlighted by Creswell et al. (2009). This research type allows a researcher to use both quantitative and qualitative methods to answer their research questions.

3.2 Primary Data

The primary data for this research is collected through a survey. A non-random, convenience sampling is used to collect respondents for the survey. This forms a high speed, low cost, and user-friendly data collection method. However, this method also leads to little to no control over respondents, and only answers in the survey can be considered. There is no room for clarifying questions. The survey was initially subjected to close friends and family, to understand whether it met its purpose. Based on this trial, several adjustments have been made.

3.2.1 Online Survey

3.2.1.1 Data Collection

The invitation to answer the survey has been spread through social media channels, as well as through family/friends. Channels as WhatsApp, LinkedIn, and others have been used to generate momentum and have as many people as possible fill in the survey in a short time window. Since the B Lab operates on a global scale and B Corps exist in many countries, no specific demographic requirements were set for respondents' country of origin. Furthermore, as mentioned in the Literature review chapter, consumers with various DMS are sought. For that reason, the survey would generate most useful results if it were filled in by a demographically diverse pool of respondents.

The survey was online from November 17th, 2022, until November 29th, 2022. During this time-window, a total of 515 responses were recorded. However, many these have been dropped from the analysis due to several reasons presented in the Results and Discussion subchapter 4.2, Descriptive statistics. As a result, 303 responses have been included in the data analysis. The respondents per stimulus in the survey can be observed in Results and Discussion subchapter 4.1, Cleaning data.

3.2.1.2 Stimuli Development

The survey used for data collection followed a two (B-Corp knowledge was shown or not) by three (B-Corp, ISO 14001, or no certification) design. Using Qualtrics' randomization tool, respondents were shown across one of the existing paths. The option to evenly present the elements in randomizers was selected to ensure pools of respondents were equal.

		B-Corp knowledge	
		Shown	Not shown
Stimulus	B-Corp		
	ISO 14001		
	No certificate		

Figure 2 : Questionnaire design matrix

After clicking the link to be redirected to the survey, respondents were given some control questions. These consisted out of three questions, if they had ever bought cereal for breakfast, if they bought a particular brand, and what the reason for that brand might be.

Next, respondents were either shown information or not, and were then directed to one of the three stimuli that were created for the survey. The stimuli created were taken from a small Dutch cereal brand (Holie Foods) and edited to allow respondents to only focus on the fact that the boxes contained muesli, and one of the three certification options was added. Respondents were asked to enter how much they would be willing to pay for the box when the stimulus was presented. As mentioned, a small test-run of the survey was done with family and friends. The main reason for this was to see if the certification which was added to the box came across to the respondents. This was tested using two manipulation questions. The first asking whether a certification was featured on the box (in the case of no certification, this was the only question) and the second asking which certification that was. In the test-run, results came in very agreeable with most testers answering the manipulation questions correctly. After answering the manipulation questions, respondents were given questions about WTP, DMS and VP. This was followed by some standard demographical questions, such as their gender, age, education, income, marital state, and what country they are from. The full survey can be found in Appendix 1. Furthermore, the following graph shows the start of the survey, and the stimuli shown to respondents.

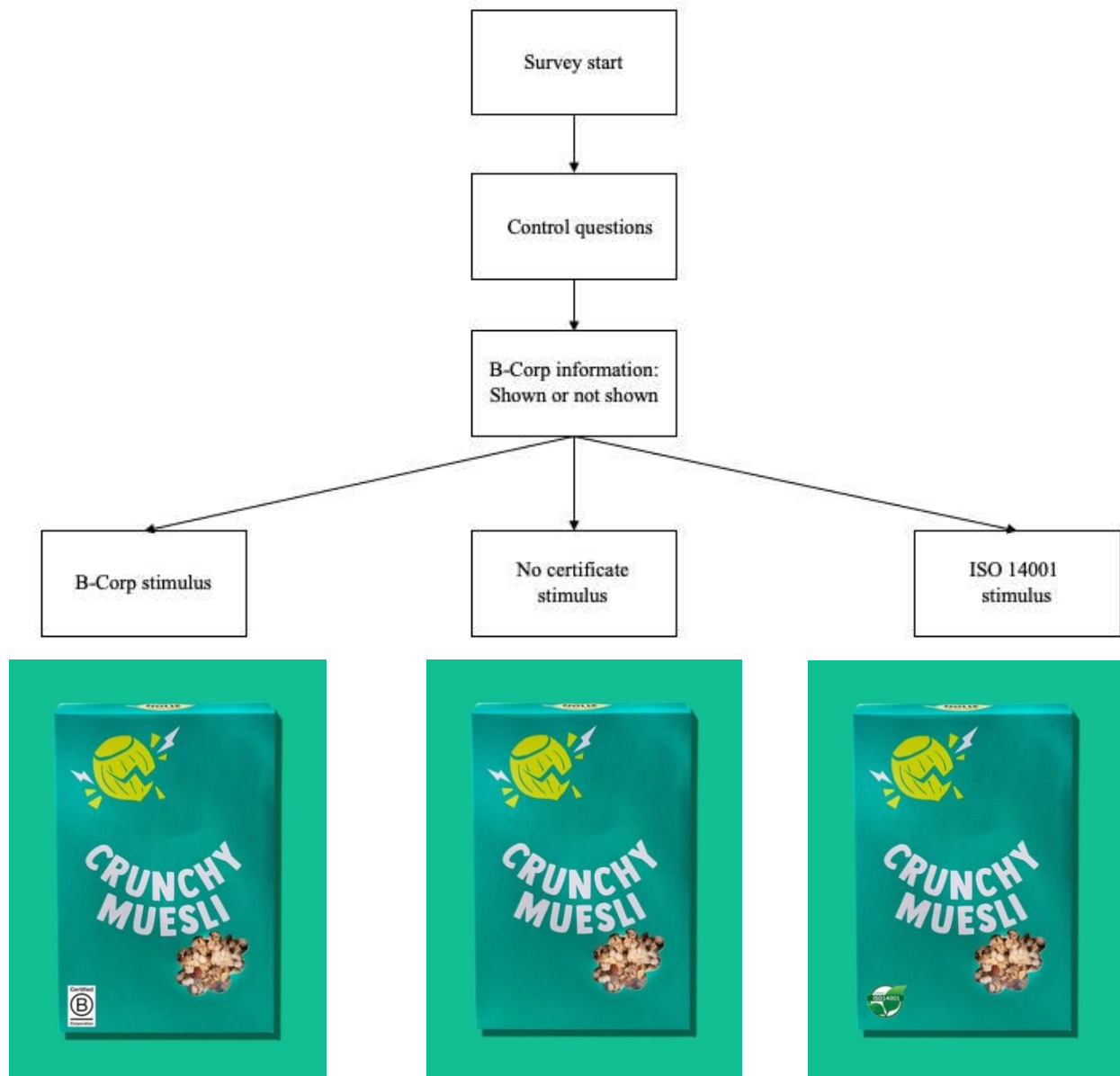


Figure 3 : Survey start, and stimuli shown to respondents

3.2.1.3 Measurement / Indicators

As mentioned in the Stimuli Development subchapter, the constructs containing questions about WTP, DMS and VP were randomized with Qualtrics' randomization tool. This was done to avoid influences generated by the order of questions, or any unforeseen effects of the order of questions. Furthermore, all questions were asked on a 5-point Likert scale, with endpoints being 'Completely Disagree', and 'Completely Agree'. The reason for using a 5-point Likert scale being not to overwhelm respondents with a lot of choices, since the survey has quite some length. Furthermore, a 5-point Likert scale has a better fit on a mobile phone (Worktango.com, n.d.). The expectancy was that most respondents would use such a device to fill out the survey.

As derived from literature presented in the chapter Literature Review, several articles have been taken into consideration for the constructs in the survey. Both the article on VP by Walsh et al., and the article on WTP by Nadeem et al. use 7-point Likert scales to test the construct. The article by Kendall et al. uses a 6-point Likert scale. As a result, all three constructs have been transformed into 5-point Likert scales.

The article on VP by Walsh et al. tests four dimensions of VP, which have three questions each. Similarly, the article on DMS by Nadeem et al, tests eight dimensions of DMS, which also have three questions each. Finally, WTP is tested by four questions. Below, an operational model presenting the details of constructs used is presented.

Operational model					
Framework	Measure	Items	Scale	Reference	Cronbach α
IV	Sustainability certification	Stimuli	<i>na</i>	<i>na</i>	<i>na</i>
Moderator	DMS	8	6-point Likert Scale	Kendall et al. (1986)	0,59
Moderator	Knowledge	Stimuli	<i>na</i>	<i>na</i>	<i>na</i>
Mediator	VP	4	7-point Likert Scale	Walsh et al. (2014)	0,91
DV	WTP	4	7-point Likert Scale	Nadeem et al. (2022)	0,91

Table 1 : Operational model of constructs

3.3 Data Analysis

Data collected through the questionnaire was tested by using the SPSS software. By doing so, the proposed hypotheses could be tested through statistical tests. Based on the types of variables used in each hypothesis test, various statistical methods were used.

First, two characterize the sample used for this research, descriptive statistics were used on the demographic questions responses. An overview of respondents' gender, age, education level, income level, marital state, and country of residence was used to discuss the applicability of the sample used.

Furthermore, several tests were used to test the hypotheses. To understand the effect of the sustainability certifications on WTP, a multiple regression was used. To compare the effects of the B-Corp and ISO 14001 certifications on WTP, an independent samples T-test was performed, allowing to compare the means of both conditions. To analyze the moderating effect

of being showed information on the relationship between B-Corp certification and WTP, a one-way ANOVA was performed.

Finally, to understand mediating and moderating effects of different variables, the Hayes Process Macro plugin for SPSS was used. The moderating effect of DMS on the relationship between the conditions and WTP was analyzed by using model 1 of the plugin, the model for a single moderation effect. To analyze the mediating effect of VP on the relationship between the sustainability certifications and WTP, model 4 of the plugin was used. This model allows to understand a single mediating effect.

4 Results and discussion

The following chapter will present the results and discussion of the research. The first subchapters will present the data, its characterizations, and a presentation of the statistical results gained from it. Second, a discussion of the statistical results will be presented.

4.1 Cleaning data

To increase the reliability of the answers produced by the dataset, several measures have been taken to clean the data that was retrieved from the questionnaire. Rather than having a dispersed dataset by what questions respondents have given answer to, the conditions were recoded as: 0 : no certification stimulus, 1 : B-Corp stimulus, 2 : ISO stimulus. This allowed for a compacter dataset. As a result, the questions could be renamed into the topic they adhere to and the corresponding question number behind it. Names of stimuli could be taken out of variable names, and all responses could be aligned.

Any responses that were not complete were taken out of the dataset. Furthermore, there were three checks for outliers which resulted in responses taken out of the dataset. First, there were three cases of responses with missing variables. Second, the average time a respondent took to fill out the questionnaire was 385,97 seconds, or 6,4 minutes. To decrease responses given with a lack of attention, responses recorded in less than 100 seconds have been taken out of the dataset. Finally, in the dataset it was noticeable that most often the highest number a respondent would be willing to pay for the stimulus in Euros was around €6. There were some responses that gave amounts from €7 to €10. To further limit outliers, responses where a WTP of higher than €6,00 was given have been recoded into their value being €6,00. The old name of the values in Euro given by respondents was ‘stimuli’, the new is ‘WTP_euro’. This has occurred at $n = 8$ responses. As a result of the recoding, the Shapiro-Wilk statistic has increased to all levels being above ,9. The differences in Shapiro-Wilk statistics can be seen in the table below.

Shapiro-Wilk comparison		
Condition	Code	
	Stimuli	WTP_euro
0 no certificate	,872	,936
1 B-Corp	,880	,937
2 ISO	,866	,951

Table 2 : Shapiro-Wilk comparison of Stimuli vs WTP_euro

To better understand the responses, and be able to perform statistical tests on them, several variables were created. The variables values are means of the Likert-scales answers' given in the questionnaire. The variables have been named in accordance with the models from which they came. In the table below, the questionnaire output variables, and what they have been created into are shown.

Variable creation			
Questionnaire output	Variable	Questionnaire output	Variable
WTP_1		DMS8_1	
WTP_2	WTP	DMS8_2	DMS_habitual
WTP_3		DMS8_3	
WTP_4		VP1_1	
DMS1_1	DMS_perfectionistic	VP1_2	VP_quality
DMS1_2		VP1_3	
DMS1_3		VP2_1	
DMS2_1	DMS_brand_concious	VP2_2	VP_emotional
DMS2_2		VP2_3	
DMS2_3		VP3_1	
DMS3_1	DMS_brand_novelty	VP3_2	VP_Price
DMS3_2		VP3_3	
DMS3_3		VP4_1	
DMS4_1	DMS_recreational	VP4_2	VP_social
DMS4_2		VP4_3	
DMS4_3		stimuli	WTP_euro
DMS5_1	DMS_price_concious		
DMS5_2			
DMS5_3			
DMS6_1	DMS_impulsive		
DMS6_2			
DMS6_3			
DMS7_1	DMS_overchoice		
DMS7_2			
DMS7_3			

Table 3 : Variable creation

The variables created are the means of the three questions from which it came, as they indicate the degree to which respondents agree with the statements given. To be able to perform statistical tests, the eight DMS and four VP dimensions have been used to compute the means of the constructs. The names of these variables are: DMS_all, and VP_all. Furthermore, dummy variables for the conditions were created to be able to do a regression analysis.

4.2 Characterization and reliability

The survey recorded a total of 515 responses. However, due to responses in which the manipulation question(s) were answered wrong, outliers detected, and incomplete responses, a total of 303 valid responses remained. In the survey development, the Qualtrics randomization tools were used to allow respondents to be allocated to the various conditions in an evenly divided way.

Results of the non-random convenience sampling technique can mostly be found in the age and country of origins of most respondents. 57,76% of respondents are aged between 21 – 30, and 27,06% of respondents come from the Netherlands. Most respondents have obtained at least a bachelor's degree (42,05%), and income is fairly widespread among the groups. Finally, most respondents are either single or in a relationship, and 16,23% of respondents are married. Below, a table presenting the demographics per condition group and the totals can be found.

		Demographics							
		0 no certificate		1 B-Corp		2 ISO		Total	
		Count	Column N %	Count	Column N %	Count	Column N %	Count	Column N %
Gender	Male	41	48,20%	54	51,90%	58	50,90%	153	50,50%
	Female	41	48,20%	49	47,10%	54	47,40%	144	47,52%
	Non-binary / third gender		0,00%		0,00%	2	1,80%	2	0,66%
	Prefer not to say	3	3,50%	1	1,00%		0,00%	4	1,32%
Age	<20	10	11,80%	4	3,80%	7	6,10%	21	6,93%
	21 - 30	48	56,50%	55	52,90%	72	63,20%	175	57,76%
	31 - 40	10	11,80%	25	24,00%	20	17,50%	55	18,15%
	41 - 50	7	8,20%	10	9,60%	8	7,00%	25	8,25%
	51 - 60	9	10,60%	6	5,80%	4	3,50%	19	6,27%
	61 - 70	1	1,20%	4	3,80%	3	2,60%	8	2,64%
	71 >		0,00%		0,00%		0,00%		0,00%
Country	The Netherlands	27	31,80%	27	26,00%	28	24,60%	82	27,06%
	Portugal	13	15,30%	11	10,60%	15	13,20%	39	12,87%
	Germany	5	5,90%	4	3,80%	2	1,80%	11	3,63%
	France	3	3,50%	7	6,70%	4	3,50%	14	4,62%
	Spain	4	4,70%	14	13,50%	18	15,80%	36	11,88%
	United Kingdom	15	17,60%	9	8,70%	13	11,40%	37	12,21%
	Other, namely:	18	21,20%	32	30,80%	34	29,80%	84	27,72%
Education	High School	11	13,10%	26	25,00%	16	14,00%	53	17,55%
	Bachelor's degree	35	41,70%	40	38,50%	52	45,60%	127	42,05%

	Master's degree	37	44,00%	35	33,70%	39	34,20%	111	36,75%
	MBA / PhD / equivalent	1	1,20%	3	2,90%	7	6,10%	11	3,64%
Income	< € 1000,-	26	30,60%	38	36,50%	37	32,70%	101	33,44%
	€1000 - €2000	17	20,00%	30	28,80%	43	38,10%	90	29,80%
	€3000 - €4000	24	28,20%	18	17,30%	19	16,80%	61	20,20%
	€4000 - €5000	10	11,80%	4	3,80%	7	6,20%	21	6,95%
	> €5000	8	9,40%	14	13,50%	7	6,20%	29	9,60%
	Marital state	Single	30	35,70%	38	36,50%	55	48,20%	123
In a relationship		39	46,40%	43	41,30%	43	37,70%	125	41,39%
Engaged			0,00%	4	3,80%	1	0,90%	5	1,66%
Married		15	17,90%	19	18,30%	15	13,20%	49	16,23%

Table 4 : Demographics of respondents

As derived from literature, three models have been used to test different concepts in respondents. Though the reliability measure of Cronbach's alpha was presented in the literature, this same test was done on this research to verify the reliability of the findings.

For the WTP variable, Chronbach's alpha is ,832, which is lower than the ,917 Chronbach's alpha of the literature by Nadeem et al. This can be explained by the fact that in this research, an extra question was added. The question was added because in the literature there was only one comparison and, in this research, there are two (ISO 14001 and no certificate). Therefore, the first question in the construct was duplicated into the first comparing to the ISO 14001, and the second comparing to no certificate. The reliability is still of an acceptable level, and there is no need to delete items from the variable.

The decision-making style model is relatively large, and it tests eight dimensions with three questions each. To double check if the constructs presented in the literature have been carried out correctly, a factor analysis has been done. Before doing so, DMS_impulsive questions one and three were reversed as they are negatively asked. The factor analysis presented the clear picture that there are indeed eight factors to be derived from the variables, with all three questions of each dimension falling in the same factor. However, the factor analysis presented an issue with DMS_price_concious, or factor 7. Question 1 was presented wrongly in the survey, and as a result, the responses of this question did not correspond to the rest of the factor. Chronbach's alpha with question 1 of this factor included was 0,399, which is why it was dropped from the analysis. With the eight factors, 71% of variance is explained. Below, the full factor analysis including Chronbach's alpha of each factor is presented.

Pattern Matrix ^a								
	Factor							
	1	2	3	4	5	6	7	8
Perfectionistic - Q1	-,02	,02	,65	,02	,09	,11	,02	-,04
Perfectionistic - Q2	-,03	-,01	,77	-,04	,00	-,06	,05	-,03
Perfectionistic - Q3	,05	-,10	,74	-,03	-,13	-,02	-,11	-,03
Brand concious - Q1	,04	,05	,09	,04	,06	,09	,05	-,56
Brand concious - Q2	,12	,07	,14	,03	,02	,04	-,31	-,60
Brand concious - Q3	,11	,01	-,01	-,03	-,01	-,06	-,02	-,69
Novelty - Q1	,82	,03	,01	-,05	-,05	-,02	-,01	-,07
Novelty - Q2	,89	-,09	-,08	-,01	,00	,00	,01	-,08
Novelty - Q3	,64	,05	,04	-,01	,12	,04	,00	,04
Recreational - Q1	-,03	-,02	,01	-,01	,81	-,01	,00	,01
Recreational - Q2	,16	,00	,05	-,13	,63	-,01	,09	-,19
Recreational - Q3	,00	-,02	-,06	,01	,74	-,01	-,06	,03
Price concious - Q2	-,05	,00	-,07	-,08	-,04	-,11	,76	,01
Price concious - Q3	,05	,09	,18	,29	,02	,10	,33	,17
Impulsive - Q1	-,02	,09	,09	-,70	,03	-,01	,05	-,01
Impulsive - Q2	,02	-,02	-,02	-,79	,08	,08	-,09	,06
Impulsive - Q3	,11	,07	,01	-,74	-,01	,05	,11	,02
Overchoice - Q1	-,06	,82	-,06	-,03	-,01	,05	,04	-,07
Overchoice - Q2	,04	,78	-,08	,05	,04	,02	-,01	,06
Overchoice - Q3	,00	,64	,06	-,11	-,08	-,09	-,04	-,06
Habitual - Q1	,03	,08	,12	-,09	,03	,68	-,10	,03
Habitual - Q2	,06	-,02	,00	,01	,00	,66	-,07	,06
Habitual - Q3	-,10	-,05	-,07	-,03	-,07	,41	,12	-,20
Initial Eigenvalues	4,70	2,51	2,37	1,74	1,57	1,38	1,09	0,96
% of Variance	20,4	10,9	10,3	7,6	6,8	6,0	4,7	4,2
Cumulative %	20,4	31,4	41,7	49,2	56,1	62,1	66,8	71,0
Cronbach's alpha	,845	,789	,760	,805	,796	,588	,423	,737

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 12 iterations.

Table 5 : Factor analysis of DMS

To be sure that the same had not occurred in the VP dimension, a factor analysis was done. Four distinct factors can be identified from the analysis, each having high reliabilities. A total of 80,1% of the total variance can be explained by the four factors derived from the analysis. The full factor analysis is presented in the table below.

Pattern Matrix ^a				
	Factor			
	1	2	3	4
Quality - Q1	-,10	-,09	,01	,82
Quality - Q2	,19	,08	,00	,71

Quality - Q3	,08	,06	-,04	,73
Emotional - Q1	,75	,01	,04	-,01
Emotional - Q2	,46	-,06	-,04	,07
Emotional - Q3	,71	-,04	-,09	,04
Price - Q1	-,08	-,97	-,01	-,03
Price - Q2	,04	-,90	,00	,04
Price - Q3	,12	-,86	,00	,00
Social - Q1	,11	-,01	-,85	-,06
Social - Q2	,00	,03	-,97	,00
Social - Q3	-,08	-,03	-,91	,06
Initial Eigenvalues	4,96	2,08	1,70	0,88
% of Variance	41,3	17,3	14,1	7,4
Cumulative %	41,3	58,6	72,7	80,1
Cronbach's alpha	,730	,942	,937	,829

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.

a. Rotation converged in 8 iterations.

Table 6 : Factor analysis of VP

Finally, some key variables have been tested from the created constructs. These variables have been tested on a condition level, to get an insight on the means and standard deviations for no certificate, B-Corp, and ISO. The data can be found in the table below.

	Means and standard deviations of created variables					
	0 no certificate		1 B-corp		2 ISO	
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
WTP_euro	2,91	1,24	3,04	1,31	2,78	1,24
WTP	3,09	,76	3,05	,76	2,75	,83
DMS_perfectionistic	3,85	,58	3,88	,67	3,9	,62
DMS_brand_conscious	2,71	,90	2,58	,80	2,65	,73
DMS_brand_novelty	2,67	,97	2,37	1,04	2,48	1,01
DMS_recreational	2,92	,89	2,83	,96	2,85	,96
DMS_price_conscious	3,55	,72	3,62	,72	3,66	,66
DMS_impulsive	2,76	,96	2,74	,86	2,75	1,01
DMS_overchoice	3,05	,84	3,07	,90	3,05	,96
DMS_habitual	3,79	,62	3,84	,56	3,84	,53
DMS_all	3,16	,40	3,12	,34	3,14	,40
VP_Quality	3,42	,64	3,70	,62	3,63	,58
VP_Emotional	3,36	,59	3,49	,62	3,37	,63
VP_Price	3,01	1,02	3,24	,91	3,1	,97
VP_Social	2,29	,97	2,44	,95	2,25	,88
VP_all	3,02	,56	3,21	,58	3,08	,52

Table 7 : Means and standard deviations of variables

The means of all dimensions of both DMS and VP have been used to compute the means for all dimensions in both constructs. The table shows that while DMS is almost equal in all three conditions, there seems to be an increased VP for the B-Corp condition.

4.3 Results from hypothesis testing

In the following subchapter, each hypothesis will be tested. This will be done using statistical tests that are relevant to the specific hypothesis that is tested. The results of these tests will be presented and explained in this subchapter. The subchapter will be concluded by testing the full model as presented in the literature review.

4.3.1 Certifications

H1: Sustainability certification positively impacts the willingness to pay

In this hypothesis, the effects of the three different conditions given to respondents will be used to see if there is an effect on WTP_euro, and how much change in WTP_euro can be attributed to the conditions. Therefore, a multiple regression will be used to test the hypothesis to find these values on the levels of each condition shown, the dummy variables for each condition will be used as independent variables. In this case, the no certification dummy variable was used as the reference group. The following table presents the key statistics from the SPSS regression output.

Multiple regression							
Hypothesis	Regression Weights	Dummy variable	Beta coefficient	R-sq	F	p-value	Hypothesis supported
H1	Conditions -- > WTP_euro	ISO	-,129	,008	1,136	,475	No
		B-Corp	,129	,008		,486	

Table 8 : Multiple regression output

First, the p-values show that both interactions are not significant, with p-values well over ,05. Furthermore, when looking at the R-square value, only ,8% of change in WTP_euro can be attributed to the conditions shown to the respondents. Based on these reasons, it can be concluded that there is no (positive) impact of the sustainability certifications on WTP, and H1 is therefore rejected. Though the interactions are not statistically significant, there is a positive effect of the B-Corp certification on WTP in comparison to no certification. Furthermore, as the beta coefficient for ISO in comparison to no certification is negative, we can conclude that the B-Corp certification also has a positive effect on WTP in comparison to ISO.

In the literature review, some articles were mentioned that discussed the effects of the B-Corp certification on company performance. It was mentioned that evidence was found that being B-Corp certified can lead to competitive advantage in highly competitive markets. In this case, it seems that the results of H1 are more in line with results of the research by Parker et al., who stated that they had found a negative correlation between certification and sales growth. However, there have been no influences such as brand identity or any other influences. The only consideration is that people, when presented images of a neutral cereal box with one of three options of certification generally would pay the same amount of money. For that reason, questions about the appropriateness of the methodology and data collection can be asked. Does brand identity of a B-Corp matter, since for a plain cereal box solely having the B-Corp certification stated on the box is not enough to ask a price premium. The result of this hypothesis also further calls for the answer to the question if knowledge on the B-Corp certification leads to a higher WTP. Reason for this is that there is some evidence of a higher WTP for a B-Corp product, though it is not significant. This could also lead to more in-depth conclusions and recommendations. It could be that a combination of being a B-Corp plus having an effective communication strategy about what that means does lead to a higher WTP in comparison to products with other certifications. All results can be seen in Appendix 2.

H1a: *The B-Corp certification will have a higher willingness to pay, than the ISO certification*

To test this hypothesis, an independent samples t-test was used, as in this case two means are compared. The groups that were used in the analysis are 1 : B-Corp, and 2 : ISO 14001.

Firstly, the F value for Levene's Test for Equality of Variances is ,226, and the significance is ,635. Meaning that the t value and the significance value for the independence samples t-test can be interpreted.

Below, the output of the independent samples t-test is presented.

Independent Samples Test				
Group statistics	Condition	N	Mean	Standard Deviation
	B-Corp	104	3,043	1,312
	ISO	114	2,785	1,238
Independent Samples Test	t	df	One-Sided P	Mean Difference
	1,496	216	,068	,258

Table 9 : Independent Samples T-Test H1a

In this case, the hypothesis is specific and states that B-Corp’s mean is greater than ISO’s mean. For this reason, the One-Sided P is taken into consideration when determining the significance level of this interaction (Pubmed.com, 2022). Since the One-Sided P is almost significant with a value of 6,8%, but above the significance level of 5%. Therefore, we cannot reject the null hypothesis. The B-Corp certification does not have a statistically significantly higher WTP than the ISO certification.

Unsurprisingly, the test of H1a shows similar results to that of H1. Though it is stated that the mean for B-Corp condition is higher than that of ISO, there is no statistically significant difference. In reviewed literature, no comparisons have been found between the B-Corp certification and another certification. So, there is no connection to published literature. However, it would be very interesting to see if there is statistic evidence that there is a significant difference between the B-Corp certification and another well-known certificate as there are many other known to consumers. An effect on academic practice could therefore be to develop a wider understanding of the various sustainability certifications on consumers. All results can be seen in Appendix 3.

4.3.2 Decision-making styles

H2: Consumer decision-making styles moderate the relationship between sustainability certification and WTP

In this hypothesis, several variables are used. The independent variable, condition, is categorical as it only has three groups. DMS_all is used as moderator, which is a numerical variable, which is also the case for the dependent variable, WTP_euro. For that reason, the Hayes Process Macro model 1 is used. This model allows to test if there is a statistically significant moderation effect of DMS on the relationship between the condition and WTP.

Model 1 for DMS moderation						
Model summary		Output variable = WTP_euro				
R	R-sq	MSE	F	df1	df2	p
,1723	,0297	1,5665	3,0499	3,0000	299,0000	,0289
Model						
	Coeff	se	t	p	LLCI	ULCI
constant	2,9104	,7190	40,4741	,0000	2,7689	3,0519
Condition	-,0731	,0894	-,8177	,4142	-,2491	,1028
DMS_all	,5364	,1889	2,8395	,0048	,1647	,9082
Int_1	,1292	,2229	,5797	,5626	-,3094	,5679
Int_1 =	Condition	x	DMS_all			

Test(s) of highest order unconditional interaction(s)					
	R2-chng	F	df1	df2	p
X*W	,0011	,3360	1,0000	299,0000	,5626

Table 10 : Model 1 for DMS moderation

Based on the p-values that are presented in the model summary, there is no significant moderation of DMS on the relationship between condition and WTP_euro. Since the interaction tested in this model is not significant, hypothesis two is rejected. DMS does not moderate the relationship between sustainability certification and WTP.

To find out what type of DMS leads to the highest WTP, statistical evidence of moderation needs to be proved. Based on the results of this test, there is no moderation in play. In this case, respondents with a high DMS_all value have responded that they agree with most of the statements provided in the questionnaire. They are likely to fall within the characteristics of several of the eight DMS. Similarly, respondents with an average score would fall within one or two DMS, and those with a low score in no or one DMS. Having a statistically significant moderation here would have led to the analysis of which decision-making style(s) would lead to the highest WTP. However, the Hayes Process Macro model 1 states that DMS do not influence the relationship between certifications and WTP. In the research published by Kendall et al. it is stated that the eight-factor methodology can be used to identify in which category consumers belong. It was not stated that the styles influence WTP, and which of these has the likelihood of presenting the highest WTP. This is also due to the case that styles may vary across product group or purchase situation (Kendall, 1986).

This research could have influenced professional and academic practice by presenting a moderation effect of DMS, and thereby proving that it is worthwhile to research the DMS of consumers of a company. This could lead to marketing and communications strategies focused on the most financially healthy consumers.

Since the interactions from the model are not statistically significant, the appropriateness of the methodology can be questioned. A model that has a proven effect of a psychographic or demographic variable on WTP could have been used to explain effects of the two main variables in this research. However, the goal was to find if, and which decision-making styles leading to the highest WTP. It has been proven that styles do not affect this relationship. All results can be seen in Appendix 4.

4.3.3 Value perception

H3: Value perception mediates the relationship between sustainability certification and WTP

This hypothesis tests the mediation effect of VP on the relationship of the various certifications and WTP. To test this hypothesis, a single mediation model can be used. Therefore, the Hayes Process Macro model 4 is used. This model allows to test the direct relation between the condition and WTP, the indirect effect, and the total effect.

First, the significance levels for the direct effect (c' , the relation between X and Y), the relation between the independent variable and mediator (path a), and the relation between the mediator and the dependent variable (path b) are considered.

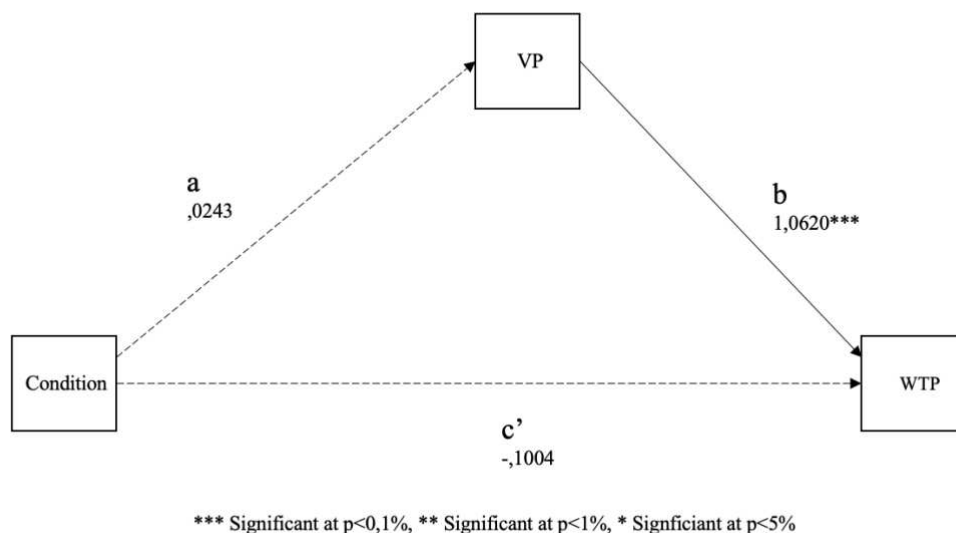


Figure 4 : Model 4 values H3

Based on the figure above, we can see that both path a and path c' are not statistically significant. Path b is statistically significant with a p value of ,00, and a coefficient of 1,06. Meaning that VP positively influences WTP. However, when looking at the indirect effect of condition on WTP through VP, the following values are presented by Process: Effect: ,0258, BootSE: 0,0420, BootLLCI: -,0567, and BootULCI: ,1101. Since the bootstrap value is placed between the lower and upper confidence intervals, we can say that there is no mediation. Therefore, hypothesis 3 is rejected and value perception does not mediate the relationship between sustainability certifications and WTP.

The PERVAL scale by Sweeney et al. was used to determine how respondents in the survey perceived the value of the stimulus that they were given. In the research by Sweeney et al., it

is mentioned that these VP dimensions can help create a market approach strategy for retail. Therefore, understanding the mediation effect of VP in this research is crucial to be able to provide B-Corp companies in an in-depth understanding of the strategic benefits of the certification.

The only significant (and positive) path found by using the Hayes Process Macro model 4 is that of the effect of VP on WTP. In other words, respondents who reported high scores in how much they agree with statements across the dimensions of VP reported higher a WTP. There is evidence for the opportunity to as for a price premium if VP is high. However, this research finds that there is no significant evidence that the B-Corp certifications leads to this higher VP. If the mediation would have been significant, further research into which dimension is affected strongest could have been done. This would have allowed a more in-depth understanding of the effects of the certification. The methodology could have been more appropriate by only comparing those that had gotten information to those that had not given information on the B-Corp, as well as only including the B-Corp condition in this model. An understanding of the change in VP dimensions solely for the B-Corp certification, and knowledge thereof could have been understood.

The only impact that this hypothesis test has on professional and academic practice is the positive relationship between VP and WTP. It is once again verified that by ensuring consumers perceive products as high across the four dimensions, they are willing to pay a price premium. In academic practice, this could be an incentive to find what communications strategies on obtained certifications could lead to a higher score on the four dimensions of VP. All results can be seen in Appendix 5.

4.3.4 Knowledge

H4: B-Corp knowledge will moderate the relationship between sustainability certification and WTP

For this hypothesis, a dichotomous variable, knowledge, is used. There are two available options respondents have seen in the questionnaire. They have either been presented information on what a B-Corp is, or they have not received any information. In this hypothesis, the emphasis is on the relationship between the B-Corp certification and WTP, influenced by received knowledge on the B-Corp or not. It is irrelevant if there are changes in WTP for the remaining conditions since no information on those conditions was provided. The split file option in SPSS is used to see the results per condition.

To test the hypothesis, a one-way ANOVA was used to compare effects of if knowledge was given to respondents, on their WTP_euro. The assumption of homogeneity of variances was tested and found tenable using Levene’s test. $F(1, 102) = 2,771, p = ,099$. When looking at the ANOVA table, the following statistics are observed: $F(1, 102) = 6,478, p = ,012$. This means that there is a statistically significant difference between the WTP_euro of respondents that were shown B-Corp information, and respondents that were shown no information, when the condition B-Corp was presented. Therefore, H4 is accepted. B-Corp knowledge does moderate the relationship between sustainability certification and WTP.

In the graph below, the means of WTP_euro for when respondents were shown information on the B-Corp, versus when they were not shown that information is presented.

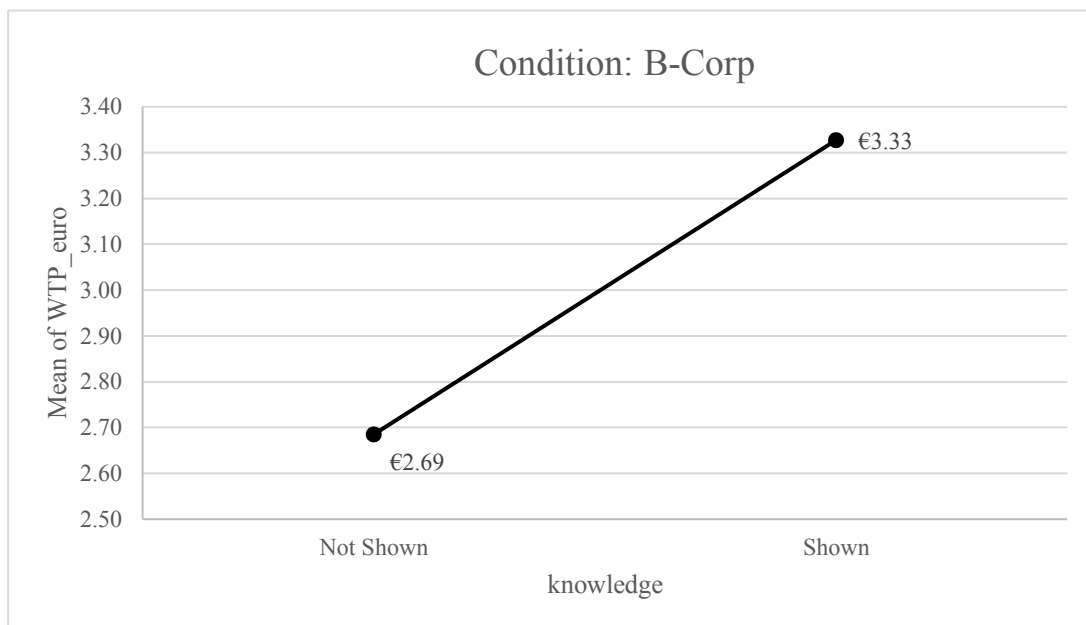


Figure 5 : B-Corp knowledge means

There is a statistically significant moderation on WTP_euro. When people are shown information, they are willing to pay significantly more than when they are not shown. Though the question whether respondents did already know what the certification stands for prior to responding to the questionnaire is unknown, several conclusions can be taken from this. First, it seems that the certification could be used as a strategy if a communications strategy is used that explains to consumers what the certification means. An approach is needed that allows consumers to understand the meaning of the certification, and only then can additional benefits

be reaped. Furthermore, all B-Corp companies, and the B-Lab should collaboratively work on how knowledgeable consumers are of its meaning. By getting more and more consumers acquainted with the meaning, a bigger pool of consumers willing to pay a price premium is generated. This could in turn incentivize uncertified companies to become certified, which in turn increases the visibility of the certification.

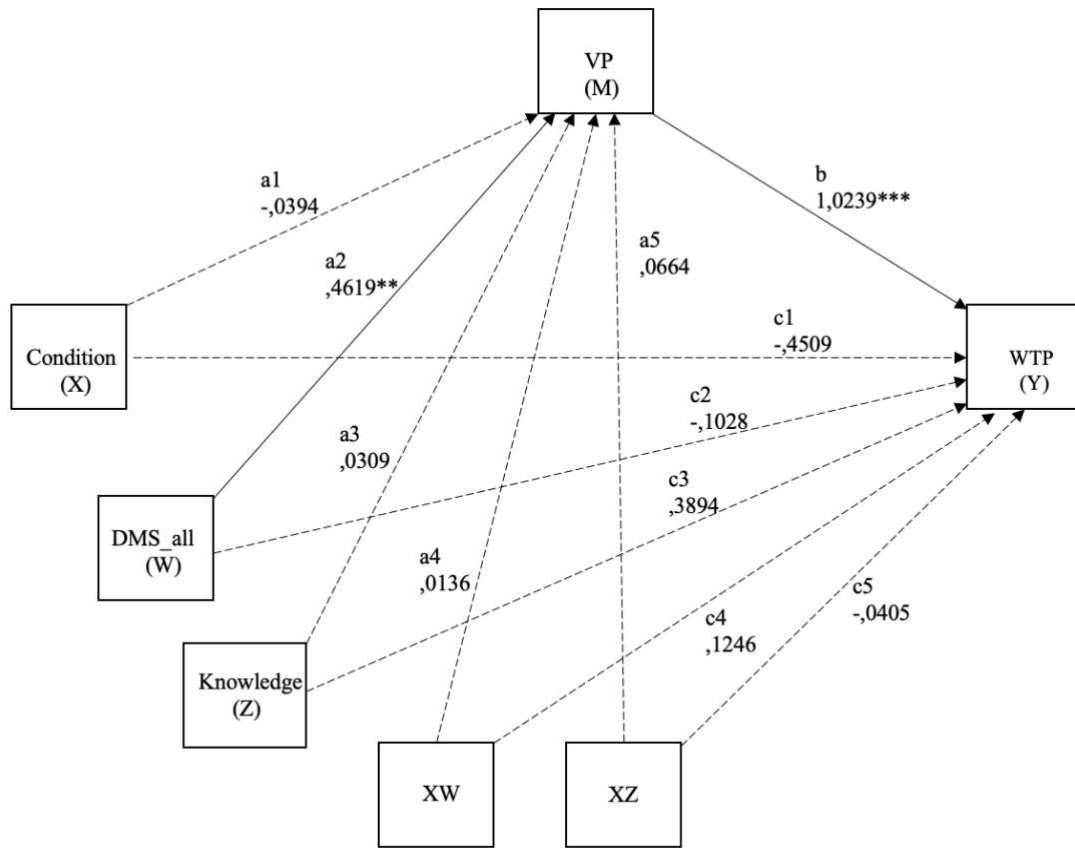
The methodology for this research revolved around comparing the B-Corp certification to another certification, or no certification. It generally not takes into consideration that people might not be knowledgeable of the meaning of the B-Corp certification. Here, it is found that there is a statistically significant moderation of being knowledgeable about this. It could therefore also have been appropriate to compare respondents with knowledge, to those without among the other hypotheses for this research. However, in this case that is out of scope.

This finding could have an effect on both professional and academic practice. In professional sense, this finding could incentivize business leaders to reorganize their market approach strategy. This could be the case if they feel that knowledge on the certification is not presented to consumers with enough emphasis to charge a price premium. In academic sense, it could call for the need to understand how knowledgeable consumers is of the certification. All results can be seen in Appendix 6.

4.3.5 Full model test

To test the full model as has been presented, the Hayes Process Macro will be used again. In this case, to test the model with two moderators and one mediator, model 10 will be used. This allows to understand all interactions that are present in the framework in a single model output.

The model will be tested with WTP_euro as dependent variable (Y), Condition as independent variable (X), VP_all as mediator (M), DMS_all as first moderator (W), and Knowledge as second moderator (Z). Below, the statistical diagram showing all interactions is presented.



*** Significant at $p < 0,1\%$, ** Significant at $p < 1\%$, * Significant at $p < 5\%$

Figure 6 : Statistical diagram model 10

In line with the hypothesis testing presented in earlier parts of this subchapter, most interactions in the full model are not significant. There are only two significant interactions in the model. The first being path a2, a moderation of DMS_all on VP_all. Respondents who have scored higher on DMS_all, also seem to have scored higher on VP_all. Second, as presented in H3, there is a positive effect of VP_all on WTP. As for the effect of knowledge on WTP, in this model the significance level is ,0732. This could be attributable to the fact that the file was not split, and so this is the effect of knowledge on all three conditions. Overall, the results of the full model analysis are in line with the results from each individual hypothesis that was tested.

5 Conclusions and Limitations

In this final chapter of the paper, the main conclusions and principal features of the study are discussed. First, based on the Results and Discussion chapter, the main research questions will be answered. Second, any managerial and academic implications will be presented. The chapter will be concluded by presenting any limitations in this research, as well as recommendations for future research.

5.1 Main findings and Conclusions

RQ1: Does the B-Corp sustainability certification impact consumers' willingness to pay?

From hypothesis testing it is known that no significant interaction was found between the B-Corp sustainability certification and WTP. Even though there is no statistically significant relation between the variables, a positive impact could be observed. First, in the multiple regression, a beta coefficient of ,129 was observed for the B-Corp condition on WTP_euro when comparing to no certificate. This implies that there is some evidence of a positive impact on consumers' willingness to pay, in comparison to how much consumers would be willing to pay for a cereal box without a certification.

Furthermore, there is also evidence of a difference in impact between the B-Corp and ISO 14001 certifications. In the first hypothesis test, it is observed that the beta coefficient in relation to no certification for B-Corp is ,129, and that of the ISO certificate is -,129. In addition, the second hypothesis test presents a higher mean of WTP for B-Corp responses than for ISO. Though not statistically significant with a p-value of 6,8%, there still seems to be some positive impact of the B-Corp certification on WTP.

In answering the first research question, it is concluded that the B-Corp sustainability certification does not impact consumers' willingness to pay. The interactions in the first two hypotheses are not statistically significant. However, there must be some reasoning as to why the coefficients and means for the B-Corp stimulus showed a positive impact, or higher mean. It seems there is some effect, but this research failed to bring forward what exactly it is. The question of what the impact of the B-Corp certification is, and how this impact can be maximized therefore remains. After setting out to convince business leaders to become B-Corp certified, the main answer to this research question will likely not be compelling from a business performance point of view. The call for further research therefore remains.

RQ2: *Does consumers' knowledge on what the B-Corp certification means influence their willingness to pay?*

From testing the fourth hypothesis, it is known that there is a significant difference of the WTP for the B-Corp stimulus between people who were given information about what the B-Corp means, versus those that did not. The mean WTP for respondents that were given information is €3,33, whereas that of respondents who were not given this information is €2,69. Therefore, the answer to the second research question is that there is a positive influence of presenting knowledge.

In this research, respondents were not asked to indicate how well they are acquainted with the B-Corp certificate. It can therefore not be ruled out that there could be a coincidence which makes the WTP for respondents who were shown this information higher. Nevertheless, it can be concluded that knowledge leads to a higher WTP. This conclusion can be divided into two considerations. First, by creating a brand communications strategy that introduces consumers to the principle of the B-Corp certificate, benefits can be reaped. Though it might be costly to create marketing strategies that explain the certificate besides promoting the brand, there is evidence that it could be worthwhile. Furthermore, by introducing more consumers to the concept, the underlying foundations of the certificate can come into its own in a financially more allowing way.

Second, by having B-Corps being able to ask a price premium based on the knowledge consumers have of its meaning, it is likely that non B-Corps become interested in obtaining a certificate. With more companies becoming certified, it is expected that consumer knowledge of the certification would increase also. As a result, brands would have to focus less on educating their consumers as more widespread knowledge would be built. In the end, the goal of the B-Lab is to get as many businesses certified as possible and having all business work as a force for good (BCorporation.net, n.d.). By getting more consumers knowledgeable on what the certification means, a financial incentive for businesses to become certified is given.

RQ3: What consumer decision making style can B-Corp companies target to drive their business?

To be able to use the scores of respondents on the DMS construct, a mean was made for each respondent. By using this mean, a moderation model test was performed. The DMS B-Corp companies could target to drive their business was aimed to be found by using a comparison of means or a regression to find which DMS leads to the highest WTP. By doing so, a brand communication strategy as proposed in the second research question discussion could have been given more direction. Which DMS would lead to a higher WTP could have given answer to what consumers tend to be like in the purchase situation. For example, it could be determined that consumers who are more impulsive style consumers would be willing to pay a price premium. On the contrary, it could have also indicated that habitual style consumers would be willing to pay a price premium. In both cases, a different brand communication strategy could be developed.

However, the moderation model presented an insignificant moderation effect of DMS on the relationship between the conditions and WTP. Therefore, no DMS can be identified that B-Corp businesses can target to drive their business. This research solely analyzed the effect of DMS on the relation between DMS and WTP. It could be that there are similar psychographic constructs that have a moderation effect on the interaction. The effect on professional practice is likely to be none since the answer to what type of consumers to target remains. From the perspective of research, the answer to this research question is not favorable. The construct used to find reasoning behind an interaction has not been effective. As a result, no answer can be given to a question that was thought to help portray the purpose of this research.

5.2 Managerial and Academic Implications

In terms of academic relevance, some theories have been proven in new contexts. There is a significant and positive effect of a high VP score on WTP. Consumers who value a product as high across the four dimensions of VP are likely to give a higher price they would pay. Furthermore, there is a moderating effect of being presented information on the certificate to consumers on the relation between the B-Corp stimulus and WTP. The effect of being presented information of the certificate on WTP was not studied before. This gives proof to the fact that consumers need to be taught what it means to create an effect. However, several constructs did not lead to significant interactions. From an academic point of view, this gives

answer to questions laid out in the introductory chapter of the paper, though not the answers that were aimed to be found.

In terms of managerial implications, there are only two viable implications. Presenting information to consumers allows a product to be sold at a price premium and having a higher perceived value can increase the willingness to pay of consumers. However, there is no evidence to present which DMS a B-Corp can target to drive their business. This research does not present a financial benefit to becoming certified.

5.3 Limitations and Further Research

This study is tied to several limitations and restrictions due to its academic nature. Besides constraints in both time and money available to complete this research, there are several limitations to consider.

By using a non-random convenience sampling technique to gather respondents for the survey, a sample bias is made. Over half of all respondents are between the ages 21 to 30, and approximately 82% of respondents have obtained at least a bachelor's degree. However, the respondents of the survey reside in a wide spread of countries. The results of this research are therefore not specific to one market, but rather consumers of all over the world. Further research could analyze whether the effects of the B-Corp are statistically significant in, for example, the Dutch market. Another research could compare the effects of the certifications in two (or more) different markets.

Second, in this research only stimuli in the form of crunchy muesli cereal boxes were used. There is no comparison between product groups. This is a product which is generally in a low-price category. The effects of the analysis could have been different when a high-price category product would have been used. Furthermore, a recommendation for further research would be to compare the effects of the certifications among two products.

Third, as receiving knowledge on the B-Corp is a significant moderator on the relation between the condition and WTP, interesting research could be to see what would happen if all respondents had received information on the B-Corp. As only half of respondents received information on the B-Corp, the overall effect on WTP is decreased. Doing research into a

situation where a brand had used a communication strategy to inform consumers about the B-Corp certifications' meaning would be an interesting way to see the effects.

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Appendices

Appendix 1 : Survey

Dissertation questionnaire

Start of Block: Introduction

Introduction This survey is being conducted to collect data for a MSc dissertation in the field of Product Management for Consumer Packaged Goods at Católica Lisbon School of Business and Economics.

Please note the following:

1. This survey is fully anonymous
2. The collected data will be kept strictly confidential
3. Only aggregated results will be used in any report on the survey
4. Participation in the survey is voluntary

For any questions, please do not hesitate to reach out to s-fverhaar@ucp.pt

This survey is expected to take no longer than 5 minutes

Thank you in advance for taking part in this survey!

End of Block: Introduction

Start of Block: Default Question Block

Q1 Have you ever bought cereal in the supermarket for breakfast?

Yes (1)

No (2)

Page Break

Display This Question:

If Have you ever bought cereal in the supermarket for breakfast? = Yes

Q2 Do you purchase a certain brand?

Yes (1)

No (2)

Page Break

Display This Question:

If Have you ever bought cereal in the supermarket for breakfast? = Yes

Q3 What is the reason you purchase a brand?

- Good value for money (1)
- Because of the taste (2)
- Because it's healthy (3)
- Because the company is sustainable (4)
- Because of allergies (5)

End of Block: Default Question Block

Start of Block: Stimuli B-Corp

B-Corp INFO Did you know...

The B-Corp Certification is a designation that a business is meeting very high standards of verified performance, accountability, and transparency on factors like employee benefits, charitable giving, supply chain practices and input materials. The certification is issued by an organisation called B Lab. Examples of B-Corps include: Patagonia, Ben & Jerry's, Ace & Tate, Tony's Chocolonely and Innocent Smoothies.

Please take the time to evaluate the following cereal box

End of Block: Stimuli B-Corp

Start of Block: Stimuli no certification

No B-Corp INFO Please take the time to evaluate the following cereal box

End of Block: Stimuli no certification

Start of Block: Stimuli

1 How much would you be willing to pay for this box of Crunchy Muesli in euro's?



End of Block: Stimuli B-Corp

Start of Block: Manipulation Question

15 Did the presented Crunchy Muesli box have a sustainability certification?

- Yes (1)
- No (2)

Page Break

Display This Question:

If Did the presented Crunchy Muesli box have a sustainability certification? = Yes

16 What sustainability certification did the box have?

- ISO 14001 (1)
- B-Corp Certification (2)

End of Block: ISO_manipulation

Start of Block

2 Please indicate how much you agree with the following statements

	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely agree (5)
I would be willing to pay more for a product that is B-Corp certified over a product with another certification (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would be willing to pay more for a product that is B-Corp certified over a not certified product (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer to purchase a B-Corp product even if another product offers a lower price (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The price of B-Corp product would have to increase quite a bit before I switch to another product (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: ISO_WTP

Start of Block: ISO_DMS

3 Please indicate how much you agree with the following statements

	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely Agree (5)
Getting very good quality is very important to me (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When it comes to purchasing products, I try to get the very best or perfect choice (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In general, I usually try to buy the best overall quality (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

4 Please indicate how much you agree with the following statements

	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely agree (5)
The well-known national brands are best for me (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The more expensive brands are usually my choices (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The higher the price of a product, the better its quality (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

5 Please indicate how much you agree with the following statements

	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely agree (5)
I usually have one or more outfits of the very newest style (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I keep my wardrobe up-to-date with the changing fashions (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fashionable, attractive styling is very important to me (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

6 Please indicate how much you agree with the following statements

	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely agree (5)
Shopping is not a pleasant activity to me (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Going shopping is one of the most enjoyable activities of my life (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shopping the stores wastes my time (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

7 Please indicate how much you agree with the following statements

	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely agree (5)
I buy as much as possible (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The lower price products are usually my choice (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I look carefully to find the best value for money (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

8 Please indicate how much you agree with the following statements

	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely agree (5)
I should plan my shopping more carefully than I do (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am impulsive when purchasing (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Often I make careless purchases I later wish I had not (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

9 Please indicate how much you agree with the following statements

	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely agree (5)
There are so many brands to choose from that I often feel confused (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sometimes it's hard to choose which stores to shop (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The more I learn about products, the harder it seems to choose the best one (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

10 Please indicate how much you agree with the following statements

	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely agree (5)
I have favorite brands I buy over and over (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Once I find a product or brand I like, I stick with it (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I go to the same stores each time I shop (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: ISO_DMS

11 I believe the Crunchy Muesli box...

	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely agree (5)
Has consistent quality (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is well made (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has an acceptable standard of quality (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

12 I believe the Crunchy Muesli box...

	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely agree (5)
Is one that I would enjoy (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Offers value for money (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Would make me feel good (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

13 Imagine the Crunchy Muesli box is priced at €3,59

I believe the Crunchy Muesli box...

	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely agree (5)
Is reasonable priced (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Offers value for money (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is a good product for the price (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

14 I believe the Crunchy Muesli box would...

	Completely disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Completely agree (5)
Help me to feel acceptable (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improve the way I am perceived (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Make a good impression on other people (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block

Start of Block: Demographics

Gender What is your gender?

- Male (1)
- Female (2)
- Non-binary / third gender (3)
- Prefer not to say (4)

Page Break

Age What is your age?

- <20 (1)
- 21 - 30 (2)
- 31 - 40 (3)
- 41 - 50 (4)
- 51 - 60 (5)
- 61 - 70 (6)
- 71 > (7)

Page Break

Country Where do you live?

- The Netherlands (1)
- Portugal (2)
- Germany (3)
- France (4)
- Spain (5)
- United Kingdom (6)
- Other, namely: (7) _____

Page Break

Education What is your education level?

- High School (1)
 - Bachelor's degree (2)
 - Master's degree (3)
 - MBA / PhD / equivalent (4)
-

Page Break

Income What is your monthly income?

- < €1000,- (1)
 - €1000 - €2000 (2)
 - €2000 - €3000 (3)
 - €3000 - €4000 (4)
 - > €5000 (5)
-

Page Break

Marital state What is your marital state?

- Single (1)
- In a relationship (2)
- Engaged (3)
- Married (4)

End of Block: Demographics

Appendix 2 : SPSS Output H1

Regression

Variables Entered/Removed^a

Model	Variables Entered	Variables Removed	Method
1	B_Corp, ISO ^b	.	Enter

a. Dependent Variable: WTP_euro

b. All requested variables entered.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.087 ^a	.008	.001	1.26369

a. Predictors: (Constant), B_Corp, ISO

b. Dependent Variable: WTP_euro

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.630	2	1.815	1.136	.322 ^b
	Residual	479.077	300	1.597		
	Total	482.707	302			

a. Dependent Variable: WTP_euro

b. Predictors: (Constant), B_Corp, ISO

Coefficients^a

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients		
				Beta		
1	(Constant)	2.914	.137		21.262	<.001
	ISO	-.129	.181	-.050	-.715	.475
	B_Corp	.129	.185	.048	.697	.486

a. Dependent Variable: WTP_euro

Residuals Statistics^a

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.7849	3.0432	2.9099	.10963	303
Residual	-2.78491	3.21509	.00000	1.25950	303
Std. Predicted Value	-1.140	1.216	.000	1.000	303
Std. Residual	-2.204	2.544	.000	.997	303

a. Dependent Variable: WTP_euro

Appendix 3 : SPSS Output H1a

T-Test

Group Statistics

	Conditio	N	Mean	Std. Deviation	Std. Error Mean
WTP_euro	B-corp	104	3.0432	1.31158	.12861
	ISO	114	2.7849	1.23756	.11591

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means				95% Confidence Interval of the Difference			
		F	Sig.	t	df	One- Sided p	Two-Sided p	Mean Difference	Std. Error Difference	Lower	Upper
WTP_euro	Equal variances assumed	.226	.635	1.496	216	.068	.136	.25826	.17267	-.08208	.59860
	Equal variances not assumed			1.492	211.242	.069	.137	.25826	.17313	-.08303	.59955

Independent Samples Effect Sizes

Standardizer ^a	Point Estimate	95% Confidence Interval	
		Lower	Upper

WTP_euro	Cohen's d	1.27339	.203	-.064	.469
	Hedges' correction	1.27783	.202	-.064	.467
	Glass's delta	1.23756	.209	-.059	.475

a. The denominator used in estimating the effect sizes.

Cohen's d uses the pooled standard deviation.

Hedges' correction uses the pooled standard deviation, plus a correction factor.

Glass's delta uses the sample standard deviation of the control group.

Appendix 4 : SPSS Output H2

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.2 beta *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2022). www.guilford.com/p/hayes3

Model : 1
Y : WTP_euro
X : Conditio
W : DMS_all

Sample
Size: 303

OUTCOME VARIABLE:
WTP_euro

Model Summary

R	R-sq	MSE	F	df1	df2	p
.1723	.0297	1.5665	3.0499	3.0000	299.0000	.0289

Model	coeff	se	t	p	LLCI	ULCI
constant	2.9104	.0719	40.4741	.0000	2.7689	3.0519
Conditio	-.0731	.0894	-.8177	.4142	-.2491	.1028
DMS_all	.5364	.1889	2.8395	.0048	.1647	.9082
Int_1	.1292	.2229	.5797	.5626	-.3094	.5679

Product terms key:

Int_1 : Conditio x DMS_all

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0011	.3360	1.0000	299.0000	.5626

Focal predict: Conditio (X)
 Mod var: DMS_all (W)

Data for visualizing the conditional effect of the focal predictor:
 Paste text below into a SPSS syntax window and execute to produce plot.

```

DATA LIST FREE/
  Conditio DMS_all WTP_euro .
BEGIN DATA.
  -.8061 -.3813 2.8045
  .0000 -.3813 2.7058
  .8061 -.3813 2.6072
  -.8061 .0000 2.9693
  .0000 .0000 2.9104
  .8061 .0000 2.8514
  -.8061 .3813 3.1341
  .0000 .3813 3.1149
  .8061 .3813 3.0957
END DATA.
GRAPH/SCATTERPLOT=
  Conditio WITH WTP_euro BY DMS_all .

```

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:
95.0000

NOTE: The following variables were mean centered prior to analysis:
DMS_all Conditio

----- END MATRIX -----

Appendix 5 : SPSS Output H3

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.2 beta *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2022). www.guilford.com/p/hayes3

Model : 4
Y : WTP_euro
X : Conditio
M : VP_all

Sample
Size: 303

OUTCOME VARIABLE:
VP_all

Model Summary

R	R-sq	MSE	F	df1	df2	p
.0352	.0012	.3121	.3724	1.0000	301.0000	.5422

Model	coeff	se	t	p	LLCI	ULCI
constant	3.0860	.0542	56.9189	.0000	2.9793	3.1926
Conditio	.0243	.0399	.6103	.5422	-.0541	.1028

OUTCOME VARIABLE:

WTP_euro

Model Summary

R	R-sq	MSE	F	df1	df2	p
.4709	.2217	1.2523	42.7355	2.0000	300.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	-.2856	.3725	-.7669	.4438	-1.0187	.4474
Conditio	-.1004	.0799	-1.2558	.2102	-.2577	.0569
VP_all	1.0620	.1155	9.1979	.0000	.8348	1.2892

***** DIRECT AND INDIRECT EFFECTS OF X ON Y *****

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-.1004	.0799	-1.2558	.2102	-.2577	.0569

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
VP_all	.0258	.0420	-.0567	.1101

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

----- END MATRIX -----

Appendix 6 : SPSS Output H4

Oneway

Warnings

Post hoc tests are not performed for WTP_euro in split file Conditio = no certificate because there are fewer than three groups.

Post hoc tests are not performed for WTP_euro in split file Conditio = B-corp because there are fewer than three groups.

Post hoc tests are not performed for WTP_euro in split file Conditio = ISO because there are fewer than three groups.

Descriptives

WTP_euro

Conditio		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
no certificate	Not Shown	41	2.7495	1.24539	.19450	2.3564	3.1426	.99	6.00
	Shown	44	3.0680	1.22603	.18483	2.6952	3.4407	1.00	6.00
	Total	85	2.9144	1.23841	.13432	2.6472	3.1815	.99	6.00
B-corp	Not Shown	46	2.6850	1.13387	.16718	2.3483	3.0217	1.00	6.00
	Shown	58	3.3272	1.38126	.18137	2.9641	3.6904	1.00	6.00
	Total	104	3.0432	1.31158	.12861	2.7881	3.2982	1.00	6.00
ISO	Not Shown	69	2.6425	1.20187	.14469	2.3537	2.9312	.00	6.00

Shown	45	3.0033	1.27290	.18975	2.6209	3.3858	.45	6.00
Total	114	2.7849	1.23756	.11591	2.5553	3.0145	.00	6.00

Tests of Homogeneity of Variances

Conditio			Levene Statistic	df1	df2	Sig.
no certificate	WTP_euro	Based on Mean	.002	1	83	.967
		Based on Median	.001	1	83	.978
		Based on Median and with adjusted df	.001	1	82.380	.978
		Based on trimmed mean	.000	1	83	.991
B-corp	WTP_euro	Based on Mean	2.771	1	102	.099
		Based on Median	1.356	1	102	.247
		Based on Median and with adjusted df	1.356	1	96.718	.247
		Based on trimmed mean	2.711	1	102	.103
ISO	WTP_euro	Based on Mean	.147	1	112	.702
		Based on Median	.290	1	112	.591
		Based on Median and with adjusted df	.290	1	111.993	.591
		Based on trimmed mean	.224	1	112	.637

ANOVA

WTP_euro

Conditio	Sum of Squares	df	Mean Square	F	Sig.
----------	----------------	----	-------------	---	------

no certificate	Between Groups	2.152	1	2.152	1.410	.238
	Within Groups	126.675	83	1.526		
	Total	128.827	84			
B-corp	Between Groups	10.582	1	10.582	6.478	.012
	Within Groups	166.604	102	1.633		
	Total	177.185	103			
ISO	Between Groups	3.547	1	3.547	2.343	.129
	Within Groups	169.517	112	1.514		
	Total	173.064	113			

Robust Tests of Equality of Means

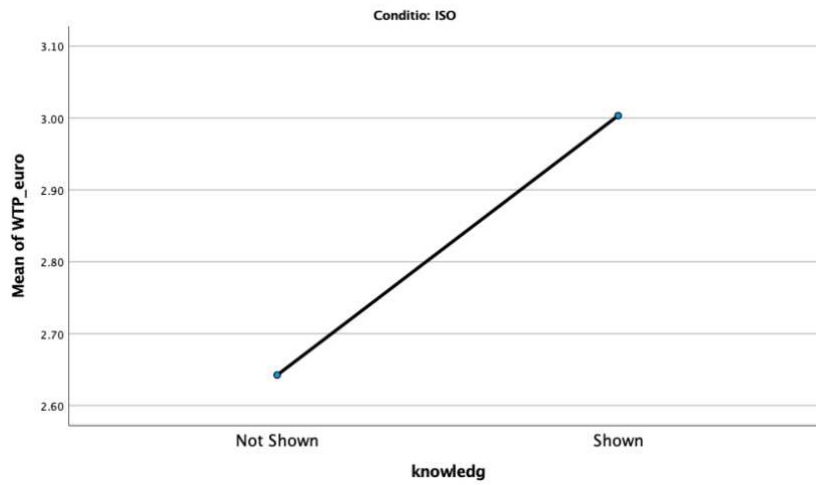
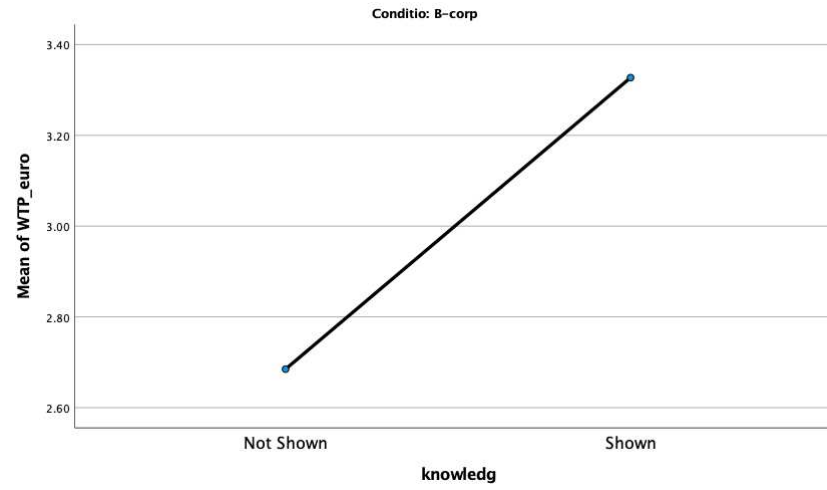
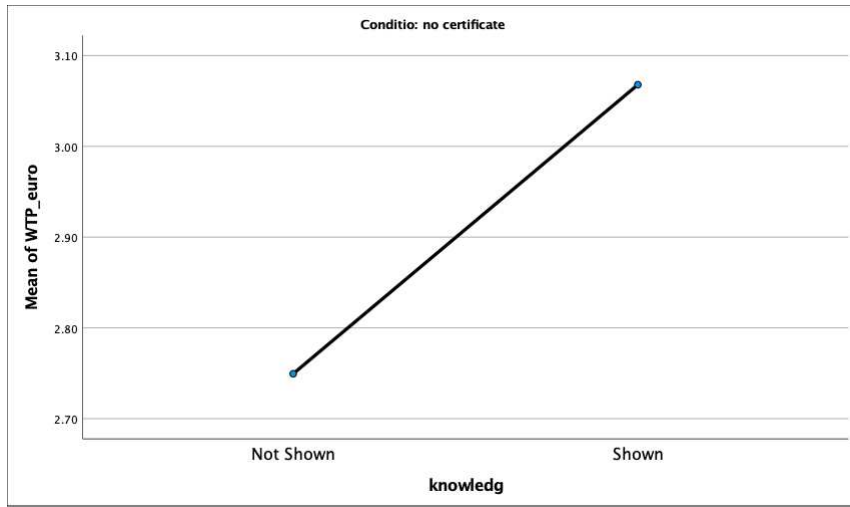
WTP_euro

Conditio		Statistic ^a	df1	df2	Sig.
no certificate	Welch	1.409	1	82.374	.239
	Brown-Forsythe	1.409	1	82.374	.239
B-corp	Welch	6.779	1	101.863	.011
	Brown-Forsythe	6.779	1	101.863	.011
ISO	Welch	2.287	1	90.289	.134
	Brown-Forsythe	2.287	1	90.289	.134

a. Asymptotically F distributed.

Means Plots

WTP_euro



Appendix 7 : Full model output

Warning # 14324

MATRIX cannot do split-file processing in interactive mode. Run the job in batch mode or process each split-file group separately.

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.2 beta *****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2022). www.guilford.com/p/hayes3

Model : 10
Y : WTP_euro
X : Conditio
M : VP_all
W : DMS_all
Z : knowledg

Sample
Size: 303

OUTCOME VARIABLE:
VP_all

Model Summary

R	R-sq	MSE	F	df1	df2	p
.3451	.1191	.2790	8.0326	5.0000	297.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	1.6109	.4193	3.8414	.0001	.7856	2.4362
Conditio	-.0394	.3009	-.1309	.8959	-.6316	.5528
DMS_all	.4619	.1314	3.5157	.0005	.2033	.7204

Int_1	.0136	.0941	.1449	.8849	-.1715	.1988
knowledg	.0309	.1028	.3005	.7640	-.1714	.2332
Int_2	.0664	.0761	.8720	.3839	-.0834	.2162

Product terms key:

Int_1	:	Conditio x	DMS_all
Int_2	:	Conditio x	knowledg

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0001	.0210	1.0000	297.0000	.8849
X*Z	.0023	.7605	1.0000	297.0000	.3839
BOTH(X)	.0023	.3917	2.0000	297.0000	.6762

OUTCOME VARIABLE:

WTP_euro

Model Summary

R	R-sq	MSE	F	df1	df2	p
.4911	.2412	1.2375	15.6802	6.0000	296.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	-.0577	.9049	-.0638	.9492	-1.8386	1.7231
Conditio	-.4509	.6338	-.7114	.4774	-1.6982	.7965
VP_all	1.0239	.1222	8.3780	.0000	.7834	1.2644
DMS_all	-.1028	.2824	-.3641	.7161	-.6586	.4529
Int_1	.1246	.1981	.6290	.5298	-.2653	.5146
knowledg	.3894	.2166	1.7977	.0732	-.0369	.8156
Int_2	-.0405	.1605	-.2522	.8011	-.3564	.2754

Product terms key:

Int_1	:	Conditio x	DMS_all
Int_2	:	Conditio x	knowledg

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0010	.3956	1.0000	296.0000	.5298
X*Z	.0002	.0636	1.0000	296.0000	.8011
BOTH (X)	.0012	.2285	2.0000	296.0000	.7959

***** DIRECT AND INDIRECT EFFECTS OF X ON Y *****

Conditional direct effects of X on Y

DMS_all	knowledg	Effect	se	t	p	LLCI	ULCI
2.7917	.0000	-.1029	.1299	-.7925	.4287	-.3585	.1527
2.7917	1.0000	-.1434	.1387	-1.0341	.3019	-.4163	.1295
3.1250	.0000	-.0614	.1087	-.5646	.5728	-.2753	.1525
3.1250	1.0000	-.1019	.1184	-.8601	.3904	-.3349	.1312
3.5417	.0000	-.0094	.1333	-.0708	.9436	-.2718	.2529
3.5417	1.0000	-.0499	.1407	-.3550	.7229	-.3268	.2269

Conditional indirect effects of X on Y:

INDIRECT EFFECT:

Conditio	->	VP_all	->	WTP_euro		
DMS_all	knowledg	Effect	BootSE	BootLLCI	BootULCI	
2.7917	.0000	-.0014	.0623	-.1264	.1215	
2.7917	1.0000	.0666	.0680	-.0708	.1980	
3.1250	.0000	.0033	.0531	-.1028	.1074	
3.1250	1.0000	.0713	.0552	-.0357	.1795	
3.5417	.0000	.0091	.0698	-.1290	.1490	
3.5417	1.0000	.0771	.0669	-.0503	.2117	

Indices of partial moderated mediation:

	Index	BootSE	BootLLCI	BootULCI
DMS_all	.0140	.1042	-.1875	.2253
knowledg	.0680	.0763	-.0840	.2182

***** ANALYSIS NOTES AND ERRORS *****

Level of confidence for all confidence intervals in output:

95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

W values in conditional tables are the 16th, 50th, and 84th percentiles.

----- END MATRIX -----