

“How does the awareness of greenwashing influence consumer purchasing decisions of quality-labelled products in the food industry?”

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ABSTRACT,

The objective of this study is to examine the effect of greenwashing on consumer purchasing decisions of quality-labels on food packaging. Claims regarding environmentally friendly and sustainable products are nowadays an essential factor that influences the purchasing decisions of consumers. In response to this trend, different marketing strategies have come into play. Some companies are adapting their internal processes in order to qualify for certified label status; whereas others have responded with the use of fake labelling, thus conducting greenwashing. How do consumer attitudes change when skepticism arises due to knowledge of greenwashing? Even fair companies could suffer from other firms' deceptive behaviour, which generally influences the market conditions. Primary data in the form of a vignette study was gathered to identify how consumer awareness of greenwashing affects their purchasing decisions in terms of consumers' attitude and the perceived value for quality-labelled products. The findings of this study reveal that consumer attitudes and their perceived value of quality label have significantly changed. The importance of quality-labelling has decreased, indicating the negative effect of greenwashing practices for all organisations in this market segment.

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Keywords

Quality label, Sustainable and environmentally friendly products, purchase decision, marketing strategy, fake labelling, greenwashing, vignette study

1. INTRODUCTION

1.1 Current Situation and Complications

This study relates to the context of greenwashing, which has become a widespread phenomenon across organisations, and its consequences on customer purchase decisions for quality-labelled products.

In 1997, Beder made one of the early definitions of greenwashing. He stated that this phenomenon consists of three elements of deception, which are confusion, front and posture. With regard to external strategies, confusion is caused by the limited flow of internal information and careful scrutiny of documents by regulators. The second element of fronting is accomplished by actions such as whistle blowing, and finally, the active use of the companies' public affairs department contributes to the third element of deception which is posturing. These strategies have the ability to generate the companies' appearance of ethical behaviour, even when required obligations are not met (Laufer, 2003).

Over time, a general definition emerged which says that a form of greenwashing involves making overblown claims of environmental friendliness or sustainability, *inter alia*, to deliberately mislead consumers with the purpose of increasing market share (Shahrin et al., 2017; Dahl, 2010). Consumers spend more money for worthless products because this practice is solely profit-driven (Shahrin et al., 2017). Overall, the practice of greenwashing has long since been a common method of staying competitive in the market (Dahl, 2010). Terra Choice (2009) identified a seventh sin which is called, "The Sin of Worshiping False Labels". This comprises the use of either images or words which lead one to believe the presence of a third-party endorsement, where no such endorsement exists. Overall, this describes the application of fake labelling. In 2009, their study discovered that 26.8% of "greener" products were carrying a fake label and only one year later, the number had already increased by 5.2% to around 32% (Terra Choice 2010).

Overall, the practice of greenwashing can cause damage to the market and distort competition. A study conducted by De Jong, Harkink and Barth (2018) identified a number of impacts of greenwashing and found that it contributes to the perceived environmental performance of corporations. According to the Environmental Claims in Consumer Markets (2009) report, the risks of greenwashing include the misleading of customers and their loss of confidence in the market, and the stolen market share from products that offer legitimate benefits, thus decreasing the spread of innovation. Another potential disadvantage is the markets loss of power, to speed up the progress towards sustainability. In general, consumers become skeptical and discerning of corporations as many firms claim to protect the environment but fail to provide evidence of such in their performance and processes (Nyilasy, Gangadharbatla & Paladino, 2013; Glem et al., 2013).

A frequently debated industry on this topic is the food industry. Quality labels are increasingly used on packaging of different food products. These labels have a crucial role in relation to marketing communication (Štefanić, 2018). For stakeholders, consumers and other external parties, an organisation's environmental performance is difficult to evaluate, thus leading to reliance on organisations to signal their environmental quality through for example, labelling or other advertising methods. The use of labels has three primary functions. The first function relates to the transfer of product information; highlighting specific product characteristics. Common information provided through a quality-label on food product packaging are the origin of ingredients, the verification of a sustainable production process or fair working conditions of

those who operate the cultivation and harvest of, for example, vegetables and coffee. Next to the transmission of product characteristics, they can contribute to increased revenue as labels promote premium pricing. Finally, the implementation of public objectives can be supported. An example could be the reduction of pesticides used in the agriculture (Howard & Ellen, 2006).

From a company's perspective, the primary motivator to operate more environmentally friendly relates to external pressure from customers, other stakeholders and government regulation. Internal concerns about the environment are less decisive (Saha, Darnton, 2005). If a company adopts a marketing strategy towards the application of quality labelling on their products, they can generally choose between two types of classifications. These distinguish between unauthentic, self-declarations, which are not controlled by external parties - thus giving rise to greenwashing - and secondly, authentic claims which are approved by an independent third party and are based on compliance with predetermined criteria (Ramli, Rashid, 2009). If a company decides to adopt an approved quality label, it has to comply with more stringent production standards compared to conventional production, which causes significantly higher costs (Annunziata, Mariani & Vecchio, 2019). Due to the difference in costs, not all companies are willing to deal with the adjustment of production processes. However, as they want to meet external expectations and have the advantage of premium pricing, corporations misuse the ability of making self-declared claims and apply fake labels to the product packaging, thus conducting greenwashing.

From the customers' point of view, they value quality labels as they are important in order to make an informed product choice. Research indicates that the primary motivational factors towards quality-labelled products relate to health (Ozguven, 2012; Bryla, 2016) and environmental concerns (Nedra, Sharma and Dakhali, 2015). The environmental motive and customer sensitivity to business processes stemmed from several past scandals that increased the general interest in ethical production processes (Gider and Hamm, 2019).

Recent studies show the rising trend in the adoption of quality labeling in the food industry. The report from the Research Institute of Organic Agriculture (2017) confirms a steady increase in the volume of the global organic food market. In 2015, consumers spent around 80 Billion euros on organic products (IFOAM, 2017). This trend displays the increased popularity of green products for both companies and their customers (Delmas & Burbano, 2011).

A concept which displays the relationship between contextual factors as quality labelling and customers' behaviour has been developed by Zepeda and Deal (2009). According to ABC-Theory, quality labelling that signals an organic production process reinforce consumers to buy quality-labelled products. However, the attitudinal aspect which comprises of norms and believes can have an effect on this relationship. The customers' norms and believes are likely to change though the awareness of greenwashing. Even though greenwashing has been around for a while, the practices of greenwashing are not widely known by customers (Nadányiová, 2016; Khandelwal, Sharma & Jain, 2019). Depending on customers' awareness, it can have far-reaching effects on all companies that are part of the quality-labelled market. Consumers can either ignorantly support greenwashing activities through the purchase of greenwashing products or in case of being aware of these practices, losing confidence in any quality label. Overall, the knowledge of this phenomenon is likely to have an effect on customer purchase decisions. Previous researches have intensively targeted the

general impact of approved quality label and their influence on consumer buying behaviour. In relation to these studies, the influence of the awareness of greenwashing and the impact of fake labeling will be adopted. This outcome will help to determine the extent to which customers' purchase decision will change and the potential impact on the market and especially on organisations which distribute quality-labelled products. In summary, this research contributes to the conceptual model of Zepeda and Deal (2009) and helps broaden the knowledge of existing relationships.

1.2 Research Goal

The goal of this study is to determine whether or not the awareness of greenwashing has an impact on consumers' purchasing decision towards quality-labelled products. The increasing disclosure of environmental information enabled scientists to analyse greenwashing behaviour, its drivers and its consequences (e.g. Delmas and Burbano, 2011, Walker and Wan, 2011). However, the impact of greenwashing on even fair-minded companies has been rarely tested, as customers might lose their trust in a quality label due to the awareness of its misuse. Thus, this study intends to elaborate upon the ABC-Theory by Zepeda and Deal (2009) which demonstrates the effect of contextual factors on customer buying behaviour. Additionally, this study extends the construct by employing a study to measure customers' purchase decision on the impact of awareness of greenwashing, in regard to fake labelling.

For this research, a vignette study is conducted and in addition, it will be tested whether an authentic quality label, which is approved by a third party and widely used on the market or an unauthentic, self-declared quality label, which displays greenwashing activity is preferred by customers. A third choice is an unlabeled product. This allows for the determination of whether respondents prefer a specific type of label, and whether a labelled product is preferred over an unlabeled product.

Overall, this study will extend existing theories on the effect of greenwashing on customers' purchase decision of quality-labelled products.

1.3 Central Research Question

The central research question for this study comprising a vignette study is as follows:

“How does the awareness of greenwashing influence consumer purchasing decisions of quality-labelled products in the food industry?”

1.4 Thesis Outline

Following the introduction, the research goal and central research question of this paper, an overview of relevant theories will be provided. Starting with the theoretical framework that forms the basis of this study and continuing with theories that provide the reader with important insights. These support a complex understanding of this research. Subsequently, an explanation and outline of the chosen methodology of this research is presented. The descriptive outcome of the vignette study will be summarised with help of graphical distribution schemes.

As this study comprises of a product choice and a pre and post survey, as information about greenwashing is given to the respondents after the first survey, the difference in the outcome will be highlighted. The discussion, the final conclusion, the theoretical and practical contribution and the evaluation of limitations are presented in the final part of the research paper. Finally, all references used for the thesis are listed according to APA guidelines.

2. THEORY

2.1 ABC-Theory and Quality Label

The main concept applied for answering the research question whether the awareness of greenwashing has an influence on customers' buying decision towards quality-labelled products is the alphabet theory by Zepeda and Deal (2009). This theory is a combination of the Value-Belief-Norm (VBN) Theory (Stern et al. 1999) and the Attitude-Behaviour-Context (ABC) Theory (Guagnano et al., 1995).

In context of this study, the focus will be given towards the ABC-Theory which is demonstrated in Figure 1.

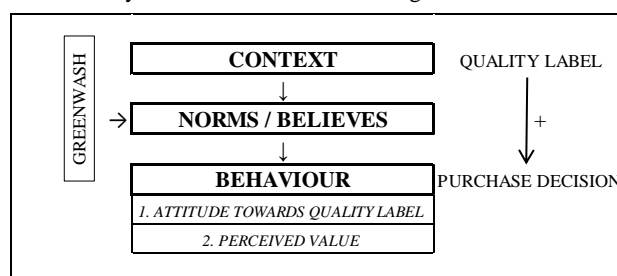


Figure 1. Conceptual framework based on ABC-Theory of Zepeda and Deal (2009)

Specifically, the ABC-Theory focuses on behaviour (B) which is the outcome of both, personal attitude (A) which comprises on norms and believes and contextual factors (C). For clarification, the terms norms and believes will be used throughout this research paper.

The contextual factor represents an external condition that has an effect on customers' behaviour. In general, when contextual forces are present they either prevent or reinforce the behaviour (Guagnano et al., 1995). According to Zepeda and Deal (2009) the context can be seen as an incentive when it comes to buying behaviour. It does not solely depend on general motivation as the contextual factor has an impact on the individual motivation, too. An example of a contextual factor could be the price or advertising methods for a product. In between of the contextual factor and the behaviour is the attitude, consisting of norms and believes that can moderate the relationship between them. A research by Thøgersen and Ölander (2006) reveals strong correlations among subjective (social) norms, and personal norms, which are attitudinal factors, toward the purchase of organic food.

For this study, quality label, which are attached to product packaging, are representing the contextual factor, which will be tested in relation to customers' buying decision, taking into account the impact of customers' awareness of greenwashing. In grocery stores, customers can choose between conventional as well as quality-labelled products. The quality label attached to product packaging represents an external factor that influences customer purchase decisions. The customers' purchase decision is identified by two constructs, namely the attitude towards quality label and their perceived value. Asif et al. (2018) focused on understanding the factors that affect the purchase decision of organic food. The attitude has been found of being a good predictor for purchase decision of organic products.

The second construct of perceived value of quality label has been revealed by Medeiros, Ribeiro and Cortimiglia (2016). In their study, they identified that the perceived value of green products increases the willingness to pay in the purchase decision. Furthermore, Dodds and Monroe (1985) concluded that perceived value is an important factor in consumers' purchasing decision, and consumers will buy a product with

high perceived value. The buying decision of a product/ service is evaluated by consumers on what they give and what they get (Dodds & Monroe, 1985; Zeithaml, 1988). In addition, Chen and Chang (2012), identified that green perceived value would positively affect green purchase intentions, supporting the construct perceived value for customers' purchase decision.

However, the effect of the awareness of greenwashing is assumed to influence customers' norms and beliefs, consequently having an impact on customers' purchase decision. The concrete impact will be tested for in this research. As identified by Steg and Vlek (2008), research on the impact of solely contextual factors is low. However, the significance given to the context does support the research on this relationship.

2.2 Attitude towards Quality Label and Customer Purchase Decision

Over the last decades, the demand for quality-labelled products, especially regarding organic certified products has increased. As identified by Asif et al. (2018) customer attitude towards quality label plays an essential role in relation to customer purchase decisions.

In the following, an enumeration of literature is presented which shows that customers' attitude influences their purchase decision on quality-labelled products. The findings highlight, that quality-labelled products are preferred over non-labelled, conventional products, thus having an effect on the purchase decision. The attitude towards quality label does therefore shows to be a construct of buying behaviour, in particular, the purchase decision as presented in Figure 1. of section 2.1.

In 2017, one such study by Kumar and Kapoor was conducted on food products. The product quality signaled by quality marks was tested as one product attribute. The outcome illustrates that consumers were having a positive attitude towards these labels and were actively viewing the labelled product information attached to the packaging. This in turn has influenced the buying decision of customers.

Additionally, the relative importance for customers of fair-trade labelling compared with other attributes was tested by De Pelsmacker, Driesen and Rayp (2005). In their study respondents rated the presence or absence of a fair-trade label as an important attributes when it comes to buying decisions. The result shows that a fair-trade label was second most important after the brand attribute, which had the highest relative importance in relation to the purchasing decision of the consumer. This shows that the context of labelling positively influences customers' buying decisions and indicates an attitude in favour of product labelling.

Further, results of another study reveal that consumers have a positive view towards environmentally friendly products and services. Among different aspects the quantitative study tested the purchase decision on green products. It outlines that the majority of consumers prefer green products that are less harmful toward the environment and themselves. In conclusion of this study, eco-friendly products, which are identifiable through a label attached to the product packaging, are preferred over non-environmentally friendly products (Alharthey, 2019).

Finally, a study conducted by Bernard, Duke and Albrecht (2018) tested whether labelling and the amount of information given by label, have an impact on customers' choice of products. The outcome revealed that labelled products are preferred over non-labelled products. The perception among respondents of attributes such as origin, food safety and quality increased whenever a label was present. As all the aforementioned studies display, customers have a positive

attitude towards quality label as their product decision have been in favour of quality-labelled products.

However, these studies do not take greenwashing activities into account. It is a widely practiced phenomenon but it is still much unknown among customers (Nadányiová, 2016). The low level of customers' awareness has also been confirmed by Khandelwal, Sharma & Jain (2019) who tested the effect of greenwashing on customers' perception.

When the awareness of greenwashing practices increases, the customers' norms and beliefs and therefore the purchase decision is likely to change. This assumption is supported by a study conducted by Aji and Sutikno (2015) who reveal that the perceived consumer skepticism is the extended consequence of greenwashing. In addition, a paper by Chen and Chang (2012) explored the influence of knowledge about greenwashing on customers' trust. They identified that the awareness of misleading practices negatively influenced customers' trust, consequently decreasing customers' buying behaviour. As skepticism arise and trust decrease, customers' attitude towards quality label is likely to change.

The literature presented therefore contributes to the proposition of the following hypothesis with consideration of the awareness of greenwashing.

Hypothesis 1: Customers' awareness about greenwashing affect consumers' attitude towards quality-labelled products

2.3 Perceived Value of Labelling and Customer Purchase Decision

Whenever organisations decide to use quality labelling, eco-label or others, they want to positively influence consumers' buying decision towards their own product. They aim to contribute to customers' perceived value. Numerous studies have tested whether customers are willing to pay a premium price for quality-labelled products compared to unlabelled, conventional products. In addition to that, they tested whether certifications that are approved by a third party are preferred over voluntary, unapproved labelling. The presented literature below, will demonstrate that the perceived value relates to customers' purchase decision, verifying the conceptual model which is presented in section 2.1.

The outcome of a study conducted by Kim, Suwunnamek & Toyoda (2008) shows that organic labelled food products increased consumers' willingness to pay a premium price which is 10% higher than the price of conventional products that have no specific labelling. Additionally, Kim, Suwunnamek and Toyoda (2008) identified that the tractability of labelling and third-party certification increases consumer levels of trust due to a better validity of the information source. This factor is a major determinant of choice behaviour for organic food.

In relation to customers' willingness to pay a premium price for labelled product, support is provided by a test with safe vegetables, which showed similar results. The findings indicated that 65% of respondents were willing to pay a premium price (Zhang et al., 2018). In addition, the presence of fair trade label pointed out that the consumers were willing to pay on average a price premium of 10% (De Pelsmacker, Driesen and Rayp, 2005).

Another study conducted by Janssen and Hamm (2012) elicited whether consumers prefer certain organic labelling schemes over others, in order to give recommendations for market actors in the organic sector. Their study leads to the conclusion that consumers had trust in well-known organic certification logos and consequently gave them preference over unpopular logos.

The certified labels contribute towards customers' perceived value, increasing their willingness to pay a premium price. Evidence is also provided by Van Loo et al. (2011) who identified that consumers were willing to pay a higher premium for a well-known, third-party approved organic label compared to unapproved organic label. However, both types of label have a positive premium compared to unlabelled products.

A study conducted on carbon footprint labels tested their impact on climate-friendly food purchase behaviour (Feucht and Zander, 2019). The outcome of this study is that consumers are willing to pay a higher price for these types of labels on food packaging. However, barriers as label skepticism, fatigue and a lack of awareness about the impact of food production and consumption on climate change for climate-friendly purchase behaviour were identified.

In conclusion, customers' buying decision is influenced by their perceived value of quality-labelled products. The contextual factor "label" in relation to the framework of Zepeda and Deal (2009) can be harmed or advocated by product price differentiation. As illustrated by Zepeda and Deal (2009) the purchase of products based on ingredients with organic agriculture is more likely if the level of knowledge about the process of organic production is high. As the aforementioned literature shows, the customer values well-known labels and companies' operational compliance in relation to quality label.

As highlighted in this section, the perceived value of label contributes to an increased likelihood of a favorable purchase decision by the customer. Furthermore, the willingness to pay a premium price is higher if the product is covered by a certified, third-party approved quality label compared to an unapproved, less known quality label. Overall, customers perceive value by purchasing quality-labelled products.

However, the positive influence of quality labelling on purchase decisions could be harmed if consumers are increasingly aware of greenwashing, which is often practiced in the market. According to Zimmer et al. (1994), an overuse and, in particular, misuse of the "green" claims can saturate the market to the point that this product characteristic may become meaningless to the consumer. A consequence could be a decline in customers' perceived value of quality labelling.

Additionally, consumer mistrust in all green claims is increased due to the rise in greenwashing activities (Shahrin et al., 2017). This is supported by a study conducted by Schmuck, Matthes & Naderer (2018) who revealed that false claims reinforce greenwashing perceptions, thus detracting from attitudes toward ads and brands.

If this is the case, the awareness of greenwashing has an impact on purchasing decisions as the perceived value decreases.

Thus, Hypotheses 2 below is proposed.

Hypothesis 2: Customers' awareness about greenwashing affect consumers' perceived value of quality-labelled products.

3. METHODOLOGY

The methods and technique applied for this research are presented with this section. First, a detailed overview of the research design is provided. Further, the data collection method, the variables as well as the sample characteristics are illustrated. The final step is to validate the questionnaire.

3.1 Research Design



For this research, dealing with the impact of customers' awareness of greenwashing on their buying decisions of quality-labelled products, the application of a vignette study is most appropriate.

The vignette technique is complemented with a traditional survey. This mixed method supports the investigation of consumers' beliefs, attitudes or judgments (Atzmüller and Steiner, 2010). Furthermore, a combination of mixed method research using qualitative and quantitative data helps to generate a more elaborate understanding of this issue. The combination of complementary kinds of data and other relevant information motivates the use of the mixed methods as it will produce a more complete picture. As well as that, single methods weaknesses can be overcome (Denscombe, 2008). For this study the survey is of quantitative nature as participants are asked to rate statements on a predetermined five-point Likert scale which ranges from 1 = "strongly disagree" to 5 = "strongly agree". Therefore, the selected choice allows for comparison, considering demographic differences such as age, gender and the educational level.

3.2 Data Collection Method

The research is designed according to a qualitative and quantitative research approach. At first, a common food product, available in many households is used for the product selection. The same product is presented three times, while having one difference in the attached imprints. To make sure that the chance of the participants being familiar with the original organic label, a common German, national label is used. This label has been introduced in 2001 and has since then becoming one of the most widely known logos in food labelling. Over 90% of German consumers know the Bio-Siegel and more than half of the 90% have trust in the message of it. This is the outcome by the University of Göttingen (Federal Office of Agriculture and Food, 2013).

Table 1: Different labels for product choice

National Bio-Siegel	
Blank Product (no label)	
Fake, spurious label	

The respondents of this study will be asked to choose the product they would most likely buy in a grocery store if all three items are available. This test is designed to control how customers react to authentic quality labels and fake labels or whether the unlabelled product is preferred.

Next to the product choice, a self-designed questionnaire (see Appendix A) with closed questions is distributed to the participants to generate the major insights on that research. The survey questions, which are based on a five-point Likert scale, intend to measure the respondents' buying decision towards

quality-labelled products. The design of the questionnaire comprises of two constructs, which are the attitude towards quality labelling and their perceived value.

Respondents are asked to rate presented statements which relate to the attitude towards and the perceived value of quality labelling. After the completion of the questionnaire, respondents are introduced towards aspects of greenwashing which are prevalent in the food industry. In the final step, participants are asked to repeat their product choice and to answer the same questionnaire once more.

This method ensures a comprehensive understanding of significant behaviour, as the single variable would solely demonstrate explanatory power. It will be examined more profoundly on attitudinal aspects (Stern, 2000). The consumer's responses can significantly change, as this is the aim to test for in the research, when the consumer is getting aware of the phenomenon of greenwashing.. A repeated-measures analysis, such as the paired t-test has been used to see if the participants' attitude significantly changes from before the treatment of greenwashing to after the treatment. As the pre-test/ post-test designs tend to be powerful, this statistical analysis requires smaller sample sizes than other types of analysis.

3.2.1 Dependent Variables

The variable of interest of this research is the dependent variable which is the customers' *purchase* decision towards quality-labelled products. In particular two constructs, the attitude towards quality labelling and their perceived value are used to identify the impact of the independent variable.

3.2.2 Independent Variables

The awareness of greenwashing represents the independent variable of this research. Its effect on customers' attitude towards quality label and their perceived value is tested for.

3.2.3 Control Variables

Control will be tested regarding participants' awareness and knowledge of food labelling. As previous studies indicate, consumer awareness has an impact on their preferences for green products (Shaikh and Rahman, 2011). Likewise, the purchasing decision is influenced by different factors and the awareness is stated as one of the most important factors (Alharthey, 2019). If there is a lack of awareness and knowledge, it provides a barrier towards the purchase decisions of quality-labelled products (Feucht & Zander, 2017).

3.2.4 Materials and Equipment

For the vignette study a picture of three identical food products will be shown to respondents which will differ in their amount of packaging information. One product will have a well-known label, the second a fake (unknown) label and the third will have no label at all. All packaging will be shown to all respondents.

Afterwards, respondents can confirm their product choice and answer the complementing questionnaire via an electronic device as a smartphone or iPad by using a link which provides access to the survey.

In the next step, the respondents are informed about greenwashing and are asked to answer the same survey again. Those respondents who are not able to be present in person access the entire survey, including product choice and a clarification about greenwashing via an online link. Care is taken that sufficient description is given to these respondents.

3.3 Sample

The vignette study used for the collection of primary data has been conducted with 81 respondents who participated on a voluntary and anonymous basis. A convenience sample

technique has been applied. This method has the advantage that data is quickly assembled and fast available for further evaluation (Marshall, 1996).

The survey comprises of four demographic questions and follows by 22 observed questions using a Likert scale of five. 16 out of 22 questions are repeatedly asked after respondents have been educated about greenwashing. The data was gathered with help of the program "Qualtrics". The collected data presents diversity in gender, age and educational background. For the processing of data, the SPSS software is used.

3.4 Exploratory Factor Analysis

The exploratory factor analysis has been done in SPSS to identify which questions are loading to the same construct. As the questionnaire has been self-developed, this test is of importance to uncover the set of variables and to identify their relationships.

Table 2 presents the final outcome of the analysis. Four questions loaded for the construct of the attitude towards quality labelling, while five questions fit into the construct of perceived value. The questions are listed in a descending order in relation to their value of loading. According to the given loading value, the questions signal a strong relationship towards these two constructs.

However, before this final outcome could be generated, the original questionnaire had to be restructured. To ensure compliance with the results of the exploratory factor analysis, a couple of questions had to be switched to another construct. This allows the accuracy of further investigations of the generated data.

Table 2: Exploratory factor analysis

Construct	Questions	Loadings
Attitude towards quality label	I attach great importance towards quality certified products	0.826
	I choose a product based on labelled product information	0.811
	Quality label encourage me to buy a certain product	0.740
	The majority of products I buy in the supermarket are labelled with quality marks	0.682
Perceived value	I believe that organic-labelled food is of higher quality than conventional products	0.811
	Buying quality labelled products makes me feeling better	0.786
	I am feeling better to consume organic products compared to non-organic products	0.715
	I think it is justified to pay a high price for organic certified products	0.548
	As long as the product is certified, the price does not play an important role for me	0.438

3.5 Reliability Analysis

With Cronbach's alpha which is the most common measure of internal consistency ("reliability"), the constructs of respondents' attitudes towards quality label and their perceived value has been tested. This test allows determining whether the scale is reliable as multiple Likert questions were used in the survey. These questions were measured on a five-point Likert scale, ranging from strongly disagreeing to strongly agreeing.

The outcome of Cronbach's alpha, for the construct of the respondents' attitude towards quality labelling shows a value of 0.833. The internal consistency for the construct of the perceived value indicates a Cronbach's alpha of 0.813 (see Appendix B). As the alpha values are in between of 0.7 to 1, all variables are considered to be reliable. So, the questionnaire is considered reliable for further study.

4. FINDINGS

The following section will cover the descriptive outcomes of the vignette study. Further, statistical testing will provide deeper insights into the influence of respondents' awareness of greenwashing on the two constructs, namely the attitude towards quality label and their perceived value.

4.1 Data Descriptive Analysis

In this study, data was gathered from both female and male genders. More than half of the respondents were female while 41% were male respondents. The age group of 20-30 years is most frequently presented, followed by 26% of respondents belonging to the age group of 50 years and older. Other age groups as 20-30 years and 30-40 years are presented by 10% of the sample. The smallest number of 5% belongs to the age group under 20 years.

Frequencies and percentages of demographic profiles are shown below in **Table 3**. In this study, data was collected from respondents having different educational backgrounds. The majority of respondents (48%) completed their High School degree, followed by 36% of respondents who achieved a university degree. The remaining 16% are divided by 14% belonging to the secondary school level and 2% relating to respondents whose educational background is lower than secondary school.

Table 3: Demographical data

Characteristics	Number	%
Sex		
Male	33	41%
Female	48	59%
Total number	81	
Age group (years)		
< = 20	4	5%
> 20 < = 30	39	48%
> 30 < = 40	8	10%
> 40 < = 50	9	11%
> 50	21	26%
Educational level		
Lower than secondary school	2	2%
Secondary school	11	14%
High school	39	48%
University	29	36%
Status of employment		
Full time	45	56%
Part time	13	16%
Housewife/ Housekeeper	1	1%
Student	19	23%
Pensioner	3	4%
Grocery for household		
Done by respondent	31	38%
Respondent with another person	40	49%
Done by another person	10	12%

The next demographic characteristic refers to the status of employment which is divided into five states. Pensioner and Housewife/ housekeeper are the least represented, by 5% in total. 16% of respondents have a part time job and 23% are students. Those who hold a full time job are the strongest represented, making up 56% of all respondents.

Further, an important demographic attribute relates to respondents purchase behaviour. Around 87% of all respondents stated that they either do the grocery shopping on their own or are accompanied by another person. Only 12% indicated to not do the groceries for the household themselves.

The frequency of buying organic food products is presented in **Table 4**. The results indicated that about 98 % of respondents are inclined to buy organic products and place importance on the food label while making their purchase decisions. Only 2 % stated that they never buy organic products.

Table 4: Purchase of organic products

Rating point	Number	%
Never	2	2%
Rare	14	17%
Sometimes	42	52%
Often	16	20%
Always	7	9%

As part of the vignette study, the respondents had to choose between three products which were identical with one difference in the attached label. As presented in **Table 5**, the most chosen product, by 44%, is the one which is labelled with the popular Bio-Siegel. About 26% of respondents preferred the unlabeled product and around 30% chose the product with a fake label.

Table 5: Product choice 1

Product	Number	%
Product 1 (with Bio-Siegel)	36	44%
Product 2 (without label)	21	26%
Product 3 (with fake label)	24	30%

In the next part of the vignette study, respondents were introduced to the meaning of greenwashing and typical practices which are related to this behaviour. Following that they were asked to make the product choice again. The outcome of their choice in the post-survey is presented in **Table 6**.

Table 6: Product choice 2

Product	Number	%
Product 1 (with Bio-Siegel)	31	38%
Product 2 (without label)	31	38%
Product 3 (with fake label)	19	24%

As results of Tables 5 and 6 show, the number of respondents who chose a labelled product decreased. As 74% preferred a labelled product before they were introduced to greenwashing, the number declined by 12%. In contrast, voting for the unlabeled product increased from 26% to 38%.

In relation to respondents' awareness of organic labeling, three questions (see Appendix A) were asked in order to identify their familiarity with these labels. The outcome shows that less than 5% were unfamiliar with organic product label. This indicates a representative sample for this research study.

4.2 Effect of Greenwashing

A repeated-measures analysis, such as the paired t-test will be used to see if the participants' responses significantly changes from before the treatment of greenwashing to after the treatment.

The outcome for the pre-test of the first pair, dealing with the customers' attitude towards quality label, shows a mean of 3.37. In contrast, the post-test signals quite a lower mean of 3.15. In conclusion, a mean difference of 0.22 resulted from before to after the treatment of the input about greenwashing. Due to the strength of deviation, the outcome of the paired t-test is significant at $p\text{-value} < 0.05$ (see Appendix B).

The next pair which tested respondents' perceived value of quality labelling, displays a significant difference of the mean value of the pre- and post-testing, too. The mean difference is slightly smaller compared to the first pair but does still signal a value of 0.11. The mean of the pre-test is 3.42 compared to the post-test with a mean value of 3.31. As for the first pair, the paired-t-test shows a significant difference of the pre- and post-test with a significance level of 0.011.

In summary, the tested pairs show a significant result with respect to the pre and post-test. The interim treatment indicates that it has influenced customers' attitude towards quality labelling and the perceived value of them.

5. DISCUSSION AND IMPLICATIONS

Quality labelling will play an increasingly important role in the food industry. Customers are inclined to environmental considerations and personal health when making a purchase decision (Ozguven, 2012; Bryla, 2016; Nedra, Sharma & Dakhali, 2015). However, unfair practices are present in the market which reduces the official purpose of quality labels. The aim of this research paper is to assess, with help of the conceptual model of Zepeda and Deal (2009), the impact of the awareness of greenwashing on customer purchase decisions.

Overall, greenwashing describes a deceptive behaviour. The focus of this study is on the organisations' product-level in terms of greenwashing behaviour. This means that companies avoid compliance with certification criteria to obtain third-party approved quality labelling and instead they make their own environmental claims on their products with the application of self-declared labels.

As the ABC-Theory outlines, labels have a positive relationship on customers' behaviour. This relationship has been revealed by a study of Kumar and Kapoor (2016), which tested the impact of label on consumers' decision making. To control this relationship, respondents of this research paper were asked to choose between three identical items which differed in their imprint on the packaging. The choice for a quality-labelled product has been higher compared to an un-labelled product. This outcome signals, that respondents are inclined towards quality-labelled products.

Regarding the purpose of this study, the effect of awareness on greenwashing was tested. The chosen constructs for customers' purchase decision were the customers' attitude towards quality label and their perceived value. According to previous studies, the customers' attitude towards quality-labelling is an essential

factor regarding customer purchase decisions (see section 2.2). These studies revealed that consumers have a positive attitude towards quality labelling as their purchase decision has been in favour for labelled products over un-labelled products.

Additionally, studies which related to customers' willingness to pay a premium price and their preference for third party approved labels indicate the consumers' perceived value of quality-labelled products (see section 3.2). These researches demonstrated that customers see these label as valuable as they are willing to pay a higher price compared to conventional products (Dodds and Monroe, 1985).

In Context to this study, the attitude towards quality labelling and the perceived value were assumed to decline when customers are getting informed about greenwashing. The awareness has been considered to influence customers' beliefs and norms, consequently effecting customers' purchase decision, in particular, on the tested constructs of the attitude towards quality label and their perceived value. It became clear that the elucidation of this phenomenon had a significant effect on participants' responses. The items tested on the two constructs have significantly decreased. Overall, this outcome demonstrates a decline in customers' purchasing decision of quality-labelled products. This outcome is also supported by the respondents' product choice for either labelled or unlabelled packaging. The number of respondents who chose the unlabelled product has increased while the choice for the labelled product has receded. This applies to both the well-known label and the fake label. According to Khandelwal, Sharma & Jain (2019) customers are mostly unfamiliar with greenwashing and therefore they do quickly become unsure of even trusted quality label. The perceptions generated by misleading communication strategies increases consumers to be suspicious about green-labelled product and consequently destroy the market (Polonsky et al., 2010).

These findings contribute to the main concept of ABC-Theory. The positive relationship between context and behaviour was weakened due to the awareness of greenwashing, which influenced customers' norms and believes. The outcomes of previous studies by Shahrin et al. (2017) and Schmuck, Matthes & Naderer (2018) that tested on the effect of greenwashing on customers' behaviour are therefore supported.

In a broader sense, this study displays the mistrust of customers about companies' practices towards the accurate use of quality label. Clear communication between organisations and their customers is essential to decrease customers' difficulty to correctly evaluate which companies are truly responsible firms (Gosselt, Van Rompay & Haske, 2017). The choice for a quality-labelled product is positively influenced by the consumer's knowledge of label (McEachern & Warnaby, 2008). A study conducted by Guyadern, Ottosson and Witel (2017) identified that "deep green" consumers are less likely to be influenced by greenwashing activities. In contrast, a lack of knowledge prevents consumers to distinguish between authentic and unauthentic quality label.

In addition to these findings, greenwashing can have even wider impacts. In particular, the upcoming of greenwashing scandals and once false claims are revealed, it can bring huge risk not only of damaging the brand image but also to loose customer trust, which may have been built up over years (Khandelwal, Sharma & Jain, 2019). The conduct of greenwashing does also negatively influence the behaviour of fair operating organisations. The fear of being cast in a negative light and the aim to avoid the status of being hypocritical has caused fair operating companies, which obtained certification of their environmental friendly behaviour, to deliberately exclude the

certification symbol from their products (Carlos, Lewis, 2017). This illustrates the far-reaching implications of greenwashing.

In contrast to the exclusion of quality labelling, a study of Gleim et al. (2013) supports the application of quality labelling. The results of the study revealed a significant relationship of the presentation of more detailed information about attributes of a green product to customer buying decisions. The more information provided to customers, the greater the likelihood that their purchase decisions were made in favour of that product.

The application of third-party labels that signal the high food production standards requires customer awareness and understanding and that consumer expectations are in line with the firms' promise to be beneficial (Carrero & Valor, 2012; Janssen & Hamm, 2014). If this is achieved, the presence of informed customers can be an incentive for firms to go green because greenwashing would be less harmful to companies under these circumstances (Lee, Cruz & Shankar, 2018).

6. CONCLUSION

As the main objective of this study, customers' buying decision has been tested on deviations as a consequence from the awareness of greenwashing. At the beginning of the vignette study, the respondents' product preference was tested. As well as that, a questionnaire, based on five-point Likert scale questions, was used to collect information about the attitude towards quality labelling and their perceived value. Furthermore, with a pre- and post-test and intermediate treatment, (the awareness of greenwashing), deviations in the responses could be detected. The gathered data allows for the drawing of conclusions about customers purchase decisions when exposed to greenwashing information. Existing theories could be confirmed and the basic concept of ABC-Theory has been expanded to the effect of greenwashing.

Regarding this investigation, it can be concluded that the majority of respondents preferred a quality-labelled product over a non-labelled product. More than 80% (see Table 4) stated to buy organic-labelled products on a frequent basis. Additionally, the well-known label is preferred over the fake label which displayed greenwashing activity. However, respondents increasingly lost trust in both, the popular quality label and the un-known label after they were informed about greenwashing. This outcome illustrates that greenwashing has an overall negative effect for labelled food and thus carries consequences for companies conducting greenwashing as well as for fair companies.

This finding is also supported by the outcome of pre- and post-test. The first construct, the attitude towards quality labelling, showed declining results after respondents were made aware of the practices of greenwashing in terms of quality label which are present in the food industry. This in particular indicates that with increased awareness of greenwashing any label is likely to be rejected by consumers.

The second construct, the level of perceived value, displayed a significant different outcome, too. The reduced level of perceived value to quality-labelled products can bring damage to organisation's financial performance. As companies intend to increase customer value through stringent production processes, signalled through quality label with a return of premium prices, a decrease in customer perceived value can bring a financial loss. The customer is less willing to pay a higher price as the perceived value decreases. Summing up, greenwashing has far-reaching effects on customer purchase decisions.

7. THEORETICAL AND PRACTICAL CONTRIBUTION

The results reveal that the awareness of greenwashing has an impact on customers' purchase decision as their level of perceived value and their attitude to quality labeling decreases. In addition, this in turn could lead to a decline in sales of not only unethical companies abusing the operation with quality label, but also of fair-operating organisations in the market.

An effective strategy for the government to control for greenwashing activities is to enhance the incentives to implement a culture of corporate social responsibility. This could be done through the reduction of costs, such as opportunities for partnerships or the provision of subsidies to the private sector (Lee, Cruz & Shankar, 2018).

Companies themselves should provide transparent information to enable customers to make a distinction between accurate quality labels and inaccurate labels. Additional information provided on company web pages could potentially increase the customer understanding towards specific quality labels and the conditions behind them (Gider & Hamm, 2019). As well as that, large promotional campaigns could help to bolster customers' awareness. Overall, a high level of consumer trust is essential for labelling systems to be successful (Janssen and Hamm, 2014).

It is important that companies do not stop complying with conditions required to apply quality labelling as this is a crucial practice that contributes to the protection of the environment. As this is also of concern to customers they should not mistrust all quality-labelled products. Instead, it is helpful to check whether the product packaging has the full list of ingredients, take a look at the company's website and controls for certification that are given by an authorized government body (Khandelwal, Sharma & Jain, 2019). Credibility of product claims, consumer value positioning and the calibration of consumer knowledge will help to generate the future of sustainable and environmental friendly products (Ottman, Stafford & Hartman, 2006).

8. LIMITATIONS OF RESEARCH

In context of this study some limitations have to be taken into account. The small sample size and the qualitative approach are limiting the generality of the outcome of the vignette study. The questionnaire has not been based on established scales which could have made measurements easier in the first place. Nevertheless, based on statistical test the self-designed questions were identified as reliable indicators for the two constructs, attitude towards quality labelling and their perceived value, consequently presenting accurate results.

Additionally, the use of a convenience sample is criticised as a collection method. Generated data of this method is vulnerable to bias and outliers. The effect of it could be more disastrous compared to probability sample (Etikan, 2016).

Furthermore, the conflict of having a sufficient number of participants for the vignette study and the limited time given for the acquisition of respondents, not all data could be generated in presence of the participants. Through detailed explanation this limitations was narrowed down as much as possible.

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APPENDIX

Appendix A:

Questionnaire of the vignette study

Q1 What is your gender?

- ☐ Male (1)
- ☐ Female (2)

Q2 How old are you?

- ☐ < 20 (1)
- ☐ > 20 <= 30 (2)
- ☐ > 30 (3)
- ☐ > 40 (4)
- ☐ > 50 (5)

Q3 What is your highest educational level?

- ☐ Lower than secondary school (1)
- ☐ Secondary school (4)
- ☐ High school (2)
- ☐ University (3)

Q7 What is your status of employment?

- ☐ Full time job (1)
- ☐ Part time job (2)
- ☐ Unemployed (3)
- ☐ Housewife/ Housekeeper (6)
- ☐ Student (4)
- ☐ Pensioner (5)

Q8 Who buys the food for your household?

- ☐ Me (1)
- ☐ Another person (2)
- ☐ Me with another person (3)

Q9 Do you buy organic certified products when you go grocery?

- ☐ Never (1)
- ☐ Rare (2)
- ☐ sometimes (3)
- ☐ Often (4)
- ☐ Always (5)

Q10 Please choose your preferred product

- ☐ Product 1 (1)
- ☐ Product 2 (2)
- ☐ Product 3 (3)

Q11 I am familiar with at least one of the quality label attached to picture 1 and 3

- ☐ Yes (1)
- ☐ No (2)
- ☐ Maybe (3)

The answers for all the following statements (Questions 12 to 27) were:

Strongly disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4), Strongly agree (5)

Control questions:

Q12 I am interested in the sustainability of food product

Q13 I am familiar with organic label on food packaging

Q15 I am familiar with the difference between organic and non-organic products

Questions to test attitude towards the presence of organic label

Q16 I choose a product based on labelled product information

Q17 Quality label encourage me to buy a certain product

Q18 I attach great importance towards quality certified products

Q19 I am feeling better to consume organic products compared to non-organic products

Questions to test attitude towards the preference of popular compared to unpopular label

Q20 I believe that organic-labelled food is of higher quality than conventional products

Q21 I trust quality labels which are commonly used in supermarkets

Q22 The majority of products I buy in the supermarket are labelled with quality marks

Q23 If I am not familiar with a quality label I would still prefer to buy this product rather than a conventional product

Questions to test attitude towards the willingness to pay a premium price for labelled products

Q24 As long as the product is certified, the price does not play an important role for me

Q25 I think it is justified to pay a high price for organic certified products

Q26 Buying quality labelled products makes me feeling better

Treatment: Information about greenwashing to increase respondents' awareness

For the post-survey, question 10 and questions 16 – 27 were asked again.

Appendix B:

Outcome of reliability analysis

(Left: Construct of attitude towards quality label; Right: Construct for perceived value of quality label)

Reliability Statistics			Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
,833	,835	4	,813	,812	5

Appendix C:

Results of paired t-test

Paired samples t-test								
Paired samples statistics								
		Mean	N	Std. Deviation	Std. Error Mean			
Pair 1	Need for label (Pre-test)	3,3673	81	0,74381	0,08265			
	Need for label (Post-test)	3,1451	81	0,73193	0,08133			
Pair 2	Perceived value (Pre-test)	3,4222	81	0,71903	0,07989			
	Perceived value (Post-test)	3,3086	81	0,70926	0,07881			
Paired Samples Correlations								
				Correlation	Significance			
Pair 1				0,786	0,000			
Pair 2				0,850	0,000			
Paired Samples Test								
				95% Confidence Interval				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	0,22222	0,48251	0,05361	0,11553	0,32891	4,145	80	0,000
Pair 2	0,11358	0,39107	0,04345	0,02711	0,20005	2,614	80	0,011