The Consumer Acceptance Of Primary Packaging Alternatives

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ABSTRACT

In a world that is constantly developing while resources are decreasing, it is important to improve the sustainability of products and their packaging, as well as make use of circular economy principles. Many large organizations have already or are currently optimizing their packaging with the intention to only use sustainable materials at some point in time. However, these initiatives are only successful when the new packaging alternatives receive the acceptance of the consumers. Thus, this research focused on "the consumer acceptance of primary packaging alternatives" in an e-commerce context. Possible reasons for the (un)acceptance, as well as the consumer perception on circular economy principles were analyzed in order to evaluate the likelihood and factors that influence the acceptance. In order to do so, a qualitative research was performed based on experiment and interview. Common influential factors like the design, price, sustainability extent, as well as awareness and concerns in regard to the current environmental situation were mentioned by the participants of the research. Nonetheless, it was also possible to determine emergent factors like the indication of sustainability, the additional effort required to purchase sustainable packaged products and the recycling process having to be convenient.

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1. INTRODUCTION

Sustainability and circular economy have received increasing importance in the past years and will also in the future be continuously relevant across all industries (Haanaes, 2016). Hereby, it is not just about recycling and reuse of materials, but also the general reduction of resources. In order to reduce the waste production and to act in a more sustainable way in regards to the economy, the society and the environment, organizations have to apply the social responsibility approach (Kozik, 2020; Bird et al., 2011).

This is especially relevant for the packaging industry, considering the high amounts of plastic material, the increased usage of online shopping and e-commerce sales being predicted as high as $4.5 trillion USD by 2021 (NoIssue, 2019). These increased numbers of the e-commerce industry lead ultimately to additional packaging waste which can have a negative influence on the environmental footprint if it is considered single use packaging or contains several material kinds that cannot easily be separated (Magnier & Schoormans, 2015). According to Tencati et al. (2016), this packaging waste forms around fifteen to twenty percent of solid waste, which could easily be reduced by considering the following aspects:

First of all, most of the packaging materials that get used could be recycled, however, through improper waste management, packaging material most of the times just "ends up in landfills" (NoIssue, 2019). The collected but insufficient managed waste can thus not only damage the ecosystem but also reach oceans or rivers and harm the marine life. As Howard et al. (2018) state, such harmful waste, mostly plastic, accounts for approximately ninety million tons. Once washed up again to the shores and beaches, the waste further pollutes the environment and can even cause a negative influence on businesses of certain industries, such as tourism.

Secondly, the attempt for reusability must be considered. According to Chen & Chai (2010), as well as Grunert (1993), thirty to fourty percent of the negative influence on the environment are caused by the non-sustainable consumption behavior of individuals. This does not only include the product selection but also the general behavior in regard to waste; most consumers throw away packaging that could be reused. Another factor can be represented by the overpacking through not optimized packaging for e-commerce (Adept Packaging, n.d.).

Additionally, it must be said that even though all kinds of packaging are equally important, most organizations of the e-commerce industry are mostly focusing on the improvement of secondary and tertiary packaging. Successful changes to primary packaging could, however, lead to the reduction of additional packaging and thus reduce the waste production to an even greater extent (Amcor Limited, 2016). Therefore, e-commerce does not increase the primary packaging issue in particular, but rather presents an opportunity to rethink the issue.

The negative influence on the environment thus deals with the unsustainable behavior of both, organizations and consumers (Calvo-Porral & Lévy-Mangin, 2020). As a result, several countries issued regulations concerning the plastic production and usage for packaging (UNEP, 2018; McKinsey, n.d.). These regulations include the minimization of harmful but maximization of reusable and recyclable materials (Huang & Ma, 2004; Ross & Evans, 2003). Additionally, the extended producer responsibility (EPR) receives increasing importance, thus supporting the production of sustainable packaging. With the packaging industry constantly growing (Monteiro et al., 2019), this is definitely the right step towards a more sustainable future and has already shown positive results in the past, according to Martinho et al. (2015).

Examples for such are the following organizations: The Loop company by reusing primary product packaging or Amazon by optimizing the packaging size and making use of sustainable materials. Furthermore, organizations like Unilever, Nestle or Coca-Cola have been promising to use "100% recyclable, biodegradable or compostable packaging by 2050" (NoIssue, 2019).

2. RESEARCH QUESTION

As it is known that a sustainable change in the packaging industry is crucial, research has been executed on the factors that could potentially influence the perception of consumers on packaging (Poturak, 2014; Martinho et al., 2015; Nordin & Selke, 2010; Monteiro et al., 2019; Lee et al., 2017; Borgman et al., 2018; Blackwell et al., 2001). Nonetheless, these studies mostly focus on certain aspects, such as price, design or awareness, and do not provide the variety of influential purchasing factors that is required to understand the market acceptance to the full extent. This is nonetheless necessary, since the social responsibility behavior of organizations is strongly correlated with the acceptance of the consumers (Nordin & Selke, 2010).

Additionally, literature in regard to sustainable packaging is rather broad or mainly focused on secondary and tertiary packaging. Just as important is the sustainability of primary packaging, which unfortunately does not get thematized in such an extensive way. Most of the times, material alternatives get discussed or why organizations should change their packaging to underline the importance of sustainability. The acceptance of the society / the market is, nonetheless, less or only partly represented in the available literature. The research focus will thus be widened and the available literature be extended.

Moreover, the product perception influences the purchasing intension and decision of an individual (Becker et al, 2011; Murray & Delahunty, 2000). Therefore, organizations need to understand what can be done differently in order to increase the interest and purchase of products with sustainable primary packaging. Given these circumstances, the study will focus on following research question:

'To what extent do consumers accept the usage of primary packaging alternatives in an e-commerce context?'

In order to evaluate this research question in a more efficient manner, three sub-questions will be thematized throughout the literature review and the findings of the research. These are:

SQ1: How aware are consumers of the negative influence that non-sustainable packaging material can have on the environment and the society?

SQ2: What are possible reasons for the (un)acceptance of sustainable packaging?

SQ3: How encouraged are consumers to contribute to the three R's (reduce, reuse and recycle) of the circular economy principle?

The research will therefore combine the influential factors on the product selection with the general consumer perception on the contribution to sustainable behavior.

3. LITERATURE REVIEW

In order to review the literature on sustainable primary packaging, it is important to define the term "sustainability" and the different kinds of packaging.

3.1 Sustainability definition

A widely accepted definition of the term sustainability is provided by a report of the United Nations of 1987:

> *"(..) the development that meets the needs of the present without compromising the ability of future generations to meet their own needs."*

Thus, sustainability strongly correlates with the 3P principle *people, planet, profit* (Nordin & Selke, 2010; Fisk, 2010) and the three pillars environment, society and economy (Kozik, 2020). Furthermore sustainability is connected to circular economy and its 3R principle – reduce, reuse and recycle. Reduce, as in using less resources, while reuse refers to making use of waste as a raw material, converted by recycling.

3.2 Packaging kinds

Packaging can be divided into three different kinds, each with a separate function (Jönsen, 2000).

3.2.1 Primary packaging

Primary packaging comes in direct contact with the product (Carlsson et al., 2011; Hellström & Saghir, 2007). Taking the example of a toothpaste, the tube would be considered primary packaging. Its main function is to protect the product (Wikström et al., 2014), but it can also be used to for example attract the consumers. The design can communicate a message (Rundh, 2005), let the consumers evaluate (Becker et al., 2011) or even motivate the purchase (Murray & Delahunty, 2000).

3.2.2 Secondary packaging

Secondary packaging comes with the product but does not directly get in contact with it. If using the same example as for primary packaging, secondary packaging would thus be represented by the packaging / box around the toothpaste tube. If a product is supposed to be sold with sustainable packaging, it is crucial that both, primary and secondary packaging, are made out of sustainable material since the sustainable characteristic will otherwise no longer be given. Nonetheless, secondary packaging can also be used to group several primary packaging (Carlsson et al., 2011; Hellström & Saghir, 2007) and thus enable easier transportation.

3.2.3 Tertiary / transit packaging

Tertiary packaging, on the other hand, is concerned with the proper transport packaging and storage (Carlsson et al., 2011; Hellström & Saghir, 2007). The sustainability of this specific packaging kind is especially important in the e-commerce industry.

3.3 Sustainable packaging

In order to create sustainable packaging, organizations have to consider and apply the sustainability and circular economy principles. Old packaging needs to be optimized and transformed into packaging with an improved life cycle (Nordin & Selke, 2010). This optimization requires the inclusion of the entire value chain, starting off with the resources all the way to the reusing of materials for reproduction to ultimately create a lower impact on the environment.

The Sustainable Packaging Coalition (2011) supports this with the following definition about sustainable packaging:

> *"Sustainable packaging is beneficial, safe and healthy for individuals and communities throughout its life cycle; meets market criteria for performance and cost; is sourced, manufactured, transported, and recycled using renewable energy; maximises the use of renewable or recycled source materials; is manufactured using clean production technologies and best practices; is made from materials healthy in all probable end of life scenarios; is physically designed to optimise materials and energy; and is effectively recovered and utilised in biological and/or industrial cradle-to-cradle cycles."*

Additionally, the new packaging should fulfill the same need and usage requirements as for the old packaging, be functional, affordable and protective – not only in regard to the product but also the planet (NoIssue, 2019). Furthermore, it is crucial that the quality will not be reduced but rather further improved (NoIssue, 2019). Considering the circular economy principle – reduce, reuse, recycle – this means in particular that not only less materials should be used, but also should the packaging be robust and consider safety, as well as contamination issues. The recycling process will in the end allow a reduced number of used resources and lower energy production. Regarding the material, Kozik (2020) mentiones that the most often used materials are glass, plastic, paper and metal. However, it is important, that these materials are compostable, biodegradable, reusable or recyclable.

Once multiple material options have been identified for the new packaging, it is possible to compare these alternatives with the help of a Life-Cycle-Assessment (LCA), which will discuss some, but not all aspects, that need to be considered when talking about sustainability (Lewis et al., 2010). One of the aspects that does not get mentioned through the LCA is for example the social aspect, as highlighted as relatively important by Nordin & Selke (2010). However, sustainable packaging can only fulfil its full purpose, if after usage recycled in a sufficient manner.

3.4 Consumer acceptance on sustainable packaging

Considering the consumer acceptance on sustainable packaging in general and not in particular focused on e-commerce, a trend towards sustainability is noticeable. As stated by Verbeke (2007), Martinho et al. (2015), Nguyen et al. (2020), Prakash & Pathak (2017) and many others, consumers are becoming increasingly interested in sustainable packaged products and continuously develop a positive attitude towards the term sustainability due to the increasing environmental concerns. Such attitude does not only include the purchasing behavior, but also the recycling behavior of consumer. Nonetheless, sustainability does not necessarily mean the same for each individual (Nordin & Selke, 2010; Steenis et al., 2017). Nordin & Selke (2010) further continue with the argument that the awareness and knowledge level should be raised in order to support the likelihood of sustainable purchases and recycling behavior. This also gets confirmed by Magnier & Schoormans (2015) who state that those with more knowledge about the problem might care more than others and thus behave differently.

Comparing these statements now with published statistics, a strong correlation is represented. According to the European Commission (2011), eighty percent of the individuals living in Europe consider the environmental impact as influential when making a purchase. In the year of 2009, the European Commission published that thirty percent of EU citizen believe that a reduction of waste and increase of recycling could influence the environmental problems to a great extent, whereas in the year of 2014 this number was exchanged by ninety-six percent. Such difference in only five years underlines the increasing interest in sustainable behavior.

Nonetheless, being interested in something and having the willingness of changing the behavior does not necessarily result

in action (Nordin & Selke, 2010). Therefore, just because the participants of the European Commission study of 2014 stated that the waste reduction could lead to a minimized environmental footprint, does not necessarily mean that these participants also acted accordingly.

However, there will always be differences between certain groups of individuals. Some might support the sustainability approach to the full extent (Mahesh, 2013), whereas others might not be interested at all or only partly (Carey et al. 2019). According to Mahesh (2013) can those individuals with a positive mindset and attitude, as well as purchase intention towards sustainable products be defined as "green consumer". Carey et al. (2019) on the other hand, highlight that those with a more negative mindset are also those that need to be urgently convinced of the opposite.

For such it is important to understand the influential factors that get integrated in the consumers mind once making a purchasing decision.

3.5 Influential factors

The consumer acceptance of sustainable packaged products is strongly influenced by (1) the consumer being able to identify the sustainability of the product, (2) social pressure and (3) the estimation of the personal influence on the environment and society (Alwitt & Pitts, 1996; Brouwers, 2018). Additionally, several other factors can have an influence on the consumer acceptance of sustainable primary packaging caused by the consumer purchasing behavior being quite complex. This also was confirmed by Hansen (2005), who states that cognitive and affective skills are not independent.

One of these influential factors is for example the product pricing, as it can be considered as one of the most crucial elements when doing business due to it influencing the likelihood of a product being purchased by a consumer and thus the sales numbers (Ashe-Edmunds, 2019; Poturak, 2014; Lee et al., 2017; Monteiro et al., 2019). As Chekima et al. (2016) further highlight, the product / packaging price is indeed one of the influential factors since available resources in form of money belong to the demographic characteristic of an individual.

Another example can be represented by environmental awareness, which deals with the influence of certain decisions on the environment. While an increased price (due to sustainable materials) can lower the tolerance and thus represents an obstacle (Martinho et al., 2015; Chekima et al., 2016; Nordin & Selke, 2010; Steenis et al., 2017; Orzan et al., 2018), the second listed factor, namely the environmental concerns, has a rather positive influence on the purchasing intention in regard to sustainable packaging (Martinho et al., 2015). Thus, those individuals with a high awareness and a high level of concerns are more open to environmental initiatives (Rokka & Uusitalo, 2008; Rashid & Ramli, 2019).

Social awareness is just as important as the environmental awareness and the general familiarity with the sustainability topic (Nordin & Selke, 2010; McCarthy et al., 2016). A study of the Perception Research Services exposed that most consumers are not familiar with the sustainable packaging concept, which shows that organizations have to place more effort into the education of such an important topic (Young, 2007). This matches previous statements made by Nordin & Selke (2010), as well as Magnier & Schoormans (2015). Additionally, this was also confirmed by a study from 2018 which clearly identifies that missing knowledge is the main cause behind the slow adaption of sustainable packaging (NoIssue, 2019).

In order to raise this awareness, multiple channels can be used. One of them being the product packaging itself. Next to providing the necessary product information, the packaging can inform the consumer about how to use and recycle the packaging appropriately. The awareness might eventually also be raised through certain society trends, which symbolize another influential factor (Nordin & Selke, 2010).

Those informed about the increasing importance of sustainable packaging and the environmental issues that can occur through packaging waste created by non reusable or recyclable materials were mostly also willing to act accordingly but did not necessary do so due to the price of sustainable packaging (Doyle M, n.d.; D'Souza et al., 2007). Nordin & Selke (2010) further mention, that a global consumer survey by McKinsey "revealed that 53% of consumers were concerned about environmental issues but unwilling to take actions in purchasing decisions, while a further 13% were willing to pay more but currently did not do so".

Another influential factor is the packaging quality (Monteiro et al., 2019; Poturak, 2014; Lee et al., 2017; Nordin & Selke, 2010). Higher quality will automatically result in a higher protection of the actual product, which is according to Young (2010), next to the functionality of the package, one of the most important drivers when selecting a product.

The packaging design can also be elementary for the selection process (Poturak, 2014; Rettie & Brewer, 2000; Ziynet et al., 2020). This not only includes the packaging shape, but also the used fonts, colors and images included on the packaging (Cooper & Kleinschmidt, 1987; Schoormans & Robben, 1997; Becker et al., 2011; Borgman et al., 2018). Poturak (2014) mentions for example, that background images of a product label (for example mountains, cities or houses) can influence the perception of a packaging and thus lead to the connection between product and lifestyle in the consumers mind.

Another example is represented by Borgman et al. (2018) through the recycling symbol that is often placed on the packaging of sustainable products. Even though most consumers place such symbol in relation with sustainability, this does not necessarily mean that they also recycle the packaging after product usage. In addition to that, the material itself obviously also places an important role. According to Ziynet et al. (2020), glass and paper are the most sustainable perceived packaging materials. However, plastic materials might get favored caused by the perception of plastic being more protective (Nguyen et al., 2020).

In regard to the available product information, e-commerce might has a slight advantage in comparison to an in-store experience, due to the consumer being able to perform additional research online and also being more flexible in time (Klein, 1998). Blackwell et al. (2001) argue that the willingness to get further informed about the product / packaging through additional online research can be defined as product involvement. Bickart & Schindler (2001) further continue that the researched information can cause the consumer to receive a different image about the product and thus change the willingness to purchase.

Still, most influential are the behavior out of habit (Carey et al., 2019) and the product selection based on needs and desires (Steenkamp, 1990; Grunert, 2005).

3.6 Consumer perception on the 3R's of circular economy

According to Park & Lin (2018), consumers contribute to the 3R principle of circular economy if they believe that it will actually make a difference and lead to a reduced environmental footprint.

Thus, those with a higher environmental value orientation are more likely to accept and contribute since these consumers have the mindset that the sustainable behavior will benefit them to a great extent (Moser et al., 2002). To what degree the social influence can be viewed as influential factor in regard to the sustainable recycling behavior is still controversial. While Do Valle et al. (2004), Oskamp et al. (1991) and Nordin & Selke (2010) believe that the social pressure stresses recycling behavior, Hage et al. (2009) and Vinning & Ebreo (1990) believe the opposite and thus deny the statement made.

However, Steenis et al. (2017) argue that despite the willingness to recycle, consumers are, generally speaking, able to identify greater sustainability in packaging materials. This includes whether consumers have the perception that packaging can be recycled, might be biodegradable or includes an unnecessary amount of material (Lindh et al., 2016; Magnier & Crie, 2015; Nordin & Selke, 2010). This perception, nonetheless, is not always based on accurate information.

Calvo-Porral & Lévy-Mangin (2020) and Nordin & Selke (2010) argue that one of the main barriers to behave sustainable is represented by the lack of knowledge and interest. Paper, for example, is perceived as most recyclable and environmentally friendly (Nyguyen et al., 2020; Lewin & Stanley, 2012; Steenis et al., 2017), while reused plastic can be just as sustainable. Plastic, on the other hand, is most often either thrown away directly or not accurately handled (Kozik, 2020). Lindh et al. (2016) stress, that exactly those packaging kinds can be reused and thus reduce the need for additional packaging purchases. Nordin & Selke (2010) further recommend, that exact instructions should be given to the consumers in order to reuse, recycle and compost the packaging material accordingly. It is thus clear that the recycling and reuse behavior depends rather on the knowledge about recycling and reuse opportunities, than on the motivation and willingness (Barr, 2007; Latif et al., 2012; Ramayah et al., 2012).

4. METHODOLOGY

The present research aims to investigate the extent of the consumer acceptance in regard to primary packaging alternatives in the context of e-commerce, followed by possible reasons for (un)acceptance. In order to collect these insights, a qualitative approach based on the grounded theory (Glaser & Strauss, 2017) was taken. Hereby, the theory is based on the data collected through the research and not a predefined framework created through data obtained in the past. This method is especially suitable if no or only little data is given about a certain subject and thus requires a qualitative research approach to define the problem. Qualitative research, especially highlighting data collection methods like interviews, documentary and observations through experiments, support the "triangulation of findings", as stated by Yin (2009).

In this research, an experiment followed by a semi-structured interview was performed, focusing on hygiene products. By not narrowing down the research to certain influential factors that were identified in the past, the overall acceptance of sustainable primary packaging was considered, which left the scope to determine the most important factors specifically for the individuals that participated in the study with the aim to identify factors that have not yet been mentioned in other publications.

4.1 Participants

A total of sixteen individuals were invited to participate in the experiment and interview. These participants were selected based on convenience due to the limited time frame, whilst also considering that each possible scenario is represented. These criteria were especially important in order to integrate all perspectives and evaluate the consumer (un)acceptance in regard to primary packaging alternatives to the full extent.

The three possible scenarios can be described as: (1) consumers who favor products with sustainable packaging or also called "green consumers" (Mahesh, 2013), (2) consumers who purchase a mixture out of sustainable and non-sustainable packaged products and (3) consumers who are not interested in products with sustainable packaging. According to Chun et al. (2019), this specific selection represents the purposive sampling of the grounded theory.

As for the sample size, many sources state different numbers of minimum participants when considering qualitative research. An example is given by Cohen et al. (2007) who suggest fifteen participants for an experimental research. Nonetheless, qualitative research should not focus too much on the number of participants but rather on the quality of data received through these.

The participants were required to (a) not be familiar with the research subject and (b) make use of e-commerce. Additionally, these individuals were also of different age groups, different locations and varied in gender in order to not specifically focus on a certain target group.

As for the frequency of using e-commerce, most participants purchase products at least once a month and thus on a regular basis (Figure 1).

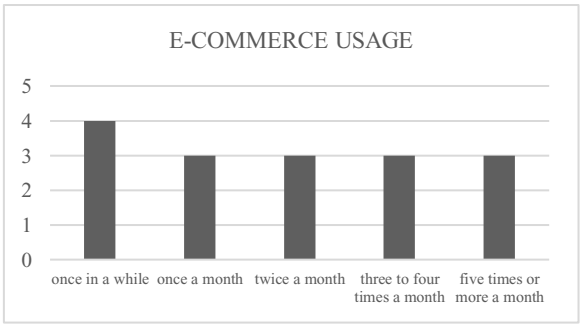

Figure 1. E-Commerce Usage

As it is shown in Figure 2, 62.5 percent of the participants belong to the age group 21 – 30 years old. Approximately 18.75 percent are between 18 and 20 years old, whereas the age groups '31 – 40 years old', '41 – 50 years old' and '61 – 70 years old' are each represented by 6.23 percent of the participants.

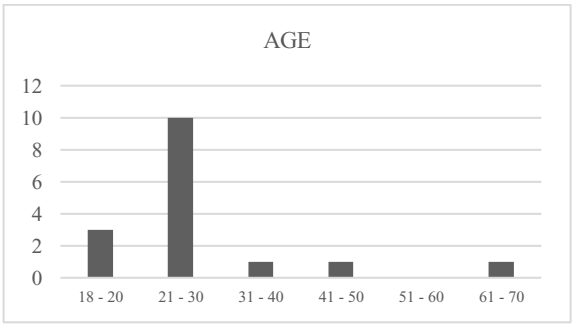

Figure 2. Age

Considering the country of origin, as displayed in Figure 3, 25 percent of the participants are located in the United States, 6.25 percent in South Africa and 68.75 percent in Europe. From those

located in Europe, 50 percent are from Germany and 6.25 percent from the Netherlands, Switzerland, as well as Spain.

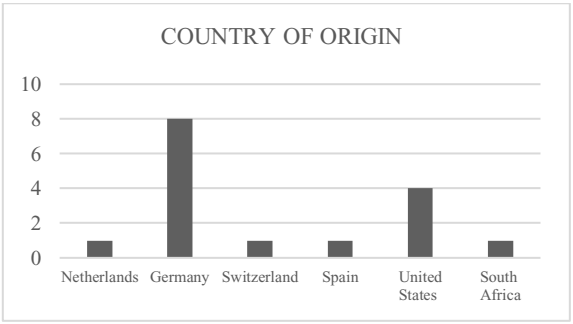

Figure 3. Country of Origin

Regarding the gender, 25 percent of the participants are male, and the other 75 percent are represented by female individuals.

4.2 Methods

4.2.1 Experiment

The first method used in this research was an experiment in the form of an usability test, based on the case study of hygiene products. The advantage of such is represented by being able to test the participant's actual behavior and not just having to base the findings of the research on statements that have been made. Since the experiment was conducted first, it provides the basis for the interview. However, it is also possible to use the experiment as validation for the statements of the interview. If one, for example, does not behave accordingly to the statements made during the interview, this will be visible and question the interview result validity. The two research methods are thus not two separate elements but rather compatible and supportive.

In order to execute the experiment, a website was created, set up like a typical online store and focusing specifically on hygiene products of the categories shampoo, oral care and deodorant. A total of thirty products were available for selection, of which some items were packaged in non-sustainable materials and others in sustainable packaging. Thus, each category included five sustainable and five non-sustainable packaged products. The product selection (Appendix 10.1) itself was rather random but the following can be said about each category:

As for the shampoo, the non-sustainable packaged products were focusing on the hair, whereas four out of five sustainable packaged products could have also been used for the body. Considering the oral care category, a variety of toothpaste, toothbrush and dental floss were selected. Hereby noted, that each non-sustainable packaged product had a sustainable alternative. Regarding the deodorants, the non-sustainable packaged products were represented by deodorant sprays and liquid roll-on's, whereas the sustainable alternatives could rather be described as deodorant sticks.

One product that should be highlighted at this point is the 'Nivea Men Deep Shampoo' which was available in two different versions. J. S. Wentink, a design student of the University of Twente, designed specifically for this product a sustainable packaged alternative and discusses in his thesis (under development) the design factors that have an influence on the product selection, on the example of the Nivea shampoo.

Each product could have been placed in the shopping cart through two different options. Either directly through the product overview of each category or after reviewing the product specific page. As for the overview, the only information that were provided about each product were following: The product image and title, the brand, the content amount and the price. The product specific page contained additionally a product description, how to use the product and the ingredients used.

Furthermore, it was possible to select the product quantity which was not given during the product overview. On the bottom of each product specific page, a 'discover more' section was displayed, presenting other alternatives of the same category. Whenever a product was selected that was surrounded by non-sustainable packaging and where the organization would be able to easily resolve the sustainability issue by exchanging the packaging, the participant was asked whether a packaging change would be desirable in exchange for a small fee. This option was not only available on the product specific page (right next to the 'add to cart' button) but also during the check-out process.

The shopping cart displayed all items again and offered the opportunity to rethink the selection. It was possible to delete products, change the quantity and, as mentioned already, for certain products it was offered to select a different packaging material.

In order to include variety and identify whether certain factors could have an influence on the product and packaging selection, following elements were incorporated on the website: Some of the eco-friendly packaged products received a 'new packaging' sticker on the product image or a title that was indicating the sustainability. In regard to the product pricing, sustainable packaged products received a slight price increase in comparison to products that were packaged in regular and non-sustainable packaging material. This price increase varied between twenty to thirty percent, mainly due to the sustainable alternatives being usually way more expensive than the regular and more common products. The only exceptions that were made occurred whenever a sustainable alternative had a relatively similar price to a non-sustainable packaged product of the same category. If a price for a non-sustainable packaged product was not identifiable, it received the price of a sustainable comparable product decreased by twenty to thirty percent.

4.2.2 Interview

The second method used in this research was a semi-structured interview on an one-to-one basis, focusing on the general acceptance of sustainable primary packaging, its relevance / importance and possible reasons for (un)acceptance, but also the willingness to behave in a sustainable manner. The interview basis was created through the experiment and thus the advantage occurred to identify what exactly happened during the experiment and especially by what it was caused. This was confirmed by Oakley (n.d.), who defined qualitative interviews as a framework that records, achieves, challenges and reinforces the practices of qualitative research. Such in-depth analysis can be determined by the answers of the interview not being predefined and the individual being exposed to the opportunity of providing possible reasons and the 'why' behind a decision.

The motivation behind the e-commerce consumer behavior can thus be clearly identified, through the expression of opinions and perspectives. Some of the interview questions were predefined, while others were later on added, left out or rephrased due to the behavior that was observed through the experiment or the response that was given to certain predefined questions. In order to have somewhat of a guideline, field notes about the different scenarios that could occur were made in advance. However, certain elements like the product attributes that caused the purchasing decision were discussed with all participants.

4.3 Research procedure

The research was performed through an online session with a total duration between 15 and 45 minutes, depending on the time needed for the experiment and the interview.

At first the experiment was executed for which the participants were asked to select at least one item per product category to add variety and to identify multiple influential purchasing factors. Independent from the initial choice, all participants were also asked to select a version of the Nivea Men Deep Shampoo. There was no time limit set for the experiment since the participants were supposed to be exposed to a real-life situation in order to study their actual purchasing behavior. In order to observe this in an accurate manner, the participants were asked to share the screen throughout the entire experiment duration. It also has to be noted at this point that the participants did not get informed about the details of the study until the end of the session in order the prevent research biases.

The common interview language was English, except in three cases in which the participants preferred to execute the interview in German. For the purpose of the study, the interview transcripts (Appendix 10.3) were accordingly translated. As mentioned previously, executing the experiment and thus the purchasing process before the interview allowed to observe the participants behavior and whether it correlated with the statements that were made during the interview.

4.4 Data analysis procedure

In order to analyze the data properly, relevant literature and the observation of each experiment were summarized, while all interviews were transcribed. These transcripts[1] were afterwards uploaded to ATLAS.ti so that with help of open coding the in-depth analysis of the findings could occur. According to Strauss & Corbin (1990), coding is the most commonly used approach when investigating interview data and should best be done "line-by-line" in order to not only validate before known results but also determine emerging factors.

Line-by-line coding can be relatively time consuming but provides the advantage of making the data accessible and identifying similarities between the different participants (Strauss & Corbin, 1990). This can be done by "coding" (Miles & Huberman, 1994) or "categorizing" (Dey, 1993) the several phrases or statements made.

Reviewing the similarity, further grouping of the results and the determination of overlapping findings enabled to identify the factors that influence the consumer acceptance, their condition and consequences. This was not only the aim of the research but also enables the development of a research framework based on the received data. Thus, coding is part of the grounded theory, as it is also stated by Chun et al. (2019) and Lonkila (1995). Following, the discussion of the findings is based on the observation of the experiments and the in-depth coding of the interviews which validates the results of the research to a certain extent.

5. FINDINGS

5.1 Findings through experiment

Through the experiment it was possible to identify several differences in the purchasing behavior of the participants. One of them being the purchasing strategy. While some participants actually took their time to investigate and review further insights about the separate products, others just selected the products directly through the product category overview. Nonetheless, majority of the participants who reviewed the product first, placed it directly in the shopping cart if the additional information provided on the product specific page was convincing / sufficient enough. One exception took although place in which one participant reviewed at first all interesting products of all categories and did not select any products until going through each category a second time.

Considering the product selection, a variety of scenarios occurred. Some participants only selected sustainable packaged products, while others only selected non-sustainable packaged products. Majority of the participants, however, selected a mixture of these two extremes. This provided a good basis for the interviews and in order to receive data from each possible outcome that could take place within this experiment. Interesting to see was also, that even though most participants were exposed to the opportunity of changing the packaging material for at least one of the non-sustainable packaged products, barely anyone made use of it.

5.2 Findings through interview

In order to represent the findings in a more efficient manner, these will be presented in the following structure: factors that influenced the product selection, doubts and changes on the packaging materials, as well as the recycling and reuse of packaging.

5.2.1 Influential factors

When asked why a certain product was selected, participants answered the question with a list of several factors. One of them being the *functionality of the product*, so what it actually does and the benefits it provides when comparing it to other alternatives. Sometimes it was even paid specifically attention to the *ingredients* used, but also the *smell.*

Another factor that was highlighted was the *design of the packaging*. Not only did this factor get used in favor to select a product but also to reject and rather choose an alternative. Hereby, it is not always about the overall design, but in some cases, even about certain elements like the packaging shape or the colors used. It can be further analyzed, that unusual packaging shapes and colors, how it was the case for the sustainable version of the 'Nivea Men Deep Shampoo', can in some cases even lead to antipathy. Additionally, a quite interesting observation, that was made while analyzing the interviews, revealed that *packaging with a plastic look is often associated as non-sustainable*. This is, however, not always the case since biodegradable materials or recycled plastics can be used in order to form a new, more sustainable product packaging.

On the opposite, the packaging design can also sometimes indicate the *sustainability* of the material which represents another influential factor. The majority of the participants were aware of the influence that non-sustainable packaging can have on the environment and integrated this awareness to some extent within their purchasing decision. This correlates with the observation made during the experiment of some participants who selected only sustainable packaged products, while others decided to only purchase products with non-sustainable packaging. To what extent the environmental influence awareness got integrated was influenced by several factors: One of them being the familiarity with the term 'sustainability' and the general environmental problematic, but either not caring about it at all or, on the opposite, to a very high extent. Nonetheless, it was especially interesting that *consumers might*

[1] The full transcripts are available in the appendix of the thesis.

be aware of the environmental influence, but unintentionally forget about it while purchasing products.

As it was mentioned during the interviews, a more direct and obvious indication of the sustainability extent could be a positive contribution towards solving this issue. Such indication could be made in several ways, as directly in the product description, on the packaging itself or through awareness raising advertisement on the organization's website or through social media. Nonetheless, during one interview, it was stated that organization's might not necessarily want to reveal this kind of information in such an obvious way in order to not prevent consumers from purchasing additional non-sustainable packaged products that get offered on the same website. Another statement that should be highlighted is the perspective *of organization's not necessarily needing to raise the awareness about the problematic but rather stop selling products that come in non-sustainable packaging*.

Comparing the sustainability and the design of a packaging as influential factors, the sustainability would receive a higher importance and always support the purchasing decision. Regardless, *the sustainable products should have an appealing look in order to be eye-catching and to raise the interest of the consumers.* This can be done through the overall packaging design, but also be supported by design elements like a recyclability symbol or a 'new packaging' sticker how it was the case within the executed experiment.

Such interesting design might then also support the next influential purchasing factor of the *consumer wanting to try a new and interesting product*. This highly correlates with the *brand recognition* and the *familiarity with certain products*. As expected, some participants favored certain brands, while others were open to a great variety. However, majority of the participants unexpectedly stated that they would be open to sustainable alternatives. The product being offered and sold online, represented an advantage as such that consumers do have *more time and possibilities to inform themselves about the benefits of the product* and secondly, the fact that consumers are just in a different purchasing mentality than in-store. *Unacceptance for such openness to alternatives was caused by having to visit different websites than usual* or simply because the product was not from a certain and familiar brand.

Other than that, *the product price* can be considered as an influential factor. Multiple price differences were mentioned throughout the interviews. As for some, an increase of twenty to thirty percent in comparison to a non-sustainable packaged product was the maximum, while others were open to pay up to a fifty percent increased price or even more than that. Such extreme was, however, commented with the requirement of not only the packaging being sustainable but also the product being different as in better and more natural ingredients, as well as lasting longer. *Interesting was additionally the perception that the sustainable packaged product should cost less than the non-sustainable alternative* in order for consumers being more attracted and thus more likely to purchase the sustainable packaged product. Secondly, it was also mentioned that there should be no price increase at all since the product is still the same and just the packaging differs. To what extent the participants were in the end willing to pay more for a sustainable packaged product depended very much on the product itself.

Summarized, sustainable packaging should be concerned with its design in terms of being eye-catching, whilst also conveying its sustainability – to a degree sometimes explicitly. The price should only slightly differentiate from non-sustainable packaged products, and also, there seems to be an opportunity for organizations to create new (sub-) brands that are specifically focused on sustainable markets. All of those suggestions seem to be useful for both e-commerce and brick and mortar (offline) stores.

5.2.2 Sustainable vs. non-sustainable packaging

While some had clear product preferences through the influential factors mentioned previously, it was interesting to receive further insights about the general perception in regard to possible changes of non-sustainable packaging or doubts while considering sustainable packaging.

As for the products packaged in non-sustainable materials, it was stated that either less or different, more sustainable materials could be used. On the example of a toothbrush this would mean, that the toothbrush head including bristles, would be more narrowed enclosed by its packaging or that only that part is actually packaged, whereas the toothpaste handle would not. Another option would be to just use a different kind of packaging, such as a paper box and thus the packaging not containing any plastic.

Focusing on the doubts in regard to the sustainable packaged products, mostly the paper packaging was critized as not being robust enough and the packaging, including product, eventually getting destroyed. In some cases, the additional fear of the product sooner or later leaking occurred. Some of the sustainable packaging also seemed to be more complicated to use in comparison to the regular alternative. This was explained on the example of the sustainable packaged dental floss, which was placed in a glass container. The participant stated that it would require an additional tool, in this case a scissor, to even get the product itself out of the packaging, whereas for the non-sustainable packaging a fixture for such action was placed. Thus, *the concern of the sustainable packaging performing in the same way as the traditional one was raised.*

5.2.3 Recycling and reuse of packaging

Regarding the recycling aspect of the product packaging, the majority of the participants were encouraged to do so in order to contribute to a positive influence on the society, the environment and the economy. Considering the different recycling options, it was found that *the way of recycling should be the most convenient for the consumer*. Thus, recycling at a certain store or collection location was in some cases rejected due to the inconvenience and the additional effort required from the consumer. It was highlighted that especially in the case of someone rather purchasing products through e-commerce, recycling the product packaging would be rather unlikely in case it cannot be done at home. Due to the recycling requirements of certain places, organizations should also consider making the packaging as convenient as possible for the consumer to clean. Another group of participants that should be considered within this research are those individuals that had initially good intensions and wanted to recycle but unintentionally forget to do so. It was also mentioned that *certain packaging kinds do not only get recycled but in some cases even reused for other purposes*. This leads in the end to less resources needed since whatever product would have initially been bought was exchanged by the reusable packaging of a product that was already purchased.

Thus, organizations should ensure, while designing new packaging, that the new creations are easily recyclable and secondly consider how consumers will dispose the product, including the packaging.

6. DISCUSSION

Considering the several factors that have been defined as influential, most of them correspond with the existing literature. One of them for example being the sustainability extent of the product / packaging and the general awareness provided about the problem. Furthermore, the statement made by Calvo-Porral & Lévy-Mangin (2020) and Nordin & Selke (2010), about not all consumers knowing the exact definition of sustainability, was confirmed through the research. Another factor was represented by the design and individual elements of it. During the interview, the participants were asked to rate either sustainability or design as more important, which resulted in the sustainability factor being rather influential under the aspect that the design is nonetheless appealing. This outcome links to the literature provided by Poturak (2014), Rettie & Brewer (2000) and Ziynet et al. (2020). As Kozik (2020) stated, plastic packaging gets either directly thrown away or not handled properly, which was supported by the participants stating that the plastic material can be associated to non-sustainable materials. Carey et al. (2019) argued, that the purchasing decision of consumers is in some cases mainly based on the habit aspect which was represented in the research by the participants selecting a product based on familiarity to the brand or product itself. Klein (1998) talked about e-commerce providing the advantage of the consumer being more flexible in time and having the ability to perform additional research. This statement was confirmed by some participants and highlighted as one of the reasons, why the openness in regard to sustainable alternatives is higher for e-commerce than for brick and mortar (offline) stores.

Considering the consumer perception on the 3R's of circular economy, the research confirmed the recycling and reuse willingness as mentioned by Park & Lin (2018) and Moser et al. (2002). Secondly, some participants mentioned the unnecessary amount of packaging material used for non-sustainable packaged products, which reflects the opinion of Lindh et al. (2016), Magnier & Crie (2015), as well as Nordin & Selke (2010).

However, the research revealed also factors that have not been mentioned by the literature just yet and can thus be defined as emergent factors. One of the most frequently mentioned influential factors was *the functionality of the product*, as well as the *ingredients used* and in some cases *the smell*. Past literature mainly focused on only the packaging aspect, not considering that the product itself can also be influential and might be rated with a higher importance than the packaging.

Considering the design of the packaging, the shape itself was mentioned by the literature but the research additionally revealed that unusual shapes have a higher likelihood of not being accepted by the consumers. This is an important factor that organizations should consider once designing their alternative and more sustainable product packaging.

In disagreement with the statement made by Carey et al. (2019), that consumer purchase products out of habit, some participants simply selected a certain product out of *curiosity and wanting to try something new*. This might fulfil the needs and desire aspect mentioned by Steenkamp (1990) and Grunert (2005), but definitely represents the opposite to the influential factor 'habit'.

Even though the sustainability was highlighted as one of the influential factors, it was also mentioned that this aspect might unintentionally become forgotten if the consumer is interested but does not strictly base his / her decision on it. Thus, a more direct indication could be beneficial, as already stated by Nordin & Selke (2010). However, most emergently was the statement that *organizations do not have to raise the awareness but should rather stop selling non-sustainable packaged products*. Optimizing the packaging is something that requires new innovations and can thus be quite time consuming, but large organizations, like Unilever, have set as goal to be fully sustainable in a couple of years. Thus, the statement made can be confirmed by the intention and willingness of the organizations.

The controversy of the price representing an obstacle should be highlighted, as stated by many sources (Martinho et al., 2015; Chekima et al., 2016; Nordin & Selke, 2010; Steenis et al., 2017; Orzan et al., 2018). Indeed, the price is seen as an influential factor, however, majority of the participants did not have an issue with paying slightly more for sustainable packaged products. One statement that especially stood out, was the perception of sustainable alternatives having to cost less in order to be more attractive to consumers.

Considering the packaging quality, which was already mentioned as influential by Monteiro et al. (2019), Poturak (2014), Lee et al. (2017) and Nordin & Selke (2010), the research additionally revealed the doubts and concerns in regard to sustainable and non-sustainable packaging. Paper, even though it gets associated with being sustainable (Ziynet et al., 2020), was critizied as eventually not being robust enough and causing the product and packaging to be damaged. Some other sustainable packaging designs were also seen as rather inconvenient or complicated in use. In addition to the perception that sometimes too much packaging material is used, the participants also stated that different materials could be used and thus felt the need to change non-sustainable packaging into sustainable packaging.

Another emerging factor that is highly important when analyzing the consumer acceptance of sustainable primary packaging is the recycling process needing to be as convenient as possible.

Differentiating now between brick and mortar (offline) stores and e-commerce, most influential factors on the consumer acceptance of primary packaging alternatives are represented for both purchasing options. However, it stood out that e-commerce offers the opportunity of additional information through the organization's website or external sources, which can in turn convince the consumer to purchase more sustainable packaged products. On the other hand, sustainable packaged products are not necessarily available on the common websites (when considering e-commerce) and thus require additional efforts as in visiting different websites than usual, which is seen as unfavorable.

7. CONCLUSION

Summarizing the findings, it can be said that the participants seem generally interested in sustainable alternatives and can also be perceived as willing to change the purchasing behavior accordingly. The research thus adds to the already provided literature on the general sustainability acceptance. However, this willingness and awareness might not always translate into actually actions (Nordin & Selke, 2010). Organizations should thus try their best in order to support the consumers decision and for them to perceive the need and desire of purchasing sustainable packaged products and resolve the doubts that might still be present. Awareness can be raised by direct indications about the sustainability extent of the product, including packaging. Multiple channels can be used for this, as highlighted during the interviews as advertisement, social media, information on the organization's website, but also on the packaging itself.

Considering the price, quite a few variations were mentioned which makes it not possible at this point to present an actual indication. A slight price increase for a sustainable alternative was no issue for majority of the participants, commented by the

price having to be reasonable. In regard to the recycling behavior of the consumers, it was highlighted that the recycling process has to be as convenient as possible. Organizations of the e-commerce industry have to additionally consider whether the packaging materials can be efficiently recycled at home or if a cooperation with a local store might be more beneficial.

However, most importantly is the packaging design. Participants rated sustainability as more important but highlighted that the design should still be appealing. Therefore, organizations should not only consider the convenience of materials but also if the sustainable alternative can compete with comparable non-sustainable packaging.

Focusing specifically on the e-commerce industry, consumers are less likely to accept sustainable packaged products if additional efforts are required, for example by visiting a different website than usual. Organizations that additionally or strictly sell their products through e-commerce should therefore keep this in mind and evaluate the (dis)advantages of cooperating with other organizations and thus being able to provide the products through multiple platforms. Nonetheless, these organizations should also take advantage of the opportunity of being able to provide additional information about the product / packaging. Brick and mortar (offline) stores should, in comparison to this, rethink their sale strategies and make use of opportunities that highlight sustainable packaged products in order to provide additional information as well. An example can be represented by sustainable packaged products being separated from non-sustainable packaged products and thus receiving a dedicated area inside the store which provides organization's the possibility to inform the consumer about the sustainability extent and the benefits of purchasing these products in particular.

7.1 Relevance

In a world that is constantly developing with resources becoming more scarce, it is important to increase the sustainability extent of products and their packaging, as well as make use of the circular economy principle. Thus, the research focuses on a relevant subject and can provide insights to organizations that are willing to produce more sustainable packaged products but might be hesitant due to not knowing how the consumers would react. However, to generalize and validate this research, it is suggested to make use of additional research using quantitative methods.

Considering the academic perspective, several publications have been made in regard to influential factors on packaging. However, these were either more generalized or did only focus on certain factors without combining others that have already been mentioned in previous studies. It was thus the objective of this research to focus specifically on sustainable primary packaging and eventually identifying additional influential factors that can have an impact on the acceptance of consumers.

7.2 Limitations and further research

As for the limitations of the research it can be said that the case study only focused on hygiene products and thus the findings do not include influential purchasing / acceptance factors that could additionally be relevant for other product groups. Furthermore, the website created for the experiment did not include any advertisement and was also limited in product variety. This represents a slightly different experience than what a regular e-commerce website would offer and on which the consumer would be exposed to hundreds of products. Ultimately, the research was rather conducted on a relatively small sample size to determine the actual problems in regard to the consumer acceptance on sustainable primary packaging of the e-commerce industry.

It is thus recommended to extend the research through a quantitative approach, in order to validate the findings on a larger sample size. Future research should also contain the misconcept of sustainable packaging that has an influence on the purchasing behavior and the overall recycling behavior of consumers. It could additionally be interesting, especially for organizations, to specify the research based on categories like age, gender or other demographic characteristics. Through this, organizations would be able to receive an indication of which target group should be focused on especially when implementing sustainable packaged products and which target group might require additional incentives to not only raise the awareness but also convince the consumers to change the purchasing behavior.

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10. APPENDIX

10.1 Product overview

Shampoo

1. Nivea Men Deep Shampoo (sustainable packaged)
2. Head & Shoulders Anti-Dandruff Shampoo
3. Emerson Natural Peppermint Sea Salt Soap (sustainable packaged)
4. Pantene Pro-V Repair & Protect Shampoo
5. Syoss Renew 7 Shampoo
6. Ethique Bar Minimum (sustainable packaged)
7. Syoss Men Power Shampoo
8. Nivea Men Deep Shampoo
9. Hydrophil Lavender Soap (sustainable packaged)
10. Aveda Rosemary Mint Shampoo (sustainable packaged)

Oral Care

11. Sensodyne Repair & Protect Toothpaste
12. Hydrophil Toothbrush (sustainable packaged)
13. Georganics Toothpaste Tablets – Spearmint (sustainable packaged)
14. Jordan Green Clean Toothbrush (sustainable packaged)
15. Colgate Charcoal + White Toothpaste
16. Colgate Smile For Good Toothpaste (sustainable packaged)
17. Georganics Natural Floss (sustainable packaged)
18. Oral-B Charcoal Infused Toothbrush
19. Oral-B Cross Action Toothbrush
20. Oral-B Pro-Expert Floss (Cool Mint)

Deodorant

21. Rexona Deo Roll-On Pure Fresh
22. Ethique Sans Unscented Solid Deodorant (sustainable packaged)
23. Axe Deodorant & Bodyspray Black
24. ApothecaryMuse Righteous Rebel Deodorant (sustainable packaged)
25. Coconut & Vanilla Native Deo (sustainable packaged)
26. Dove Clear Tone Deodorant Dry Spray
27. Meow Meow Tweet Baking Soda Free Deodorant (sustainable packaged)
28. Dove Deo Roll-On Invisible Dry
29. Dove Original Clean Dry Spray
30. Meow Meow Tweet Sustainable Deodorant (sustainable packaged)

10.2 Experiment summaries

Removed due to confidentiality issues.

10.3 Interviews with participants

Removed due to confidentiality issues.

10.4 Findings overview

Removed due to confidentiality issues.