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Changes in Shopping Behavior Under the Aspect of Sustainability and the COVID-19 Pandemic.

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Abstract

Since the beginning of 2020, governments around the world have taken measures to contain the novel COVID 19 pandemic. These measures have changed many aspects of public life. The introduction of mask requirement in points of sale and the call for social distancing raises the question of how these conditions affect the shopping behavior of consumers. As part of this study, a written online survey was carried out with students from the Schwäbisch Hall campus of Heilbronn University. The aim is to research the adapted purchasing behavior under the new situation towards increased online shopping as well as the inclusion of sustainability aspects in the purchase decision. In summary, it can be stated that consumers mainly order clothing, electronics and books online. Since the beginning of the COVID 19 pandemic, more and more online purchases have been made across all product groups, with those articles that were previously in greater demand online recorded the greatest relative growth in the pandemic situation. The main reasons for this are the fact that shopping is simple and uncomplicated as a hybrid between the advantages of online trading and COVID 19 related measures. The willingness to support the local brick-and-mortar retailers who switched to online sales in the wake of the pandemic is only present to a limited extent.

Key Words: Sustainability, COVID 19, retailer, costumer behavior, empirical study

1. Introduction

With the outbreak of the novel COVID 19 virus, public life changed in many ways. The measures to combat the pandemic enacted by governments worldwide resulted in numerous restrictions for citizens in their daily routines. On the one hand, masks were made compulsory in public spaces and especially in shops. On the other hand, there was a call to avoid personal contact as much as possible. Brick-and-mortar trade is thus becoming increasingly unattractive for consumers. As an alternative, online trade offers itself for the procurement of goods.

Against this background, it is questionable whether online retail is used more extensively by consumers compared to brick-and-mortar retail. The aim of this paper is to clarify whether and to what extent online platforms are used more by consumers in the pandemic situation. In addition, possible reasons for an increased demand in the e-commerce sector are to be worked out and it will be determined to what extent sustainability aspects are included in the purchase decision.

2. Theoretical background of the empirical study

The topic is to be classified in the scientific fields of (1) retail logistics, (2) behavioral economics and (3) sustainability science.

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2.1 Theoretical background of retail logistics

Retailing is one of the oldest human activities that evolved from a simple exchange of goods and services to a globally dominant industry. One change that came with the growth of the internet was the development of e-commerce companies such as Amazon. Previously, purchasing was purely a final activity, with the goods or service being offered directly to the customer (Geyik &Topal 2020).

In Germany, the brick-and-mortar shop is currently the most used sales channel in retail. However, this is losing importance due to the growth of online retailing. This increasing prioritisation of e-commerce is reflected either in the form of own online shops or the use of online marketplaces (Wittmann & Deichner 2020). In the context of digitalisation, this challenges the entry of brick-and-mortar retail into digital distribution networks. This often corresponds to a connection of sales channels, i.e. online and offline (Rumscheidt 2016). With multichannel retailers, a purchase is offered and completed entirely via one distribution channel, whereby each distribution channel stands on its own. With omni channel, the different channels are combined with each other and together form an optimal, individual path to procurement for the customer, whereby the consideration and the goods offered are also identical (Bailey 2020).

Due to the outbreak of the Covid 19 pandemic in spring 2020 and the associated lockdown, around 200,000 brick-and-mortar retailers had to cease operations. Despite the reopening, the industry is suffering from decreased demand as private consumption has weakened the economy (Genth 2020). Thus, 97% of retailers faced major consequences of the COVID 19 crisis (Paul et al. 2020). The winners are online retailers, as growth of 15% is expected through this sales channel in 2020 alone. Customers were more likely to buy online rather than in brick-and-mortar stores, accelerating the shift towards e-commerce.

German politicians have taken measures that also affect the retail sector to strengthen private consumption. For example, families receive a child bonus of €300 per child, although it is unclear whether this subsidy flows directly into the brick-and-mortar retrial trade or is saved respectively purchased online (Genth 2020).

Due to this situation and the advancing online trade, according to a survey, 50% of the traders who have not practised e-commerce so far are planning to additionally take up online sales (Paul et al. 2020).

2.2 Theoretical background of behavioral economics

It is crucial for traders to know the behaviour of consumers in order to be able to act according to their needs. Consume as such is to be understood as the use and consumption of goods and services, regardless of whether the good is acquired in return for payment or free of charge. However, an unambiguous classification is no longer possible, as consumers often adapt their behaviour situationally and thus make it dependent on internal and external factors, such as the financial or time situation (Hilpert & Völkening 2020).

The emergence and growth of digital activities is also changing consumers' fundamental characteristics, which are also affecting their buying behaviour (Freundl & Paul 2020). As a result, brick-and-mortar trade in the previously known form of the retail shop has to record decline (Hilpert & Völkening 2020, Freundl & Paul 2020). For this reason, many retailers have adapted their market strategy and distribution (Vakulenko et al. 2019).

Both online and offline trading have advantages and disadvantages for buyers: trad via e-commerce channels has the advantage for customers that they can make purchases quickly and conveniently via the internet. This happens through the indirect meeting between trader and buyer, whereby buyers additionally have a possibility to compare products and traders with regard to price, delivery time, quality or customer service and thus gain a higher transparency (Geyik & Topal 2020). Therefore, it is not uncommon for the collection of information across the product range to begin with the flagship of online retailing, Amazon. When shopping online, customers decide primarily based on price, followed by customer service, the breadth of the product range and time saving (Freundl & Paul 2020). On the other hand, in brick-and-mortar retail, customers can see the product and check it out, which makes it possible to make a personal assessment of the goods before buying (Geyik, Topal 2020).

For the sellers, distribution via the internet is a way of acquiring additional customers and meeting the demand for online presence. Thus, for the retailers, customer loyalty is strengthened. These facts provide resilience in the competitive environment (Wittmann & Deichner 2020).

Sellers in brick-and-mortar retail have a personalised interaction with customers, which gives the customer a familiar feeling and makes them prefer future purchases from the retailer. For online-only retailers, there is an advantage in opening brick-and-mortar shops to easily establish a brand; for customers who are used to traditional shops, this creates awareness of the company and brand. In addition, they see the direct feedback and communication regarding the concretisation of the product range as beneficial (Geyik & Topal 2020). Largely, it is considered elementary to provide the customer with a special shopping experience, which creates an advantage for the retailer (Vakulenko et al. 2019). The difficulty is that even a website is taken for granted by consumers (Freundl & Paul 2020).

Reasons for the weaker demand in brick-and-mortar trade due to the pandemic situation (in times without lockdown) are the fear of infection in retail shops and the pandemic-related uncertainty regarding the income situation. Additionally, some consumers only buy the most necessary goods due to the obligation to wear a mask (Genth 2020).

2.3 Theoretical background of sustainability science

Sustainability is concerned with the careful use and consumption of resources so that future generations can meet their needs, whereby sustainability is divided into three pillars: economic, ecological, and social sustainability (Lozowicka 2020, Schleiden & Neiberger 2019, Flores-Hernandez et al. 2020). In addition to economic sustainability, ecological and social sustainability have gained in importance in recent years, with the aim of strengthening resource-saving actions (Oniszczuk-Jastrzabek et al. 2020). In the meantime, the image of simultaneously implementing economic, ecological, and social goals has been consolidated, which is reflected in the three-pillar model (Schleiden & Neiberger 2019).

This is the reason why this topic is also very important in politics. With its "Agenda 2030", the EU is pursuing 17 sustainability goals that its member states are supposed to achieve within the next ten years (Lozowicka 2020).

To curb the rapid development of climate change, governments have to take measures that cost billions of dollars (Otto & Gugushvilli 2020). Nevertheless, more than half of German consumers perceive the price of sustainable products as too expensive (Reimers & Hoffmann 2019). However, the main drivers for the purchase of sustainable products are the consumers' personal values; so-called universalism is the most important value that drives sustainability-conscious consumption (Balderjahn & Hüttel 2019).

Whether companies can offset greater costs for sustainable products depends on customers' willingness to spend more money on sustainability (Schleiden & Neiberger 2019). Retailers build the bridge between the suppliers and the consumers (Ruiz-Real et al. 2018). For the relevant actors along the supply chain, they could be the "environmental goalkeepers" to integrate sustainability into their business (Yang et al. 2017). In order to make their own products and production processes (e.g. logistics, packaging or assortment) more sustainable, retailers can put pressure on suppliers to deliver more sustainable goods on the one hand, and trigger social and sustainable purchasing behaviour of their customers on the other hand.

Despite the low willingness to spend more money on sustainable products, 93% of all consumers see the brands they consume as having a responsibility to support social and ecological issues (Ruiz-Real et al. 2018). A central point is the so-called Corporate Social Responsibility (CSR), which deals with the responsibility of companies to act sustainably (Oniszczuk-Jastrzabek et al. 2020). CSR has a direct and significant link to reputation, brand image and perceived consumer satisfaction (Flores-Hernández et al. 2020). Therefore, retailers should also look for business partners who take a socially sustainable position (Ruiz-Real et al. 2018).

According to studies, the option to return goods purchased online also plays a major role among consumers (Tauscher 2017). Every sixth to eighth product is returned (Lockhauserbäumer & Mayr 2015). Reasons for this can be quality defects due to the delivery, the deviating idea of the product as well as the deliberate ordering of different choices (Freundl & Paul 2020). For retailers, this is associated with considerable costs, with an average of €20 for shipping, company processes, losses in value, etc. (Lockhauserbäumer & Mayr 2020). Consequently, a high number of returns has a negative impact on the retailer's profit (Röllecke et al. 2018). Currently, the transport and logistics sector already accounts for 24% of total European greenhouse gas emissions (Schleiden & Neiberger 2019).

3. Methodology

In this study, consumers are asked about their online/offline shopping behaviour. For this purpose, the methodology of a written survey is chosen, which contains standardised closed questions and is asked by e-mail. Bortz defines the written survey as a process when study participants answer questions (questionnaires) submitted in writing on their own (Bortz 2006). The written survey is suitable first against the background of the current Covid 19 pandemic situation and the associated growing problem of being able to conduct oral surveys (Atteslander 2000). Furthermore, this form of questioning is perceived as more anonymous by the interviewees, which tends to reduce inhibition thresholds to truthful and accurate processing of the topic (Bortz 2006).

Since the respondent does not have an oral interlocutor available to clarify questions that are difficult to understand, a clear and unambiguous question had a high priority in the preparation of the present survey. The questionnaire is structured using standardised questions so that the answers can be grouped, and their comparability is facilitated. Closed questions were used in which the possible answers are offered to the respondent and, if necessary, even divided into categories. Therefore, only the appropriate answer has to be selected (Atteslander 2000). Furthermore, closed questions are asked because this variant ensures greater objectivity and better grouping and coding work. In addition, computer interviewing offers an avoidance of response bias (Bortz 2006).

The survey aims to explore possible changes in shopping behaviour and the reason for this behaviour, allowing matters to be described and evaluated (Bortz 2006). The survey was sent out by e-mail to avoid personal contacts during the current pandemic situation. Subject of the survey are students of the Heilbronn University. Since they are currently not at the university's locations due to the exclusively online events, only an online survey was suitable. Furthermore, the range is increased if every student can receives the survey via the internet.

The survey was carried out during the period from 24.11.2020 to 29.11.2020. The survey was limited to the Schwäbisch Hall campus of Heilbronn University to be able to break down the behaviour to a certain social circle. 117 students participated in the empirical study, distributed in 88 female and 28 male and one diverse participant. The survey in this paper was conducted online only. In this way, it was mainly possible to reach test persons who already have a high affinity for using the internet. This affinity forms the basis for making online purchases. Therefore, it can be assumed that the target group of this study already has experience with the consumption of goods on the internet. The sample is not a probabilistic one and somehow a bias in the sample must be assumed due to the higher proportion of females.

4. Results of the empirical study

Figure 1 provides an overview of the types of products that respondents buy online at least occasionally: 90% of the survey participants state that they purchase clothing via the internet. Slightly fewer, namely 68%, purchase electronic devices as well as CDs ando DVDs via this retail channel. Just under half (47%) buy books via online retails. About 38% of people buy cosmetics or drugstore items digitally. The next-largest group of goods purchased is household necessities, at 29%. Every fourth respondent also buys furniture online. In this survey, only about 3% of the panel participants state that they would buy food via the internet.

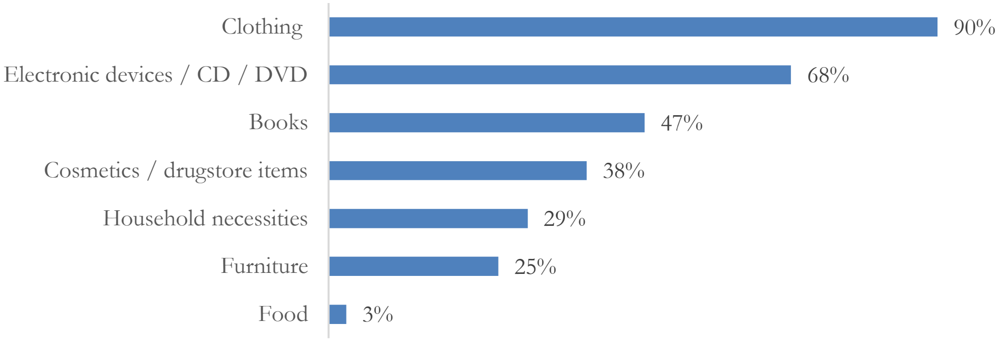

Figure 1: Proportion of respondents who buy product groups online at least occasionally (Own illustration)

It is interesting to look at the gender distribution for this topic. If we look at the purchase of clothing, it is noticeable that 93% of all participating women purchase this via online channels, while only 79% of men use this route. There is slightly stronger tendency to purchase online electronics, CDs, or DVDs among men, 79% of whom order these online. Among women, it is 15% less. A similar pattern emerges with the purchase of books, where 62% of men order this way even more frequently than women do with 42%. In contrast, almost twice as many women buy cosmetics and drugstore items online (43% of female participants) than men (24%). The picture is similar for the purchase of household articles, where the proportion is 32% of women and only 21% of men. The ratio is almost equal for the purchase of furniture, where about every fourth person buys via the internet. The segregated product group of food is purchased online by 7% of men and only 1% of women.

Table 1: Average share of online purchases before the start of the COVID 19 pandemic and since the COVID 19 pandemic in percent, as well as the change in percentage points (pp) (Own illustration)

Product group	**before Covid 19**		**since Covid 19**		**Change**	
Clothing	48,1%		59,2%		11,1pp	
m/f	46,6%	48,6%	59,5%	59,1%	12,9pp	10,5pp
Electronic devices / CD / DVD	33,5%		40,0%		6,5pp	
m/f	46,6%	29,3%	57,8%	34,1%	11,2pp	4,8pp
Books	31,2%		35,7%		4,5pp	
m/f	39,7%	28,4%	44,0%	33,0%	4,3pp	4,5pp
Cosmetics / drugstore items	14,5%		19,0%		4,5pp	
m/f	11,2%	15,6%	15,5%	20,2%	4,3pp	4,5pp
Household necessities	13,2%		16,0%		2,8pp	
m/f	10,3%	14,2%	12,1%	17,3%	1,8pp	3,1pp
Furniture	9,6%		12,2%		2,6pp	
m/f	13,8%	8,2%	15,5%	11,1%	1,7pp	2,9pp
Food	1,5%		1,9%		0,4pp	
m/f	2,6%	1,1%	3,4%	1,4%	0,9pp	0,3pp

Table 1 shows that respondents already made an average of 48.1% of their clothing purchases online before the COVID 19 pandemic began. Since the beginning, this value has increased by 11.1pp to 59.2%. The product group with the second highest online share before the pandemic is electronics with 33.5%. A clear increase of 6.5pp can also be seen here due to the pandemic. Similarly, 31.2% of books have already been purchased online before the pandemic began, with a somewhat weaker increase of 4.5pp compared to electronics since the beginning of the pandemic. Cosmetics and drugstore articles (14.5%), household necessities (13.2%) and furniture (9.6%) were mainly bought stationary before the start of the pandemic. What is striking here is the change in cosmetics and drugstore articles (+4.5pp), which corresponds to the change in online book consumption, despite an initial value for books that is more than twice as high. Household necessities (+2.8pp → 16.0%) and furniture (+2.6pp → 12.2%) have only been bought marginally more online since the beginning of the pandemic. The lowest online share in consumption is found in food, at 1.5% before and 1.9% since the start of the pandemic. Looking at the overall picture, it can be seen that the share of online purchases has increased in all product groups. Furthermore, in the product groups where many purchases have already been made online before the start of the COVID 19 pandemic, the greatest change towards more online consumption can be observed since the beginning.

When comparing male and female respondents, men obtain more of their electronics (m: 46.6%, f: 29.3%) online. In line with the previous finding, the change since the start of the COVID 19 pandemic is greater for male respondents than for females (m: +11.2pp, f: +4.8pp). Similarly, for books (m: 39.7%, f: 28.4%), furniture (m: 13.8%, f: 8.2%) and groceries (m: 2.6%, f: 1.1%), the proportion of online purchases was higher among men than women. On the other hand, women are more likely to buy cosmetics and drugstore items (m: 11.2%; f: 15.6%), as well as household products (m: 10.3%, w: 14.2%) from online retailers. Only in the case of clothing (m: 46.6%, f: 48.6%) is the proportion of items purchased online about the same, and since the beginning of the pandemic (m: 59.5%, f: 59.1%) it is now minimally higher among men. Apart from clothing, electronics and groceries, the share of online purchases for all other product groups has increased more for women than for men, albeit only to an insignificant extent.

Figure 2: Consideration of brick-and-mortar retails in online purchasing (Own illustration)

In the wake of the Covid 19 pandemic and the associated exit restrictions, some stationary traders have set up online trading as an additional sales channel. However, only about one in ten survey participants supported the online variant of brick-and-mortar trade from their environment. Anyway 22%, and thus more than twice, are considering it. In this respect, too, men are more likely than women to make purchasing decisions in favour of stationary retail, as 34% of men are positive about this. The figure for women is 3pp less. More than a third (68%) of the respondents did not attach any importance to it. Similar structures can be seen in the gender comparison, with 68% of women and 66% of men paying little or no attention to this model.

42.5% of the respondents stated that their online consumption had not increased since the beginning of the pandemic. The data of the remaining 57.5% can be found in Figure 3. The reasons for increased online consumption explicitly stemming from the pandemic outbreak are "social distancing" and "fear of infection", which are given by about one in four respondents. A "wider range of products" (47.5%) and "price/performance transparency" (42.6%), which already applied to online retail before the start of the pandemic, are more decisive for the respondents to shop less in brick-and-mortar retail.

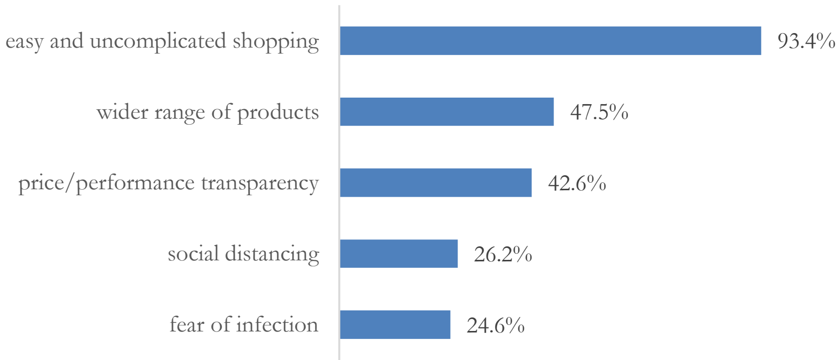

Figure 3: Reasons for increased online consumption of those respondents who stated that they have increased their online shopping since the beginning of the COVID 19 pandemic (Own illustration)

Due to the COVID 19 regulations, some shops had to close, and the wearing of surgical masks got mandatory. For this reason, shopping at brick-and-mortar retailers became less convenient. The reason "easy and uncomplicated shopping" represents a hybrid between explicitly COVID 19-related and already applicable to online retail before the pandemic. Therefore, almost all (93.4%) respondents gave this reason for their increased recourse to online retailers. The question of why especially students have increasingly shopped online since the start of the COVID 19 pandemic can thus be explained less in terms of the restrictions and fears arising purely from COVID 19, but mainly from the combination of the advantages of online retailing with the COVID 19-related restrictions, which makes brick-and-mortar retailing less attractive to consumers.

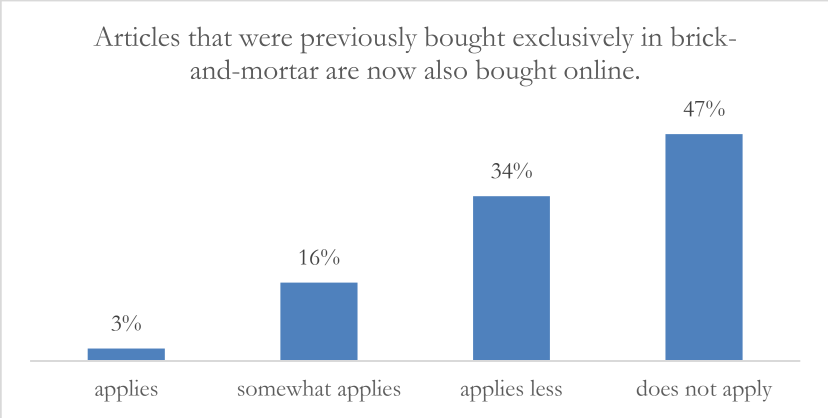

Figure 4: Switch to online retailing of items previously purchased exclusively in bricks-and-mortar stores (Own illustration)

In the context of this study, the change in purchasing behaviour is analysed more detailed. As described before, the trade volume of brick-and-mortar trade is steadily decreasing in contrast to online trade. Therefore, it is interesting to see whether the Covid 19 pandemic is also causing items to be bought online that were previously purchased exclusively by respondents from offline retailers. Overall, this hypothesis can be negated in principle, as 47% of the respondents' state that this statement does not apply to them, for another 34% it applies only less. Men are more consistent in rejecting this statement, as 59% of them hold a clear negative opinion, while only 43% of women take this clear stance. In summary, it can be said that customer behaviour has only changed to the extent that those products that were already purchased online are now increasingly purchased online.

In the past, the issue of sustainability has become increasingly important. However, the study shows that this is a split topic. Slightly less than half of the respondents attach importance to sustainability. Only 13% agree with the statement that they fundamentally value sustainability. It is striking that every second woman considers the statement at least true, while only 38% of the men agree.

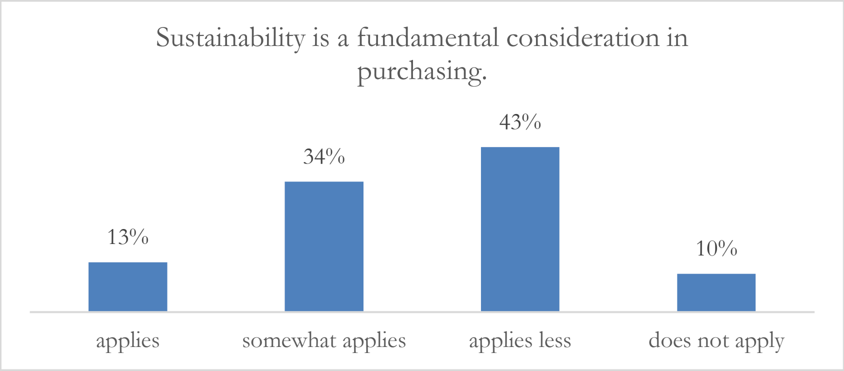

Figure 5: Sustainability as a fundamental consideration in purchasing (Own illustration)

The link to sustainability becomes even more meaningful when external variables such as price or quality are factored out. For this reason, the panel participants were also asked whether they have so far opted for sustainable products, given the same price and otherwise same conditions.

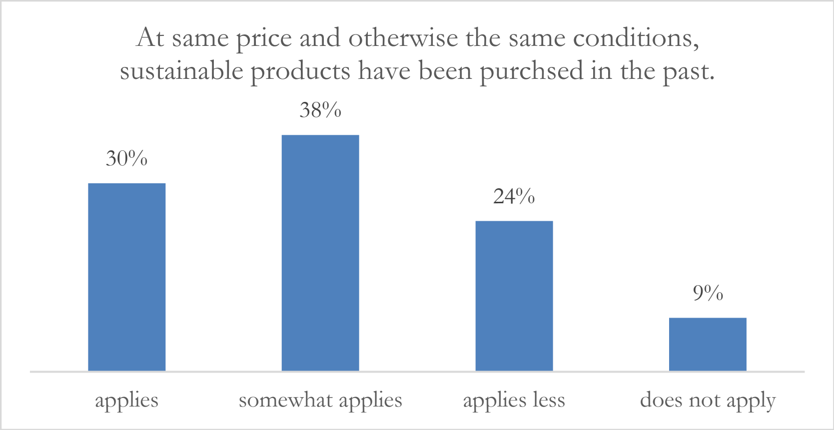

Figure 6: Impact of price and other conditions on sustainability (Own illustration)

The tendency to buy sustainable products under these premises is 21pp higher than in the previous question and thus 68% of all respondents apply at least somewhat. 30% of them discovered complete agreement in this, while a further 38% at least take the same direction. In addition, it shows that there is no significant difference between the genders. Looking at the opposing opinion, it can be said that only about every third participant would rather buy less or even not at all because of sustainability. It can be concluded that the purchase decision about sustainable products tends to depend on price and other conditions.

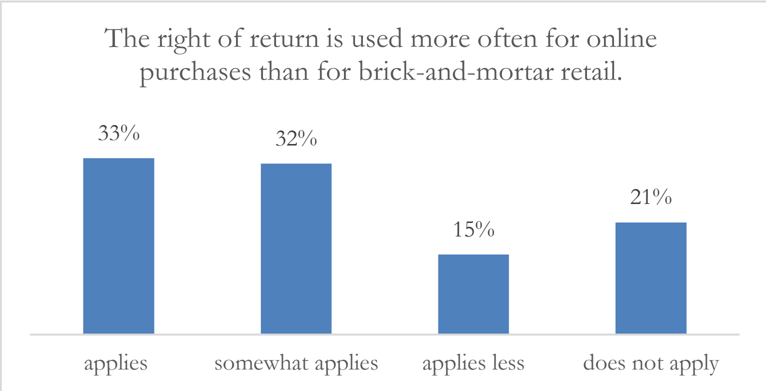

Figure 7: Returns (own illustration)

Purchasing via the internet is associated with high numbers of returns, which is why the question arises whether returns are more frequent with online purchases than in brick-and-mortar trade. Every third study participant agreed with this question. A further 32% of respondents were able to answer it rather in the affirmative. It is striking that 36% of women clearly agree with this thesis and are thus clearly more likely to return goods compared to 24% of men. Conversely, 28% of the men disagree, but only 18% of the women. Thus, women are more likely to participate in returns transactions.

5. Conclusion

Since the beginning of 2020, governments around the world have levied measures to contain the novel COVID 19 virus. These measures have changed public life in numerous ways. With the introduction of mandatory masks in places of sale and the call for social distancing, the question arises as to how these circumstances affect the shopping behaviour of consumers. In the context of this study, a written online survey was conducted with students from the Schwäbisch Hall campus of Heilbronn University. The aim is to research the adapted purchasing behaviour under the new situation towards increased online purchases as well as the inclusion of sustainability aspects in the purchasing decision. A trend towards increased online shopping has already emerged in recent years. The Covid 19 pandemic shows that consumption via online platforms has increased among respondents. The reasons for this are mainly due to the advantages of online trade and, to a weaker extent, due to the pandemic precautionary measures.

In summary, it can be said that consumers primarily order clothing, electronics, and books online. Across all product groups, online purchases have increased since the start of the COVID 19 pandemic, with those items that were already in greater demand online showing the greatest relative growth in the pandemic situation. The reason for this is mainly the fact of easy and uncomplicated shopping as a hybrid between the advantage of online trade and COVID 19-related measures. The willingness to support local brick-and-mortar traders who have switched to online sales in the wake of the pandemic is only present to a small extent. Therefore, the addressed theoretical aspects of the paper can mostly be confirmed by the empirical results. COVID 19-related measures are just another aspect to increase online shopping. However, the main trend of consumption on online platforms is mainly related to general advantages of online trade. Sustainability aspects in terms of supporting local shops have just a very low impact.

Almost half of the respondents stated that they generally attach importance to sustainability, with sustainable products being preferred if all other conditions would be equal.

Only students at Heilbronn University were chosen as the subject of this study. This results in a homogeneous group with regard to educational level, age and income. Therefore, it would be interesting to extend the study to several social groups.

The results of this study show an increased number of returns for online compared to brick-and-mortar purchases. The question of the impact on environmental sustainability in terms of CO2 emissions, recycling and scrapping of returned goods remains open.

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