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How much are young consumers in the Netherlands willing to pay for everyday used goods based on varying perceived risk?

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ABSTRACT

This study investigates the willingness to pay (WTP) for everyday used goods among young consumers in the Netherlands. A particular focus is given to how varying levels of perceived risk influence WTP. Circularisation and environmentally conscious markets are playing an ever-increasing role, thus understanding consumer behaviour in the used goods market can provide valuable insights for marketers and policymakers. The research collected 47 responses through Qualtrics on purchasing preferences and perceived risks associated with seven used goods. Open-ended survey questions and Likert scales captured data that was analysed through 3 paired samples t-tests. The findings show that higher perceived risk significantly reduces consumers' WTP for used goods. The switching ranges of consumers' WTP are also found to decrease as perceived risk increases. In this sample, it was found that consumers are willing to pay roughly 60% of the new price for low perceived risk used goods, between 40-50% of the new price for medium perceived risk used goods, and around 40% of the new price for high perceived risk used goods. The limited sample size, however, implies that results are not fully generalisable to the broader young Dutch population. This study highlights that future research requires a larger and more diverse sample size. Marketers should take away from this research that safety of use, functionality, and transparent information regarding the used good can mitigate perceived risks and perhaps offset the reduction of WTP that this brings.

Keywords: Consumer behaviour, Willingness to pay, Used goods

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CHAPTER 1 Introduction

This study talks about the willingness to pay for everyday used goods where the varying perceived risk of the goods is central. A used good, or second-hand good is any good with a previous owner or when the good sold is not new and whose financial value is lower than a new good (Roux & Korchia, 2006). Xue (2018) argues that used goods reduce waste generation and increase a good's lifecycle, which lowers resource consumption, energy use, and greenhouse gasses. However, Xue argues that the economic impacts are less clear-cut, with potential sales cannibalisation on the one hand and the other, sustainably conscious customers can be attracted, driving sales up again (Xue, 2018). Willingness to pay (WTP) can be understood as the maximum price a buyer is willing to pay for goods or services (Le Gall-Ely, 2009) and directly measures the valuation that a consumer places on a good concerning its utility (Estes et al., 2018). According to Mitchell (1999), there are many ways that risk manifests, such as inherent, handled, uncertainty, objective, subjective, etc. I will use Bauer's (1960) definition of risk as something that arises from unforeseen and uncertain negative consequences that come with the purchase of a product. The dynamic landscape that consumers find themselves in today is loaded with environmental and economic concerns regarding sustainability and affordability. The used goods market is a perfect middle ground, advocating and facilitating the circular economy that the European Union is pushing toward (EEA, 2020). In this context, WTP for used goods plays a key part in the understanding of the role of the used goods market in the circularisation of the European economy.

Previous research on the WTP of premiums on products made with recycled and ecologically friendly materials has been done by Essoussi (2010). The WTP in this article was found to increase when goods made with recycled or reused materials and a product with a higher functional risk had a lower WTP than products with a lower functional risk. The importance of risk levels cannot be understated, especially in the used goods market where asymmetrical information is rampant and causes uncertainty in the buyer (Dimoka et al., 2012). This uncertainty and perceived risk lead to varying valuations of the used goods, with price quality and time (how old the used good is) being especially important (Sihvonen, 2016). Focussing more on used goods, in a study made by Pretner (2021), it was found that second-hand hoodies had a lower WTP than new hoodies, however, WTP increased with verified positive environmental information regarding the hoodie. Despite the fact that the lower WTP clearly indicates a lower perceived quality of the used goods, the increased

awareness gives consumers a “positive feeling of “doing the right thing”, making a positive contribution to a common societal challenge.” (Pretner, 2021, p. 3).

This study will replicate the process of Essoussi (2010) but focus on used goods only, rather than (new) goods which were made with reused or recycled materials. The goal of the study is to show that the results will be directly inverted, with the WTP for used goods being lower than for new goods. Previous research has been done regarding the WTP for used goods by researchers such as Pretner (2021) this research should show a similar correlation, namely that WTP is lower for used goods than new goods. I roughly combine the two papers to explore the untouched topic of to what extent the WTP differs based on varying levels of perceived risk of the used goods. In order to obtain a greater understanding of this field, it is important to consider differences in the type of product, type of usage, and the switching behaviour from new to used goods. This leads to the following research question:

How much are young consumers in the Netherlands willing to pay for everyday used goods based on varying perceived risk?

In order to guide this research paper, two theoretical research questions serve as the basis for the theoretical framework, along with 3 empirical research questions to guide the data and results sections of this paper.

Theoretical research questions:

1. Why do consumers have a lower WTP for used goods than new goods?
2. What factors influence perceived risk during the purchase of a good?

Empirical research questions:

1. To what extent do used goods have the same WTP as new goods?
2. To what extent does perceived risk play a role in WTP for used goods?
3. To what extent is switching behaviour dependent on perceived risk?

The research targets a sample of 47 respondents, all living in the Netherlands to explore the WTP for everyday used goods. We gain initial insights but acknowledge that generalising findings to the entire population will be limited due to the small sample size. A convenience sampling method is adopted to collect responses for the survey and includes

elements of snowball sampling to increase the number of participants as much as possible to get more reliable results. However, due to time constraints, fewer responses were collected than hoped for, thus, future research should aim, primarily, to include a larger and more diverse sample to enhance the representativeness in order to generalise results better to the population of young consumers in the Netherlands. Initially, the research focussed on all consumers in the Netherlands, however, since most of the sample will be participants who are in my professional and academic network, students will make up the majority, thus a focus on young consumers was chosen. Young is defined as below the age of thirty. The participants are an even mix of native Dutch and internationals.

Participants will be asked to fill out a self-designed questionnaire, although inspiration is taken from Essoussi's (2010) paper in the making of the questionnaire. To analyse the data, similar to the Essoussi (2010) paper, this study will use three paired samples t-tests. The first will test the difference between the WTP of the new and used goods, the second will test the difference between the WTP of two used goods and the third will test the price switching range for the WTP of two used goods. Used goods are expected to have a lower WTP than new goods, with there being a significant difference in the means between the two used goods as well. Furthermore, the perceived risk of the goods should have a negative impact on WTP, with higher-risk goods lowering the WTP. Lastly, it is expected that the switching range for high perceived risk used goods is smaller than the switching range for low perceived risk used goods.

In order to achieve these outcomes, a positive t-statistic for each used good, which is statistically significant at the 5% level, will have to be achieved for the first test. In order to interpret the second and third tests, we need a t-statistic which is statistically significant at the 5% level for each used good. This study aims to shed light on the importance of risk classification within WTP, which will help marketers and policymakers to sell products and implement policies more successfully. Furthermore, gaining more insights into the relatively untapped market of used goods should help promote sustainable and circular consumption initiatives that can aid in environment conservation.

CHAPTER 2 Theoretical Framework

The research done on this topic is relatively broad and goes back to the 1960's, however, it has stayed quite theoretical in nature. I aim to bridge the gap between theory and practice by combining the topics of WTP and perceived risk within the used goods research area. In order to get a better grasp of these topics, it is important to dive deeper into the concepts of WTP and perceived risk and how they have been discussed by previous studies.

2.1 Why do consumers have a lower WTP for used goods than new goods?

The used goods market has been studied with reasonable depth, especially since the rise of online marketplaces such as eBay (US and UK markets) and Marktplaats (Dutch market). eBay's active user count is over 135 million (Statista) and Marktplaats has nearly 11.5 million users (Marktplaats) out of the 17.7 million inhabitants. The used goods market is thriving globally, with current sales of the used apparel market surging to \$197 billion and estimations putting 2028 global sales of used apparel around \$350 billion (GlobalData). According to Ferraro (2016), 83% of used clothes buyers partake for fashion reasons, not due to economic or environmental reasons. However, environmental reasons are important, for example, in a study on psychological distance and willingness to buy used goods online, Liu (2020) found that people who live close to environmental pollution are more aware of the effects of their purchasing behaviour and thus are more willing to participate in the buying of used goods online.

The main advantages of used goods include financial benefits, a greater value for money, and reduced environmental impact (Hur, 2020; Calvo-Porrall et al., 2024; Williams, 2017). Castellani, Sala, and Mirabella (2015) argue that reuse might be a more preferred alternative to current waste management, implying that a broader and greater used goods market promotes efficiency and helps reduce environmental impacts. However, these advantages do not translate into a higher WTP, as Ge (2023) argues that used goods have poor after-sales service, false promotion, and poor product quality. Furthermore, in the online marketplace for used goods, overall trust in the websites is low, which reduces WTP (Ge, 2023). In a study on the automotive industry, Habib (2021) found that with the introduction of higher quality after-sales service, brand loyalty and credibility can be improved and have a significant, positive, impact on WTP to buy used goods. With the previous literature in mind,

we have to test whether or not our sample will have different WTPs for used and new goods, leading to our first hypothesis.

Hypothesis 1: There is no difference in WTP between new and used goods.

There is a great difference between buying used goods online or in a store, such as not being able to touch, see, or smell a product, and having to rely only on a description and pictures of the goods. This creates product uncertainty, which results in “difficulty in predicting the outcome of an online transaction due to seller-related and product-related information asymmetry” (Dimoka et al., 2012). The asymmetry of information from the principal-agent problem is highly applicable in the online used goods marketplace. If a seller can signal quality and reduce uncertainty, it is possible to foster trust (Scott et al., 2012), which can increase the buyer’s perception of the reputation and condition of the good (Shen et al., 2011).

Coming back to the initial question of why used goods have a lower WTP for used goods than new goods, there are several variables that play a role. Product uncertainty regarding quality, life expectancy, and safety are among the most important factors in why consumers have a lower WTP for used goods (Sihvonen, 2016). Furthermore, as Habib (2021) found, the after-sales service and warranty play a large role as well. Lastly, Wu (2023) argues that the prestige of owning new goods can explain why used goods do not have the same WTP, although this study was performed in China, where status plays a larger role than in the West.

2.2 What factors influence perceived risk during the purchase of a good?

Sticking with Bauer’s (1960) definition of risk, the perceived risk that will be used for this research is something that arises from unforeseen and uncertain negative consequences that consumers expect or perceive will come with the purchase of a product based on subjective beliefs. There are five types of risk, namely, financial risk, performance risk, physical risk, psychological risk, and social risk, which form one overall perceived risk (Kaplan, Szybillo, and Jacoby, 1974). First, financial risk pertains to the possible money that could be lost or be required to make a good function normal (Garner, 1986). Secondly, performance risk is the situation where a product might not function or work as promised

(Kim and Lennon, 2000). Thirdly, physical risk pertains to the consequences of a malfunctioning good, usually involving harm to the customer (Roselius, 1971). Fourthly, psychological risk is mental distress that might arise from the failure of the bought good (Jacoby and Kaplan, 1972). Fifth, social risk refers to outcasting or disparagement that might come along with the purchase of a particular good (Dowling and Staelin, 1994). It is important to use a variety of goods in this research so that all aspects of perceived risk are covered.

Overall, online shopping is perceived as more risky than in-store shopping (Bezes, 2016). However, the perceived risks can be reduced by creating a pleasant and positive online shopping experience, although reducing perceived risk will always be more difficult for online stores than physical stores (Samadi and Yaghoob-Nejadi, 2009). Online stores can also lower perceived risk by providing risk-reliever strategies, such as secure checkouts, communication media, online assurance marks, and providing the seller's record (Fang, 2014). Furthermore, Fang (2014) also argues that buying from foreign online stores is perceived as more risky than from online stores in your home country. Moreover, online security and privacy play a huge role in perceived risk, along with factors such as how long a consumer has been purchasing online, with consumers with more experience shopping online having lower perceived risk than those who do not (Miyazaki, 2001). Lastly, due to the shift in perspective from the prejudice-free generations, buying used goods, and especially clothing, has become cool and trendy, thus the perceived risks, which should drive down WTP, are being balanced by the change in consumer behaviour (Hristova, 2019).

A further distinction between the type of transaction has to be made, namely, whether we are talking about a good or a service. Overall, a service is considered more risky than a good due to its intangibility, heterogeneity, perishability, and inseparability (Mitchell, 1993). It is difficult to measure and review a doctor's treatment (service), whereas we can more easily monitor and measure how effective a pill (good) is. However, this conclusion is very product-specific and consumers may deem certain goods riskier than certain services (Cabanero, 2007). Having a distinction between the goods is therefore key, which leads to our second hypothesis:

Hypothesis 2: Consumer WTP for used goods is product-specific.

Other than the types of risk, the underlying factors that increase or reduce perceived risk are also important to highlight. Self-sufficiency and independence were found to be positively related to risk-taking and rigidity to be negatively related, according to Kogan (1964). Perceived risk can be higher with lower self-esteem, risk-averse people, and rigidity, however, perceived risk can be negatively related to anxiety measures (Schaninger, 1976). However, risk aversion does not always mean that the WTP is lower for a given good, for example, in a study about insurance, Eisenhauer (2004) found that risk-averse buyers of insurance had a higher WTP. In a study on online buying in China, it was found that perceived risk is relatively unresponsive to reputation, disposition to trust, uncertainty avoidance, and subjective norm, however, interaction caused perceived risk to decrease (Sun, 2010). In a similar study about trust in new technologies, Siegrist (2005) found that perceived risks are reduced with high levels of trust and confidence, whereas low levels had the opposite effect. The study included 388 people from Switzerland and also found that women, overall, perceived more risk than men (Siegrist, 2005). Brand loyalty, money-back guarantee, store image, shopping, and expert advice are some of the best ways of reducing perceived risk, according to Derbaix (1983).

The previous research above was done on the consumption of new goods and it is generally accepted that used goods have a higher perceived risk than new goods. The assumption has been made that the underlying emotional and psychological reasons that influence perceived risk are similar, if not the same, for new and used goods. In order to test if perceived risk affects WTP, the third hypothesis was created.

Hypothesis 3: The level of perceived risk influences consumer WTP of used goods.

Lastly, knowing the reasons why consumers would switch from buying new goods to used goods, Alam (2015) finds that price is the most important factor in the consumer's decision of whether to buy new or not. This begs the question of at what price do consumers make this switch. Switching behaviour in this study is the occurrence when consumers will buy used instead of new goods. Therefore, in order to test the impact of perceived risk on the range of the WTP for used goods, the fourth and final hypothesis was created.

Hypothesis 4: Switching behaviour in WTP is stronger for high perceived risk versus low perceived risk used goods.

CHAPTER 3 Data & Methodology

3.1 Data

The data used in this research is collected through an online Qualtrics survey with a convenience and snowball sampling method within the researcher's network. This method was chosen to utilise time as effectively as possible, however, this came at the cost of introducing some biases due to the fact that the sample was not randomly selected. This can affect the representativeness of the sample and generalisability to the population of the Netherlands. Respondents were not forced to take the survey, could have opted out at any moment and the surveys were filled in anonymously to comply with ethical regulation.

The age of respondents varied from 18 to 64, with the majority being between the ages of 18 and 24. The respondents were 68% male and 32% female respondents, of which the most common level of education was HBO/university, namely 47%, and high school and Master's education both being roughly a quarter of the sample. The annual income was not too high, as could have been expected, where roughly half earns below €25,000, a quarter earns between €25,000-€50,000, 17% earns between €50,000-€100,000, only 2% makes between €100,000-€200,000 and 6% prefers not to say.

The survey starts off by asking for general background information, such as gender, age, education level, and annual income (measured in euros). The respondents were also asked to categorise the seven everyday goods into low, medium, or high perceived risk if bought used. Further information on how often used goods are bought by the respondent was asked in a 5 choice question, ranging from never to always. Lastly, respondents were asked to rank five risk factors of buying used goods based on how important they are to them (hygiene, return policy, warranty, safety of use, and functionality).

The main part of the survey was made up of seven questions, each asking the WTP for the everyday goods compared with the price at which you buy them new, in euros. The everyday goods were chosen to cover a variety of types of goods and prices. The book and broomstick cover the low perceived risk and cheaper items, where functionality likely plays the largest role in decision-making. The tennis racket, backpack, and shoes represent the medium perceived risk where the price is higher. A trade-off between performance, brand loyalty, and cost-saving plays the largest role for this level, thus the switching behaviour will

be most relevant in these used goods. The car tire and climbing harness represent the high perceived risk, where background information and inspection play a large role in determining WTP.

The respondents were informed that the used goods would have visible wear and tear but are overall functional without damage that would impair normal use, as you would find the average used good's state in. Each question had five parts to it; the price at which the respondent would always/almost always/sometimes/almost never/never buy the used good. A slider allowed respondents to indicate the price they would be WTP, going from €0 to the new price of the good (€10 for a book, €10 for a broomstick, €200 for a tennis racket, €100 for a pair of shoes, €100 for a backpack, €200 for a car tire and €100 for a climbing harness). For book and broomstick, the slider allowed for 1 decimal point, whereas for the other goods only whole numbers were available. The seven questions from the survey will be included in Appendix A.

The Qualtrics questionnaire received a total of 73 respondents, of which 9 had to be excluded from the analysis as the respondents were not from the Netherlands. A further 17 responses were incomplete, thus 26 responses were deleted from the data set, which left 47 usable responses that were analysed in this research paper. For the main part of the data, three new variables were created in order to run the analysis. Firstly, the *average WTP* variable was needed for each used good, which was created by taking the mean of the five responses of each used good per respondent. The *average WTP* is measured in euros. Secondly, the maximum prices of the goods were different which meant direct comparison of the means is impossible. To overcome this, the results for each answer were standardised to 100 by dividing the respondent's WTP price of the used good by the new price of the good and multiplying this by 100. This gave us the *relative WTP* variable for each used good per respondent, which is measured in euros. Lastly, in order to calculate the switching range, the difference between the maximum and minimum WTPs for each used good was taken and then standardised as well to allow comparisons. This gave us the *switching WTP* variable for each used good, measured in euros. Below are three tables of each variable's descriptive statistics.

Table 1. Descriptive statistics of the variable *average WTP*

WTP variable	Obs	Mean	Std. dev.	Min	Max
<i>Average book</i>	47	6.23	1.47	2.2	9
<i>Average broomstick</i>	47	5.36	1.77	0	7.9
<i>Average tennis racket</i>	47	109.69	33.64	36	170.4
<i>Average shoes</i>	47	38.65	23.13	0	84.4
<i>Average backpack</i>	47	53.35	17.19	17.6	84.8
<i>Average car tire</i>	47	81.04	55.66	0	172.4
<i>Average climbing harness</i>	47	44.35	27.82	0	90.2

Table 2. Descriptive statistics of the variable *relative WTP*

WTP variable	Obs	Mean	Std. dev.	Min	Max
<i>Relative book</i>	47	62.29	14.66	22	90
<i>Relative broomstick</i>	47	53.64	17.72	0	78.8
<i>Relative tennis racket</i>	47	54.85	16.82	18	85.2
<i>Relative shoes</i>	47	38.65	23.13	0	84.4
<i>Relative backpack</i>	47	53.35	17.19	17.6	84.8
<i>Relative car tire</i>	47	40.52	27.83	0	86.2
<i>Relative climbing harness</i>	47	44.35	27.82	0	90.2

The results of Tables 1 and 2 are more or less in line with what was predicted, with Table 1 showing higher means for goods that have higher new prices, such as *average car tire* or *average tennis racket*. Table 2 is also as expected, with the low perceived risk goods having a higher WTP, such as the *relative book* with a mean of 62.29, compared to the high perceived risk goods, such as the *relative car tire* with a mean of 40.52. These results hint at the possible answer to the main research question, namely that consumers are willing to pay roughly 60% of the new price for low perceived risk used goods, between 40-50% of the new price for medium perceived risk used goods and around 40% of the new price for high perceived risk used goods. However, this has not taken into account the differences between the means of the WTP for used goods across different perceived risk levels, thus further t-tests are run.

Table 3. Descriptive statistics of the variable *switching WTP*

WTP variable	Obs	Mean	Std. dev.	Min	Max
<i>Switching book</i>	47	51.17	19.63	6	99
<i>Switching broomstick</i>	47	49.47	23.52	-10	99
<i>Switching tennis racket</i>	47	47.10	18.9	20	99.5
<i>Switching shoes</i>	47	38.36	24.83	-4	99
<i>Switching backpack</i>	47	40	23.37	-50	99
<i>Switching car tire</i>	47	30.63	29.13	-55	100
<i>Switching climbing harness</i>	47	14.11	14.01	-30	50

The most noteworthy aspect can be found in Table 3, where the minimum value of the switching range is negative for *switching broomstick*, *switching shoes*, *backpack*, *switching car tire*, and *switching climbing harness*. This could be explained by a respondent believing that a higher price for a used good indicates quality. For example, paying 20 euros for a used car tire does not signal a safe, functional car tire, whereas 150 euros might. Therefore, the respondent's answers are inverted with what was the aim of this research. Otherwise, the results from Table 3 are also generally in line with what was expected, where the mean of *switching book* in this instance is 51.17, whereas the mean of *switching climbing harness* is 14.11, which shows that the average switching range is higher in low perceived risk goods, compared to high perceived risk goods.

Furthermore, it was brought to attention that some respondents would never buy some of the goods second-hand or never buy it under any circumstance, thus an answer of 0 was filled in. For example, for used shoes or climbing harness, some of the respondents would only accept a price of 0 in order to acquire it. This could have skewed some of the results closer to 0 than would have been predicted. However, these are considered legitimate data points as they reflect part of the population who do not buy used goods. If a larger sample was collected, perhaps this trend would be more visible and perhaps more of the young Dutch consumers have this WTP, but are underrepresented in the study.

To conclude, for the main WTP data used in the analysis, the new price of the good, the *average WTP* of the used good, *standardised WTP* of the used good and *relative WTP* of the used good were used.

3.2 Methodology

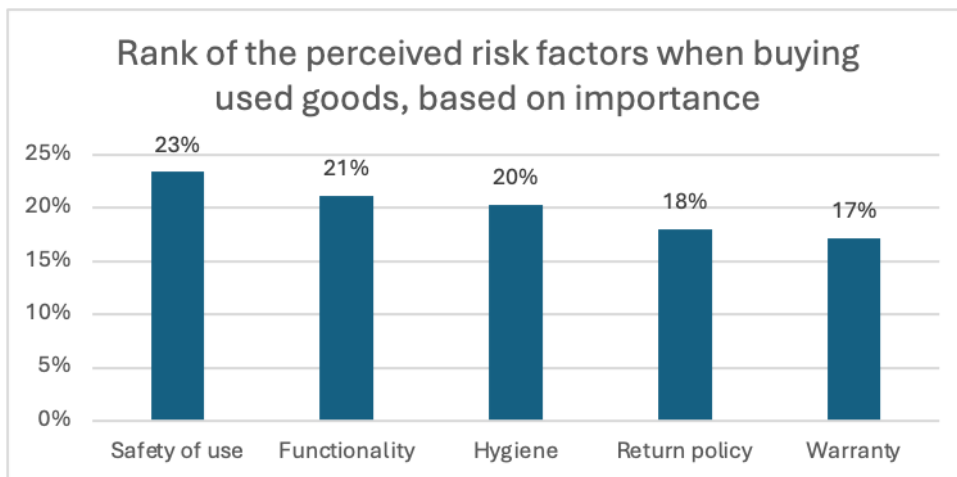
In order to check whether the WTPs of the used goods differ significantly, three paired samples t-tests were run in the statistical software STATA 17.0 MP Parallel Edition. A paired samples t-test is a statistical method that compares the means of two related groups to test if they are different. The paired samples test is relevant in this case as each respondent provided a WTP for each used good, thus creating a set of paired measurements. This accounts for within-subject variability, which controls for individual differences in the WTP response and also leverages the pairing of observations which increases statistical power.

The first paired samples t-test will compare the means of the new price of the good and the average WTP of the used good. The second paired samples t-test will compare the means of the standardised WTP in a pairwise comparison, in which each good is juxtaposed with the other six goods. This pairwise comparison leads to 21 combinations of paired t-tests. The third paired samples t-test will compare the means of the relative WTP, utilising the same 21 pairwise comparisons as test two.

CHAPTER 4 Results & Discussion

4.1 Results

Figure 1. The respondents' rankings of perceived risk factors based on importance



The respondents ranked the perceived risk factors when buying used goods as can be seen in Figure 1. Safety of use was found to be the most important, with 23% of respondents ranking it first. Especially with regards to the high perceived risk used goods, such as the car tire and climbing harness, the consequence of a malfunction explains the prioritisation of safety. Second was functionality, with 21% of responses, which is more relevant for medium risk goods such as tennis racket and shoes, although, for broomstick, car tire, and climbing harness functionality is also tied to its effectiveness. Third was hygiene which is mostly associated with shoes and backpack. Fourth and fifth were similar, both in terms of rank and type of factor, with both having to do with the consequences of a non-functioning used good. Return policy and warranty will be more important in medium and high-perceived-risk used goods as more money is at stake. Lastly, we can infer that the sample is a little more risk-averse, as safety is ranked higher than functionality. Moreover, we can see the sample cares highly about the cleanliness of personal items and is less focused on mitigating financial risk.

4.1.1 To what extent do used goods have the same WTP as new goods?

Table 4. Paired samples t-test of the WTP of new vs used goods

Type of good	t-statistic	Statistical significance
<i>New vs used book</i>	17.6	0.000***
<i>New vs used broomstick</i>	17.9	0.000***
<i>New vs used tennis racket</i>	18.4	0.000***

<i>New vs used shoes</i>	18.2	0.000***
<i>New vs used backpack</i>	18.6	0.000***
<i>New vs used car tire</i>	14.7	0.000***
<i>New vs used climbing harness</i>	13.7	0.000***

Note: The p-values are reported as follows: * < 0.1, ** < 0.05, *** < 0.01.

The results of the paired samples t-tests are displayed and discussed in this section, with tables 4, 5, and 6 summarising the results. Firstly, Table 4 shows the results of the paired samples t-test of the WTP of new goods versus used goods. We can see that the t-statistic is both positive and large for each t-test and that the p-value is less than 0.01 for each result. This suggests that there is a statistically significant difference between new and used goods, implying we reject the null hypothesis of hypothesis 1, which states that new and used goods do not have the same WTP. Tennis racket, shoes and backpack have a higher t-statistic, 18.4, 18.2 and 18.6 respectively, which implies they had the difference greatest between new and used WTP. Car tire and climbing harness had the lowest t-statistic, 14.7 and 13.7 respectively, which implies they had the least difference between new and used WTP.

4.1.2 To what extent does perceived risk play a role in WTP for used goods?

Table 5. Paired samples t-test of the difference in WTP of two different used goods

Pairings of used goods	t-statistic	Statistical significance
<i>book vs broomstick</i>	3.3	0.002***
<i>book vs tennis racket</i>	-21.5	0.000***
<i>book vs shoes</i>	-9.7	0.000***
<i>book vs backpack</i>	-19.6	0.000***
<i>book vs car tire</i>	-9.3	0.000***
<i>book vs climbing harness</i>	-9.5	0.000***
<i>broomstick vs tennis racket</i>	-21.7	0.000***
<i>broomstick vs shoes</i>	-10.1	0.000***
<i>broomstick vs backpack</i>	-20.0	0.000***
<i>broomstick vs car tire</i>	-9.4	0.000***
<i>broomstick vs climbing harness</i>	-9.8	0.000***
<i>tennis racket vs shoes</i>	16.6	0.000***

<i>tennis racket vs backpack</i>	14.6	0.000***
<i>tennis racket vs car tire</i>	4.5	0.000***
<i>tennis racket vs climbing harness</i>	16.0	0.000***
<i>shoes vs backpack</i>	-5.6	0.000***
<i>shoes vs car tire</i>	-6.4	0.000***
<i>shoes vs climbing harness</i>	-1.5	0.138
<i>backpack vs car tire</i>	-3.7	0.001***
<i>backpack vs climbing harness</i>	2.4	0.020**
<i>car tire vs climbing harness</i>	6.0	0.000***

Note: The p-values are reported as follows: * < 0.1, ** < 0.05, *** < 0.01.

From Table 5, we can see that almost every pairwise comparison of *relative WTP* for each used good is statistically significant at the 95% confidence level, except *shoes vs climbing harness*, as this is the only result with a p-value greater than 0.1. *Book* showed large, negative t-statistics when compared with goods such as *tennis racket*, *shoes*, *backpack*, *car tire* and *climbing harness*, ranging from -21.5 to -9.3, which indicates that *book* has a significantly lower mean than those items. Similarly, *Broomstick* showed large negative t-statistics for all those items as well, ranging from -21.7 to -9.4, which indicates that also *broomstick* has a significantly lower mean than those items. Conversely, *tennis racket* showed a large, positive t-statistic compared to *shoes*, *backpack* and *climbing harness*, which indicates that *tennis racket* has a significantly higher mean than those items. *Shoes* has a small, negative t-statistic with *backpack* and *car tire*, which indicates that it has a slightly smaller mean than those items. Lastly, *backpack* and *car tire* have a small, positive t-statistic, implying their means are slightly larger than *climbing harness*.

Overall, the findings underscore statistically significant variations in the mean values between the pairwise comparisons of used goods, thus hypothesis 2 is supported, where WTP for used goods are product specific. Moreover, the results show that for low perceived risk used goods, such as book and broomstick, the WTP is lower, compared to a higher perceived risk used good. This also supports hypothesis 3, however, in quite the opposite way as was expected. It was expected that people would be willing to pay more for used goods that have a low perceived risk and that with increased perceived risk, the WTP would go down.

4.1.3 To what extent is switching behaviour dependent on perceived risk?

Table 6. Paired samples t-test of the difference in price switching ranges of the WTP of two different used goods

Pairings of used goods	Mean difference	t-statistic	Statistical significance
<i>book vs broomstick</i>	1.70	0.6	0.520
<i>book vs tennis racket</i>	4.07	1.4	0.157
<i>book vs shoes</i>	12.81	3.4	0.002**
<i>book vs backpack</i>	10.94	2.9	0.006**
<i>book vs car tire</i>	20.54	4.3	0.000***
<i>book vs climbing harness</i>	37.06	12.3	0.000***
<i>broomstick vs tennis racket</i>	2.37	0.8	0.431
<i>broomstick vs shoes</i>	11.11	3.3	0.002**
<i>broomstick vs backpack</i>	9.46	2.3	0.029*
<i>broomstick vs car tire</i>	18.84	3.9	0.000***
<i>broomstick vs climbing harness</i>	35.36	10.2	0.000***
<i>tennis racket vs shoes</i>	8.73	2.8	0.008**
<i>tennis racket vs backpack</i>	6.88	1.9	0.062*
<i>tennis racket vs car tire</i>	16.47	4.0	0.000***
<i>tennis racket vs climbing harness</i>	32.99	10.6	0.000***
<i>shoes vs backpack</i>	-1.67	-0.4	0.683
<i>shoes vs car tire</i>	7.73	1.9	0.063*
<i>shoes vs climbing harness</i>	24.26	7.3	0.000***
<i>backpack vs car tire</i>	9.76	3.1	0.002***
<i>backpack vs climbing harness</i>	25.83	9.1	0.000***
<i>car tire vs climbing harness</i>	16.52	5.5	0.000***

Note: The p-values are reported as follows: * < 0.1, ** < 0.05, *** < 0.01.

From Table 6, we can see that almost all pairwise comparisons are statistically significant, except for *book vs broomstick*, *book vs tennis racket*, *broomstick vs tennis racket* and *shoes vs backpack*, whose values are above 0.1. There is a general trend for *book*, *broomstick*, *tennis racket*, *shoes* and *backpack*, namely that as the used goods are being compared with an increase in perceived risk, the mean difference increases as well. For example, *book vs shoes* has a mean difference of 12.81, whereas *book vs climbing harness* has a mean difference of 37.06. Furthermore, *broomstick vs shoes* has a mean difference of 11.11,

whereas *broomstick vs climbing harness* has a mean difference of 35.36. The switching range for *broomstick* here is relatively larger when compared to *climbing harness* than it is for *shoes*, which means that the switching ranges decrease with increased perceived risk. This supports the statement that switching behaviour in WTP is stronger for high perceived risk versus low perceived risk used goods, thus hypothesis 4 is supported.

Tennis racket, shoes and *backpack*, who were all initially classified into the medium perceived risk category, have rather differing means when compared to other used goods. The participants of the survey categorised shoes as a high perceived risk, which explains why it has the largest mean out of the three when compared to *book, broomstick, and tennis racket*. Lastly, shoes vs backpack was the only pairwise comparison that resulted in a negative mean, however, due to its p-value being larger than 0.1, we can ignore this result.

4.2 Discussion

The results above shed light on the consumer's WTP for everyday used goods and their switching ranges. The significant differences in WTP across the used goods pairwise comparisons suggest that consumers value the items differently. This is in line with Pretner's (2018) study on hoodies, where the WTP was lower for used hoodies. Furthermore, WTP was product-specific, which implies that underlying factors such as safety of use and functionality play a role. These tie in with the types of risk that Kaplan, Szybillo, and Jacoby (1974) discussed, namely financial, physical, and performance risk. Thirdly, the perceived risk impacted the WTP significantly, where a low perceived risk used good had a low WTP and a high perceived risk used good had a high WTP. This was not predicted earlier in the research and goes against the result of Essoussi (2010), who found that WTP is lower for low-functional-risk goods and higher for high-functional-risk goods. Perhaps the distinction between functional and perceived risk can explain this difference, however, more research would have to be done in this area. Lastly, the switching ranges of the WTP for the used goods were found to decrease as perceived risk increased, which is in line with Essoussi's (2010) findings on switching behaviour.

Safety of use and functionality were ranked first and second in terms of perceived risk factors, which ties in closely with Essoussi's (2010) research, which focussed on functional risk only. The parallel between the papers increases the validity of the inference that

reliability and performance play perhaps the greatest role in WTP for used and recycled goods.

The research highlights that more specific information about the used goods is key for the success of a purchase. For example, car tires and climbing harnesses can be sold at a more premium price, if safety of use is exemplified and shown. Finding the right price will be key, however, as switching behaviour was found to be volatile in these goods. On the other hand, books and broomsticks can be sold at a much lower price, where functionality and return policy might play a larger role. For medium-risk goods, a balance would have to be found between highlighting functionality and hygiene and finding the right price range, depending on which type of good it is. Furthermore, the unfamiliarity with buying used goods such as car tires or climbing harnesses can cause buyers to place higher value on other factors than price. Used goods such as books, broomsticks, shoes, and backpacks have been sold for much longer than tennis rackets, car tires, and climbing harnesses, thus consumers have less previous knowledge of the risks. Furthermore, having more items of clothing in the research would have allowed a greater view into consumers' WTP for goods they are highly familiar with, where we most likely would have observed a higher WTP, as Hristova (2019) found. Overall, the results imply that retailers, marketers, and private sellers of used goods should place a great focus on reducing perceived risk through displaying safe-to-use and highly functional used goods, which is in accordance with Scott et al's (2012) findings. Further improvements in brand image, such as Derbaix (1983) and Habib (2021) proposed could increase WTP, such that it offsets perceived risk reduction in WTP.

This research did not consider product branding, thus brand image and brand loyalty were held constant, though this is almost never the case in the real world. A used good with a strong brand image can offset the perceived risk of the good, thus driving up WTP, where this study would not find a difference. Knowing which type of consumer you are targeting is also crucial. For example, a risk-averse consumer will, on average, attach a higher perceived risk to goods, which has to be accounted for. A firm could use discounts or simply target other groups of consumers to stay economically profitable, as long as this is not financially prohibitive. This is another field of study that must be explored before conclusive steps can be taken in companies. Another key aspect of the study was the aspect that WTP is not the same as what people actually spend in the stores. Factors such as product availability, in-store advertising, and brand loyalty all affect the consumer's decision-making, which were not

taken into account in this study and are warranted for more accurate predictions of WTP of used goods.

The study provides valuable insight into the WTP of used goods with statistically significant results, however, the scope of the study was limited mainly to perceived risk and its impact on WTP. The sample size and demographic are small and consist mainly of young people who have a smaller budget, which might skew the results towards lower WTP. A richer sample where the average annual income would be closer to the real Dutch population, could show that brand loyalty and hygiene play larger roles. Collecting a more diverse, representable sample through longitudinal design and considering more factors would improve the validity and representativeness of this study.

CHAPTER 5 Conclusion

The purpose of this study was to explore consumers' WTP for used goods with varying perceived risks. This study aimed to uncover underlying factors that influence consumer's decision making with regards to the used goods market. The research was done to shed more light on the growing circularisation and sustainable consumption patterns that increase the popularity of the used goods market. Understanding this consumer behaviour is important for marketers and policy makers, who can bring about a more sustainable economy, while at the same respond to market demands and profitability. Therefore, the question that was studied in this paper was "How much are young consumers in the Netherlands willing to pay for everyday used goods based on varying perceived risk?".

Coming back to the theoretical research questions, we find that consumers have a lower WTP for used goods than new goods for a variety of reasons, namely, product quality uncertainty, life expectancy and safety of use. We also find that there are plenty of factors that influence perceived risk during the purchase of a good, for example, brand image, brand loyalty, money back guarantee and expert advice. As we moved on to the empirical research questions, we found that used goods have the same WTP as new goods to no extent. In all used goods, it was found, with statistical significance that the WTP of used goods was lower than new goods. Furthermore, it can be said that perceived risk plays a significant role in WTP for used goods, however not quite as expected. It was predicted that goods with high perceived risk would have a low WTP, yet the opposite was found in the results. Lastly, the extent to which switching behaviour is dependent on perceived risk is large, where it was found that high perceived risk goods have a smaller switching range than goods who have low perceived risk. Taking these theoretical and empirical questions and answers into account, we can answer the main research question.

To answer the main research question, consumers are willing to pay roughly 60% of the new price for low perceived risk used goods, between 40-50% of the new price for medium perceived risk used goods, and around 40% of the new price for high perceived risk used goods. The t-tests confirm statistically significant differences between the levels of perceived risk. Controlling for perceived risk has shown to be of great importance in measuring WTP.

The findings have highlighted what steps must be taken next in order to understand the growing used goods market both in the Netherlands and globally. The impact of brand image/loyalty are of particular notability and worth exploring, where the perceived risk could be offset by a strong brand image. Other significant factors that future research should focus on include risk aversion and the type of good. Especially the used clothing market was unexplored in this study as it is perhaps the largest type of used goods market and also plays a large role in both the battle against climate change and the circularisation of economies.

Looking critically at the research, firstly, it can be said that a greater and more diverse sample would improve the generalisability of the population of young Dutch consumers. Secondly, the respondents might have been unfamiliar with buying some of the used goods such as shoes, car tires, and climbing harnesses, thus more familiar goods could have been chosen. Thirdly, the research did not take into account outside factors such as brand loyalty/image, which affect consumption patterns in the real world to a great extent. Lastly, this research failed to address the problem that WTP does not always represent what people spend in stores, where factors such as product availability and store advertising play a large role.

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APPENDIX A Survey questions

1. What gender do you identify as?
 - Male
 - Female
 - Other
 - Prefer not to say

2. What is your age?
 - Under 18
 - 18 – 24
 - 25 – 34
 - 35 – 44
 - 45 – 54
 - 55 – 64
 - 65 – 74
 - 75 or older

3. What is your country of residence?
 - The Netherlands
 - Outside The Netherlands

4. What is the highest degree of education that you completed?
 - High School
 - Bachelors/HBO
 - Master's
 - Ph.D. or higher

- Prefer not to say

5. What is your annual income

- Less than €25,000
- €25,000 - €50,000
- €50,000 - €100,000
- €100,000 - €200,000
- More than €200,000
- Prefer not to say

6. Please categorise the following 7 goods based on the perceived risk you would experience if you bought them second-hand/used.

	Low perceived risk	Medium perceived risk	High perceived risk
Book			
Broomstick			
Tennis racket			
Shoes			
Hiking backpack			
Car tire			
Climbing harness			

7. How often do you buy used goods?

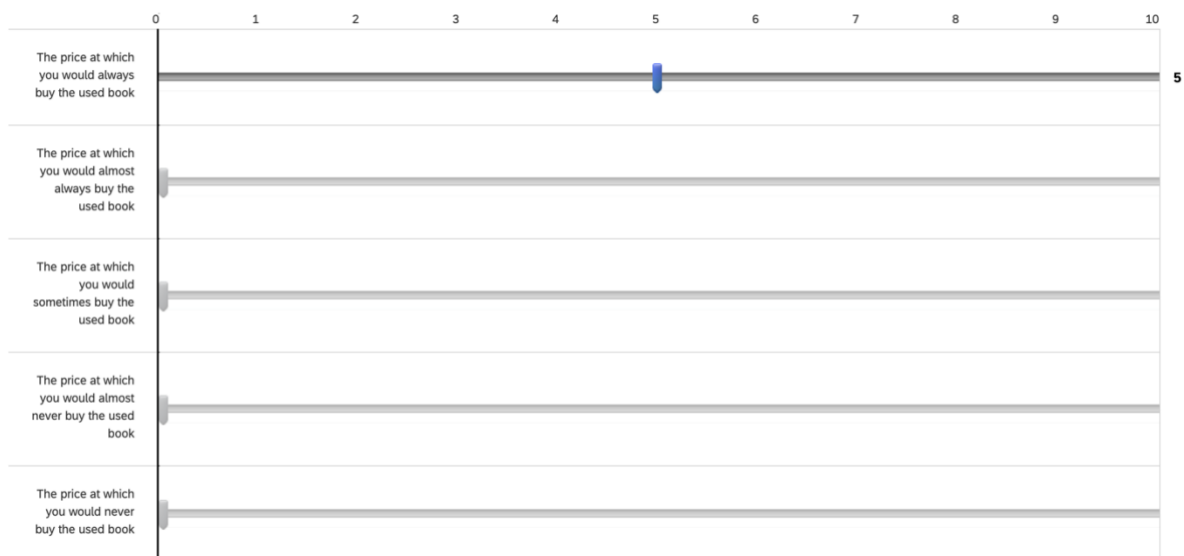
- Never
- Rarely
- Sometimes
- Often
- Always

8. Please rank the perceived risk factors when you buy used goods based on how important you find them (1 = most important, 5 = least important).

	1	2	3	4	5
Hygiene					
Return policy					
Warranty					
Safety of use					
Functionality					

In the following section, I will ask your willingness to pay on seven used goods. You may assume the used goods have some visible wear and tear but are overall functional without damage that would impair normal use.

9. If you are going to purchase a book for €10 and you are given the alternative of buying that used book, please state:



For questions 10, 11, 12, 13, 14, and 15, the same format was used as question 9, except for the new price (thus the maximum the slider would go up to), which varied per good, as explained in the thesis. Furthermore, for book and broomstick, respondents could give answers close to 1 decimal point, whereas for the other goods, only whole numbers were available.