Master Thesis

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Understanding the effects of Risk Aversion on Replenishment Decisions

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Acknowledgement

This master thesis is the last part of my master Supply Chain Management at the Tilburg university. Since the start of January, this has been the main focus of my study as well as my internship at A.S. Watson. A case study about the sub-store-delivery system in combination with my master thesis has brought forth this document.

This research has both been a demanding but rewarding experience, on which I can look back my entire professional career. During my master thesis I received the chance to combine my international business administration background which I developed during my bachelor in Nijmegen, with my supply chain management master which I followed at Tilburg university.

I have always felt welcome at A.S. Watson and especially at the Store Replenishment department in Renswoude, Utrecht. I would like to thank Stephan van Roest for his help and for the opportunity to ask all the questions I had. Without him, this research would not have been possible.

Furthermore, I would like to express my gratitude to my supervisor, Dalia Lases Figueroa, for her guidance, support, and feedback. Without her supervision, this master's thesis would have remained merely a proposal.

Abstract

Purpose

Risk aversion and its effect on replenishment decisions are a relatively new topic to be studied in both the supply chain management literature, and in the behavioural science literary fields. A.S. Watson saw an increase in redistribution of products in between and with it a rise in costs. Thus, a case study was implemented at A.S. Watson in order to research this intersection of academic fields.

Design/methodology/approach

A two-step questionnaire containing 10 questions about replenishment decisions, and the DOSPERT questionnaire, which measures a person their risk aversion, were distributed amongst 200 store managers of A.S. Watson. 92 store managers eventually participated in the study. An ANOVA one-way was performed in order to test the hypothesis.

Findings

A clear significance was found when performing the ANOVA, which meant that H_0 could be rejected which meant that risk averse store managers redistribute more products.

Originality

The results confirm that risk aversion influence replenishment decisions. Therefore future research can build on this conclusion and could try to find additional ways in order to reduce risk aversion in order to mitigate the negative consequences that are associated with risk aversion.

Contents

1. Introduction

In this first chapter, the problem statement will be introduced as well as the theoretical and managerial implications. After this the problem statement will be given and the research questions will be presented, from both the exploratory phase as well as the analysis phase. This will be concluded after which the literature review will be presented.

1.1 Problem Statement

While the global supply chain was still recovering from the COVID-19 pandemic (Marsillac, 2021; Sombultawee et al., 2022), the war in Ukraine started in February 2022. With Ukraine being the breadbasket of the world and Europe's dependency on Russia for its now cut-off natural gas resources, the global inflation began a meteoric rise (Aharon & Qadan, 2022; Fang & Shao, 2022). This inflation, in combination with increased global competition the importance for companies to be smart with their working capital is rising (Abuhommous et al., 2022; Demiraj et al., 2022). With retailing space is commonly regarded as being the most expensive space in the whole supply chain, retailers need to critically assess what they sell, and how much space they administer to these products with the upmost care. The expected sales of new products are difficult to forecast (Fildes et al., 2022; Urban et al., 1996), and therefore, a lot is dependent on the skills and insights that the buyer or material planner possess when ordering products (Makarius & Srinivasan, 2017). Employees that are in charge of store replenishment generally poses a different pallet of skills (Makarius & Srinivasan, 2017). Due to the fact that they have to be knowledgeable of multiple different aspects of the enterprise they have to be good in collaborating with other employees (Korhonen et al., 2007).

Furthermore research in the recent years acknowledges the role of risk when it comes to replenishment decisions (Cai et al., 2020; Di Mauro et al., 2020). With the increasing demand to reduce spending (Abuhommous et al., 2022), buyer or material planners are increasingly pressured to make better forecasting decisions (Cai et al., 2020). While some researchers explain this by viewing this by the fear of losing wealth, when explaining individual risk aversion (Bjork et al., 2014; Cohn et al., 2015; Guiso et al., 2018), other researchers try to explain the phenomenon by losing a specific social status of a group (Im et al., 2021).

To study this phenomenon a case study has been performed at A.S. Watson Benelux (from here on referred to A.S. Watson). A.S. Watson is one of the biggest health and beauty retailers in the consumer market in the world. As of today A.S. Watson operates in 28 different

countries and worldwide it has 16,398 stores (Lim, 2022). A.S Watson Benelux, is in the Benelux the market leader and parent company behind Kruidvat, Trekpleister, Prijsmepper, ICI PARIS XL and Pour Vous. A.S. Watson currently has five distribution centres in The Netherlands from which it distributes products to its front stores.

A.S. Watson has a system that they call "sub-store-delivery" (*Onderling Leveren*) that ensures that if a store has a surplus of a certain product that it expects not to sell, the store manager can choose to redistribute those products to other stores that are willing to accept these products. Last year (2022) showed an increase in the amount of products that are redistributed between locations of the Kruidvat stores. Employees at the headquarters of A.S. Watson are under the impression that the individual store managers are afraid of having excess inventory pile up in their warehouses due to the fact that they are not able to sell all of the products, with all the necessary costs that this phenomenon entails. This hearsay is a possible indication that individual risk aversion influences the replenishment decisions and should therefore be studied.

1.2 Theoretical contributions

This research contributes in multiple ways to the existing theoretical framework. Firstly, it is an addition to the growing literature on supply chain management and to the organizational behaviour literature (Ojha et al., 2018; Srinivasan et al., 2021). The body of literature on risk aversion in the supply chain management literature has been growing the past decade, with Cai et al. (2020) and Di Mauro et al. (2020) having done the most recent research linking both concepts to each other. As a consequence there have been several case studies on the topic of risk aversion in the supply chain context the last five years. However, the research that was performed differ from this research. For example Cai et al. (2020) studied the effect of information asymmetry between suppliers and their risk aversion, but focussed predominantly on the information asymmetry aspect. Di Mauro et al. (2020) studied through an experiment setting the effect of individual risk aversion on replenishment decisions in a multi-echelon supply chain and found evidence for a suggested link. The study's findings were based on experiments which performed a classic 'Beer Game' across multiple companies. While the multiple case study does offer great benefit to generalizability, it did not test if the effect was present between participants that were employed in the same sector or at the same company. Therefore, due to the fact that this research will take place at A.S. Watson, the conclusion will

be more applicable to the health and beauty retailing industry and to the theory in regard to the internal functions of an organization.

Lastly, several other researchers focus on risk aversion in combination with sustainability aspects (Cao & Mei, 2022; Li et al., 2022; Zhu et al., 2022; Zou et al., 2022), but these do not focus on replenishment decisions, and are therefore less applicable to the current research. Thus, the implications and direction of this research will have a contribution to the literature currently present.

1.3 Managerial implications

The results of this study can be used by managers in the beauty and health retailing industry in order to better select participants that are applying for employment in replenishment positions. Knowing if a participant is risk averse and is therefore making different replenishment decisions, changes the training trajectory for this individual. More emphasis can be bestowed upon the part to mitigate the negative consequences of risk aversion. Additionally if managers are aware of the possible effect risk aversion has on replenishment decisions, they can try to identify this behaviour in their employees. Once the behaviour is identified, through education and information, employees can be made aware which slightly decreases risk aversion (Gurtler, 2014), trainings which are based on incremental exposure to risk have proved to be able in reducing risk aversion (Thomas, 2013). Even support of colleagues or mentorship and guidance have been proven to help (Thomas, 2013). Therefore identifying the effect can have a lot of consequences if organizations are willing to act upon it.

In the case of A.S. Watson, the findings of this research can help reduce costs due to the fact that less redistribution costs occur. This will be beneficial to the organization as a whole. Moreover, the redistribution of products are costing a lot of manpower, existing of/such as loading and unloading transport vehicles, repacking pallets, transportation costs. The redistribution of products happens by transporting the products from store A to the distribution centre in Heeteren, and only then to store B, it therefore is easily to conclude that it is an heavy burden on the environment. Since everything is transported between locations and distribution centres via fossil fuelled transport trucks.

In conclusion, after this research organizations are able to reduce spending on redistribution costs and A.S. Watson particularly will reduce its transport emissions.

1.4 Problem Statement

The problem statement of this research will be:

"Does individual risk aversion influence replenishment decisions in the beauty and health retailing industry?"

1.5 Research Questions

This research will consist of two stages, an exploratory phase to get a better understanding of the topic and the literature that is currently present on the subject, and an analysis phase in order to get a better understanding of the case that is being studied. Both phases will be vital in order to answer the main research questions:

Exploratory Phase

1. On what factors are Replenishment Decisions based?
2. What is risk aversion, and how is it caused?
3. How does risk aversion influence replenishment decisions

Analysis Phase

4. How are current sub-store-delivery decisions made by managers, and at what point can it be influenced by risk aversion?

Now that the problem is known and the literary gap has been introduced, this research will continue into the next chapter where the theorical background will be explained through a literature review.

2. Theoretical Background

This literature review focusses on the literature that is present in the economic, behavioural business administration, and the supply chain management field. Economic centred literature is gathered and used in order to give extensive definitions of certain concepts due to the fact that risk aversion is a well-documented concept in the economic field. The behavioural business administration and supply chain management fields are addressed because the research question is focussed on this particular academic field. The theoretical background of this research is explained according to the research questions mentioned in the introduction:

2.1 On what factors are Replenishment Decisions made and based?

This sub-chapter will start with the definition that this research uses when discussing replenishment decisions, after which it will sum up the factors that influence replenishment decisions.

Replenishment decisions constitute a fundamental process within Supply Chain Management, and therefore has been studied since the 1980's- by scholars such as Sterman (1989). The widely accepted definition of Sterman (1989) regarding the role of replenishment decisions taken by managers is:

> 'The manager seeks to maintain a quantity [of stock] at a particular target level, or at least within an acceptable range' (Sterman, 1989).

Over the past three decades replenishment decisions have been studied extensively, however there has not been a consensus on the different factors that influence the replenishment decision making process. Initially, research on the influencing factors of replenishment decision centred around the notion that the judgement and experience of the individual replenishment decision maker were the sole factors that influenced the decision making process (Di Mauro et al., 2020). In the last two decades, studies have shown that there are additional factors influencing the replenishment decisions (Tsao, 2018). These factors, in contrary to the traditional idea, have a wide variation of causes. However, they are in some way still related to the classical concepts of judgement and experience.

Replenishment decisions are often seen as a part of supplier selection due to it being viewed as criteria on which the suppliers are differentiated (Mendoza & Ventura, 2009). While this is true in some cases, the term replenishment decisions that this research focusses on relates to the quantity and sizes of orders while there is no possibility of replacing

suppliers. Therefore, the focus of the impact of these multiple factors is not on the possible difference between suppliers, but on the difference between order quantities and sizes.

While it seems obvious that the cost of products influences the replenishment decisions taken by replenishment managers, those costs differ in the way they influence those decisions. First, transportation costs, influence the replenishment decisions (Toptal, 2009). Organization are entities that are focussed on cost saving (Swenseth & Godfrey, 2002) and therefore a calculation is made between the items needed and the optimum order quantity in regards to full truck loads. Swenseth & Godfrey (2002), distinguish three shipping decisions categories: (1) shipments that result in true truckload shipping quantities, (2) shipments that are likely to be over-declared as truckload, and (3) shipments that are not likely to be over-declared as truckloads and are therefore shipped at less-than-truckload rates. Swenseth & Godfrey judge that the first category is most preferable due to the fact it is the most cost-effective usage of trucks. An inventory replenishment specialist will therefore try to order full truckloads in order to be as efficient as possible (Swenseth & Godfrey, 2002; Toptal, 2009). Therefore his replenishment decisions are influenced by the transportation cost and volume (Toptal, 2009).

Furthermore, the option and the amount of trade credit of a firm is vital to the replenishment decisions that are made by the inventory replenishment specialist. Trade credit of a firm is extended by vendors to an organization which provides organisations with the ability to procure supplies necessary, and to pay those suppliers in a timely manner (Tsao, 2018). Without trade credit, organizations are severely limited in buying power and the amount of stock that they are able to hold. A high trade credit is therefore beneficial to the organization because it is more simple to reach the desired safety stock of the organization (Kreng & Tan, 2010).

Additionally, lead time is described by Hopp & Spearman (2011) as ‘The time between the beginning of a job, process or project and the appearance of its results’. Researchers find it to have an important influence on the replenishment decisions that are made (Comez-Dolgan et al., 2020; Li et al., 2013). Naturally, if a product has an extended lead time, the order frequency will rise as well(Wang & Yan, 2009), which influences replenishment decisions as stated earlier.

Lastly demand variance is an influence on the replenishment decisions taken by an inventory replenishment specialist. Not only seasonal demand such as Christmas

commodities, but also supply chain disruptions influence the quantity and commodity ordered by the supply chain specialist (Wang et al., 2014).

In conclusion, the main factors that influence replenishment decisions are transportation costs, order quantity and frequency, lead time, demand variance and the option to trade credit. Therefore, these will be used in order to explain how risk aversion affects replenishment decisions.

2.2 What is risk aversion and how is it caused?

This sub-chapter will explain the definition of risk aversion that is used in this research. After this the different causes will be examined as well as the possible solutions in order to reduce the negative effects of risk aversion.

2.2.1 Definition

Risk aversion is a well-established concept in the economic academic literature, with one of the first academics that theorised an influence of risk on profits being Knight (1921). Markowitz (1952), later, discusses the compromise between risk and the anticipated return an investor makes when he decides on how its portfolio is compromised. The first to formalize the theory would have been Diamond & Stiglitz (1974), with their definition of risk aversion entailing 'the preference of individuals or businesses to avoid uncertainty and potential losses'. Tversky & Kahneman (1979), put it as 'Risk aversion refers to the tendency of individuals or organizations to prefer a certain outcome over an uncertain outcome with the same expected value'. While Markowitz is still praised as being the starting point of the literature on risk aversion (Peter, 2021; Said et al., 2015; Urban et al., 1996), the definition of Tversky & Kahneman given in their 'prospect theory ' (1979) is more commonly used in the behavioural science and supply chain management academic field (Fetzer et al., 2021; Tian et al., 2007; Venaik & Brewer, 2010), and therefore will be the definition used in this theory.

In finance, it is commonly understood that risk-averse investors are willing to pay a higher price for assets are guaranteed to provide higher yields, this in turn leads to the creation of premiums (Cizkowicz et al., 2022). In insurance however, the risk aversion of individuals affects the national/global demand for insurance and in turn the pricing of insurance policies. Risk-averse individuals are willing to pay a premium for insurance to avoid the risk of a large loss (Eeckhoudt et al., 2018; Li et al., 2008).

Moreover, the influence of risk aversion extends to the mundane aspects of the lives of individuals by for example choosing higher costing household appliances if the retailer offers

rebates on those appliances (Caliskan-Demirag et al., 2011), or when choosing between short-term (variable cost) or long-term (fixed cost) energy contracts (Oliveira & Ruiz, 2021).

Most importantly for this research, in the context of supply chain management it refers to the preference of individuals or organizations to avoid risk or uncertainty when making decisions (Chopra & Sodhi, 2004). These decisions could affect suppliers, employees or even the choice of the location of their office. Thus, generally in supply chain management, risk aversion affects the decision-making process significantly, due to the fact that management of a supply chain must balance the need to minimize risk, and therefore invest for example in a risk premium, with their need to optimize performance (Tang, 2006). Furthermore, risk aversion of individuals that are for example working in procurement at organizations can influence the supplier selection (Chen & Zou, 2017), with supply chain managers that display risk averse behaviour being more willing to pay a higher price for goods in order to minimize their perceived risk (Chen & Zou, 2017). One of the challenges in supply chain management is managing supply chain disruptions and the so called ‘black swans’. These supply chain disruptions can result from a range of factors and impacts, including natural disasters, political instability, and unexpected changes in demand or supply (Skiver, 2022). Risk-averse supply chain managers may choose to take a cautious approach to managing these disruptions, by investing in risk management strategies such as inventory holding, dual sourcing, or developing backup plans (Tang & Tomlin, 2008).

2.2.2. Causes of risk aversion

While there are many different characteristics and definitions on risk aversion, the factors that influence an individual their risk aversion level are extensive as well. Firstly, culture can influence an individual's risk aversion. People from cultures that value risk-taking generally score lower on risk-averse scales than those from cultures that value security and stability (Minkov & Hofstede, 2014). For instance, individuals from the United States or the Netherlands, which promote individualism and assertive people (Brewer & Venaik, 2011; Minkov & Hofstede, 2014), tend to produce more risk-averse individuals than in comparison to countries such as Japan and South Korea, where there is a collectivist culture. These cultures value conformity and caution more than risk-taking (Minkov & Hofstede, 2014).

In addition to culture, personal experiences can shape an individual's risk-taking behaviour as well. For example, people who have suffered adverse outcomes from taking risks may become more risk-averse. Similarly, those who have had positive outcomes from taking risks may develop a more liberal view regarding risks (Said et al., 2015).

Finally, age and gender can also influence one's risk aversion. Studies show that women are generally more risk-averse than men (Hong Chew et al., 2017; Spicka, 2020). Age also plays a crucial role, with older people being more risk-averse than their younger counterparts. This is partly due to the loss of cognitive flexibility and an increased focus on maintaining a stable lifestyle as people age (Charness & Gneezy, 2012; Han et al., 2012). Naturally this means that risk aversion increases with age, as a study amongst Swedish households concluded (Pålsson, 1996). Furthermore research that was performed amongst Czech farmers concluded that the not only the age, but the household size, and composition, for example if the person was living with their partner, determined their risk aversion level (Spicka, 2020).

In conclusion, age, gender, culture and personal experience shape a person their aversion to risk. How to reduce risk aversion, and its possible negative consequences will be discussed in the following sub-chapter.

2.2.3. Reducing risk aversion

While there are many causes and effects of risk aversion, there are possible solutions in order to decrease or mitigate the effect. As mentioned earlier, identification of the behaviour is the starting point in order start the process of reducing risk aversion (Bensouda & Benali, 2022). This should be followed up with one or multiple of the following actions:

Making employees aware of the fact that they are risk averse reduces risk averse behaviour (Charpentier et al., 2017; Gurtler, 2014; Sookhtanlou & Gholami, 2018), this is probably due to the fact that people will compensate for their risk averse behaviour (Charpentier et al., 2017). In supply chain management this will happen in the form of purchasing less products than the participants instinct will advise them. Additionally, trainings which are based on incremental exposure (Thomas, 2013), or that encourage mimetic pressure in the situations where this is relatively few information present (Bensouda & Benali, 2022), reduce risk aversion as well. This is probably due to the fact that this makes employees more resilient to the stress that they encounter when they are confronted with risk (Bensouda & Benali, 2022). Lastly, mentorship and guidance in reducing risk aversion can have a distinct influence in reducing the negative effects. Thomas (2013) and Charpentier et al. (2017) both suggest that it is due to an objective person having a view on the matter, and are able to separate the problem from the decision that has to be made.

While there are multiple causes, such as culture, age and gender there are multiple ways in order to reduce risk aversion as well. These are awareness, mentoring and trainings based on simulations of incremental exposure. In the next subchapter this research will take a look at how risk aversion possibly influences replenishment decisions.

2.3How does Risk Aversion influence Replenishment Decisions?

In the following sub-chapter the possible influence of risk aversion on replenishment decisions will be discussed, as well as the differences between them.

Risk averse people tend to avoid failure at all cost, and therefore are willing to receive a lower outcome (Lopes, 1987). In economic literature this is called Decreasing Absolute Risk Aversion (DARA), which means that the individuals willingness to take risks decreases as the size of the outcome increases (Bonilla & Vergara, 2021; Dreyfuss et al., 2022; Hansen & Sargent, 2001). DARA is furthermore sometimes referred to as 'prudence' or as Bonilla and Vergara (2013) state: 'prudence ensures that in the face of an increase in the risk of future income […] the decision maker will increase saving in the present'. While the terminology for both exist, the use is intertwined and regarded as the same concept. In Supply Chain Management this would mean that replenishment officers will take more risk, if the eventual gains increase (Bonilla & Vergara, 2021). Risk neutral individuals who are indifferent to risk and therefore expect the option with the highest expected value incorporating the risk (Lopes, 1987) are also referred to as showing Constant Absolute Risk Aversion (CARA) This means that the individuals willingness to take risks increases and decreases at a constant rate, regardless of the size of the outcome (Becherer, 2003; Wu et al., 2018). Lastly, there are risk loving individuals who desire to achieve the highest return no matter the risk (Lopes, 1987) or Increasing Absolute Risk Aversion (IARA). IARA is understood as the individuals willingness to take risks increases as the size of the outcome increases. Individuals with IARA are willing to take relatively more risks for small potential gains than for large ones (Holt & Laury, 2002). In the supply chain management context, this would mean that the larger the order value, the more risk a replenishment officer is willing to take (Oh et al., 2016).

One of the more fundamental explanations of risk aversion are derived from the two concepts of loss aversion and myopia (Rabin & Thaler, 2001), wherein Kahneman and Tversky (1979) argue that decision makers evaluate their own wealth in respect to a reference point. Additionally, losses are weighted twice as much as gains (Rabin & Thaler, 2001).

While these theories show a similar implication as risk aversion, they however are not the same as Rabin and Thaler (2001) argue themselves.

In conclusion, there are three different forms of influence, DARA, CARA and IARA. With an replenishment officer showing DARA, meaning he or she will take less risk even if the gains increase. With CARA, risk and gains are constant and with IARA the individual in question will take more risk even if the gains relatively decrease.

2.4How are current sub-store-delivery decisions made by managers, and at what point in the process can it be influenced by risk aversion?

In the last sub-chapter of the literature review the interview will be discussed.

In order to receive a better insight into the sub-store-delivery process, how it works and who is responsible, an interview was held with a district manager (see Appendix A). The interview was held in Dutch due to the fact that it was the native and only language spoken by the district manager. Kruidvat has over 1,250 stores, with every store having a store manager. 15 to 30 stores make up one district, and at the head of a district is a district manager. These district managers are made aware if a sub-store-delivery is being planned, and therefore have the most broad overview of the entire supply chain.

A sub-store-delivery starts almost at the end of the supply chain, namely in the warehouse of a Kruidvat retail store. While every Kruidvat retail store has a different layout and size, they all follow the same formula. There is an inventory part which is pull-based and is known as well as the standard inventory. Additionally there is a push-based inventory, wherein the purchasing department at the A.S. Watson headquarters buy up large quantities of seasonal or cheap everyday items and they ‘push’ to the stores. The Store and Replenishment department are responsible of making distribution decisions according to what the historical data show for said products.

These products therefore are vastly different in price, size and target audience, which causes multiple problems for different stores. While the current archival data can adjust some levels of certain products before they hit the stores, some errors may still happen, with retail stores having to store different sizes of products in an already crammed warehouse. In order to counter this, stores are allowed to ship excess products that they are unable to sell to other stores which have an shortage of those products. This process is the aforementioned sub-

store-delivery process (‘onderling leveren proces’). There are some requirements in order to use the sub-store-delivery process:

1. The receiving store has to approve within a certain amount of time that they want to receive the products;
2. The total quantity of products shipped cannot be less than half a pallet;
3. The products have to be shipped according to the rules of the transporting company.

Once the sub-store-delivery complies with rules 1 to 3, the district manager has to approve the request. District managers are likely to check the inventory of their other stores in the region . In case of a store with low inventory, they can address it first before the products leave their district. If everything is approved, a pickup order is created and the and the transport department retrieves the pallet on the nearest delivery date. After the pickup, the pallet is processed in the distribution centre of Heeteren and is transported on the nearest delivery date to the receiving store.

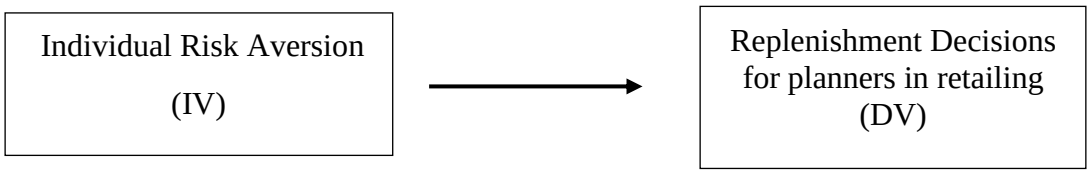
The element in the process that can be affected by risk aversion is whether a store manager decides to ship the excess products or not. In order to make this decision, the store managers will have a general idea of how much products the store potentially sells and can store in its warehouse. Based on the judgement of the store manager, it decides to sub-store-deliver the products.

In conclusion, investigating the risk aversion at the store manager level in the organizational structure will be the most rewarding and interesting for the research. At this level in the sub-store-delivery process the individual store manager has the choice if he or she wants to redistribute the products. Due to this choice, and the amount of quantity the store manager can choose, this has the highest chance to be influenced by risk aversion of an individual.

2.5 Final Conceptual Model and Hypotheses

The conceptional model of this research is shown below in Figure 1. The independent variable (IV) is risk aversion and the dependent variable (DV) is managerial decisions due to the fact that there is no cause to believe that replenishment decisions influence the individual risk aversion. The final conceptual model therefore will look as the following below:

Figure 1



The hypotheses that were concluded from both the literature review and the analysis phase are the following:

H_0: Risk averse inventory replenishment managers will not redistribute more products to other stores

H_1: Risk averse inventory replenishment managers will redistribute more products to other stores

This chapter laid the literary base for the research, and together with the organizational insights from interview a questionnaire could be made. Which will be further explained in the next chapter.

3. Methodology

This chapter starts with the design of the research and a description of the participants. An outline of the measurement methods is given in order to give a complete description. Afterwards attention is paid to the research process flow and the research ethics. The chapter ends with a conclusion in order to give a clear oversight before the this research moves on to the following chapter.

3.1 Research design

In order to test the hypothesis described in chapter 2, an inductive quantitative study has been performed through a two-step questionnaire. This case study has the chance to gather a large quantity of data, due to the size of the organization, therefore a quantitative approach was chosen with regard to a more in-depth qualitative research. As mentioned before, the case study takes place at A.S. Watson, an organization focused on the beauty and health retailing industry. The first part of the questionnaire was filled in by the participant in order to measure their replenishment decisions, after which they filled in 26 questions in order to determine their risk aversion.

In order to test the replenishment decisions, participants were asked what they would do in case they received certain quantities of products. To mitigate the potential influence of the amount of available warehouse space stores currently had on the replenishment decisions, the total sample of the research was divided into 4 equal groups based on their warehouse space. The data of the warehouse space was distributed by A.S. Watson. The first group had a total warehouse of 0 to 68 square meters, the second group had a warehouse of 68 until 100 square meters, the third group had a warehouse of 101 until 123 square meters, and the fourth and last group was every warehouse above 123 square meters. The quantity of products that store managers were questioned about, is based on the mean quantity that the warehouse-group, to which they belonged, received during the year 2022 in individual shipments.

3.1.1. Determining the replenishment decisions

In the first part of the questionnaire, the participants were asked about the ten most sub-store-delivered items from 2022. The first and second most sub-store-delivered products from 2022 were COVID-19 tests, however due to the fact that these tests were regarded as seasonal products, they were not used in the questionnaire. Therefore the 11th and 12th most sub-store-delivered products were chosen. The questions contained the general quantity their stores received based on the square meters of their warehouse, accompanied with the question if

they wanted to sub-store-deliver it, and how much of the products they wanted to sub-store-deliver (the questionnaire can be found in Appendix B).

3.1.2. Determining the level of risk aversion

In this second part of the study, the participants were asked to fill out a survey, in order to establish the amount of risk averse behaviour they exhibit. There are multiple variations in order to measure the risk aversion of a person, this research chose to use the Domain Specific Risk Taking Survey (DOSPERT) devised by Blais & Weber (2006)(See Appendix C). This survey technique offers the chance to see different subfields of risk aversion (ethical, financial, health & safety, recreational and social) displayed by the participant instead of only the financial risk averse behaviour, which are measured by so-called lottery-surveys (Coppola, 2014). For this research, the subfield 'health & safety' was left out of the survey, due to the fact that the questions felt intrusive on participants their personal life, and because the questionnaire was distributed through official channels of A.S. Watson, who raised concern among these questions. The deletion of these questions should not matter for the outcome of the overall score, only that the risk aversion was not measured for this particular subfield.

After the collection of the survey-data, two groups were created with the first one being named 'few signs of risk averse behaviour' and the second one being named as 'many signs of risk averse behaviour'. These two groups aided in the process of determining the hypotheses. In order to accept the hypothesis, the group 'many signs of risk averse behaviour' should have had a higher quantity of sub-store-deliveries in comparison to the group 'few signs of risk averse behaviour'. The DOSPERT questionnaire used in this research had a maximum of 182 points. While the questionnaire excels in comparing risk aversion between subjects, there is not a hard threshold from which participants are considered risk averse. Blais and Weber (Blais & Weber), divided participants of their questionnaire in three groups, 'risk-taking', 'neutral' and 'risk-averse'. Therefore the scale was divided into three, with the group 'risk-averse' showing a score above 122 points.

In the final sample division the group 'few signs of risk averse behaviour' contained 57 people, and the group 'many signs of risk averse behaviour' contained 23 participants.

3.2 Sample Selection

The participants that took part in this study were store managers of A.S Watson. A normative distribution was made based on the floorspace of the warehouses of the stores. This

distribution was further used in order to form four distinct groups, and from each group a random selection of 50 stores was drawn which resulted in a starting sample of 200 store managers. Therefore the sample was as evenly distributed as possible.

The added benefit of only choosing professionals is the fact that it is to be expected that they have more experience and expertise on the matter (Tokar et al., 2012), furthermore they should exhibit less optimism or pessimism about risk due to their experience (Di Mauro et al., 2020; Tokar et al., 2012).

3.3Data Collection

Due to the scattered dispersion of Kruidvat stores, the questionnaire was performed online which has multiple advantages as well as disadvantages. Performing this questionarre online provides flexibility and ensures that physical mobility does not play a part in sample selection. However non-verbal ques cannot be noticed when filling out the survey and therefore the questions have to be more precise.

The software that was used was ‘Qualtrics’, this was done because it is a simple, reliable software program and easy to fill in for participants on laptop and mobile phone. Participants were advised to complete the questionnaire at work, due to the fact that this is a comfortable space and the chances of disturbance were considered low. The survey was performed in Dutch. While the global language of A.S. Watson is English, the native language of A.S. Watson Benelux is Dutch. The DOSPERT survey is originally in English and has therefore been translated to Dutch in order to determine the risk aversion of the individual store manager.

3.4 Research Ethics

Research ethics are an essential part of any research that is performed. Therefore, at the start of the survey, all participants will receive an extensive explanation of the purpose and procedures of the research. This will ensure that participants will have a full transparent view of the research and its goal. The research will mention that participating in the study should be done voluntary and that they can withdraw from the research at any time. The participation of the store managers will be kept confidential and will be done anonymous, which will be stated at the beginning of the survey as well.

The last question that the participants will receive, will be a question that will ask their consent in order to process the data. All data will be stored on a private server to ensure the

privacy of participants. Furthermore when analysing the data, confidentiality of the participants will be ensured in order to safeguard their privacy.

3.5 Data Analysis

In conclusion, a questionnaire was distributed amongst a select amount of A.S. Watson store managers. In order to test the hypothesis, an ANOVA one-way test was performed in IBM SPSS 27.0 (further called SPSS). This research chose the ANOVA one-way test due to the fact that there was one ordinal independent and one numerical dependent variable. The results of the data are further discussed in chapter 4.

4. Findings

This chapter will present the results of the statistical analysis that were performed. First, the sample statistics will be presented. This will be followed by presenting the reliability of the research, which will be displayed through the Cronbach's alpha. Subsequently the assumptions of the research will be described which will be followed by the results of the ANOVA test. At the end of the chapter, a small conclusion will be made before the results will be presented in chapter five.

4.1 Data Preparation

In order to analyse the data, the raw data had to be prepared. Therefore, the data was converted from Qualtrics to SPSS, which meant that some additional data surfaced. This part of the data was deemed as unnecessary and therefore was deleted in order to be in compliance with the code of ethics of the university of Tilburg, and to ensure the privacy of the participants. The following data was deleted StartDate, EndDate, Status, IPAdress, Duration in seconds, RecordedDate, ResponseId, RecipientLastName, RecipientFirstName, RecipientEmail, ExternalReference, LocationLatitude, LocationLongitude, DistributionChannel, UserLanguage.

Additionally, risk aversion was calculated by converting each question into points. Answering 'not risky at all' is equal to one, 'slightly risky' is equal to two etcetera, until 'extremely risky' being 7 points (Appendix D). As discussed in chapter 3.1.2., participants that scored more than 122 points were placed in the 'many signs of risk averse behaviour' group, and the other participants were placed in 'few risk averse behaviour' group.

Lastly, all products were measured with different scales. Some products were shipped in quantities of 240 items and some were shipped in quantities of only 10 items. This created a problem when creating a single dependent variable. This problem arose when trying to calculate a mean of the quantities of products that store managers redistributed. Therefore, the largest scale was taken, which was 240. The largest scale was divided by each scale individually which was then multiplied with the corresponding answer that was given to each question. The answers to the 10 questions of each individual were transformed via their mean into the dependent variable named 'replenishment decisions'.

4.2 Sample Statistics

The total sample amount of the questionnaire were 200 store managers who were normally distributed along the total floor space of the warehouse that their store posses. From this

initial sample, only 92 filled out the survey. From these 92, only 81 participants finished the survey. The following Table shows the distribution along the individual groups:

Table 1

	Sample	Respondents	Finished
Group 1	50	25	22
Group 2	50	26	23
Group 3	50	21	17
Group 4	50	22	19
Total	200	94	81

Due to the privacy of the respondents and the scope of this research, no additional information was gathered from the participants. Therefore nothing can be said about gender of the participants. All participants did have to confirm that they were above the age of 18 in order to participate in the survey. If participants were not above the age of 18, they could not participate in the survey under the code of ethics of Tilburg University.

It is important to address the thirteen participants that did not finish the questionnaire. After studying the completion data, results revealed that two participants stopped after the first question, which was that they agreed that they were at least 18 years old. Eleven participants however stopped after the questions concerning the replenishment decisions, and before the DOSPERT questionnaire. The reason for the first group to drop out is unknown. The reason for the second group to drop out can be that the length of the questionnaire was perceived as to long, due to the fact that they all stopped after the block was introduced with 26 more questions. Both groups did not finish the survey and therefore nothing can be said about their risk averse behaviour. Therefore these participants were deleted from the dataset.

4.3 Reliability

As stated before, the Cronbach's alpha (CA) was calculated in order to determine the reliability of the questions used in this research. The CA measures whether the scale used in the questionnaire is reliable and whether the outcomes of the test stay consistent if the test is repeated (Field, 2016). According to Field (2016), if the CA exceeds 0.7 then it is safe to assume the reliability. The result of the CA test was 0.7 exactly, but it suggested removing question 1 & 3 to increase the reliability. After removing those of the CA test, the result was 0.719 after which it again suggested removing question 2. After this question was removed

out of the CA test, the CA was settled on 0.725, which resulted in the continuation of testing with only questions 4 until 10, the above mentioned tables can be seen in appendix E.

4.4 Assumptions ANOVA

This research applies an one-way ANOVA to test its hypothesis. In order to do so, the research model must meet multiple assumptions. If these assumptions are not met, an ANOVA cannot be performed. To start, the six assumptions of ANOVA were tested:

The first assumption ensures that the dependent variable of this research was measured at the continuous level. This is met due to the fact that Replenishment Decisions were measured in number of products ranging from 0 until 240 products.

The second assumption is that the independent variables should consist of two or more categorical independent groups. The variable risk aversion consists of two groups. Namely ‘few signs of risk averse behaviour’, and ‘many signs of risk averse behaviour’. Therefore this research can conclude that the second assumption has been met as well. SPSS however, cannot accept strings when performing the ANOVA one-way. Therefore the independent variable was transformed into a numeric value with ‘few sings of risk averse behaviour’ being transformed into 1 and ‘many signs of risk averse behaviour’ being transformed into the number 2.

The third assumption is called the ‘independence of observations’, which states that there cannot be a relationship between observations in each group or between the groups themselves (Field, 2016). Due to the nature of the sampling selection, only store managers were asked to participate, with each store manager being categorized into one of four groups based on the warehouse space of their store. Due to the fact that store managers only lead one store, they could not participate multiple times in the survey or in other groups.

The fourth assumption is concerned with significant outliers. In order to identify the outliers the boxplot was checked of the dependent variable (Appendix F). From this boxplot, participant 12 was noticed as an outlier. Participant 12 scored on six out of the ten questions the maximum score and the other questions were scored with the minimum, namely a score of 0. Due to the fact that questions one until three were deleted, only one question remained on which participant 12 scored the minimum score. Therefore, participant 12 became an outlier. Due to the fact that that the assumption states that for ANOVA no significant outliers can be present, this outlier was deleted from the data.

The fifth assumption is that the dependent variable data, in this case the replenishment decisions, should be approximately normally distributed. In order to control that the dependent variable was normal distributed, the skewness and the kurtosis are analysed. Their full descriptives can be found in table 2 below:

Table 2

	Replenishment Decisions	Std. Error
Mean	51,2009	5,55402
Median	38,1271	
Variance	2467,77	
Std. Deviation	49,67665	
Skewness	1,004	0,269
Kurtosis	4,88	0,532

The dependent variable 'Replenishment Decisions' has a skewness of 1,004. This means, due to the fact that it is positive, that it is more skewed to the left. The kurtosis, which has a value of 0.488, means that it is more horizontal. In technical terms, there are no problems with the skewness or the kurtosis, this would have been the problems if they would be below -2 or above 2 (Field, 2016). However, if you look at the histogram (Appendix F), not a clear normal distribution is shown. Due to the fact that the ANOVA one-way is robust to violations of normality, and due to the fact that the skewness and kurtosis do not fall outside of the acceptable boundaries the assumption is regarded as accepted. It is nonetheless important to retain this assumption when looking at the results (Field, 2016).

The last assumption that should be met, is the assumption of homogeneity of variances for of the independent variable. This is done by performing the Levene's test on the independent variable in combination with the dependent variable. The result should not be significant. The result of the Levene's test 'risk aversion' (IV) was 0.35 (Appendix F). The result was > 0.05 and therefore this research can conclude that the last assumption is met as well and therefore the ANOVA one-way can be performed.

4.5 Results

This research aimed to find out if risk aversion influenced the replenishment decisions of an individual through a case study. A questionnaire was distributed through the internal communication channels of A.S. Watson with the goal of surveying store managers. These store managers are responsible of redistributing possible excess inventory that their stores

poses to other stores. The questionnaire was started by 92 store managers and finished by 81 of them. During the checking of the assumptions, one outlier was found which was deleted from the dataset. The remaining 80 participants were divided into two groups based on their risk aversion score, which was calculated with the DOSPERT questionnaire (Blais & Weber, 2006).

From the further statistics in Table 2 it is apparent that there is a clear division between the two groups of risk aversion (N). Both group names were converted to numeric values due to the fact that SPSS cannot calculate strings. Group 1 consists of the individuals that scored lower than 122 points on the DOSPERT questionnaire and were assigned to the group 'few signs of risk averse behaviour' (N=57), while group 2 are individuals that show 'many signs of risk averse behaviour' (N=23). The mean of products that group 1 would distribute other stores is 44,7 products, while that of group 2 is 70,2 products. These numbers already show a clear distinction and are a conformation to the expectation that the literature on the subject is grounded in evidence.

Table 3

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	Upper Bound
1	57	44,7193	44,54945	5,90072	32,8987	56,5399
2	23	70,2454	56,71174	11,82522	45,7214	94,7694
Total	80	52,0581	49,37267	5,52003	41,0707	63,0454

In order to substantiate the visual evidence of means of both groups, an ANOVA one-way was performed. This aids in statistically discovering if a relationship exists between the risk aversion of an individual and their replenishment decisions.

After performing the ANOVA one-way, H_0 can be rejected, due to the fact the effect is considered present due to that the ANOVA one-way is statistically significant; $F(1,78) = 4,579$, $p = 0,035$. Therefore H_1: 'Risk averse inventory replenishment managers will redistribute products to other stores more' is accepted. The results of the ANOVA one-way can be found in Table 4 below:

Table 4

	Sum of Squares	Df	Mean Square	F	Sig
Between Groups	10677,759	1	10677,759	4,579	0,035
Within Groups	181897,459	78	2332,019		
Total	192575,218	79			

Additionally the effect sizes are calculated as well with the Eta-squared (η^2) effect being 0,055. η^2 is < 0.06. Therefore it is suggested that the effect size is only small to medium (Field, 2016). Furthermore examining solely this effect can be biased due to the fact that it is purely a sum of squares from the sample and no adjustment is made to make it generalizable for the population (Field, 2016). In this regard, the omega squared (ω^2) can be used which is slightly smaller, namely it is 0.043 which is once more considered a small effect since everything that is < 0.06 is considered small (Field, 2016). The η^2 and ω^2 are generally smaller when the sample size increases, therefore a smaller effect size does not diminish the result (Field, 2016).

To conclude, the effect is present and H_0 should be rejected and therefore the findings support H_1.

5. Discussion

This chapter will act as the bridge between the gathered literature, the interview and the empirical results. After having introduced risk aversion and the possible connection to replenishment decisions of individuals, the case study setting was briefly discussed at A.S. Watson. Additionally, the importance of this research was highlighted through the managerial and theoretical implications which concluded in formulating the problem statement and subsequently the research questions. The main question of this research was:

> *"Does individual risk aversion influence replenishment decisions in the beauty and health retailing industry?"*

The literature study laid the basis on what grounds replenishment decisions were made, it further discovered the effect risk aversion and its causes. While this literature was helpful in giving an insight into the concepts it was not enough to apply to the case study in a practical sense. Therefore it was decided that not only a literature study was needed, but an empirical study as well. In order to gain more insights, a district manager was interviewed. In this interview viable information regarding sub-store deliveries and the possible influence of the warehouse space on the quantities of product influx was discovered. Furthermore, the following hypotheses were formed:

> H_0: Risk averse inventory replenishment managers will not redistribute products to other stores more
>
> H_1: Risk averse inventory replenishment managers will redistribute products to other stores more

With the knowledge now present, a two-step questionnaire was designed which was answered by store managers of A.S. Watson. The result of the ANOVA test that was performed proved to be statistically significant; $F(1,78) = 4{,}579$, $p = 0{,}035$. This meant that H_0 could be rejected and H_1 could be accepted. Furthermore there were clear differences between the means of group 'few signs of risk behaviour', and 'many signs of risk averse behaviour'. Lastly, the ω^2 and η^2 were small yet present.

This research can conclude that there is a clear sign that risk aversion influences the quantity of replenishment decisions. The initial hypotheses proved to be right, and the literature framework at the beginning of the research was therefore accurate, and supported the findings of this research. The implication of the result is that risk averse store managers redistribute

more products to other stores, and therefore have substantially higher costs than store managers that don't show risk averse behaviour. These findings are in line with the findings of the 'Beer Game' performed by Di Mauro et al (2020), and with Cai et al. (2020) their study on information sharing strategies in order to counter risk aversion. This research therefore expands the current existing literature in both the supply chain management, and the behavioural science academic fields to the health and beauty retailing sector. It confirmed some recent insights, and it filled the critical gaps in the way that this research had not been performed at one single company before.

Organizations that want to reduce the impact of risk averse store managers have multiple options. First, and the most basic measure is to make the individual aware that they are risk averse, and that it affects their replenishment decisions (Gurtler, 2014), furthermore incremental exposure to risk can help with overcoming the risk aversion (Thomas, 2013). Most importantly, mentorship and guidance can help with reducing risk averse behaviour (Thomas, 2013). More on these possible steps will be explained at the managerial implications

6. Conclusion

Chapter 6, which is the final chapter, will first centre around the managerial implications this research has, and what organizations such as A.S. Watson can learn from this research will be discussed. Secondly the limitations of this research will be discussed. This research will conclude with recommendations for future research topics.

6.1 Managerial implications

This research was centred around a case study, due to the practical nature of a case study, these results are therefore easy applicable to the real world, and to other organizations worldwide. As seen in the literature study, risk aversion does not solely affect one particular group of people but is more diverse (Cai et al., 2020). The negative consequences of risk aversion as this research has pointed out are that more products are redistributed and therefore additional transporting and repacking costs are made. Furthermore the amount of manhours that this process takes is substantial as well. Reducing risk aversion therefore will bring great financial gains to not only A.S. Watson but also to other organizations that try to deal with the potential negative effects (Oh et al., 2016).. Particularly, for organizations in the supply chain field centred around retailing, this research could act as a starting point in order to make their employees aware and less susceptible to risk aversion.

Organizations that are looking to make an organization wide effort in order to reduce the impact of risk averse behaviour, should implement a program-like structure. As stated earlier in the literature review, the solution should not focus on only one part, but should consist out of multiple solutions. A possible program could consist out of the following parts:

The program should start with identifying the risk averse employees in the organization , for example with the DOSPERT questionnaire used in this research. Additionally, this can be converted to a Qualtrics-like program in order to enhance the simplicity of distributing it. An employer needs to be careful with the signal that the are giving when distributing these questionnaire, in order to not to let their employees feel anxious (Charpentier et al., 2017), and they should signal their employees that participating in the program does not harm their career (Charpentier et al., 2017). Reducing the negative effects of risk aversion, in this case ordering more or less products, and ensuring the success of the program is connected to the willingness of the participant in participating in the program (Thomas, 2013).

After that, the program itself should focus on guiding and mentoring the employee with different simulations and trainings in order to make the participant more resilient to the

stress that they experience when they are confronted with risk (Charpentier et al., 2017). Furthermore, incremental exposure to risk should be part of the program as well due to the fact this has been proven to be a viable way of reducing risk aversion (Thomas, 2013).

In conclusion, organizations should adopt a program-like training in order to reduce the negative consequences of risk aversion. These programs should be designed in order to guide the employee in order to get the best result

6.2 Research limitations

While the goal of the research was to be as in depth and complete as possible, some limitations did arise when analysing this research in retrospect. This sub-chapter will treat these limitations in consecutive order, with the aim of keeping this sub-chapter as organised as possible.

First, the research took place in the form of a single case study. While a case study offers the chance to get in depth results, they also give the chance to get contextual understanding (Field, 2016). While context was extremely important due to the delicate nature of the sub-store-delivery system, it makes it less generalizable for other sectors or companies. Risk aversion is present in almost every society and part of society. However, risk aversion may not affect every organization similarly as it did at A.S. Watson. The sub-store-delivery system, tha A.S. Watson uses, may be present for some other companies, however it cannot be said with certainty that this will be the case. In order to counter these uncertainties, a multi case study could be performed at other organizations that use some sort of sub-story-delivery system.

Secondly, a limitation to this research could have been the number of respondents. 92 people started the questionnaire from which 81 participants finished it. 81 participants is 40% of the total sample this research hoped to obtain. The amount of participant from the initial sample could be explained due to the fact that the questionnaire only was distributed for 9 days, with the targeted audience being reminded after 7 days. Not obtaining the targeted amount of participants could mean that the sample is not a reflection of the complete population which could have caused the results to not present an accurate representation of the reality. Not reaching the targeted amount of participants was due to time restrictions. With additional time however, the targeted sample maybe have been reached fully.

Lastly, A.S. Watson has over 1250 stores in the Benelux and therefore the 81 participants this research obtained are only 6.48% of the possible total sample. This research chose to only

limit the total amount of participants to 200 due to achievability. Every store manager had to be e-mailed directly with their individual e-mail address. Again due to time constraints this number was therefore limited. If it was easier to distribute this research or if this research had more time, this possibly would have not been the case.

6.3 Future research

In this sub-chapter several avenues for future research will be given, in order to enhance the literary field, to fill in the gaps that are currently present in both the supply chain management and the behavioural science literature and to add benefit to organizations in the supply chain management field that encounter problems with risk aversion.

While this research focussed primarily on risk aversion and how it could affect replenishment decisions in general, future research could investigate if the same effect is present for overstocking. The relationship between risk aversion and if individuals overstock on goods could be beneficial for both the academic fields and for organizations. A lot of costs are hidden in inventory, and while lean management tries to reduce inventory the problem will never fully go away.

Furthermore, future research could try to investigate if additional effects that are present in the stores, reinforce risk aversions effect on replenishment decisions. This research did not incorporate the differences between the warehouse space of the stores but made a distinction due to the quantity of products that are send to them are different. Future research could differentiate between the groups and ensure that that effects differ.

Additionally while the findings of the study acknowledge that the effect is present, the cause of the effect has not been found, due to the fact that this was out of the scope of the research, and no additional information about the participants were gathered. Therefore future research could try to research if the effect is still present between different cultures, genders or even ages.

Lastly, due to the present advancements in artificial intelligence, this may grew in importance in future organizations. Therefore future research could study the influence of artificial intelligence on individuals that show high aversion to risk. In theory, computer programs can help individuals with their decision making process when it comes to ordering more or less quantities of products. Furthermore artificial intelligence could take over the role of coaches, in the mentoring or guidance programs that can be designed to reduce risk aversion.

While this research chose to be as in depth as possible with the given time, the future possibilities are interesting and of utmost importance to both the academic field and the public sector. Therefore, these should be investigated and researched.

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Appendix A: Interview about the sub-store-delivery process

I: Ik ga gewoon over alles nog een keer. Sommige dingen hebben we net al een beetje besproken, maar dan kan ik het tenminste nog verwerken in een gewoon een document best. Richard zou je jezelf kunnen voorstellen en je dagelijkse bezigheden als districts manager kunnen vertellen.

P1: Ja Richard Teunissen, districtsmanager, inmiddels 15 jaar in deze rol al wat langer bij het bedrijf en In de rol van districtsmanager. Ik ben vooral bezig met het coachen, ondersteunen en helpen van onze filialen, filiaalmanagers dat zij, dat de voorwaarden Er zijn waarop zij het best kunnen presteren. En, Dat is eigenlijk heel globaal, dus Als je nog in detail wilt, kan dat maar.

I: Ik heb alle tijd.

P1: Ja, nou ja, goed, dat gaat van de dagelijkse gang van zaken tot uitvoeren van commercieel beleid tot. Vooral plezier hebben In de samenwerking en zorgen dat we efficiënt gewoon alle cijfers halen.

I: Oké, mijn onderzoek spitst zich natuurlijk onder anderen op het onderling leveren in. Kan je vertellen wat jouw rol bij de onderlinge leveringen is? Kan je vertellen. Wat jouw rol bij onderlinge leveringen is?

P1: Nou, die is wel divers, want je hebt verschillende soorten van onderlinge leveringen, hè? Je hebt een onderlinge levering omdat je [het process] in gang zet omdat een ander filiaal het kan verkopen. Ja, dan kan het zijn dat ik of zelf even rij, of dat we een COL [Credit Onderling Levering] aanmaken via Heteren [DC] en helpt het wel eens. Als ik er achteraan mail dat het wat eerder kan in plaats van de data die voorgesteld worden In het systeem, maar je hebt ook onderling leveringen die we in gang zetten om het op te slaan, in het opleidings- of In het opslagfiliaal van de Broerstraat waar een kelder van 500 vierkante meter, maar dat gaat wel via mij want daar moet ik toestemming voor geven. Omdat ik niet wil dat er een bepaalde wildgroei is aan pallets en wat zeker moeten zijn om er alles aan hebben gedaan dat we het verkocht hebben. En dan kan het uiteindelijk.

I: Dus is er een bepaalde minimum of maximum die jij naar de broerstraat laat sturen?

P1: Nou ja, als het vol is dan gaat het echt niet meer. Zit het maximum is de capaciteit en die kunnen daar een kleine 80 pallets kwijt. Zoiets. Maar één ding is wel, die 80 pallets die ik gaan twee keer per jaar ook weer terug naar de filialen, want er zit heel veel op = op handel tussen en dat verdelen we dan weer over de overige 17 filialen twee keer per jaar. Dus het moet een keer wegdoen, want stilstaande handel kost alleen maar geld natuurlijk.

I: Nou die vraag, die stelde ik dus net, maar nou heb ik hem tenminste op tape om het zo maar te zeggen, maar komt het voor dat je zonder tussenkomst van het distributiecentrum een onderling levering?

P1: Ja, dat komt vrij vaak voor.

I: En als je dat percentage zou moeten schatten?

P1: Ja, Dat is lastig. Ja, dat zijn vaak de kleinere leveringen, ja, We gaan geen pallets versturen via Heteren als het gaat om 2/3 doosjes. Ja en dan rijden ze ook vaak zelf. Of ik laad het eens een keer achterin. Nou dat hebben we net gedaan hier, en dan zou het zonde zijn als we de capaciteit gebruiken terwijl het niet nodig. Daarnaast gaat het sneller als we het zelf regelen. Ja en soms heb je nog wat waarde artikelen. Nou, dat doen we liever niet, maar In de decembermaand bijvoorbeeld hebben we ook krasloten en dat soort dingetjes, december loten, dat moet dan wel zo snel mogelijk dat andere filiaal zijn het liefst ook wel met enig toezicht, want het gaat wel om waarde, dus dat gaat dan ook via mij bijvoorbeeld. Maar dat doen we dan niet via Heteren een percentage wat je aangeeft ja. Dat zal dan 20/80% zijn. Dus 20% regelen we zelf en 80% gaat via Heteren.

I: Is dat meestal omdat het snel moet is dat of omdat het te kleine hoeveelheden zijn. Of, zou je een andere redenen hebben waarom je het doet?

P1: Zelf doen qua snelheid dat klopt wel. Hoewel het er dan wel in meedenkt hoor, moet ik eerlijk zeggen dat het was ooit wel eens anders, maar tegenwoordig is het wel zo. Als je vraagt, joh, er zit wel wat druk achter. We zitten nu In de Moederdagperiode. Kan dat eerder? Dan lukt dat vaak wel, maar dan moeten we wel toevallig naar de auto in één van die 2, 4 jaren komen. Nou, maar het is ook een kostendeling als het wat minder grote leveringen zijn. Ja, Waarom zou je het dan? Via Heteren Laten doen. Ja en maar vooral snelheid. Ik denk dat dat wel de hoofd reden is.

I: En Als je het proces zou moeten beschrijven. Jullie krijgen bijvoorbeeld hier een pallet. En, eigenlijk weet je die kan ik in de Broerstraat beter gebruiken. Per handeling, wat zou er dan moeten, gebeuren?

P1: Nou ja, Laten we beginnen. Als je de pallet er nog niet staat, dus staat niet in de winkel of we zijn achter en we zien veel voorraad. Ja voor het voorbeeldje, onderhoud [wasmiddel] ik noem maar wat, er staat veel handel van. Nou weet ik het liefst dat het mooiste is als filiaalmanagers zelf In het district het wegkrijgen. “Joh, Ik heb wat meer onderhoud, wie kan de onderhoud gebruiken?]”. Ja of aan de andere kant kan zijn dat ik aangeef, joh, ik weet dat daar kunnen ze onderhoud verbruiken. We gaan het belletje onderhoud die kant op zetten. Dan moeten we dat eerst even afstemmen met elkaar. Ja en vervolgens gaat de filiaalmanager gaat zo’n pallet inscannen. Ik weet niet of dat je zo diep wilt gaan dat ze daar speciale locaties voor moet gebruiken en zo en welke ze juist niet moeten gebruiken. Maar dan gaan ze het inscannen goed insealen, [er] zit[ten] de richtlijn aan vast hè. De pallet mag niet hoger dan 1 meter 80 cm [zijn], dan moeten Track & Trace labels op. En op het moment dat de pellet klaar is, hè? Ze moeten hem dus aanvragen bij Heteren in dit geval. Nou, die geven een voorstel datum aan. Dat kan zomaar zijn dat het over twee weken is. Ja, Dat is wat ik net zei. Dan komen wij nog wel eens

in actie om te kijken of het eerder kan. En dan gaat de pallet moet uitgescand worden op het moment dat hij hier weggaat, dus de filiaalmanager of een medewerker die scant hem uit als zijnde verzonden. Ja. En dan vervolgens gaat hij met de chauffeur mee. Nou dan weten we dus ook hè? Hij is daar uitgescand dus als je [hem] ergens kwijt raakt, dan is het ligt dus niet bij het filiaal. En dan gaat hij bij de eerstvolgende vraagt bij het ontvangende filiaal wordt ie erbij gezet. Ja, die moeten hem inscannen en dan komt voor hun het rijk, want zij gaan controleren of dat alles erop staat dat. Klopt of wat op de bon? Staan, dat klopt. En als dat zo is, nou dan gaan zij hem dus verwerken, tenzij het opslag is en dan wordt hij gewoon niet ingezet. Wordt er niks meer mee, maar.

I: Ja ja ja.

P1: Ja had nog een andere stroom, hè? Ik weet niet, dit wil ik ook wel even benoemen. Daar heb ik hier dus geen problemen mee, maar je hebt ook nog de externe opslagen. Dat is geen online levering, Maar het is wel weer een handeling om magazijnen leeg te rijden, dus dus werkbare magazijnen te creëren met pellets die ingescand moeten we dus. Eigenlijk pak je het hele traject. Tot aan het moment dat je? Hem uit kent, daar heb je dus een externe opslag locatie voor nodig, want die wordt gelijk meegenomen in dit land en die komt bij Nabuurs ergens.

P1: Aan en ook die moet een keer teruggehaald worden. Dus het hele traject is zo ongeveer hetzelfde. Behalve het feit. Hij komt niet bij een ontvangend filiaal bij.

I: Hoe vaak wordt zo'n pallet teruggehaald?

P1: Ja minimaal twee keer per jaar. Ja, en Dat is net na de zomer opeens op. Ja, dan willen we gewoon dat Nabuurs leeg is en na de winter die heeft voor mij ook met Hongkong te maken, dat ze gewoon willen van jou dan kan me dat ook audits om te kijken. Wat staat er dan op aan externe opslagen? En het kan ook vaak zeker In de winterperiode. Omdat we dan handel, dan komen we nog wel eens handel tekort, dus daar moeten we het gewoon verdelen met zijn allen.

I: Volgens mij heb ik deze ook toch gesteld, Maar ik stel hem voor de zekerheid. Moet jij een akkoord geven voor een onderlinge levering?

P1:Voor een online levering niet, althans niet administratief? We hebben wel die afspraak met name als het naar de opslag filiaal gaat. Joh, dat wil ik wel weten, maar het hoeft in principe niet. Voor een externe opslag wel. Als een filiaal externe opslag aanvraagt, krijgen wij een melding. Ik heb dat nu dus gelukkig niet zoveel van Utrecht had ik dat dus weldan krijg ik een melding. “Joh het filiaal wil graag een pallet opslaan”, en dan gaf ik geen akkoord. Het moest ook nog eens binnen een bepaalde tijd, want anders verloopt ie, dan kan hij al niet meer weg. Als alles goed is dan wordt hij de volgende dag of de dag daarna opgehaald.

I: Zijn er filialen die in jouw district zichzelf. Een bepaalde plaats. Hebben toegeëigend dus bijvoorbeeld, door te zeggen: “ik verkoop eigenlijk alleen maar snoep” of “ik verkoop eigenlijk Alleen maar kleding”.

P1: Maar wat bedoel je dan met plaats toe-eigenen?

I: Ja, nee, Maar ik bedoel dus die dat ze zichzelf zo zien, dus Dat is bijvoorbeeld meer van snoep willen hebben dan bijvoorbeeld meer van kleding. Ik kan bijvoorbeeld bedenken als jij In de Mariekenstraat zit dat jij daar geen broeken gaat verkopen.

P1: Maar dan …, kijk met de term plaats toe-eigenen zeg ik dan haast alsof het een gevoelskwestie is. Ik heb dan liever dat we het ook nog staven met feiten omdat dat nog wel een verschil kan zijn, namelijk. Filiaal is echt heel snel van. Nou, Wij zijn geen snoepfiliaal, maar als je dan kijkt naar de percentages, Ik denk nou, de doorstroom is best zo. Dus, maar die zijn er wel. Ja, kijk je, je hebt al een verschil in centrum filialen, bijvoorbeeld. Als je kijkt naar luiers bijvoorbeeld, ja, die verkopen niet zo heel veel luiers, want mensen gaan niet met een paar luiers door het centrum heen winkelen. Onderhoud bijvoorbeeld, dat zijn grote verpakking, onderhoud lopen daar ook niet zo heel hard. De dorpse filialen of filialen was hij met de auto kunnen komen. Ja die verkopen vaak wel onderhoud en noem maar op, dus daar zit wel een differentiatie in.

I: Dat snap ik. En je zei wel soms zie je in de cijfers wel dat ze dus best wel veel verkopen. Waar denk je dan dat? Dat aan ligt. Dus dat mensen het gevoel hebben in ieder geval dat aan de ene kant de feiten zeggen, dus dat ze een snoep filiaal zijn, want ze verkopen heel veel snoep, maar toch kunnen ze die andere producten nog wel verkopen.

P1: Ja, ja, nou ja, weet je? Kijk, onze formule is natuurlijk zo dat alles wat In de folder staat moeten we wel hebben. Ja. En wat je nu wel meer ziet, is dat replenishment veel meer rekening houdt met wat ze wel of niet kunnen verkopen, hè? Dus dus dat dat gaat dan prima. Één ding moet wel alleen niet vergeten, we zijn en blijven natuurlijk nog steeds wel een push organisatie. We hebben de handel nou eenmaal nodig en eventjes en misschien zijn er ook verkeerd, maar dan moet er maar wel of niet uithalen, maakt niet uit, Maar ik heb liever 3 doosjes te veel dan een doosje te weinig.

I: Ja dat snap ik.

P1: Want dat bepaalt of dat al mijn klanten er gebruik van hebben kunnen maken en als jij teveel nee moet zeggen, in de markt waarin wij in zitten, jagen we ze zo naar een concurrent toe. Ja, daar hebben ze waarschijnlijk wel het. Dus het is heel belangrijk dat de juiste handel op de. Juiste plek. Terecht komt daarom is onderling leveren voor ons wel een soort van noodzakelijk iets, ook omdat juist goed voor elkaar te kunnen krijgen.

I: Dus in jouw visie is, zeg maar onderling leveren meer dat je ergens genoeg hebt in plaats van dat je ergens teveel weg stuurt?

P1: Nou ja, dat klopt aanvullend. Ik heb liever ergens genoeg dan ergens anders tekort. Dus als wij nou een mooi voorbeeld: vanmorgen met de geschenkverpakking uit de Lange Hezelstraat. Nou, daar ben ik van de week geweest. Hebben ze prachtige presentatie staan, daar kunnen ze eigenlijk tot haar Moederdag wel mee vooruit. Hebben ze toch nog 1/2 pallet achter staan. Hoe komt dat? Dat is het nadeel binnen ons bedrijf. Dat zou voor mij de grootste uitdaging zijn om dat aan te pakken qua onderlinge leveringen. Omdat zij zoveel wegsturen gaat het administratief eruit. Je voorraad wordt het gezien als verkoop. Ja dus de eerstvolgende keer. Als we die handel weer gaan krijgen op basis van historie, gaan ze dezelfde handeling gestuurd krijgen. Dat is iets als we dat nou eigenlijk kunnen aanpakken dan worden heel veel filialen geholpen.

I: En het aanpakken van dat, kan dat doormiddel van bijvoorbeeld contact op te nemen met Store Replenishment?

P1: Ja, Maar het systeem is het systeem. We weten dat het zo is. We weten ook dat daar een uitdaging is. Ik vraag me af hè? Net als dat zeg maar op het hoofdkantoor misschien wel eens de gedachte leeft van “ja weet je, is een filiaalmanager nou wel echt bezig met wat er allemaal om een online levering heen hangt”. Ik vraag me af of dat men op het hoofdkantoor wel duidelijk heeft dat als dit systeem zo blijft, blijft het ook in standhouden. Want dat betekent namelijk dat met name de kleine filialen die veel gebruik maken van OL’s. Die zullen daar gebruik van moeten blijven maken, want het komt eigenlijk hier binnen. Als we kijken naar een soort van oplossing, zou dat de grootste oplossing zijn. Oké, want dat is dus als je kijkt naar de verschillende redenen waarom mensen online leveren. Hè, magazijnruimte gebrek/ winkelruimte gebrek. Dat is 1 grote reden, dat kun je daarmee ondervangen. De tweede is dat filiale die het wel goed kunnen verkopen. Die hebben die handel gewoon nodig. Kun je er ook wel een klein beetje mee ondervangen, want daar kun je misschien wat meer handelen dan het toesturen. Dan hoef je het thema onderling leveren wat minder te gebruiken. Alleen, het probleem met de magazijnruimte is. En, die magazijnen worden natuurlijk niet groter. Maar dat blijft maar gepusht worden. En dan zeg ik ook tegen de filialen: “Ja maar luisteren elke klant die jou binnenkomt wil alles uit de folder kunnen kopen”. Maar in de hele kleine filialen dus zoals in de Lange Hezelstraat met die 2/3 pallets magazijnruimte die ze hebben, en een winkel met twee gangpaden. Daar zou je eigenlijk een doorstroom moeten hebben van een week. Want elke week hebben we nieuwe handel ja. Maar dat gaat niet veranderen. Waarschijnlijk op het moment dat wij niet iets kunnen doen aan het de onderlinge leveringen, cijfers uit je verkopen te halen. Oké, dus mijn hoop is op jouw gevestigd [gelach]. Kunnen we deze even extra opnemen? Nee.

I: Ik kan het wel dik drukken.

P2: Wat wat ook wel is. Is dat zeker bij de verdelingen niet gekeken wordt naar de voorraad die nog in de winkel is.

P1: Dat is niet helemaal waar want het gaat via Replenishment namelijk? Ze kijken naar de verkoopkans. En in het individuele geval, [naam P2], zou dat wel kunnen zijn, Maar dat heeft denk ik meer te maken met filiaal specifiek In de grote lijn laat ik het zo maar even zeggen, gaat ook de GM (General Merchandise) nu mee in verkoopkans en op basis van welke voorraden we nog hebben.

P2: Maar volgens mij laatste gegevens was er nog niet zo, want ik heb gemaild omdat ik weer heel veel Tic Tac over datum had, dus aan de kassa. En die gaan dan over datum. En dan weer krijg ik wat, ik nog heel veel voorraad heb en toen zeiden ze dat GM nog niet gekoppeld was aan de voorraad die in de winkel is.

P1: Nou, dat is goed dat je het zegt, dat moet duidelijk hè? Nee, goed dat je het zegt we hebben Peter van Beek.

P2: Ja, Daarom wou ik eventjes, ja.

P1: Die ken je ook waarschijnlijk. Nou dat is het aanspreekpunt voor onze area. Die gaat ook zo af en toe. Die is bij mij ook veel in Utrecht geweest, dus. Daar ga ik. Dat toch nog eens een keer bij hem verifiëren? Want dat zou namelijk wel zo moeten zijn. Alleen Tic Tac bijvoorbeeld, maar niet om nou heel erg op filiaal specifiek te gaan. Dat is dan ook weer het lastige. Dat is niet eens GM, dat is gewoon standaardassortiment. Maar goed, weet je?

P2: Ja maar die heb je bijvoorbeeld ook nu met Moederdag met de Merci en met de Celebrations die er staan? Want ik dacht nog losgekoppeld aan de voorraad die er is, want die zit dan in de GM.

P1: Nou ja. Maar dat is wel een interessante. Ja, ja.

P2: Dan zou je moeten gaan leveren als het bijvoorbeeld bijna ja, als je denkt van, ik heb zo'n gevoel ik ga de datum niet halen.

P1: Nee ja nee oké, Maar dat is wel een goeie toevoeging, Maar dat is. Misschien heeft dat ook weer met groepen te maken. Dat zou kunnen. Weet ik ook niet, maar dat ga ik eens even beter navragen. Je mag gewoon toevoegen [naam P2], hè?

P2: Nee sorry ik wou even

P1: Dat mag juist goed. Ja juist goed.

P2: Omdat ik voor vorig jaar daar nog over gemaild had, omdat ik heel veel Tic Tacs over datum had en ik echt FIFO vul. Omdat Ik weet van, het moet, maar dan heb je een meng doosje van, dan pak ik toch even tiktak voorbeeld want er zijn ook andere. Je krijgt een meng doosje als het een kassa koopje

is, maar ze zitten allebei los in de ons standaard assortiment en de Orange (smaak Tic Tac) gaat bijvoorbeeld heel hard, maar normaal gesproken in het standaard assortiment gaat je Orange en Mint apart, maar bij kassakoopjes samen [in een doosje]. En dan zetten we heel weinig Orange in en heel veel Mint. Maar dat gevolg, hoe ik ook mijn best doe, dan gaat elke keer de Mint over datum omdat ik het gewoon dan niet verkoop. Kijk aan sommige dingen, andere filialen hebben dit probleem misschien met de Smintjes?

P1: Nee, Maar ik neem deze wel mee met Peter van Beek niet Peter Ebben maar Van Beek en het raakt wel het feit Als het gaat om onderlinge leveringen. Maar dat Ik denk dat het een ander proces is wat belangrijker is voor jou. Hoe wordt er nou te weinig ingestuurt plaats van het onderling leveren zelf, zeg maar.

P2: Ja, maar goed, stel dat ik nu kijk naar zo'n Tik Tac is €2, maar die merci Moederdag dozen van €7,80 en die heb ik nu meer als 400 op voorraad. Daar moet ik echt wel goed In de gaten houden. Staat allemaal mama op, dus die zou ik wel eigenlijk onderling moeten gaan leveren. Als ik denk van daar wordt namelijk mijn moeder nog wel een dingetje.

P1: Nou raak je weer iets anders, want dat is voor dit filiaal natuurlijk heel lastig. Want dit is het filiaal met de hoogste omzet. Dus hoe groot is de kans dat jij het onderling kunt leveren?

P2: Ja heel klein? Nee, maar goed, ik denk dat ik wel heel Nederland door moet.

P1: Nee, dat begrijp ik maar. Maar dat dat klopt, hè, dus even buiten dit om, dat zou ik wel even Call voor haar maken met CE code of EN code erbij van “Joh let op, ik weet niet beste inkoper, Misschien moeten we nu hier iets mee doen?”

P2: Ja ze zeggen zelf is CE code als ze normale assortiment hebben alleen moeder opgezet.

P1: Ja, Maar ik zou het wel doen die Call aan maken, anders worden ze niet wakker.Want dat zien zij ook.

I: Waarom denk je dat? Wat zijn de 3 dus voornaamste redenen dat filiaalmanagers willen, zou je die nog een keer op kunnen noemen?

P1:Nouja magazijnruimtegebrek. Ruimtegebrek/teveel instuur. Die kun je eigenlijk samen pakken. Of nou ja, ruimtegebrek [1], teveel instuur [2] en kansen zien [3]. Dat is denk ik. Dat is ook een belangrijk.

I:Ja, en als je die zou moeten rangschikken op waarde, welke zou dan op een komen staan dus vooral kansen zien?

P1:Dat zou het mooiste zijn, Maar dat is niet de realiteit. Ik denk dat het merendeel zit op basis van. We hebben geen ruimte. Magazijn is vol teveel insturen dus.

I: En dan ga ik toch weer een percentage vragen stellen, maar hoeveel van de OL die jij stuurt bijvoorbeeld naar filiaal Broerstraat is echt: “Oké ik heb teveel, ik heb ruimtegebrek, dus daarom stuur ik het naar het opslagfiliaal op de Broerstraat.

P1: Ja, Dat is een interessante vraag. Wat In de broerstraat staat, ja dat is 100% omdat er geen ruimte is.

I: Dus eigenlijk, stuur je nooit naar de Broerstraat. Als je denkt, hé daar komt het wel op.

P1: Nee, nee, want daar zit één traject voor, namelijk: Iedereen die roept van “joh, mag ik iets opslaan?” Dan is de eerste vraag: “joh, heb je het geprobeerd In het filiaal of In het district?”, “Ja dat heb ik gedaan” en zo zijn er de afgelopen weken een aantal pallets van Nijmegen-Noord Oosterhout naar Cuijk toegegaan in plaats van de Boerstraat. Dus dat is de reden dat ze het via mij moeten doen. Ik zie natuurlijk ook alle filialen. Dus ik kan ook zeggen, een voorbeeldje: Hezelstraat heeft 8 kratten UA staan. Kleine winkeliers, maar [filiaal] Groesbeek is 1 grote winkel. Waarschijnlijk is het daar 90% gewoon vak voorraad. Oké, dus dan is het “joh, mag ik het opslaan?” Nou ja, je mag sowieso niet opslaan als standaard assortiment tussen zit? Ook niet dus nee, dat gaat dus dat gaat naar Groesbeek in dit geval. Dus wat op de Broerstraat staat dat is 100% teveel handel en daar zit wel iets aan vast ook weer vind ik. Maar dat is onze rol dus. Op het moment dat ik in het weekend, in het weekend bezoeken wij ook wel eens filialen, maar op het moment dat ik In het weekend zie dat een filiaal ,bij wijze van spreken, op zaterdag actiemeters leeg heeft staan. De eerste beste moment dat ze mij bellen “We willen pallets opslaan”, dan zeg ik: “nou, dat denk ik dus niet, oké. Zorg er eerst maar eens voor dat je 7 dagen in de week je handel gewoon In de winkel hebt staan”. Want dat is het hetgeen wat ik in Utrecht in het begin heel erg moest doen. Ook echt daarin ook wel vervelende keuzes maken voor de filialen. Je voelt blijkbaar de noodzaak niet, want je vult niet op zaterdag omdat je op maandag de verdeling erin wil gooien. Ja, dan gaan we gewoon niks extern zetten, dan moet je het even voelen, want alles wat we extern inzetten kost ook geld. Alles wat op de Broerstraat staat is dode handel. Dat kost ook geld.

I: Hoeveel van het OL percentage in dit district zetten jullie op Watsonline? Er is natuurlijk een deel dat je natuurlijk alleen In het district naar elkaar stuurt en dat daar zou jij vooral de beslissingen maken.

P1: Nou, Maar dat is wel heel wisselend, hoor, want er zijn wat filialen bij die het af en toe een keer erop zetten. Maar dat dat zou nog beter kunnen en het heeft ook wel weer een nadeel hoor, want het nou laat ik met het voordeel beginnen: Onder andere de Lange Hezelstraat, die heeft dat volgens mij een maand of twee geleden nog een keer gedaan met wat onderhoud, en die is ze kwijtgeraakt. Ook in een filiaal ergens in Nederland. Maar het heeft ook een nadeel, want de filiaalmanagers die heel actief met WatsOnline bezig zijn, die raken het dan misschien kwijt. Filiaalmanagers die wat minder actief

met WatsOnline bezig zijn of de telefoon niet altijd bij de hand hebben, wat logisch is want ze zijn aan het werk die grijpen dan mis. Bovendien vind ik het ook niet zo fijn als ik meekrijg dat een ander district, pallets naar mij toe het sturen is terwijl ik zelf filialen heb waar heel veel handel staat.

I: Oké ja

P1: Dus ik ben daar niet zo'n heel erge fan van. Ze hebben gewoon ook een marktplaats groep Watsonline ja maar in ieder geval ja ik vind het lastig. Ik vind als je buiten district wil gaan kijken, vind ik dat je met de districtsmanager moet praten. Want blijkbaar zit je in zo'n noodsituatie dat je de hulp nodig hebt. Ja, dan moet je hulp van ons krijgen vind ik persoonlijk.

I: Hoe lang Laten jullie producten staan voordat je dus besluit om ze te bellen? Dus dat als je binnen een week niet verkocht krijgt of denk je wel nou, je kan nog van tevoren zien binnen 3 dagen. Je hebt teveel producten, stuur maar naar dit filiaal.

P: Kijk dus als je kijkt naar een Leuvensbroek. Nou, die heeft, die heeft echt het kleinste magazijn, Dat is dit stuk zo vanaf het podium naar achter (wijst in het filiaal rond). Dat is hun magazijn, Dat is alles en dus daar zou je eerder kunnen kiezen om te zeggen, “we halen wat handel weg”. ze hebben wel weer een redelijk hoge doorloop, dus zij hebben handel ook nodig om hun omzet te halen. Ja, dus dat dat blijft altijd een beetje een spanningsveld. Dus om dat precies te kunnen zeggen is lastig, maar uiteindelijk weet je wel. Een voorbeeldje na een zomerperiode, als iemand als een filiaal nog 3 planken met boeken heeft staan, weet je, die gaan ze niet verkopen. De aankomende half jaar tot aan de volgende vakantieperiode. Nou, dan moet die er gewoon uit, ja, maar dan is dat weer opslag, niet zozeer omdat ergens anders een verkoopkant zien.

I: Deze was vooral vanuit een van mijn collega's, maar krijg je de periodieke evaluatie op je push van jouw area manager doorgezet of niet?

P1 : Ja ja, ja, sterker nog, dat kunnen wij ook op reageren. Daar wordt aangegeven hoeveel we plussen en minnen hè dat filiaal toch? Ja, nee, die krijg ik van Teun Bouman, hij is onze area manager en die neemt ons daarin mee en dat is voor ons ook goed om te zien. Want dan weten we ook dat het dat werkt. Ja soms vragen we het aan. Even aankijken of iets wel of niet kan, maar die krijgen wel. Die krijgen wel gecommuniceerd ja.

I: Nou, deze vraag heb ik al in het begin gesteld. Maar hoe zorg je dus dat het filiaal van de Broerstraat niet helemaal volloopt daar ben? Jij dus zelf verantwoordelijk voor?

P1: Nou ja de filiaalmanager zelf hè! Je vooral hè? Ja kijk, zij is verantwoordelijk voor die winkel, dus het moment dat die vol is, ja, dan weet zij, hij kan nu gewoon niks meer kwijt. We hebben nog een andere stroom. Hè om het Nog iets complexer te maken? We hebben ook nog de stroomrichting prijsmepper. Dat is misschien ook wel de onderlinge leveringen stromen, hè?

I: Ja, die haal ik uit mijn data, want die behoren niet tot mijn onderzoek. Dat kan ik. Aan de filiaalcodes kan ik zien welke dat zijn

P1: En kijk op het moment dat wij het ook niet redden. Het is ook niet zo dat je daarmee alles redt, hè? Want dat zijn Misschien 1/2/3 pallets. Maar ja, dan ga ik wel kijken naar de filialen die het meest vol zitten. Dus de kleine magazijn filialen en als die op dat moment even niks kwijt kunnen, dan gaat. Er iets bij? De Broerstraat die wordt sowieso twee keer In het jaar leeg gereden.

I: Is dat tijdens die op=op weken?

P1: ja

I: Ja, dat was hem eigenlijk. Kijk kort, maar krachtig Dan wil ik je heel graag bedanken voor het fijne gesprek.

P1: Ja graag gedaan!

Appendix B: Questionnaires

Note: Only one questionnaire is shown here. The other questionaries only differ on the amounts used in the block ‘Replenishment Decisions’, these are available on request.

Group 1

Start of Block: Code of Ethics

Risk Aversion Beste deelnemer, graag zou ik u willen bedanken voor het invullen van dit onderzoek voor mijn Master Thesis. Op deze pagina staat verder uitleg over mijn onderzoek en wat betrekking heeft op u.

Ik doe dit onderzoek om te kijken of risico aversie invloed heeft op beslissingen omtrent uw voorraad. Het onderzoek zal ongeveer 5 minuten in beslag nemen en alles wat u invult zal **anoniem** zijn. Niks is terug te leiden naar u persoonlijk

Informatie voor uw deelname

- Dit onderzoek is vrijwillig, en u bent vrij om te stoppen wanneer u maar wilt
- U heeft het recht om te verzoeken om toegang tot en rectificatie, verwijdering, beperking van of bezwaar tegen de verwerking van de persoonsgegevens.
- Alle data is anoniem en zal alleen voor mijn onderzoek worden ingezien
- De data zal tot 8 juni worden opgeslagen, hierna is mijn onderzoek ten einde en wordt het verwijdert
- Gegevens zullen geen andere doeleinde dienen dan mijn onderzoek
- Voor eventuele opmerkingen of klachten over dit onderzoek kunt u ook contact opnemen met w.schemkes@tilburguniversity.edu.
- Indien u opmerkingen of klachten heeft over dit onderzoek kunt u ook contact opnemen met w.schemkes@tilburguniversity.edu.

Q40 Ik bevestig hierbij dat ik ouder dan 18 jaar ben en bovenstaande informatie heb gelezen

○ Akkoord (1)

End of Block: Code of Ethics

Start of Block: Pagina 2

Introductie U krijgt op de volgende pagina 10 verschillende producten te zien, met 10 verschilende hoeveelheden. Telkens is de vraag of u gebruik zou maken van het 'Onderling Leveren' systeem, en dus of u het naar een ander filiaal zou sturen. Als u het niet naar een ander filiaal zou sturen kunt u 'Nee' aanklikken

End of Block: Pagina 2

Start of Block: Replenishment Decisions

Q31

U krijgt 150 bussen Pringles binnen met de eerstvolgende vracht. Zou u gebruik maken van het 'Onderling Leveren' systeem met uw huidige voorraad, en zo ja hoeveel zou u wegsturen?

Nee

0 15 30 45 60 75 90 105 120 135 150

Ik zou wegsturen: ()	

Q27

U krijgt 160 pakketten WC papier binnen, zoals hierboven, met de eerstvolgende vracht. Zou u gebruik maken van het 'Onderling Leveren' systeem met uw huidige voorraad, en zo ja hoeveel zou u wegsturen?

nee

0 16 32 48 64 80 96 112 128 144 160

Ik zou wegsturen ()	

Q28

U krijgt 121 bussen Pringels Orginal smaak binnen met de eerstvolgende vracht. Zou u gebruik maken van het 'Onderling Leveren' systeem met uw huidige voorraad, en zo ja hoeveel zou u wegsturen?

Nee

0 12 24 36 48 61 73 85 97 109 121

Ik zou wegsturen: ()	

Q41

U krijgt 73 WC blokken van Witte Reus binnen met de eerstvolgende vracht. Zou u gebruik maken van het 'Onderling Leveren' systeem met uw huidige voorraad, en zo ja hoeveel zou u wegsturen?

Nee

0 7 15 22 29 37 44 51 58 66 73

Ik zou wegsturen: ()	

Q42

U krijgt 52 5-packs binnen van Indomie Noodles met de eerstvolgende vracht. Zou u gebruik maken van het 'Onderling Leveren' systeem met uw huidige voorraad, en zo ja hoeveel zou u wegsturen?

Nee

0 5 10 16 21 26 31 36 42 47 52

Ik zou wegsturen: ()	

Q43

U krijgt 10 magnetische raamhorren binnen met de eerstvolgende vracht. Zou u gebruik maken van het 'Onderling Leveren' systeem met uw huidige voorraad, en zo ja hoeveel zou u wegsturen?

Nee

0 1 2 3 4 5 6 7 8 9 10

Ik zou wegsturen: ()	

Q44

U krijgt 6 klamboes binnen met de eerstvolgende vracht. Zou u gebruik maken van het 'Onderling Leveren' systeem met uw huidige voorraad, en zo ja hoeveel zou u wegsturen?

Nee

0 1 2 3 4 5 6

Ik zou wegsturen: ()	

Q45

U krijgt 4 Stoelkussen binnen, zoals hierboven, met de eerstvolgende vracht. Zou u gebruik maken van het 'Onderling Leveren' systeem met uw huidige voorraad, en zo ja hoeveel zou u wegsturen?

Nee

0 1 2 3 4

Ik zou wegsturen: ()	

Q46

U krijgt 16 Witte Reus XXL waspoederverpakkingen binnen, zoals hierboven, met de eerstvolgende vracht. Zou u gebruik maken van het 'Onderling Leveren' systeem met uw huidige voorraad, en zo ja hoeveel zou u wegsturen?

Nee

0 2 3 5 6 8 10 11 13 14 16

Ik zou wegsturen: ()	

Q47

U krijgt 18 Witte Reus XXL pods binnen, zoals hierboven, met de eerstvolgende vracht. Zou u gebruik maken van het 'Onderling Leveren' systeem met uw huidige voorraad, en zo ja hoeveel zou u wegsturen?

Nee

0 2 4 5 7 9 11 13 14 16 18

Ik zou wegsturen: ()	

End of Block: Replenishment Decisions

Start of Block: Intro DOSPERT

Risico Aversie De volgende vragen gaan over hoe risicovol je iets persoonlijk vind. Nogmaals: Deze gegevens zijn volledig anoniem en kunnen niet aan jou persoonlijk worden gekoppeld

Heel erg bedankt

End of Block: Intro DOSPERT

Start of Block: DOSPERT Enquête

Q1 Toegeven dat je iets niet lekker vind

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q2 Gaan kamperen in het wild

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q3 Een dagloon inzetten op een voetbalwedstrijd

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)

- Extreem risicovol (7)

Q4 10 procent van je inkomen te investeren in één aandeel

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q5 Stevig drinken op een feestje

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q6 Het nemen van een aantal twijfelachtige getallen op uw aangifte inkomstenbelasting.

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q7 Het niet eens zijn met een autoriteitsfiguur op een belangrijk punt

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q8 Je dagloon gokken tijdens het pokeren

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q9 Doen alsof jij iets hebt gemaakt terwijl een collega dit heeft gedaan

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q10 Een skipiste die boven jou niveau ligt

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q11 5% van je loon investeren in een erg onstabiel aandeel

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)

- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q12 Wildwater-raften in de lente

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q13 Je dagloon wedden in het Casino

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q14 Het geheim van een vriend vertellen aan iemand anders

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q16 10% van je inkomen in een nieuw bedrijf stoppen

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q17 Een skydiving cursus nemen

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q18 Een leuke carrière kiezen in plaats van een veilige carrière

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q19 Je onpopulaire mening geven in een meeting op het werk

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q20 Bungeejumpen van een brug af

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q21 Een klein vliegtuigje besturen

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q22 Naar een stad verhuizen ver weg van je familie

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q23 Van carrière veranderen op je 35e

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q24 Je peuters thuis achterlaten in hun eentje terwijl jij boodschappen gaat doen

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)

- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

Q25 Een portomonee vinden met daarin €200,- en deze niet terugbrengen

- Totaal niet risicovol (1)
- Een klein beetje risicovol (2)
- Een beetje risicovol (3)
- Deels Risicovol (4)
- Risicovol (5)
- Erg risicovol (6)
- Extreem risicovol (7)

End of Block: DOSPERT Enquête

Appendix C: DOSPERT Survey

Domain Specific Risk Taking Survey: Risk Perceptions:

People often see some risk in situations that contain uncertainty about what the outcome or consequences will be and for which there is the possibility of negative consequences. However, riskiness is a very personal and intuitive notion, and we are interested in your assessment of how risky each situation or behavior is. For each of the following statements, please indicate how risky you perceive each situation.

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	Not at all risky	Slightly risky	Somewhat risky	Moderately risky	Risky	Very risky	Extremely risky
1. Admitting that your tastes are different from those of a friend.	☐	☐	☐	☐	☐	☐	☐
2. Going camping in the wilderness.	☐	☐	☐	☐	☐	☐	☐
3. Betting a day's income at the horse races.	☐	☐	☐	☐	☐	☐	☐
4. Investing 10% of your annual income in a moderate growth diversified fund.	☐	☐	☐	☐	☐	☐	☐

5. Drinking heavily at a social function.	☐	☐	☐	☐	☐	☐	☐
6. Taking some questionable deductions on your income tax return.	☐	☐	☐	☐	☐	☐	☐
7. Disagreeing with an authority figure on a major issue.	☐	☐	☐	☐	☐	☐	☐
8. Betting a day's income at a high-stake poker game.	☐	☐	☐	☐	☐	☐	☐
~~**9.** Having an affair with a married man/woman.~~	☐	☐	☐	☐	☐	☐	☐
10. Passing off somebody else's work as your own.	☐	☐	☐	☐	☐	☐	☐
11. Going down a ski run that is beyond your	☐	☐	☐	☐	☐	☐	☐

ability.							
12. Investing 5% of your annual income in a very speculative stock.	☐	☐	☐	☐	☐	☐	☐
13. Going whitewater rafting at high water in the spring.	☐	☐	☐	☐	☐	☐	☐
14. Betting a day's income on the outcome of a sporting event.	☐	☐	☐	☐	☐	☐	☐
~~**15.** Engaging in unprotected sex.~~	☐	☐	☐	☐	☐	☐	☐
16. Revealing a friend's secret to someone else.	☐	☐	☐	☐	☐	☐	☐
~~**17.** Driving a car without wearing a seat belt.~~	☐	☐	☐	☐	☐	☐	☐

18. Investing 10% of your annual income in a new business venture.	☐	☐	☐	☐	☐	☐	☐
19. Taking a skydiving class.	☐	☐	☐	☐	☐	☐	☐
~~**20.** Riding a motorcycle without a helmet.~~	☐	☐	☐	☐	☐	☐	☐
21. Choosing a career that you truly enjoy over a more secure one.	☐	☐	☐	☐	☐	☐	☐
22. Speaking your mind about an unpopular issue in a meeting at work.	☐	☐	☐	☐	☐	☐	☐
~~**23.** Sunbathing without sunscreen.~~	☐	☐	☐	☐	☐	☐	☐
24. Bungee jumping off	☐	☐	☐	☐	☐	☐	☐

a tall bridge.							
25. Piloting a small plane.	☐	☐	☐	☐	☐	☐	☐
~~**26.** Walking home alone at night in an unsafe area of town.~~	☐	☐	☐	☐	☐	☐	☐
27. Moving to a city far away from your extended family.	☐	☐	☐	☐	☐	☐	☐
28. Starting a new career in your mid-thirties.	☐	☐	☐	☐	☐	☐	☐
29. Leaving your young children alone at home while running an errand.	☐	☐	☐	☐	☐	☐	☐
30. Not returning a wallet you found that contains $200.	☐	☐	☐	☐	☐	☐	☐

Appendix D: DOSPERT Survey Scoring

Domain Specific Risk Taking Survey: Risk Perceptions Scoring Procedure

There are five separate domains for risk assessment:

1) Ethical (items 6, 9, 10, 16, 29, 30)

2) Financial (items 3, 4, 8, 12, 14, 18)

3) ~~Health & Safety (items 5, 15, 17, 20, 23, 26)~~

4) Recreational (items 2, 11, 13, 19, 24, 25)

5) Social (items 1, 7, 21, 22, 27, 28)

Item ratings are added across all items of a given domain to obtain subscale scores. Higher scores suggest perceptions of greater risk in the domain of the subscale.

*Additionally, the six financial items can be dichotomized into gambling (#3,8,14) and investment (#4,12,18) items for further decomposition of the construct. Lastly, all 30 items can be added up, yielding an overall scale score, for a broader assessment of the risk-taking constructs.

Appendix E: Cronbach's Alpha

Figure 2: Cronbach's Alpha on the first try

Reliability Statistics

Cronbach's Alpha	N of Items
,700	10

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q1	378,56793346	142427,188	,128	,705
Q2	375,43786578	137662,175	,236	,695
Q3	382,28254613	143969,807	,120	,705
Q4	328,20174581	112856,664	,370	,680
Q5	378,74817086	133671,845	,400	,679
Q6	321,14116248	111049,362	,439	,662
Q7	340,28687391	120221,939	,368	,676
Q8	350,48781583	115360,371	,422	,665
Q9	349,71963163	112956,798	,545	,641
Q10	325,73637679	108882,905	,518	,643

Figure 3: Cronbach's Alpha on the second try

Reliability Statistics

Cronbach's Alpha	N of Items
,719	8

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q2	351,70831811	131745,161	,191	,725
Q4	304,47219813	106292,269	,365	,706
Q5	355,01862319	127524,723	,362	,707
Q6	297,41161481	101855,485	,485	,674
Q7	316,55732624	111508,629	,402	,693
Q8	326,75826816	106626,951	,458	,680
Q9	325,99008396	106523,115	,539	,664
Q10	302,00682912	102535,183	,512	,667

Figure 4: Cronbach's Alpha on the third and final try

Reliability Statistics

Cronbach's Alpha	N of Items
,725	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Q4	287,62005028	98350,769	,368	,715
Q5	338,16647533	120101,643	,331	,720
Q6	280,55946696	93039,558	,509	,674
Q7	299,70517839	102362,048	,428	,695
Q8	309,90612030	99365,377	,449	,690
Q9	309,13793611	100645,542	,498	,679
Q10	285,15468127	94758,022	,516	,672

Appendix F: Assumptions

Figure 5: Boxplot showing outliers

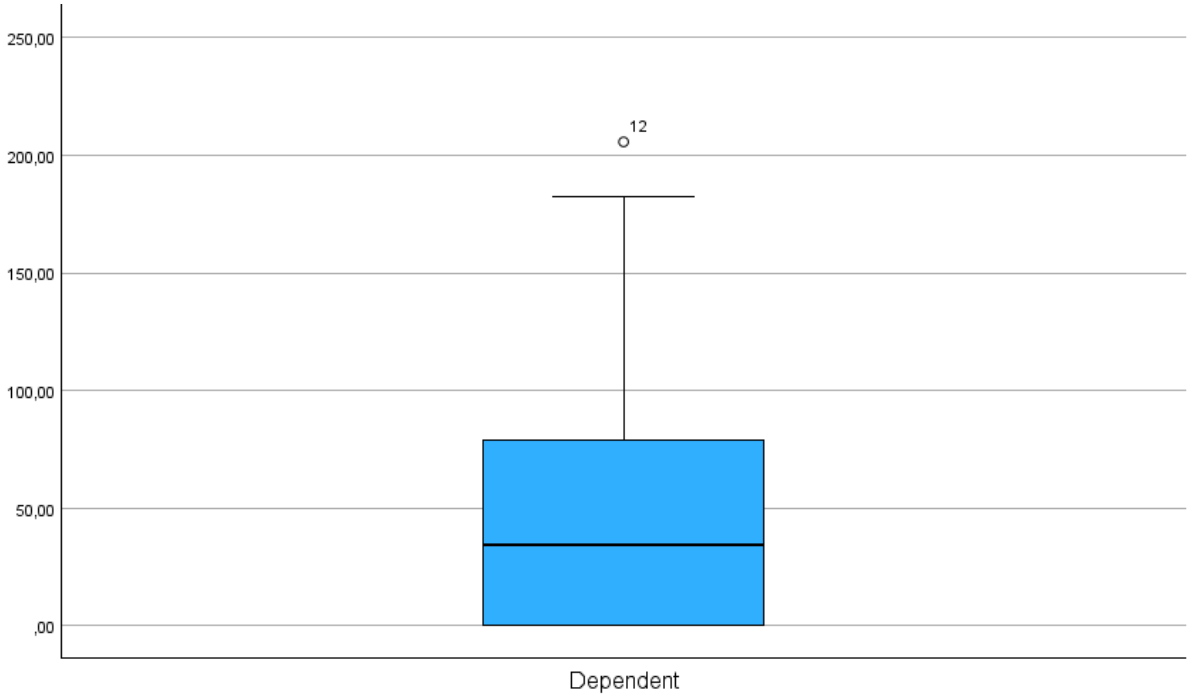

Figure 6: Histogram showing the distribution of the dependent variable

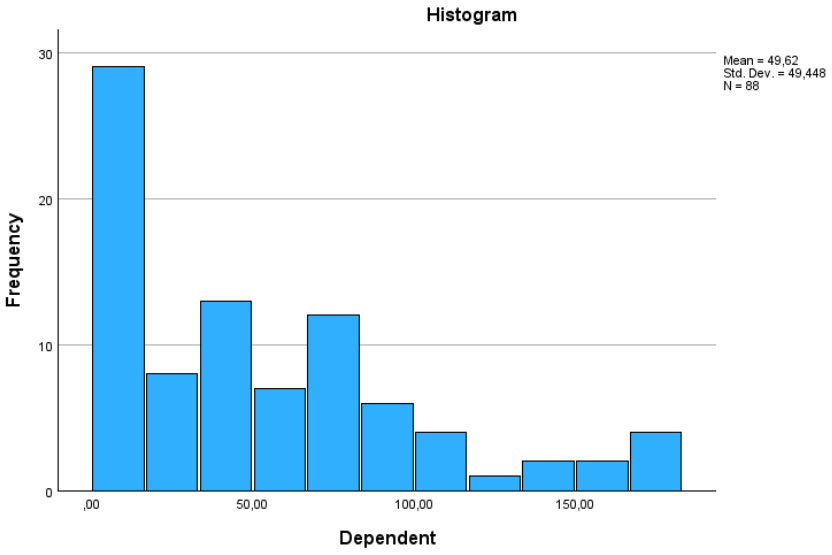

Figure 7: Levene's test for Risk Aversion (IV) and Replenishment Decisions (DV)

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
ReplenishmentDecisions	Based on Mean	,883	1	78	,350
	Based on Median	1,012	1	78	,317
	Based on Median and with adjusted df	1,012	1	74,766	,318
	Based on trimmed mean	,983	1	78	,325