Bachelor paper – Research proposal

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The influence of out-of-stock policies on customer behavior.

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ABSTRACT
The influence of out-of-stock policies on customer behavior has been a topic of research for many years. But most of the studies have been conducted in the offline environment. This paper found that customer behavior differs between the online and offline market. The online market keeps growing with the year and so is the importance of using the right out-of-stock policy. Traditional out-of-stock policies such as leaving the shelve empty were found to have negative effects on direct sales and the store image. Reason for this is the higher transparency of the online market, which makes it easier for customers to switch between stores when they face an out-of-stock situation. Organizations should adapt new out-of-stock policies that fit with the online environment to influence the customers' buying decision in a positive way. This paper has tested two new policies by giving customers the opportunity to backorder a product in a hypothetical situation. The results showed that customers are willing to wait on an out of stock product when given the opportunity. Compensating customers for the out of stock situation led to even more sales and an improved store image. This paper further found that customers are willing to wait for a product that is in stock when they get a financial compensation in return. This last finding could have serious implications for organizations.

Keywords
Consumer behavior, out-of-stock policies, willingness to wait, black box model.

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1. INTRODUCTION

A stock-out, or out-of-stock (OOS) is a regular phenomenon for shoppers as the global average of retail out-of-stocks is 8.3% (Gruen & Corsten, 2007). Preventing a OOS situation is a basic marketing function that has an effect on both short-term revenues and long-term customer loyalty (Amato, 2009). That this marketing function of meeting demand with supply can be very challenging is also seen within the world's largest retailer Wal-Mart. At a company meeting at March 28 in Orlando, Wal-Mart executives reported they were leaving almost $3 billion on the table as a result of out-of-stocks (Rosenblum, 2014). Wal-Mart simply left their shelves empty, which is a way to deal with an OOS situation but when a stock-out occurs a retailer should find ways to ensure that they do not lose customers and sales to their competitors. In the online retail market this is even more important because customers can easily switch to another online store due the higher transparency of the market.

The online market keeps growing with each passing year. For example in the Netherlands alone the number of people who frequently[1] bought a product online grew from 3.9 million in 2005 to 7.1 million in 2012 (CBS, 2013). This number is still growing but with this growth, product stock-outs are becoming a common point of irritation for online customers (Sloot, 2006). That there will be OOS situations is unavoidable but organizations should have a plan when an OOS situation occurs and not let the shelf just be empty as Wal-Mart did. In contrast to the offline environment, the more flexible online environment offers unique opportunities to deal with the negative effects of out of stock situations (Breugelmans, Campo, & Gijsbrechts, 2006).

Breugelmans et al. (2006) have investigated the effect of two different online OOS policies on the customers' response. The first one was the non-visible policy: stock-outs are visible after clicking to purchase it. The second one was the replacement policy: stock-outs are visible but a replacement item is suggested. They have found that "online retailers can guide a customer's choice in an OOS situation by adopting a replacement policy but that they should be careful in the selection of the suggested replacement item and (2) that the OOS reaction may be more negative when customers become skeptical about the retailer's OOS policy (hiding stock-outs or suggesting higher-priced options as a retailer-enriching strategy). Customers clearly value an open and honest retailer who truly helps in finding an appropriate substitution item." Based on the study of Breugelmans et al. (2006) the conclusion can be made that the OOS reaction of customers depends on which OOS policy an organization uses. The aim of this paper is to investigate the effects of two more policies that could possibly influence the customer response. One is a backorder policy where customers get the opportunity to order the product with a delayed delivery time. The second is a compensation backorder policy where customers get a discount for the inconvenience of backordering.

Every online shop has a standard delivery time for a product or order but when a product is OOS an online shop cannot meet this standard delivery service. When retailers can order more of the OOS product from their supplier they can sell the product to customers with an extended delivery time. Customers who are prepared to wait longer for their order can still place their order this way. The willingness to wait is an important factor influencing the decision of customers whether or not to place the order. This willingness to wait is influenced by when the customer needs it product. When it is needed for a special day that is sooner than the extended delivery time there is a very small chance the customer will place the order because it will be delivered to late.

Despite the importance of OOS policies in the online environment, the backorder and backorder compensation policies this paper tries to study aren't tested yet. The main characteristic where this paper is interested in is the willingness to wait a customer has for a product to be delivered. The loss of sales as a result of a customers' unwillingness to wait for their product is a direct loss in revenue. So what policy can convert this loss of sales into sales? Based previous studied OOS policies and the found customer behaviors this paper will test the influence of the two OOS policies on customer behavior to stock-outs in the online business-to-customer environment. Ultimately this paper also tests an extra policy to reduce OOS situations with an in stock backorder policy.

The main research question of this paper is: What is the influence of an OOS policy on the customer behavior? In order to answer this main research question these sub questions are developed.

- How do customers react when they encounter online OOS products?
- How do customers react when they encounter an OOS product that they can backorder?
- How do customers react when they encounter an OOS product that they can backorder while getting a compensation for it?
- How long are customers willing to wait for their product to be delivered?
- Are customers willing to wait for a product that is in stock when getting financial compensation?

This study starts of with a literature overview of the different already tested OOS policies. Based on the found outcomes of these previous studies in the literature overview, a theoretical framework is developed. This theoretical framework is conceptualized in a research model and hypotheses. The hypotheses are then operationalized in the methodology section and hereafter the results of the questionnaire will be presented followed by a discussion, conclusions, implications and limitations.

2. LITERATURE

The literature review focuses on providing an overview of the current literature about the relevant factors of customer behavior on OOS policies. To understand these relevant factors basic knowledge about OOS policies and customer behavior are explained. The keywords to search for articles included "OOS policies", "customer behavior", "OOS", "out of stock", "online customer responses" and "stockouts". These keywords were used on different scientific search engines such as Google Scholar, Library & archive of the University Twente, Web of Science, ScienceResearch and Scopus. The snowball method was also been applied to retrieve new relevant articles from the founded relevant literature. In order to develop a theoretical framework searches where also done with the keywords: "black box model", "buying decision process" and "4-p's".

2.1 Customer's OOS responses

The knowledge of the customers' reaction in OOS situations is crucial for retailers to minimize lost sales and loss of customer loyalty. Therefore there has been substantial interest in the topic of customer's reaction to OOS since the 1960s (Sloot, 2006). The majority of the first studies on OOS focused on defining OOS reactions and their financial impact. In order to investigate customer's reactions most previous researchers

[1] Frequently shoppers were considered frequently when they bought a product 3 months before the research and also bought before that.

have asked customers how they would react when they encounter OOS products. The six main behavioral customer responses according to Sloot, Verhoef, and Franses (2005) are:

1. Store switch: going to another store to buy the item;
2. Item switch: switching to another item of the same brand;
3. Postponement: postponing the indented buy until the next visit;
4. Cancel: dropping the purchase completely;
5. Category switch: buying a substitute product from another category; and
6. Brand switch: buying another brand within the same product category.

The most commonly reported responses were: (1) substitute for the item (switch size, quantity, or brand), (2) go to another store to buy the item (store switch), (3) delay the purchase until the next trip to the store, or (4) cancel the purchase. The results of Laurens M. Sloot et al. (2005) are pretty much in line with the results of other studies (see figure 2.1). The most reported customer reaction is substitution of the product (article and brand switch) as shown in the table below.

	Stockout reactions				
Authors	Article-switch	Brand-switch	Store-switch	Postpone-ment	Cancel-lation
Walter/Grabner 1975 (Wine, Spirits)	19.3%	64.1%	14.1%	2.5%	-
Schary/Christopher 1979 (Groceries)	4.8%	17.4%	47.9%	11.1%	18.7%
Emmelhainz/Emmelhainz/Stock 1991 (Groceries)	41.0%	32.0%	14.0%	13.0%	-
Verbeke/Farris/Thurik 1998 (Groceries)	65.0%*		25.0%	20.0%	-
Campo/Gijsbrechts/Nisol 2000 (Cereals)	44.0%*		3.3%	49.0%	3.7%
Campo/Gijsbrechts/Nisol 2000 (Margarine)	66.0%*		2,0%	30.0%	2.0%
Zinn/Liu 2001 (Furniture, Jewelry, White goods)	62.0%*		22.9%	15.1%	-
Gruen/Corsten/Bharadwaj 2002 (Meta-Analysis)	19.0%	26.0%	31.0%	15.0%	9.0%
Sloot/Verhoef/Franses 2005 (Groceries)	18.0%	36.0%	19.0%	23.0%	3.0%
Woensel/Donselaar/Broekmeulen/Fransoo 2007 (Bread)	84.0%*		10.0%	6.0%	

* Article and brand switch represent one category (substitution)

Figure 2.1 – stock-out reactions

These findings come from studies that are conducted in the offline environment and they distinguish among product-, store-, customer-, and situation-specific variables (Helm & Hegenbart, 2011).

2.2 OOS policies

As already stated the response of a customer in an OOS situation depends on how retailers are dealing with this service failure. Online retailers can use various OOS policies in order to keep the customer at their store. The policies mainly differ in how and when stock-outs are announced, whether and how online shelves are adjusted and whether substitutes or compensations are offered (Breugelmans et al., 2006).

All in stock policy: Customers can buy every product because every product is "in-stock". After placement of the order customers get the announcement, often by e-mail, that the product is not in stock and thus not deliverable in the agreed days. Customers can now choose to cancel the order, choose a different product or wait until the product is available again. By not communicating the stock-outs right away, retailers hope that customers will choose another product or are willing to wait for new supply. Although some customers will choose for this and create extra revenue on the short term it is in fact misleading the customer. The image of the retailer is influenced negatively so customers are less likely to buy again. The story loyalty of customers will get lower by this policy and thus it is not advised to use (Breugelmans et al., 2006).

Non-visible policy: Products are only announced OOS when customers have clicked on them. Retailers do this so that the category page appears to be offering many products to choose from. This influences the perception of completeness and variety of choice within this category page (Hoch, Bradlow, & Wansink, 1999; Ryzin & Mahajan, 1999). However it is found that customers will get frustrated when they have clicked on many products and time after time they appear to be OOS. This sequence of trial and error may make customers refrain from purchasing (Dhar, 1997). The willingness to purchase will reduce because customers get a feeling of an unfair treatment. Breugelmans et al. (2006) have found that the positive effects of a non-visible policy will get more than counterbalanced by the negative effects.

Empty shelf policy: The announcement that a product is OOS and clearly visible before purchasing and clicking on the product is called an empty shelve policy. The empty "shelve" is in the online context not literally empty because the image of the product will still be visible but now with an OOS announcement within it. It is often not even noticed by customers that a non- or less-preferred product is OOS (Kim & Lennon, 2011) so this policy also gives a perception of variety of choise but this only works when the preferred product is in stock. Retailers can reduce the disappointment when the preferred product is OOS, by giving information about when the product comes in stock again (Aastrup & Kotzab, 2010).

Replacement policy: Customers get a substituted product suggested when the product they have clicked on is OOS. Breugelmans et al. (2006) found that suggesting a substitute product increases its choice probability and sales volume. Retailers should not suggest substitute products that are higher priced because customers could get a suspicious feeling. When customers become suspicious of the fairness of a retailer the positive effects of the suggestions rule out. Of course the suggested substitute also has to appeal to the customer in order to get sold. In short a replacement policy can effect customers' choice decision in a positive way for retailers.

3. THEORETICAL FRAMEWORK

3.1 Black box model

The black box model of customer behavior gives insight in how stimuli, customer characteristics and the decision processes interact in eliciting customer responses (Sandhusen, 2000). In short this model identifies the stimuli and processes responsible for customer behavior. The marketing stimuli can be planned and processed by organizations where the environmental stimuli are not in the control of organizations. The customer's black box contains the characteristics and the decision process of the customers. The customer's response is the result of a rational decision process wherein it is assumed that the customer has recognized the problem. The stimuli that influence the customer decision-making process can be classified as interpersonal (between people) or intrapersonal (within people). In this paper we focus primarily on *intrapersonal influences* on customer behavior because we are interested in what the stimuli, OOS policies, have on the customer. The interpersonal influence is mainly important in the post-purchase stage because the experience customers have had with the purchasing of the product will affect the perception customers have of the organization and they may share this new perception with friends, family but also with reviews on the Internet. The aim of this paper is to find the influence of an out of stock policy, which can be seen as stimuli, on the customer behavior or in this case the response, so this model is very suitable for this study. The buyer decision process is an important part of the

black box model because it gives insight in how customers behave.

3.2 Customers' buying decision model

"Customer behavior is the study of individuals and the procedures they use to select, secure, use, and dispose of products, services, experiences, or ideas to satisfy needs and the impacts that these processes have on the customer and society" (Solomon, 2006). According to Schiffman, Hansen, and Kanuk (2008) customer behavior is: "The behavior that customers display in searching for, purchasing, using, evaluating, and disposing of products and services that they expect will satisfy their needs" In other words the nature of customer behavior is why, how, where and when customers buy or do not buy products. For organizations it is important to predict customer behavior even though it is difficult, even for experts in the field (Armstrong, 1991). To make better predictions of customer's behavior a good understanding of customer behavior is critical. More important is how to influence the customer behavior in such a way that it benefits the organization. So the understanding, predicting and influencing of customer behavior is critical for organizations.

Describing the process a customer goes trough when making a purchase makes it easier to understand customer behavior. A traditional model that describes the process a customer goes through is called the *buying decision process* and was first introduced by Engel, Blackwell and Kollat in 1968. Trough the years many scholars have used and changed this buying decision model but in this paper we use interpretation of Khosla (2010) wherein this model consists of five stages:

1. The problem recognition stage,
2. Information search,
3. Alternative evaluation,
4. Purchase decision,
5. Post-purchase decision.

The first stage is the problem recognition stage wherein the customer comes in a problem situation. The costumer needs a solution for the problem it is facing, which can be a product or a service. The second stage starts when the customer has recognized the problem and start searching for information on products and services that can solve the problem. The customer uses *internal information* and *external information* to make his choice in this process (Belch & Belch, 2007). Internal information is already present in the customers' memory and external information comes from *external stimuli*, such as reviews and advertisements. The third stage is the evaluation of the different alternatives and starts once all the information is collected. Every customer is unique and so the evaluation of the alternatives is very subjective and strongly depends on *customer characteristics*. This process will lead to an evoked set which contains the products the customer takes in consideration to buy. As stated organizations should influence the customers with stimuli to increase the likelihood that their product is in this evoked set (Schiffman et al., 2008). The fourth step starts when the customer has evaluated the different solutions and proceeds with the actual buying of the product that seems most appropriate to his needs. The fifth step is the evaluation of the purchased product or used service. The customer will evaluate whether the product or service has met his original needs.

For this paper the customer buying decision process is an important model because it gives a better understanding of customer behavior. This understanding is necessary in order to test and understand the impact of the different out of stock policies in each stage of the customers buying processes. When a customer comes in a situation of a product stock-out, the last thing an organization wants is that the customer will buy the product from a competitor. To avoid this organizations have to intervene in the *customer buying process* with elements of their OOS policies.

3.3 4P's - OOS policies

The intervening in the customers buying process can be seen as a part of the marketing strategy of the organization because the goal of a marketing strategy is to create and sustain a competitive advantage. The different kind of choices made to position the product or service in the market and create this advantage is called "the marketing mix". A well-known model for making marketing decisions is "the 4 P's of marketing". With the 4P model this paper aims to describe that an OOS policy is part of the marketing mix. Because the OOS policy is just a small part of the whole marketing mix an organization can use, using a more complex model such as the 7P model would made it more complex than necessary. So for this paper uses the definition of McCarthy (1960) were the P's are associated with: Product (or Service), Price, Promotion and Place (or Distribution).

The elements of the 4P's are the stimuli in this paper because they will be different in the scenarios that are tested. The element product (or service) should answer questions like what needs does it satisfy and how will customers experience it. Within this paper the element service will be tested by giving customers the possibility to backorder an OOS product. The element price is about questions as: is the customer price sensitive and what discounts should be offered. This paper tries to test element price by giving customers a discount when they face an OOS situation. The promotion element should answer the question of how and when the marketing message should be delivered to customers. The literature section has shown that customers are not happy to hear that a product is not in stock afterwards so this paper will test with policies before the purchase. The place element is all about were customers look for the product or service or how to get the products to the customers. Within this paper the element place is in the online web shop. These marketing elements or stimuli can be used by organizations to stimulate customer's behavior in the organizations most preferable way. Early and basic stimulus-organism-response models suggest a linear relationship between stimuli and response. It assumes that the organisms are acting inactive and unprepared (Eysenck, 2000). Most modern theorists, however, agree that the organisms are actively processing information and also choose which information is sought and received. The processing of information is stimulus driven but is also influenced by past experiences and even characteristics of the organism (Moital, 2006). In order to examine the influence of the stimuli, OOS policies, on the customer's behavior we have to assume that customers are processing information actively. So we take a cognitive approach, assuming that the customer is rational, discerning, logical and active in decision-making, for examination of the customer behavior (Bray, 2008).

3.4 Customer characteristics

As described above the processing of information is also influenced by past experiences and unique customer characteristics so every customer will react in a different way on the stimuli provided by the organizations. These personal and unique characteristics are attitudes, motivations, perceptions, personality, lifestyle and knowledge (Campo, Gijsbrechts, and Nisol, 2000). Because it is almost impossible to test all these elements, this paper has to focuses on gender, age, sort of purchase, online experience, online purchasing habit and willingness to wait. These elements are chosen because

they are easy to measure with a questionnaire and make a pretty complete profile sketch of the customers.

4. RESEARCH MODEL AND HYPOTHESES

Based on the black box model and the buyers decision process this paper has visualized the research model, which is presented below in figure 4.1. The problem of the buying decision process in this study is a stock-out; a customer wants a product, which is not in stock. By intervening with OOS policies in the information search stage this paper tries to influence the decision process of the customer. Every customer has his own unique characteristics so the influence of the policies will vary per customer. The customers' responses are measured trough hypothetical created situations. The last stage of the buying decision process is covered by measuring the impact that OOS policies have on the store image. This stage is becoming more importantly, especially within online shopping because when a customer is happy with the product or service he or she can share his attitude and his opinion easily by sharing it on social media or writing an review (Foxall, 2005).

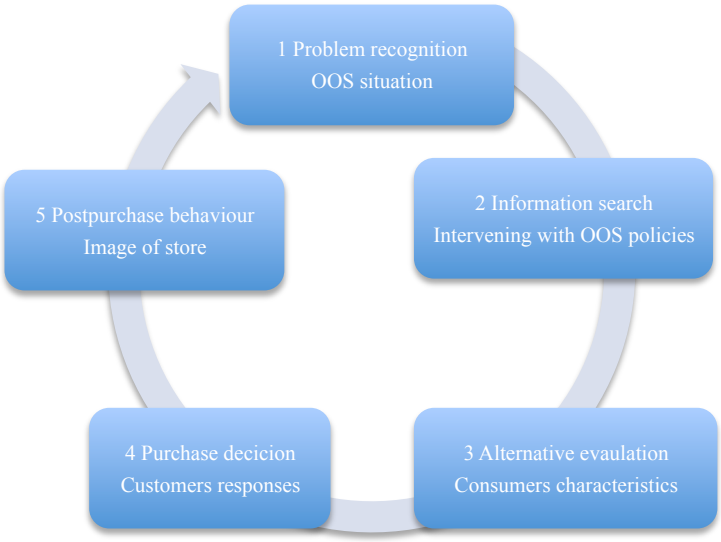

Figure 4.1 – The research model

Before the influence of the two out of stock policies can be tested we have to know what the responses of customers are when they face an OOS situation with a empty shelve policy. Many studies have been conducted on customers' reactions towards OOS situations but most of these previous studies were conducted in the offline environment where store switching is not as easy as in the online environment. In the offline environment customers have to walk or even drive to another retailer were in the online environment customers can browse to another web shop in seconds. So the following hypothesis is formulated: (H1) Online and offline responses will differ especially in store switching.

By testing the first hypothesis the customers' responses to an empty shelve policy will be defined. What shift in customers' responses would be created when instead of just an empty shelve, a delay in delivery time is offered. The customers' response to this backorder policy depends on their willingness to wait for their order. This willingness to wait is strongly affected by time pressure because when customers need their product in two days they will probably, due lack of time, not make use of the possibility to backorder the product. So in order to test this policy the assumption had to be made that that there was time to wait. This led to the following hypothesis: (H2) A backorder policy leads to more sales than an empty shelve policy.

Online retailers should consider the option of offering a financial compensation in the form of a discount as an OOS policy because in an offline setting Kim and Lennon (2011) found that "financial compensation was most effective in mitigating the negative impact of OOS occurrences on consumer responses". The financial compensation gave customers a feeling that the retailer made an apology for the OOS situation and thus influenced the customers' black box. This study expects that this will also work in the online context and that online customers will agree faster with a delivery delay when they get a compensation for it. So the hypothesis created is: (H3) Customers will be more likely to backorder products when they get compensated.

This paper is also interested in whether the customers' willingness to wait can also be influenced by financial compensation when a product is in stock. The expectation is, due the unique customer characteristics, that there will be customers that are willing to wait even though there is stock because not every customer prefers fast delivery over getting financial compensation. The following hypothesis is therefore tested: (H4) There will be customers that are willing to wait for a discount even though there is stock.

By testing the hypotheses above this study tries to measure the direct impact of intervening with OOS policies in the information search stage on the purchase decision. But the intervening will also have a long-term effect on customer behavior in the post-purchase stage. As found in the offline context by Anderson, Fitzsimons, and Simester (2006) the adverse impact of OOS situations extends to both short-term sales and sales on the long run. The post-purchase stage consists of the evaluation of the product and service and thus the image of a store will be affected by the policy an organization uses. It is important to know how and which policies affect the store image because store image has inter- and intrapersonal influences on the decision process. This paper expects that the store image will also be influenced by OOS policies in the online context, leading to the following hypothesis: (H5) OOS policies have an effect on the store image.

As stated every customer is unique and so is his or hers decision process. Testing the time stress issue is important because the willingness to wait probably depends on when customers need their product but there are more factors that influence the decision process of customers. To get a better understanding of what happens within the customers' black box the following elements are tested: gender, age, online experience, online purchasing habit and willingness to wait. This paper expects that these customer characteristics influences the impact OOS policies have on the customers' responses. Formulated in a hypothesis: (H6) The impact of OOS policies is influenced by customer characteristics.

5. METHODOLOGY

The research was conducted in order to determine the effects of OOS policies on the customers' decision process. A survey was conducted in order to answer the main question of this study. The survey was made with the program Qualtrics and spread by Facebook, Whatsapp and E-mail. The data was collected within a period of one week in June 2015. Finally, 244 respondents tried to fill in the questionnaire. Before analyzing the data of the questionnaire, the collected data was exported to an IBM SPSS format. After a screening on the time spend filling in the questionnaire, 199 respondents were selected that completed the questionnaire in a reasonable time. The

questionnaire consisted out 15 questions and was divided in the following parts:

1. Demographic questions to identify general characteristics of the participant.
2. Hypothetical scenario sketch to identify customer responses to the different OOS policies.
3. Four statements to identify the influence of OOS policies on the store image.

The demographic questions are measured with nominal- and ordinal variables. To test the OOS policies, three hypothetical situations were created to measure customers' reactions to these situations. A situation wherein there is no possibility for backorder, one where there is and one where the subjects are getting a compensation for backordering. These situations couldn't be measured with interval or ratio scale so again nominal variables were used i.e. subjects could choose what to do in each situation. The results of the four statements were measured with interval variables.

In order to get enough subjects per variable, the variables (answers) of some questions are recoded in new different variables. The questions whose variables are recoded, can be recognized by the _1 note behind the number of that question. The first step in analyzing the questionnaire was the creation of the frequency table that can be found in appendix 10.2. In short: the respondents consisted out 99 men and 100 women, mostly in the age category of 21-30 and were spending 1-2 hours online a day. Because this paper is testing multiple scenarios with various variables some methodology is also found within the results section in order to keep a better overview.

6. RESULTS

H1: The respondents could choose how they would respond in a hypothetical OOS situation. In order to make comparisons with the responses of, the in chapter two mentioned, previous conducted studies four categories were chosen for the measurement scale: store switch, article switch, brand switch and postponement. Cancellation of the purchase is combined with postponement because of the differences of the online and offline environment is expected to rule out cancellation. The results showed that 171 of the 199 subjects or 85.9% chose to leave the web shop to buy it on another web shop (Appendix 10.2 Frequency tables, Q6).

H2: By giving respondents the possibility to backorder the product the percentage of store switchers is expected to decrease. As shown in table 1, without a backorder policy 171 of the 199 (or 85.9%) answers represented a sales loss. With the intervening of the possibility to backorder 79.5% of these shop leavers chose to backorder the product. In total the backorder policy has resulted from 85.9% loss of sales to 21.6% loss of sales due to OOS. In other words due to the backorder policy the number of sales has grown from 28 to 156. Which represents a sales growth of 557%.

Table 6.1: Influence of backorder policy on sales

		No backorder		
		Sales loss	Sales	Total
Backorder	Sales loss	**35**	**8**	**43**
		20.5%	28.6%	21.6%
	Sales	**136**	**20**	**156**
		79.5%	71.4%	78.4%
Total		**171**	**28**	**199**
		100%	100%	100%

H3: In order to test this hypothesis the subjects that answered they wouldn't backorder were selected as the cases. As shown in table 6.1 there were 35 respondents that wouldn't backorder. By offering a discount of 10% as compensation 27 of the 35 respondents choose to backorder the product. In other words 77.1% of the respondents that were unwilling to backorder a product did want to backorder when they got compensated for it (Appendix 10.7).

H4: To test this hypothesis customers were asked how long they were willing-to-wait on a product when there is no time stress. 37.5% of the respondents wanted their product to be delivered in less than a week, 34.7% was willing to wait a whole week, 23.6% was willing to wait two weeks and 4,5% was willing to wait three weeks or longer (Appendix 10.2 Frequency tables, Q10). The focus lies on group of respondents who were willing to wait less than a week because they normally wouldn't choose to wait. In the situation the product was in stock and thus could be delivered within a week but they were asked if they would wait a week for a discount of 10%.

Table 6.2: Influence of compensation on willingness to wait

		Willingness to wait		
		< Week	> Week	Total
Discount / fast delivery	Discount	**51**	**112**	**163**
		68.9%	89.6%	81.9%
	Fast delivery	**23**	**13**	**36**
		31.1%	10.4%	18.1%
Total		**74**	**125**	**199**
		100%	100%	100%

The results presented in table 6.2 show that of the 74 respondents that normally want their product within a week, 68.9% choose to wait a week in order to get a discount of 10%. For the group of respondents who were already willing to wait a week or longer 89.6% choose to wait for the product in order to get a discount of 10%. In total 81.9% of the respondents would wait a week for a product that is in stock in order to get a compensation of 10%. To explore it further the respondents who are willing to wait a week for 10% discount where asked if they also would be willing to wait for 5% discount. 51.53% of the respondents were willing to wait a week even for 5% discount. The other way around the respondents who weren't willing to wait a week for 10% where asked when they would be willing to wait. 58.3% of these respondents would be willing to wait when they got a discount of 25% (Appendix 10.2 Frequency tables, Q11A, Q11B).

H5: In order to test if and which policies affect store image the respondents where asked on a scale of 1 to 5 how the image of the store was affected by a situation. The minimum of the scale 1 stands for a negative influence and the maximum 5 stands for a positive influence. The situations were representing the effects of the following policies P1: all in stock policy, P2: empty shelve policy, P3: backorder policy and P4: backorder compensation policy. The results are presented below in table 6.3.

Table 6.3: Influence of backorder policy on store image

	Mean	SD	Skewness	Kurtosis
P1	1.46	0.827	2.276	5.829
P2	1.90	1.030	1.016	0.336
P3	2.95	0.931	-0.089	0.358
P4	4.02	1.012	-1.063	0.699

Policy 1 has considering a mean of 1.46 a negative influence on the store image. The high kurtosis of 5.829 and the positive skewness of 2.276 are corresponding with this low mean. The mean of 1.90 of policy 2 shows that it also has a negative influence on the store image. The skewness is still positive so it means the distribution is asymmetrical with a tail to the left. Policy 3 has almost no influence on the store image regarding the mean of 2.95 and an almost perfect symmetrical distribution with a skewness of -0.089. Policy 4 has a positive influence on the store image with a mean of 4.02 and an asymmetric distribution to the right. The relative small differences in the standard deviations of the four policies implicate that the results are reliable.

H6: Furthermore, as a final step in the analysis of the results, different customers characteristics that might have an impact on customer' buying decision process were analyzed using crosstabs, by comparing means with T-tests and one-way ANOVA tests. The results of the crosstabs are presented in appendix 10.3, 10.4 and 10.5. The results of the T-tests and ANOVA's are presented in appendix 10.6.

Gender: There were found significant differences in the mean scores for males and females on the following elements: online experience, sort of purchase, willingness to wait under time pressure and the influence of policies store image. Men were spending more time online, women bought more clothes (Appendix 10.3), and women wanted their product more days in advance when there was time stress (Appendix 10.4). The store image gets influenced more negatively for women when by the empty shelve and backorder policies (Appendix 10.6.1). `

Age: There were found significant differences in the mean scores of the age groups in online experience, online purchasing habit, days in front, willingness to wait and backorder policy influence on store image. The most significant differences have been found between the group of the age of 31 and above and the groups with an age under the 30. The group of subjects with an age of 31 and above had less online experience, bought more frequently online, wanted their products more days upfront an event, wanted to wait less days when there was no time pressure and the store image was influenced more negatively or less positive by all the policies (Appendix 10.3, 10.4, 10.6.2).

Online experience: There was a statistically significant difference at the impact of the empty shelve policy on the store image between the groups of subjects that uses the internet less than a 2 hours a day and the groups who uses the internet more. The store image gets influenced more negatively for the subjects who use the Internet less than 2 hours (Appendix 10.6.3).

Online purchasing habit: There was a statistically significant difference at the impact of the backorder policy on the store image between the groups of subjects that bought more than ten and less than ten times a year. The image of the web shop was influenced less positive for Subjects who bought more than ten times a year (Appendix 10.6.4).

Sort purchase: There were found no significant differences between scores for the two groups and other variables.

Willingness to wait: There was found a significant difference between the means of the willingness to wait groups and the reactions on the backorder compensation policy (Appendix 10.5 - Q11). There were also significant differences between the means of the willingness to wait groups and the influence of the backorder policy on store image (Appendix 10.6.6 - Q14) and backorder compensation policy on store image (Appendix 10.6.6 - Q15). Subjects of the group who are willing to wait less than a week were less influenced by compensation than the groups who are willing to wait more than a week. The image of the shop was less positively influenced by the backorder policies in the group who are willing to wait less than a week.

7. DISCUSSION AND CONCLUSION

This paper investigated the influence of OOS policies on customer behavior in the business to customer environment. In existing literature this concept is predominantly discussed in the offline context highlighting the advantages and disadvantages of various policies. This research has focused specifically on the online environment and tested new policies to exploit the unique opportunities this environment brings. An empirical study in the form of an online survey was conducted in order to test the effect of these unique online policies on customer behavior.

The literature review revealed that existing policies mainly differ on how and when stock-outs are announced, whether and how shelves are adjusted and whether substitutes or compensations are offered. Using an all in stock policy led to more sales on the short-term but it was bad for the image of the shop on the long run. The non-visible policy gives a perception of completeness and variety of choice but these positive effects are more than counterbalanced when customers experienced a sequence of trial and error. The empty shelve policy only has positive effects when non- or less- preferred products are OOS because only then it gives more variety of choice. The replacement policy had a positive effect on store image and direct sales but suggesting higher priced replacements could lead to suspicion of the fairness of the retailer leading the positive effects to revoke.

H1: The responses of customers towards an OOS situation differed enormously between the online and offline environment. Customers leaving the web shop to buy the product elsewhere was with 85.9% by far the most common response in the online environment. In contrast within the offline environment the highest shop leave ratio was 47.9% with an average of 18.82%. The explanation for this can be found in the much lower barrier to go to another store within the online environment. With just a click on a button customers can visit another online store while travelling between two physical stores takes a lot longer. This also demonstrated the importance of using the right OOS policies to deal with the consequences of OOS situations.

H2: The backorder policy where customers got the opportunity to order the product with a delayed delivery time of one week had a positive influence on the direct sales and on the image of the store. 79.5% of the group that responded with leaving the web shop when facing the empty shelve policy, chose to backorder the product when faced the backorder policy. This result supports the findings of Aastrup and Kotzab (2010) who stated that retailers can reduce the disappointment of an OOS situation by giving information about when the product comes in stock again. Obviously this backorder policy can only have a positive effect on direct sales when the customer can and is willing to wait for the seven days of extended delivery time. The effect of a backorder policy on the store image is much more positive in comparison with the empty shelve policy and the all in stock policy. Customers simply prefer a 7-day delivery time note than an out of stock notification.

H3: Giving the opportunity to backorder a product and compensating customers with a 10% discount led to even more willingness to wait for the product. 77.1% of the customers who didn't make use of the opportunity to backorder a product did backorder the product when they got the compensation. But regarding that 79.5% would also backorder without compensation, using a backorder compensation policy would

give this customers a discount while it is not even necessary. However the backorder compensation policy also has a positive influence on the store image thus an improvement of the store image during the decision process of customers has a positive influence on the post-purchase behavior of customers, which can have a positive effect on the long-term success of an organization. Not only trough intrapersonal influences resulting in returning customers but also trough interpersonal influences because post-purchase behavior also embodies the sharing of positive experience with friends, family, online reviews etc.

H4: This paper also studied a situation where the product was in stock but customers could choose to wait a week for their delivery to get a financial discount of 10%. The results showed that customers prefer discount over fast delivery. Although this is only this case when there is no time-pressure it has some interesting implications. For example when a customer has no time-stress and choses for the discount there is more stock left for customers who can't or aren't willing to wait for the product. This leads to more sales and happier customers because OOS situations will happen less frequently. This policy also lowers the amount of safety-stock needed that will lead to lower inventory costs. As presented in the results section woman wanted their product more weeks in advance so retailers should take more stock of woman' products.

H5 & H6: Like the black box model already suggested, this paper found that the customer characteristics play an important role in the buyers' decision process. The results showed that age, online experience, online purchasing habit and the willingness to wait are influencing the impact the different OOS policies have on the customers' responses. Influences where found in the information search stage resulting in differences on direct sales but influences where also found in the post-purchase stage resulting in differences the OOS policies have on the impact on store images. As presented in appendix 10.3 gender and age have a significant influence on the other tested customer' characteristics and thus age and gender are considered to be the most important customer characteristics.

Based on the performed tests this paper concludes that that are no reasons to reject the tested hypotheses. The overall conclusion is that backorder policies do have a significant effect on the customer behavior.

8. IMPLICATIONS & LIMITATIONS

8.1 Implications

Organizations that buy their stock from a wholesaler that can deliver within a week can make use of the backorder policies. The best way to use the backorder policies is in combination with the replacement policy. In that way organizations can make use of the positive effects that the different policies have on customer behavior. This paper has shown that there is a big difference in customer behavior between the offline and online environment because customers can easily switch from one store to another, directly resulting in a loss of potential sales. This paper has shown that using a backorder policy leads to way less store switching. Selling products with a longer delivery time rather than selling no, influences the image of the organization in a positive way. So organizations that want to have a sustainable success should give customers the opportunity to backorder products. This paper has shown that using backorder compensation policy leads to even more direct sales and influences the store image more positive but by giving compensation, the margin of profit on sales decreases. Organizations should calculate whether the extra sales and improved store image equipoise against the smaller margin of profit. Another great implication of this paper is that customers are willing to wait for their product when they get financial compensation even if the product is in stock and thus deliverable in the standard delivery time. Organizations can offer this to those customers in order to have more stock for customers who cant wait on the product resulting in needing less safety stock. Further, it was found that the customers' characteristics influences the impact OOS policies have. Gender and age where found to have most significant influences. Because the men's willingness to wait was found to be longer organizations should have more inventory of women's products. Customers of 30 years and older had less patience so there should be more stock of products that are especially for this group.

8.2 Limitations

There are a few limitation of this study that will be explained to stimulate and improve future research in this research area. In this study the respondents did not perceive an actual OOS situation therefore the external validity of this paper is limited by the obvious discrepancy between hypothetical and true behavior (Zinn & Liu, 2008). In order to improve the external validity of the results of this paper, future research should conduct an experiment wherein the different policies are tested on OOS situations. The external validity is further narrowed because the hypothetical situations consisted of a specific product category; the purchasing of clothes. Jing & Lewis (2011) found that the impact of OOS situations vary across product categories so the conclusion this paper conducted from the hypothetical situations could differ when other products where the subject.

Due the fact that the majority of the respondents are friends and acquaintances of the researcher, the majority of the respondents were between the 21 and 30 years and all have a Dutch nationality. So the sample group isn't a truly representative of the whole population. Also regarding the relative low sample size the results cannot be generalized for the whole population.

The internal validity is inter alia limited by the fact that respondents know that they are subjects of a study, which could influence the answers given. Another threat to the validity of the found causal interferences is confounding. Future research should focus on improving the internal validity by using an experiment setting.

Another limitation was created due the choice of testing the hypotheses with a backorder delivery time of seven days. When retailers cannot offer a backorder delivery time of seven days the results of this paper aren't fully applicable. But this paper did ask respondents how long they were willing to wait on a product when there was no time stress. The results showed that more than 28% of the respondents were willing to wait two weeks or more on their delivery. When the product was ordered for a special day the willingness to wait was even higher. Though this is dependent on how far in advance customers start searching for the product. Future research should focus on testing the different OOS policies with varying backorder delivery times.

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10. APPENDIX

10.1 The questionnaire

Q1 - What is your gender?

- Men (1)
- Women (2)

Q2 - What is your age?

- < 20 (1)
- 21 - 30 (2)
- 31 - 40 (3)
- 41 - 50 (4)
- 51 > (5)

Q3 - How much time do you spend online daily?

- < 10 min (1)
- 10 - 30 min (2)
- 30 - 60 min (3)
- 1 - 2 hour (4)
- > 3 hour (5)

Q4 - How much online purchases per year do you make?

- 0 purchases (1)
- 1 - 2 purchases (2)
- 3 - 4 purchases (3)
- 5 - 10 purchases (4)
- > 10 purchases (5)

Q5 - What do you buy online?

- Clothes (1)
- Groceries (2)
- Electronics (3)
- Games (4)
- Vacations (5)
- Other (6) _____

Q6 - You're looking for a pirate costume for a party you have in a month. De web shop has several variations of pirate costumes available but the costume you like the most is out of stock. What would you do in this situation?

- I leave the web shop (1)
- I buy another variation of the costume (2)
- I buy another color/size of the costume (3)
- I postpone the purchase (4)

Q7 - The web shop show that the costume is deliverable with 7 days. Would this change your choice?

- No (1)
- Yes, I would wait for the costume (2)

Q8 - The party is in a month. How long are you willing to wait for the product to be delivered?

- One week (1)
- Two weeks (2)
- Tree weeks (3)
- If it is on time, its ok(4)

Q9 - How many days upfront a party do you want the costume to be delivered.

- If it is on time, its ok (1)
- 1 - 2 days (2)
- 3 - 4 days (3)
- 5 days - 1 week (4)
- 2 weeks (5)
- 3 weeks (6)

Q10 - How long are you willing to wait on a product when there is no time pressure?

- Less than a week (1)
- 1 week (2)
- 2 weeks (3)
- 3 weeks (4)
- 4 weeks (5)

Q11 - You want to buy a product that is in stock. However you can get a 10% discount when you are willing to wait a week on your order. There is no time pressure. What would you do?

- 10% discount (1)
- Fast delivery (2)

Q11-A Answer If 1 – Would you also wait a week for 5% discount?

- Yes (1)
- No (2)

Q11-B Answer 2 – For what discount would you wait?

- 15% (1)
- 20% (2)
- 25% (3)
- 30% (4)
- 35% (5)
- 40%+ (6)
- I would never choose this (7)

With the following statements respondents could choose on a scale from 1 (negative) to 5 (positive) if and how it influenced the store image

Q12 - After the purchase I get a email that the product isn't deliverable.

Q13 - Products that aren't in stock are displayed.

Q14 - Products with 7 days delivery time are displayed.

Q15 - Discount is offered because of longer delivery time.

10.2 Frequency tables

Q1 - Gender	#	%
Men	99	49,7
Women	100	50,3
Total	199	100

Q2 - Age	#	%
< 20	35	17,6
21 - 30	97	48,7
31 - 40	17	8,5
41 - 50	25	12,6
51 >	25	12,6
Total	199	100

Q2_1 - Age	#	%
<20	35	17,6
21-30	97	48,7
31>	67	33,7
Total	199	100

Q3 – Online experience	#	%
< 10 min	1	0,5
10 - 30 min	16	8
30 - 60 min	41	20,6
1 - 2 hour	76	38,2
> 3 hour	65	32,7
Total	199	100

Q3_1 – Online experience	#	%
<hour	58	29,1
1-2hours	76	38,2
2hours>	65	32,7
Total	199	100

Q4 – Online purchasing habit	#	%
1 - 2 purchases	13	6,5
3 - 4 purchases	23	11,6
5 - 10 purchases	74	37,2
> 10 purchases	89	44,7
Total	199	100

Q4_1 – Online purchasing habit	#	%
< 9 purchases	110	55,3
10 > purchases	89	44,7
Total	199	100

Q5 - Sort-purchase	#	%
Clothes	108	54,3
Groceries	2	1
Electronics	35	17,6
Games	7	3,5
Vacations	14	7
Other	33	16,6
Total	199	100

Q5_1 – Sort purchase	#	%
Clothes	108	54,3
Other	91	45,7
Total	199	100

Q6 - OOS situation responses	#	%
I leave the web shop	171	85,9
I buy another variation of the costume	20	10,1
I buy another color/size of the costume	1	0,5
I postpone the purchase	7	3,5
Total	199	100

Q6_1 – OOS situation responses	#	%
Sales loss	171	85,9
No sales loss	28	14,1
Total	199	100

Q7 – Backorder responses	#	%
No	43	21,6
Yes, I would wait for the costume	156	78,4
Total	199	100

Q7_1 - Backorder response	#	%
Sales loss	43	21,6
No sales loss	156	78,4
Total	199	100

Q8 - Willingness-to-wait with time pressure	#	%
One week	71	35,7
Two weeks	68	34,2
Tree weeks	12	6
If it is on time, its ok	48	24,1
Total	199	100

Q9 - Days upfront an event	#	%
If it is on time, its ok	28	14,1
1 - 2 days	18	9
3 - 4 days	39	19,6
5 days - 1 week	69	34,7
2 weeks	41	20,6
3 weeks	4	2
Total	199	100

Q10 - Willingness-to-wait no time pressure	#	%
Less than a week	74	37,2
1 week	69	34,7
2 weeks	47	23,6
3 weeks	5	2,5
4 weeks	4	2
Total	199	100

Q10_1 - WTW no time pressure	#	%
less than a week	74	37,2
1-2 weeks	69	34,7
2 weeks or more	56	28,1
Total	199	100

Q11 - Backorder compensation response	#	%
10% discount	163	81,9
Fast delivery	36	18,1
Total	199	100

Q11_1 - Backorder compensation response	#	%
>week	36	18,1
<week	163	81,9
Total	199	100

Q11A - 5% Discount	#	%
Yes	84	42,2
No	79	39,7
Total	163	81,9
System	36	18,1
	199	100

Q11B - ..% Discount?	#	%
20%	9	4,5
25%	12	6
30%	3	1,5
40%+	11	5,5
I would never choose this	1	0,5
Total	36	18,1
System	163	81,9
	199	100

Q12 - Non visible	#	%
Negative	137	68,8
	43	21,6
Neutral	13	6,5
	2	1
Positive	4	2
Total	199	100

Q13 - Empty shelve	#	%
Negative	91	45,7
	58	29,1
Neutral	33	16,6
	13	6,5
Positive	4	2
Total	199	100

Q14 - Backorder	#	%
Negative	16	8
	32	16,1
Neutral	108	54,3
	32	16,1
Positive	11	5,5
Total	199	100

Q15 - Backorder compensation	#	%
Negative	5	2,5
	15	7,5
Neutral	25	12,6
	81	40,7
Positive	73	36,7
Total	199	100

10.3 Cross tables - consumer characteristics vs consumer characteristics

		Gender			Age				Online experience				Purchasing habit			Sort purchase		
		Men	Women	Total	<20	21-30	31>	Total	<hour	1-2hours	2hours>	Total	< 9	10 >	Total	Clothes	Other	Total
		99	100	199	35	97	67	199	58	76	65	199	110	89	199	108	91	199
		100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Gender	Men				57,1%	58,8%	**32,8%**	49,7%	41,4%	40,8%	**67,7%**	49,7%	50,0%	49,4%	49,7%	**33,3%**	**69,2%**	49,7%
	Women				42,9%	41,2%	**67,2%**	50,3%	58,6%	59,2%	**32,3%**	50,3%	50,0%	50,6%	50,3%	**66,7%**	**30,8%**	50,3%
					PCS			11.584	PCS			12.437	CC		0.000	CC		24.041
					AS(2-sided)			**0.003**	AS(2-sided)			**0.002**	AS(2-sided)		1.0	AS(2-sided)		**0.000**
Age	<20	20,2%	15,0%	17,6%					10,3%	25,0%	15,4%	17,6%	23,6%	10,1%	17,6%	18,5%	16,5%	17,6%
	21-30	57,6%	40,0%	48,7%					37,9%	40,8%	**67,7%**	48,7%	43,6%	55,1%	48,7%	50,9%	46,2%	48,7%
	31>	22,2%	45,0%	33,7%					**51,7%**	34,2%	16,9%	33,7%	32,7%	34,8%	33,7%	30,6%	37,4%	33,7%
		PCS		11.584					PCS			22.485	PCS		6.497	PCS		1.025
		AS(2-sided)		**0.003**					AS(2-sided)			**0.000**	AS(2-sided)		**0.039**	AS(2-sided)		0.599
Online experience	<hour	24,2%	34,0%	29,1%	17,1%	22,7%	44,8%	29,1%					31,8%	25,8%	29,1%	31,5%	26,4%	29,1%
	1-2hours	31,3%	45,0%	38,2%	**54,3%**	32,0%	38,8%	38,2%					40,9%	34,8%	38,2%	40,7%	35,2%	38,2%
	2hours>	44,4%	21,0%	32,7%	28,6%	45,4%	16,4%	32,7%					27,3%	39,3%	32,7%	27,8%	38,5%	32,7%
		PCS		12.437	PCS			22.485					PCS		3.259	PCS		2.566
		AS(2-sided)		**0.002**	AS(2-sided)			**0.000**					AS(2-sided)		0.196	AS(2-sided)		0.277
Purchasing habit	< #9	55,6%	55,0%	55,3%	74,3%	49,5%	53,7%	55,3%	60,3%	59,2%	46,2%	55,3%				50,0%	61,5%	55,3%
	#10 >	44,4%	45,0%	44,7%	25,7%	50,5%	46,3%	44,7%	39,7%	40,8%	53,8%	44,7%				50,0%	38,5%	44,7%
		CC		0.000	PCS			6.497	PCS			3.267				CC		2.213
		AS(2-sided)		1.0	AS(2-sided)			**0.039**	AS(2-sided)			0.195				AS(2-sided)		0.137
Sort purchase	kleding	36,4%	72,0%	54,3%	57,1%	56,7%	49,3%	54,3%	58,6%	57,9%	46,2%	54,3%	49,1%	60,7%	54,3%			
	anders	63,6%	28,0%	45,7%	42,9%	43,3%	50,7%	45,7%	41,4%	42,1%	53,8%	45,7%	50,9%	39,3%	45,7%			
		CC		24.041	PCS			1.027	PCS			2.570	CC		2.213			
		AS(2-sided)		**0.000**	AS(2-sided)			0.598	AS(2-sided)			0.277	AS(2-sided)		0.137			

10.4 Cross-tabs - policies vs consumer characteristics

		Gender			Age				Experience				Purchasing habit			Sort purchase		
		Men	Women	Total	<20	21-30	31>	Total	<hour	1-2hours	2hours>	Total	< 9	10 >	Total	Clothes	Other	Total
		99	100	199	35	97	67	199	58	76	65	199	110	89	199	108	91	199
		100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Q6 - OOS situation responses																		
Salesloss	%	81,8%	90,0%	85,9%	85,7%	90,7%	79,1%	85,9%	79,3%	89,5%	87,7%	85,9%	85,5%	86,5%	85,9%	88,9%	82,4%	85,9%
No salesloss	%	18,2%	10,0%	14,1%	14,3%	9,3%	20,9%	14,1%	20,7%	10,5%	12,3%	14,1%	14,5%	13,5%	14,1%	11,1%	17,6%	14,1%
Tests		CC = 2.119			PCs = 4.425				PCs = 3.058				CC = 0.000			CC = 1.217		
		AS(2-sided) = 0.145			AS(2-sided) = 0.109				AS(2-sided) = 0.217				AS(2-sided) = .993			AS(2-sided) = 0.270		
Q7 - Backorder responses																		
Salesloss	%	22,2%	21,0%	21,6%	22,9%	20,6%	22,4%	21,6%	27,6%	14,5%	24,6%	21,6%	17,3%	27,0%	21,6%	25,0%	17,6%	21,6%
No salesloss	%	77,8%	79,0%	78,4%	77,1%	79,4%	77,6%	78,4%	72,4%	85,5%	75,4%	78,4%	82,7%	73,0%	78,4%	75,0%	82,4%	78,4%
Tests		CC = 0.001			PCs = 0.112				PCs = 3.854				CC = 2.187			CC = 1.196		
		AS(2-sided) = 0.970			AS(2-sided) = 0.945				AS(2-sided) = 0.146				AS(2-sided) = 0.139			AS(2-sided) = 0.274		
Q8 - Willingness to wait under time pressure																		
1 week	%	35,4%	36,0%	35,7%	34,3%	36,1%	35,8%	35,7%	34,5%	36,8%	35,4%	35,7%	30,9%	41,6%	35,7%	38,0%	33,0%	35,7%
2 weeks	%	**26,3%**	**42,0%**	34,2%	37,1%	26,8%	43,3%	34,2%	29,3%	35,5%	36,9%	34,2%	32,7%	36,0%	34,2%	35,2%	33,0%	34,2%
3 weeks	%	6,1%	6,0%	6,0%	11,4%	7,2%	1,5%	6,0%	6,9%	5,3%	6,2%	6,0%	8,2%	3,4%	6,0%	6,5%	5,5%	6,0%
On time	%	**32,3%**	**16,0%**	24,1%	17,1%	29,9%	19,4%	24,1%	29,3%	22,4%	21,5%	24,1%	28,2%	19,1%	24,1%	20,4%	28,6%	24,1%
Tests		CC = 9.107			PCs = 10.115				PCs = 1.712				CC = 5.425			CC = 1.869		
		AS(2-sided) = 0.028			AS(2-sided) = 0.118				AS(2-sided) = 0.944				AS(2-sided) = 0.143			AS(2-sided) = 0.599		

		Gender			Age				Experience				Purchasing habit			Sort purchase		
		Men	Women	Total	<20	21-30	31>	Total	<hour	1-2hours	2hours>	Total	< 9	10 >	Total	Clothes	Other	Total
		99	100	199	35	97	67	199	58	76	65	199	110	89	199	108	91	199
		100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Q9 - Days in front of event																		
In time	%	18,2%	10,0%	14,1%	2,9%	17,5%	14,9%	14,1%	15,5%	9,2%	18,5%	14,1%	12,7%	15,7%	14,1%	13,0%	15,4%	14,1%
1 - 2 days	%	11,1%	7,0%	9,0%	20,0%	9,3%	3,0%	9,0%	8,6%	9,2%	9,2%	9,0%	9,1%	9,0%	9,0%	7,4%	11,0%	9,0%
3 - 4 days	%	18,2%	21,0%	19,6%	11,4%	25,8%	14,9%	19,6%	25,9%	21,1%	12,3%	19,6%	23,6%	14,6%	19,6%	19,4%	19,8%	19,6%
5 days 1 week	%	34,3%	35,0%	34,7%	45,7%	30,9%	34,3%	34,7%	34,5%	32,9%	36,9%	34,7%	39,1%	29,2%	34,7%	35,2%	34,1%	34,7%
2 weeks	%	17,2%	24,0%	20,6%	20,0%	15,5%	28,4%	20,6%	13,8%	25,0%	21,5%	20,6%	13,6%	29,2%	20,6%	23,1%	17,6%	20,6%
3 weeks	%	1,0%	3,0%	2,0%	0,0%	1,0%	4,5%	2,0%	1,7%	2,6%	1,5%	2,0%	1,8%	2,2%	2,0%	1,9%	2,2%	2,0%
Tests		CC = 5.702			PCs = 23.208*				PCs = 7.728				CC = 9.639			CC = 1.703		
		AS(2-sided) = 0.336			AS(2-sided) = 0.010*				AS(2-sided) = 0.655				AS(2-sided) = 0.086			AS(2-sided) = 0.889		
Q10 - Willingness to wait - without time pressure																		
Less than a week	%	36,4%	38,0%	37,2%	**25,7%**	30,9%	**52,2%**	37,2%	48,3%	31,6%	33,8%	37,2%	30,9%	44,9%	37,2%	38,9%	35,2%	37,2%
1-2 weeks	%	35,4%	34,0%	34,7%	**48,6%**	37,1%	**23,9%**	34,7%	25,9%	36,8%	40,0%	34,7%	36,4%	32,6%	34,7%	37,0%	31,9%	34,7%
2 weeks or more	%	28,3%	28,0%	28,1%	25,7%	32,0%	23,9%	28,1%	25,9%	31,6%	26,2%	28,1%	32,7%	22,5%	28,1%	24,1%	33,0%	28,1%
Tests		CC = 0.064			PCs = 11.718				PCs = 5.207				CC = 4.644			CC = 1.949		
		AS(2-sided) = 0.969			AS(2-sided) = 0.020				AS(2-sided) = 0.267				AS(2-sided) = 0.97			AS(2-sided) = 0.377		
Q11 - Responses to backorder compensation																		
>week	%	19,2%	17,0%	18,1%	11,4%	21,6%	16,4%	18,1%	22,4%	17,1%	15,4%	18,1%	17,3%	19,1%	18,1%	20,4%	15,4%	18,1%
<week	%	80,8%	83,0%	81,9%	88,6%	78,4%	83,6%	81,9%	77,6%	82,9%	84,6%	81,9%	82,7%	80,9%	81,9%	79,6%	84,6%	81,9%
Tests		CC = 0.047			PCs = 2.004				PCs = 1.103				CC = 0.022			CC = 0.526		
		AS(2-sided) = 0.828			AS(2-sided) = 0.367				AS(2-sided) = 0.576				AS(2-sided) = 0.882			AS(2-sided) = 0.468		

*minimum expected cell frequency not met

10.5 Cross tab – Willingness to wait vs scenarios

			Q_10_1_WTW_no_timepressure			Total
			less than a week	1-2 weeks	2 weeks or more	
Q6_1_OOS_situation_response	salesverlies	#	60	59	52	171
		%	81.1%	85.5%	92.9%	85.9%
	geensalesverlies	#	14	10	4	28
		%	18.9%	14.5%	7.1%	14.1%
Total		%	100.0%	100.0%	100.0%	100.0%
Q7_1_Backorder_response	salesverlies	#	18	15	10	43
		%	24.3%	21.7%	17.9%	21.6%
	geensalesverlies	#	56	54	46	156
		%	75.7%	78.3%	82.1%	78.4%
Total		%	100.0%	100.0%	100.0%	100.0%
Q8_WTW_timepressure	Maximaal een week	#	34	26	11	71
		%	45.9%	37.7%	19.6%	35.7%
	Maximaal twee weken	#	23	21	24	68
		%	31.1%	30.4%	42.9%	34.2%
	Maximaal drie weken	#	2	4	6	12
		%	2.7%	5.8%	10.7%	6.0%
	Als het maar op tijd binnen is	#	15	18	15	48
		%	20.3%	26.1%	26.8%	24.1%
Total		%	100.0%	100.0%	100.0%	100.0%
Q9_days_in_front	Als het maar op tijd binnen is	#	13	10	5	28
		%	17.6%	14.5%	8.9%	14.1%
	1 - 2 dagen	#	4	6	8	18
		%	5.4%	8.7%	14.3%	9.0%
	3 - 4 dagen	#	13	17	9	39
		%	17.6%	24.6%	16.1%	19.6%
	5 dagen - 1 week	#	26	19	24	69
		%	35.1%	27.5%	42.9%	34.7%
	2 weken	#	15	17	9	41
		%	20.3%	24.6%	16.1%	20.6%
	3 weken	#	3	0	1	4
		%	4.1%	0.0%	1.8%	2.0%
Total		%	100.0%	100.0%	100.0%	100.0%
Q11_1_WTW_backorder_compensation	>week	#	23	6	7	36
		%	31.1%	8.7%	12.5%	18.1%
	<week	#	51	63	49	163
		%	68.9%	91.3%	87.5%	81.9%
Total		%	100.0%	100.0%	100.0%	100.0%

Tests	Pearson Chi-Square	Asymptotic Significance (2-sided)
Q6	3.672	.159
Q7	.788	.674
Q8	12.158	.059
Q9	12.049	.282
Q11	13.719	.001

10.6 One way ANOVA's & T-Tests – Consumer characteristics vs store image

10.6.1 Gender vs store image – T-Test

Group Statistics

Q1_gender		N	Mean	Std. Deviation	Std. Error Mean
Q12_non_visible	Man	99	1,54	,884	,089
	Vrouw	100	1,38	,763	,076
Q13_empty_shelve	Man	99	2,14	1,069	,107
	Vrouw	100	1,66	,934	,093
Q14_backorder	Man	99	3,14	,926	,093
	Vrouw	100	2,76	,900	,090
Q15_backorder_compensation	Man	99	4,09	,927	,093
	Vrouw	100	3,94	1,090	,109

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Q12_non_visible	Equal variances assumed	3,304	,071	1,328	197	,186	,155	,117	-,075	,386
	Equal variances not assumed			1,327	192,258	,186	,155	,117	-,076	,386
Q13_empty_shelve	Equal variances assumed	3,250	,073	3,383	197	,001	,481	,142	,201	,762
	Equal variances not assumed			3,381	193,004	,001	,481	,142	,201	,762
Q14_backorder	Equal variances assumed	,246	,620	2,946	197	,004	,381	,129	,126	,637
	Equal variances not assumed			2,946	196,713	,004	,381	,129	,126	,637
Q15_backorder_compensation	Equal variances assumed	2,965	,087	1,052	197	,294	,151	,144	-,132	,434
	Equal variances not assumed			1,052	192,616	,294	,151	,143	-,132	,434

10.6.2 Age vs store image - ANOVA

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Q12_non_visible	<20	35	1,26	,505	,085	1,08	1,43	1	3
	21-30	97	1,63	1,014	,103	1,42	1,83	1	5
	31>	67	1,31	,583	,071	1,17	1,46	1	3
	Total	199	1,46	,827	,059	1,34	1,57	1	5
Q13_empty_shelve	<20	35	2,00	1,188	,201	1,59	2,41	1	5
	21-30	97	2,20	1,047	,106	1,98	2,41	1	5
	31>	67	1,42	,700	,085	1,25	1,59	1	4
	Total	199	1,90	1,030	,073	1,76	2,04	1	5
Q14_backorder	<20	35	3,03	,618	,104	2,82	3,24	2	5
	21-30	97	3,16	,986	,100	2,97	3,36	1	5
	31>	67	2,60	,889	,109	2,38	2,81	1	5
	Total	199	2,95	,931	,066	2,82	3,08	1	5
Q15_backorder_compensation	<20	35	4,34	,639	,108	4,12	4,56	3	5
	21-30	97	4,11	1,009	,102	3,91	4,32	1	5
	31>	67	3,70	1,101	,135	3,43	3,97	1	5
	Total	199	4,02	1,012	,072	3,87	4,16	1	5

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Q12_non_visible	10,946	2	196	,000
Q13_empty_shelve	7,069	2	196	,001
Q14_backorder	6,285	2	196	,002
Q15_backorder_compensation	3,990	2	196	,020

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Q12_non_visible	Between Groups	5,644	2	2,822	4,263	,015
	Within Groups	129,743	196	,662		
	Total	135,387	198			
Q13_empty_shelve	Between Groups	24,413	2	12,207	12,892	,000
	Within Groups	185,577	196	,947		
	Total	209,990	198			
Q14_backorder	Between Groups	13,046	2	6,523	8,069	,000
	Within Groups	158,452	196	,808		
	Total	171,497	198			
Q15_backorder_compensation	Between Groups	11,287	2	5,643	5,771	,004
	Within Groups	191,668	196	,978		
	Total	202,955	198			

Robust Tests of Equality of Means

		Statistic[a]	df1	df2	Sig.
Q12_non_visible	Welch	4,319	2	109,447	,016
	Brown-Forsythe	5,864	2	186,698	,003
Q13_empty_shelve	Welch	16,983	2	85,120	,000
	Brown-Forsythe	11,908	2	94,030	,000
Q14_backorder	Welch	7,822	2	108,165	,001
	Brown-Forsythe	9,760	2	185,098	,000
Q15_backorder_compensation	Welch	6,881	2	108,653	,002
	Brown-Forsythe	6,788	2	173,120	,001

a. Asymptotically F distributed.

Post Hoc Tests

Multiple Comparisons

Tukey HSD

Dependent Variable			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Q12_non_visible	<20	21-30	-,372	,160	,056	-,75	,01
		31>	-,056	,170	,941	-,46	,34
	21-30	<20	,372	,160	,056	-,01	,75
		31>	,315*	,129	,041	,01	,62
	31>	<20	,056	,170	,941	-,34	,46
		21-30	-,315*	,129	,041	-,62	-,01
Q13_empty_shelve	<20	21-30	-,196	,192	,565	-,65	,26
		31>	,582*	,203	,013	,10	1,06
	21-30	<20	,196	,192	,565	-,26	,65
		31>	,778*	,155	,000	,41	1,14
	31>	<20	-,582*	,203	,013	-1,06	-,10
		21-30	-,778*	,155	,000	-1,14	-,41
Q14_backorder	<20	21-30	-,136	,177	,722	-,56	,28
		31>	,432	,188	,058	-,01	,87
	21-30	<20	,136	,177	,722	-,28	,56
		31>	,568*	,143	,000	,23	,91
	31>	<20	-,432	,188	,058	-,87	,01
		21-30	-,568*	,143	,000	-,91	-,23
Q15_backorder_compensation	<20	21-30	,229	,195	,468	-,23	,69
		31>	,641*	,206	,006	,15	1,13
	21-30	<20	-,229	,195	,468	-,69	,23
		31>	,412*	,157	,025	,04	,78
	31>	<20	-,641*	,206	,006	-1,13	-,15
		21-30	-,412*	,157	,025	-,78	-,04

10.6.3 Online experience vs store image - ANOVA

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Q12_non_visible	<hour	58	1,36	,613	,080	1,20	1,52	1	3
	1-2hours	76	1,47	,840	,096	1,28	1,67	1	5
	2hours>	65	1,52	,970	,120	1,28	1,76	1	5
	Total	199	1,46	,827	,059	1,34	1,57	1	5
Q13_empty_shelve	<hour	58	1,60	,917	,120	1,36	1,84	1	4
	1-2hours	76	1,83	,944	,108	1,61	2,04	1	4
	2hours>	65	2,25	1,132	,140	1,97	2,53	1	5
	Total	199	1,90	1,030	,073	1,76	2,04	1	5
Q14_backorder	<hour	58	2,71	,991	,130	2,45	2,97	1	5
	1-2hours	76	3,01	,902	,103	2,81	3,22	1	5
	2hours>	65	3,09	,879	,109	2,87	3,31	1	5
	Total	199	2,95	,931	,066	2,82	3,08	1	5
Q15_backorder_compensation	<hour	58	3,83	1,172	,154	3,52	4,14	1	5
	1-2hours	76	4,03	1,019	,117	3,79	4,26	1	5
	2hours>	65	4,17	,821	,102	3,97	4,37	1	5
	Total	199	4,02	1,012	,072	3,87	4,16	1	5

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Q12_non_visible	2,200	2	196	,114
Q13_empty_shelve	1,823	2	196	,164
Q14_backorder	1,693	2	196	,187
Q15_backorder_compensation	3,585	2	196	,030

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Q12_non_visible	Between Groups	,828	2	,414	,603	,548
	Within Groups	134,559	196	,687		
	Total	135,387	198			
Q13_empty_shelve	Between Groups	13,273	2	6,636	6,612	,002
	Within Groups	196,717	196	1,004		
	Total	209,990	198			
Q14_backorder	Between Groups	5,047	2	2,524	2,972	,054
	Within Groups	166,450	196	,849		
	Total	171,497	198			
Q15_backorder_compensation	Between Groups	3,593	2	1,797	1,766	,174
	Within Groups	199,362	196	1,017		
	Total	202,955	198			

Post Hoc Tests

Multiple Comparisons

Tukey HSD

Dependent Variable			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Q13_empty_shelve	<hour	1-2hours	-,225	,175	,402	-,64	,19
		2hours>	-,643*	,181	,001	-1,07	-,22
	1-2hours	<hour	,225	,175	,402	-,19	,64
		2hours>	-,417*	,169	,039	-,82	-,02
	2hours>	<hour	,643*	,181	,001	,22	1,07
		1-2hours	,417*	,169	,039	,02	,82

*. The mean difference is significant at the 0.05 level.

10.6.4 Purchasing habit vs image – T-Test

Group Statistics

Q4_1_online_purchasing_habit		N	Mean	Std. Deviation	Std. Error Mean
Q12_non_visible	< 9 purchases	110	1,41	,782	,075
	10 > purchases	89	1,52	,881	,093
Q13_empty_shelve	< 9 purchases	110	1,96	1,083	,103
	10 > purchases	89	1,82	,960	,102
Q14_backorder	< 9 purchases	110	3,04	,823	,078
	10 > purchases	89	2,84	1,043	,111
Q15_backorder_compensation	< 9 purchases	110	3,96	,967	,092
	10 > purchases	89	4,08	1,068	,113

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Q12_non_visible	Equal variances assumed	1,912	,168	-,914	197	,362	-,108	,118	-,340	,125
	Equal variances not assumed			-,902	177,675	,368	-,108	,119	-,343	,128
Q13_empty_shelve	Equal variances assumed	,302	,583	,977	197	,330	,143	,147	-,146	,433
	Equal variances not assumed			,989	195,325	,324	,143	,145	-,143	,429
Q14_backorder	Equal variances assumed	8,099	,005	1,464	197	,145	,194	,132	-,067	,455
	Equal variances not assumed			1,428	165,138	,155	,194	,136	-,074	,461
Q15_backorder_compensation	Equal variances assumed	1,838	,177	-,796	197	,427	-,115	,144	-,400	,170
	Equal variances not assumed			-,788	179,576	,432	-,115	,146	-,403	,173

10.6.5 Sort purchase vs image – T-Test

Group Statistics

Q5_1_sort_purchase		N	Mean	Std. Deviation	Std. Error Mean
Q12_non_visible	kleding	108	1,45	,890	,086
	anders	91	1,46	,750	,079
Q13_empty_shelve	kleding	108	1,93	1,048	,101
	anders	91	1,87	1,013	,106
Q14_backorder	kleding	108	2,94	1,016	,098
	anders	91	2,97	,823	,086
Q15_backorder_compensation	kleding	108	3,93	1,091	,105
	anders	91	4,12	,905	,095

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Q12_non_visible	Equal variances assumed	,253	,615	-,066	197	,947	-,008	,118	-,240	,225
	Equal variances not assumed			-,067	197,000	,946	-,008	,116	-,237	,221
Q13_empty_shelve	Equal variances assumed	,001	,976	,394	197	,694	,058	,147	-,232	,347
	Equal variances not assumed			,395	193,253	,694	,058	,146	-,231	,347
Q14_backorder	Equal variances assumed	2,503	,115	-,240	197	,811	-,032	,133	-,294	,230
	Equal variances not assumed			-,244	196,699	,807	-,032	,130	-,289	,225
Q15_backorder_compensation	Equal variances assumed	3,299	,071	-1,356	197	,177	-,195	,144	-,478	,089
	Equal variances not assumed			-1,378	196,955	,170	-,195	,141	-,474	,084

10.6.6 Willingness to wait vs store image - ANOVA

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Q12_non_visible	less than a week	74	1,46	,879	,102	1,26	1,66	1	5
	1-2 weeks	69	1,42	,864	,104	1,21	1,63	1	5
	2 weeks or more	56	1,50	,714	,095	1,31	1,69	1	4
	Total	199	1,46	,827	,059	1,34	1,57	1	5
Q13_empty_shelve	less than a week	74	1,82	1,127	,131	1,56	2,09	1	5
	1-2 weeks	69	1,94	1,013	,122	1,70	2,19	1	5
	2 weeks or more	56	1,95	,923	,123	1,70	2,19	1	4
	Total	199	1,90	1,030	,073	1,76	2,04	1	5
Q14_backorder	less than a week	74	2,74	,980	,114	2,52	2,97	1	5
	1-2 weeks	69	3,00	1,043	,126	2,75	3,25	1	5
	2 weeks or more	56	3,16	,626	,084	2,99	3,33	2	5
	Total	199	2,95	,931	,066	2,82	3,08	1	5
Q15_backorder_compensation	less than a week	74	3,77	1,245	,145	3,48	4,06	1	5
	1-2 weeks	69	4,20	,797	,096	4,01	4,39	1	5
	2 weeks or more	56	4,11	,846	,113	3,88	4,33	2	5
	Total	199	4,02	1,012	,072	3,87	4,16	1	5

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
Q12_non_visible	,086	2	196	,917
Q13_empty_shelve	1,353	2	196	,261
Q14_backorder	4,017	2	196	,020
Q15_backorder_compensation	11,551	2	196	,000

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Q12_non_visible	Between Groups	,197	2	,098	,143	,867
	Within Groups	135,190	196	,690		
	Total	135,387	198			
Q13_empty_shelve	Between Groups	,666	2	,333	,312	,732
	Within Groups	209,324	196	1,068		
	Total	209,990	198			
Q14_backorder	Between Groups	5,822	2	2,911	3,444	,034
	Within Groups	165,675	196	,845		
	Total	171,497	198			
Q15_backorder_compensation	Between Groups	7,344	2	3,672	3,679	,027
	Within Groups	195,611	196	,998		
	Total	202,955	198			

Robust Tests of Equality of Means

		Statistic[a]	df1	df2	Sig.
Q14_backorder	Welch	4,345	2	129,513	,015
	Brown-Forsythe	3,648	2	183,740	,028
Q15_backorder_compensation	Welch	3,124	2	126,929	,047
	Brown-Forsythe	3,861	2	178,130	,023

a. Asymptotically F distributed.

Post Hoc Tests

Multiple Comparisons

Tukey HSD

Dependent Variable			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Q14_backorder	less than a week	1-2 weeks	-,257	,154	,220	-,62	,11
		2 weeks or more	-,417*	,163	,030	-,80	-,03
	1-2 weeks	less than a week	,257	,154	,220	-,11	,62
		2 weeks or more	-,161	,165	,595	-,55	,23
	2 weeks or more	less than a week	,417*	,163	,030	,03	,80
		1-2 weeks	,161	,165	,595	-,23	,55
Q15_backorder_compensation	less than a week	1-2 weeks	-,433*	,167	,028	-,83	-,04
		2 weeks or more	-,337	,177	,140	-,75	,08
	1-2 weeks	less than a week	,433*	,167	,028	,04	,83
		2 weeks or more	,096	,180	,855	-,33	,52
	2 weeks or more	less than a week	,337	,177	,140	-,08	,75
		1-2 weeks	-,096	,180	,855	-,52	,33

*. The mean difference is significant at the 0.05 level.

10.7 Frequency table – compensation backorder

		Frequency	Percent
Valid	Ik kies voor 10% korting	27	77,1
	Ik kies voor snelle levering	8	22,9
	Total	35	100,0