Stockholm School of Economics

What is the best position?

A study about product position effect on digital stores front-page

Abstract: There is an abundance of information and wisdom to draw upon if you want to optimize your physical store. With the emergence of e-commerce it is becoming ever more important to provide the same tools and information for online stores. It is already clear that e-commerce is an important part of a healthy and growing national economy. This paper attempts to provide some information and tools regarding consumers' online shopping behaviour by looking mainly at how position can influence shopping behaviour. There already exist a tonne of research regarding how one should place products in a physical store. However it is not obvious which research is applicable in an online setting and which are not, and to what degree they may differ. The results of this study shows that there are indeed some commonalities between placement in a physical stores and online stores such as horizontal centrally placed products being purchased more often. However there are also glaring differences that needs to be understood, since the results also show that products position can have an impact on the total basket size of consumers.

Key words: Online purchasing behaviour, shelf management, front page optimization, consumer behaviour, product position effects, ecommerce

Author: Gustav Lantz

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Handledare: Magnus Söderlund

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1. Introduction

Where, how and when should a product be exposed to a customer to optimize sales? If you own a physical store you have available a myriad of research and theories to consult, some developed through decennia's of research. Vertical and horizontal placement, brands, paths in store, lightning, smell, and location, all of these can be answered to some extent with current research. However if you sell your products in a digital environment you will certainly not find the same abundance of information to answer the questions of where, how and when you should expose your products to your customers to optimize your sales. There are some information available, Ash (2011) for example dedicated an entire book to the question of front page optimization however it is a book based on experience with no references to scientific literature.

There are some commonalities between sales through a retail channel and a digital channel, in both channels you can place products on highly visited or looked upon places and you can use promotions to entice sales. There are also gaping differences, on a website at any one time the customer is only looking at two dimensional page, a horizontal and a vertical axis, and navigates to other pages by clicking links. However in a store you have a third dimension depth, customers don't click to come to the next shelf, and they walk and they can touch and feel products.

It's hard to say exactly where the commonalties end and the differences begin in some instances, this can make it hard to translate which sales techniques will work in the digital world and which won't. Valenzuela & Raghubir (2009) found that in a physical store the best place for a product in the shelf is the centre, this is at eye height, where our eyes naturally look. What does it mean to be in the centre of a webpage, furthermore could there even be said to be such a thing as "eye height" on a webpage? On most digital stores the visitor is free to scroll up and down the page and as such any item could at any time be in the visitors centre This is why research is needed for sales in the digital environment, placement can have an immense effect on sales, but there is a lack of research on where to place the products and the existing research in physical environments is not always transferable.

The lack of research regarding digital stores is hardly surprising. The internet is not even that old and it is only relatively recently that it has found widespread use. In 1995 only about 4 % of the world's population had used internet in the last year, now 10 years later that number is 100 times larger. (Miniwatts Marketing Group, 2014), the internet is growing quickly. The internet's development can be problematic for researchers; programing languages change, available data amount, behavioural changes and new laws are all factors that can quickly change the digital world which can immensely

change the appearance and inner workings for online stores, which could potentially render research moot.

It is obvious now that the internet is here to stay, in just a few short years it has become an integral part of society. However digital stores have so far largely been left out in the dark by the research community, having to rely on trial and error. A better understanding of where, how and when to expose products in digital stores would further encourage the growth and development of the digital market.

1.1. Background

The world's first online transaction was conducted already in the early seventies when students at Stanford University arranged to buy marijuana from their fellow students at Massachusetts Institute of technology (Power, 2013). The transaction was arranged on Arpanet the forefather of what we today call internet. Arpanet was small scale and only a select few people even had access to it. It wasn't until the development of the information system the World Wide Web in 1992 that it was really possible to construct a well-functioning ecommerce site. The first one popped up in 1994 and sold Sting CDs. It wasn't long until names that are recognized as household names today began popping up, both eBay and amazon were founded in 1995 (Dorsey, 2010). Today both are featured on Forbes fortune 500 list, with amazon ranking at number 35 and eBay at 180, from not even existing to being two of the most highly valued companies in the world in only a span of 20 years (Fortune, 2014).

Ecommerce continues to grow, in 2014 the Swedish ecommerce market grew by 16 %, it now constitutes 6.4% of the total revenue in Swedish retailing. The most common product categories bought by Swedes are in order of size; electronics, apparel and then books/media (E-barometern, 2014). This study will be looking at online stores that mainly sell electronics and all of the products involved in the experiment falls into this category. It is perhaps not surprising that electronics is the most common item sold on the internet in Sweden. Electronics is relatively straight forward, it's often easy to figure out what you need and know if it will work for you, the electronics market is also highly competitive on the internet which helps bring down prices. This has made the internet an attractive forum for consumers to buy their electronics in.

Combining the facts that ecommerce only constitutes about 6 % of retail revenue (E-barometern, 2014) in a highly digitalized country such as Sweden with the fact that ecommerce success is relatively newfound, it is perhaps not surprising that there is not much research done regarding optimal product positioning in a retail environment. However tomorrow has already become today, ecommerce continues to expand and there need to be a better understanding of the market.

While the internet surely doesn't change basic human behaviour, general psychological models still hold up regardless of what medium humans communicate in. However it has been shown that purchasing behaviour can be very different in an online store (Degeratu, Rangaswamy, & Wu, 2000). Therefore it is highly relevant to begin examining which models and theories that are true in a physical store also are true for online stores. And if they do not match adjust the theories and models so we can better understand ecommerce.

This study will look at models and theories regarding placement in the offline world and see how they hold up in the present day online world. Can the same theories and models be used or is there a need for set of models and theories for the online stores?

1.2. The issue

a) How does placement of products on a digital stores front page influence the visiting consumers purchasing behaviour in terms of clicks and purchases?
b) How does time spent in the digital store influence the visiting consumers behaviour in terms of clicks and purchases

1.3. Intention of this study

This study aims to increase the understanding of products position on a website and how those positions effect behaviour. Which positions are more profitable than others and how can this be used to the advantage of the retailer? This study seeks to provide online retailers with a better understanding of how position translates into behaviour and perception, and thus gain a better understanding of how consumers behave in online stores.

1.4. Limits of this study

Consumer behaviour is a very complex study. No two individuals act the same way in every situation, we are all unique. There are an immense number of factors that can influence the results. It is important to limit the scope of the study to something which can be observed, easily quantified and controlled for with a correct scientific method.

First off all we only look at three online retail stores that are active in Scandinavia. This means that the results do not reflect the population of the world nor the population nor even that of Scandinavia. The stores who participate in this study have their target group and their unique demographic customer base which most likely is not representative of the entire population.

Secondly we only examine one product category, electronics. Since it's a big and established online market it was easier to find willing participants. Electronic stores also work mainly with standard products there are very few store unique products, most all products in an electronics store can just

as well be found in another electronics store. Most online electronics stores also use similar layouts for their front pages. This limits the results applicability to only the electronics category.

Thirdly this study only looks at the placement of products. Therefore the experiment design is constructed in a way as to eliminate as many other factors as possible, for example calendar effects and product specific attributes.

Fourthly, while this study does look at three different stores to eliminate store specific qualities one has to realize that the general layout on the used stores could be considered somewhat similar. This is the layout most online retailers choose but there are certainly stores who chose to use a radically different layout. Stores with different layout have different product positioning so depending on the store layout the results achieved in this study may not be applicable on online stores that do not use the cookie-cutter layout that is most often seen in online stores.

Fifthly, this study exclusively looks at the front page of the selected online store. The front page was chosen since this is the page that by far sees the most traffic. Some stores use different layouts for their front page and for their category pages. It is also possible that customers behave differently on the front page than they do on other pages. Therefore the results of this study only concerns product placement on the front page.

1.5. Contribution

This study will provide tools for online retailers as to how they can optimize the placement of products on their website. Online retailers' main source of information has been by trial and error, there exists little research about placements role on consumer behaviour in an online setting. Thus this study will provide the retailers with a better understanding of their customers and also an indication of what knowledge gained form physical stores can be transferred to online stores.

This study will provide academic knowledge about the role of placement for online stores. It will look on real world behaviour by using up and running store, and provide real world data that reflect actual customer behaviour. This study will draw upon knowledge form previous experiments and theories mainly conducted in physical stores and will see if these theories match up with the results of the online world. This paper will also see too what degree that research done on physical stores is translatable to online stores.

1.6. Disposition

To gain a bird's eye view of this study here follows a short disposition. This study consists of a total of 9 chapters, excluding the list of references and the appendix. The first chapter provides an introduction to the field and also gives a brief history of ecommerce development and research leading up to it. Chapter 2 introduces the most relevant theories and models which lays the foundation for the scientific background of this study. Chapter 3 discusses the chosen research method and experiment design, why it was chosen; its pros and its cons. Chapter 4 draws from the aforementioned theories and presents hypothesis based on the previous research done in the field

Chapter 5 presents the results from the performed experiment, and how and to what extent the results match up to the hypothesis. This is followed by a discussion and analysis in chapter 6 which with the help of previously mentioned theories attempts to explain and put the results into context. Chapter 7 provides a brief conclusion. Followed by chapter 8 which discusses the implications of the study on the future. Lastly chapter 9 provides recommendations for areas of future research and also discusses the limitations of this study.

2. Theoretical basis

Since there is a lack of research regarding consumer online behaviour this study takes its theoretical background largely from studies done in an offline environment. However there certainly are some relevant studies done in online stores, for example in 2014 Ahlbom & Gyllanhammar did an experiment that, amongst other things, looked at product placement and where visitors look on a website. However they did not use absolute placement as an independent variable, instead using type of product organization technique. Furthermore they used a website they designed themselves and no customers actually bought any products so the study did not measure real consumer behaviour. This study can be seen as a further development of aspects from Ahlbom & Gyllenhammars study. This study will explicitly look upon positions effect and also use three real online retailers to gain an insight into customer purchasing behaviour in a real retail setting.

Theories used that are based on offline stores are theories that are relevant in both online and offline stores, these include cognitive psychology, purchasing behaviour, the purchasing process and theories regarding perception

2.1. SOR-model

At the very heart of this type of research is the SOR model, short for Stimulus-Organism-Response. The SOR model only started off as the Stimulus-Response model, in 1927 Thorndike described the law of effect which simply states that when a person is exposed to a certain stimulus this stimulus leads to a certain behaviour (Thorndike, 1927). However all humans are unique and not everyone is affected in the same way by the same stimulus, the model needed development! This is how the SOR-model was born. In 1978 Houston & Rothschild looked at how people responded differently when exposed to stimuli in the form of product attributes (Houston & Rothschild, 1978). The *Organism*-part of the model dictates how strongly and to what degree a person will react to a certain stimuli, product attribute in Houston & Rothschild study. This addition to the model allows us a better understanding of how people look for products, where they look for them and when they will do it. This study will look at the SR-parts of the model by looking at the absolute data for number of clicks and number of sales for the used products. The O-part will be evaluated by a survey answered by a subset of the consumers. (Houston & Rothschild, 1978)

2.2. Purchasing behaviour

Purchasing behaviour can be described in many ways and there has been many models who attempt to give a streamlined clear definition of what stages a consumer goes through when purchasing something. Engel et al. (1995) provides a five stage model of how purchasing behaviour looks (Engel, Blackwell, & Miniard, 1995):

Figure 1: Engel et al. (1995) five stages of purchasing behaviour

Now this study mainly examines how positioning influences purchasing behaviour. The problem with the above model is that it leaves very little room for this. According to this model consumers are logical and evaluates their alternative and find the best product. But this is not so, consumers regularly show biases in selection processes and commit systematic errors. (Tversky & Kahneman, 1983)

In his book *In-Store Marketing*, Jens Nordfält provides criticism of the traditional five step model and argues that consumers are indeed not the rational people some researches have given them credit of being. Instead Nordfält proposes a much more flexible model which allows for more manoeuvring and other influences such as our unconsciousness. (Nordfält, 2011)

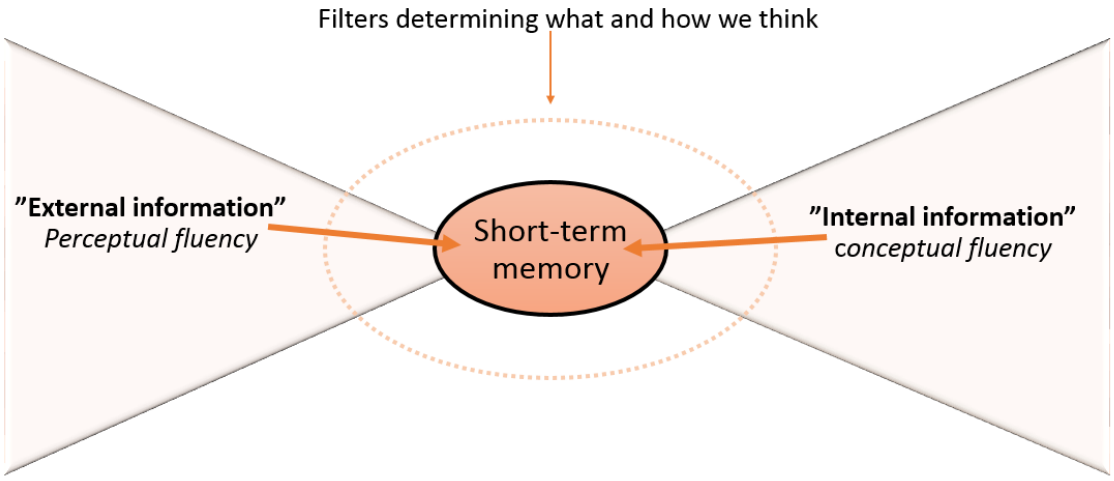

Figure 2: Nordfält (2011) dynamic model of consumer purchasing behaviour.

In Nordfälts model out unconsciousness filters the information for us. This approach of thinking about the consumer purchasing behaviour is much better at explaining behaviour observed in the real world. It also gives us a reason to expect that position could play an important role in consumers purchasing behaviour. It is possible that the unconscious mind evaluates products differently based on position.

2.3. Time spent in the store

There have been several theories regarding time spent in a store and the amount of purchased goods. In some cases it seems obvious that more time spent in a store leads to a bigger basket, for example you generally don't stroll around in a foodstuff store for one our looking for just a few items, you bring a cart and you continually fill it during the hour. This is discussed by Granbois (1968). However there has been other studies which have been unable to produce similar results, the relationship between time spend and money spent is a complicated one (Turley & Milliman, 2000). This is not surprising if you look at the opposite end of the question. Someone shopping for a car is unlikely to buy more cars just because they spend a longer time in the store. Most people only buy one car at a time regardless of how long time they spend looking at cars in the shop. In this study we will look at how the positioning of products somehow influence the time spent in the online shop, and also if it time correlates with consumers actually buying the product. Since the relation between time and money in a physical store is already hard enough to describe it becomes doubly so when it comes to online stores. Which is correct is more time better, indifferent or maybe even negative? (Granbois, 1968)

2.4. Perception

Human perception can be a delicate thing, there are an untold number of possible variables that can influence our way of thinking and or perceived reality. While the experiment executed in this study only attempts to look at one such variable, position. It is important to be aware of other variables that could interfere with the results. The experiment is done in with the Latin-Square design which means that product specific qualities such as shape and colour which can influence behaviour, are controlled for. It is possible different planograms unintentionally form groups and patters that influence consumers perception that in turn could influence purchasing behaviour. For example Kahn & Wansink (2004) showed different ways of organizing products can influence the perceived variation which in turn can influence purchasing behaviour. Therefore it is very important to be aware of such possible interferences in perception which could influence the results. Most of these possible variables are controlled for either in experiment design or by probing consumers perception through the survey presented to a subset of the observed consumers. (Kahn & Wansink, 2004)

2.5. Position on shelf

Drezé, Hoch & Purk (1994) made a large experiment looking at different aspects of shelf optimization. They found that vertical position on the shelf is by far the most important aspect of a products placement on the shelf, with picking height being the best location for the product, horizontal placement did not seem to matter much. The authors also found that the location was more important than the number of facings. Since internet stores rarely use more than one facing per product it is possible that location plays an even larger role for online retailers since the effect of facings is largely nullified. Curhan (1974) echoes some of the same result, he found that location was more important than number of facings and price. However his study was done on fruit and vegetable category so it is not certain that similar results can at all be expected in the electronics category.

These findings are also supported by eye-tracking such as the one done by Chandon, Hutchinson Bradlow & Young (2009) experiments. Unlike the previously mentioned studies they found a positive relation in horizontal position however noting that vertical position was more important. The results from the study can be shown in the figure below. It is mainly the columns regarding horizontal position and vertical position that is pertinent to this study. Other studies found that given a shelf with identical products consumers will more often choose the centrally placed products. (Christenfeld, 1995). Valenzuela & Raghubir (2009) looked more to the question of *why* customer looks in the centre of the shelf. Their conclusion is that centrally placed products are perceived as being more popular, and the social animals we are therefore see the popular products in a more positive light.

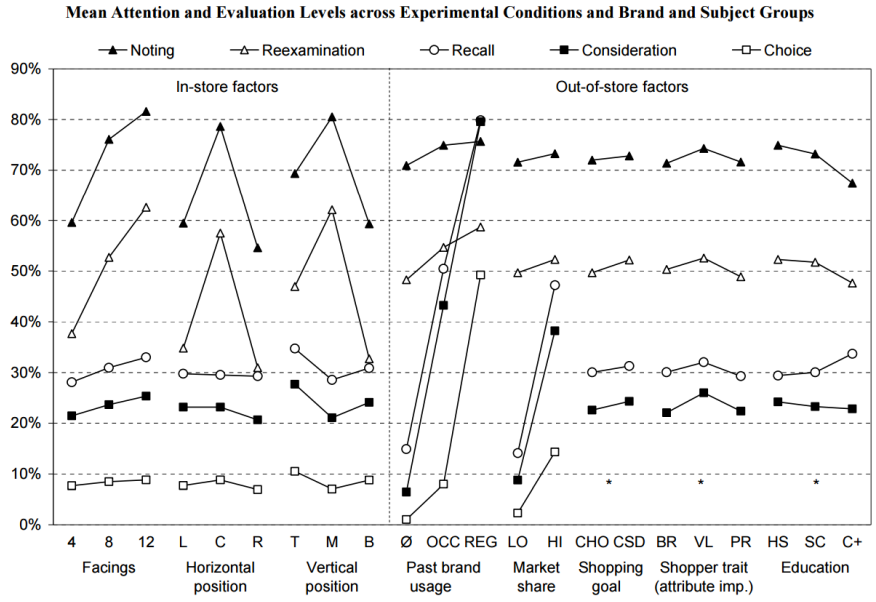

Figure 3 Mean attention and evaluation levels in eye-tracking experiment (Chandon, Hutchinson, Bradlow, & Young, 2009)

2.6. Implicit memories

Implicit memories are memories that we do not remember yet we act upon them. Acting on these consciously unknown memories is called priming. Basically priming means that when you are exposed to one stimulus it influences another stimulus. Psychologists Meyer & Schvaneveldt (1971) showed how priming influences our perception of words based on context. What the experiment in this study will test, is if location of products has a priming effect. Will location influence consumers to have another behaviour? And if so to what degree will location prime consumer behaviour in regards to purchasing products. Implicit memories directly contrasts explicit memories which are memories that we do remember and can consciously draw information from, such as episodic memories.

Priming can be a very powerful tool, Tulving, Schacter & Stark (1982) showed that priming has a very long lasting effect lasting even longer than normal memory recognition.

2.7. Cues and heuristics

Cues and heuristics are important pieces in understanding human behaviour and purchasing behaviour. A heuristic is when a consumer engages in the same or a similar behaviour when a situation is repeated, a habit. For example a consumer may always choose the same brand of butter that he/she prefers. Cues work the other way around it is bits of information perceived and processed by the person, these bits of information can create new behaviour or change previous behaviour. For example someone who has a favourite brand of butter may be inclined to change brand if they see a signage for a healthier or cheaper brand of butter. (Park & Lessig, 1981)

For our online experiment it is possible that product position influence customers behaviour. Position could work as a cue, when a product is placed in a certain position it is possible that the consumer will press it since they were looking at that position. Similarly online consumers are bound to have some heuristics regarding their online shopping habits, some which might have to do with position. Maybe said consumer always looks and clicks at the products in the top row for example. As has been shown there are both commonalities and differences between physical and online stores. (Degeratu, Rangaswamy, & Wu, 2000)

Thus cues and heuristics could possibly provide an explanation for why certain positions might be more attractive than others. Since cues can be based on factors such as familiarity (Park & Lessig, 1981), and availability (Tversky & Kahneman, 1973) there are bound to be differences between countries and cultures so it is also important to remember that this study observers behaviour on Scandinavian websites, thus the cues and heuristics observed in this experiment may not have relevance to consumers outside of Scandinavia.

2.8. Financial effects

Most all online stores are commercial enterprises, and since a commercial enterprises main goal is to turn a profit, it is important to look at the financial effects aspect of product positioning in the online store. Figuring out the optimal placement of products is something which will require resources, developing an algorithm that somehow does it automatically, or doing it by hand, either way it will cost money. Thus it is a central point for business to know if the resources invested into optimizing product placement can achieve the desired financial effects, increased sales. Putting products in attractive positions can lead to increased sales in physical stores as shown by Rossiter & Percy, (1997). Lohse & Spiller (1998) looked at internet stores and developed a model for what influences online store sales. They found that a large portion 60 % of the sales could be explained by the shelf layout. Lohse & Spillers study ties into this study directly by looking at the financial aspects of shelf placement. This study then can be considered an extension of this previous study. This study will look at placement and their ties to key numbers such clicks sales and also evaluate the behaviour by using a survey to probe who the consumers perceive the website and its qualities.

Furthermore this study will discuss possible explanations for why position might influence the total basket based on impulse purchases (Stilley, Inman, & Wakefield, 2010a) and reasons for why it might potentially not influence total basket size because of mental budgets (Stilley, Inman, & Wakefield, 2010b)

2.9. Studies performed in physical stores relevance to online stores

Since the online store often looks radically different than its offline equivalent it is unclear what consumer behaviour can be expected to be consistent across channels. Degeratu, Rangaswamy & Wu (2000) showed that visual cues plays a much smaller role in consumer choice in online stores than in supermarkets.

2.10. Serial positioning effect

By tracking eye movement Hendrickson & Ailawadi (2014) showed that customers often look at products the same way we read; left to right, top to bottom. Also the serial positioning effect dictates that the primary and recency positions has a positive effect on memory (Frensch, 1994). Meaning that information placed in the beginning and end are more often remembered than bits of information in other positions.

2.11. Summary of theories

To figure out the effects of position on consumer behaviour in online stores this study uses different models and theories. General psychological models such as the Stimuli-Organism-Response-model, perception theories, implicit memories, serial positioning effect, cues and heuristics are used to gain a better understanding of the inner workings of the mind to find explanations for what could be happening to explain different behaviour.

Research done about effect of position form physical stores are used as starting ground to form a picture of what might be expected from a similar study done in an online store. Together with the few available research papers conducted in online stores to gain a better understanding of consumers behaviour in online stores.

To understand the effects on the financial results research done in both physical stores and online stores are used to better understand the phenomena. Look at how unplanned purchase (Stilley, Inman, & Wakefield, 2010a) and mental budgets (Stilley, Inman, & Wakefield, 2010b) could influence the stores total sales.

3. Hypothesis

Based on previous research which has been presented and surmised in the previous chapter the following hypothesis have been formulated.

First of we need to prove that position does in fact have a tangible effect (Dréze, Hoch, & Purk, 1994). To prove this we need to conduct statistical tests to see if different product positions receive a different amount of clicks and/or purchases.

H1a: Products absolute position influences the number of clicks received on said product.

H1b: Products absolute position influences the number of purchases of said product.

Different studies have come up with different results regarding how time influences the amount of purchased goods. Some studies show that longer time spent in stores leads to a bigger basked whilst other studies show the opposite. These studies also weren't made in online studies which makes it even more uncertain what to expect in our experiment. Therefore we test if time spent influence amount of purchased goods. (Turley & Milliman, 2000)

H2: Time spent in the online store influences the amount of purchased goods.

Valenzuela & Raghubir examined the effect of placement on a shelf in physical stores. They found that the centre on the horizontal place of a shelf was the optimal place to place a product while the vertical position mattered less. Since an online shelf looks radically different than an online shelf it is unclear if the effect is prominent in online stores. Therefore we will firstly test if vertical/horizontal position influences the amount of visitors who click on the product.

H3a: Different vertical positions will receive different amount of clicks.

H3b: Different horizontal positions will receive a different amount of clicks.

According to Valenzuela & Raghubir products placed in the centre on the horizontal plane are perceived as being more popular. Also Hendrickson & Ailawadi (2014) showed that we browse products in the same pattern we read from left to right and usually top to bottom. Also Meier & Robinson (2004) and Schubert (2005) showed that higher vertical position is evaluated more positively. Therefore we can expect the products placed in the horizontal centre, and vertical top are going to be the best product positions.

H3c: The higher up an item is on the vertical axis the more number of clicks it will receive.

H3d: Centre position on the horizontal axis will receive more clicks.

Then the same hypothesis will be tested with purchases instead of clicks, clicks is an important part of the business for online retailers this is how consumers navigate to product pages. However what really matters for a store is to increase purchases. Therefore we will test if position influences the amount of purchased goods. The following hypothesis uses the same basis and theories as the four previous hypothesis but tests for purchases instead of clicks.

H4a: Different vertical positions will receive different amount of purchases.

H4b: Different horizontal positions will receive a different amount of purchases.

H4c: The higher up an item is on the vertical axis the more number of purchases it will receive.

H4d: Centre position on the horizontal axis will receive more purchases.

After we have tested positions individual effect on clicks and purchases respectively we will see if there is a connection between the two (Rossiter & Percy, 1997). In physical stores there is a link between exposing a product on an attractive location and sales. To test if clicks work in a similar way a test will be conducted to test the relationship between clicks and purchases.

H5: an increased number of clicks leads to an increased number of purchases.

Increasing the purchases of an individual product can certainly be a nice tool for retailers to have but a more important question in regards to retailers' financials is if position influences the total basket size of consumers, therefore tests will be conducted to see if there is a relationship between product position and total basket size.

H6: Position influences the total number of goods purchased.

This study attempts to explain consumer behaviour based on the positions of products on a web site. Therefore we have to make sure that other factors aren't also influencing the results. Hoch et al (1999) and Kahn & Wansink (2004) has showed that different ways of organizing products can influence consumer's perceived variation of the assortment. To make sure that there are no unintentional organization effects interfering with the results we need to test if the perceived variation changes with different product constellations.

H7: The twelve planograms do not influence perceived variation amongst consumers.

4. Method

4.1. The chosen subject

This study examines the role of products positions for online retailers. It is hard to predict what effect different placements will have on numbers such as sale and time spent on the webpage since there is a lack of research done about this in an online setting. The retail market on the internet is growing, and with its growth it's becoming more and more important to our everyday lives. There is a need for research to better explain our behaviour in the online world. A better understanding can help retailers and regulators facilitate further positive growth in the online marketplace.

4.2. The objects of this study

This experiment involves three Scandinavian online retailers of varying sizes that specialize in the electronics category. Since the necessary data required for this experiment involves some very sensitive data all of the participants have requested to not be named since sales data tied to a company can provide benefit for their competitors and leverage for their suppliers.

To conduct the experiment three online retailers with similar product layout was needed as to not mess up the research design. To find suitable candidate for the study a small analysis of current website layout was conducted. A small explorative study was done on Scandinavia's 50 largest online retailers (ranked after Alexa rank), the results were that the stores had an average of 3.7 columns, a median of 4.0 columns and an average of 3.1 rows and a median of 3.0. There exists a great variety in number of columns/row anything from 2-6 in either category. To make the results applicable to as many retailers as possible and also not mess up the experiment design only stores with the median values, 4 columns and 3 rows were asked to participate in the experiment. (Alexa, 2015)

Online stores who met the aforementioned criteria was then emailed and asked if the wanted to participate in a research study about marketing in online stores. Stores who showed interest were then called up to discuss the research specifics and see if the online store could make the necessary changes to their store so the experiment could be conducted. After this we discussed which products to use in the experiment, to be as least disruptive as possible to the stores sales 12 good selling products were chosen, products that could normally be featured on the front page of the store, the products used was chosen by the stores and not the researcher.

Websites with similar layout can be seen in the appendix to gain an understanding of how the typical electronics online store looks. The three participants were chosen based on their willingness to actually make the necessary changes to their website to conduct the experiment and prompt a

subset of visitors with a survey. They were also chosen based on their layout, stores with very unique or experimental design layouts were not approached to partake in this experiment.

4.3. Research method

This study uses quantitative methods to collect data in two ways. First the page visitors actual behaviour is recorded, how many and which items they press on, how long they look at the page, if they buy products they have looked upon and also how big their basket is in terms of money. This data allows us to look at actual consumer behaviour. No consumer knows during the buying process that their data is to be used in an experiment. Thus the data is not influenced by consumers knowing they're being observed. A subset of the consumers were asked about their experience through a survey. The survey was prompted after consumers had completed their purchase/visit as to not influence their behaviour.

This study is not trying to observe some new behaviour and come up with new theories and models, it is looking at a new context and seeing of old theories and models are applicable in an online context. Hypothesis are based solely on these previous research endeavours thus this study is to be considered deductive.

4.4. Measurements

Since sales volume and number of clicks could possibly be used as an identifier by competitors this study will not report the actual sales and click numbers for each individual store but instead as an aggregate.

The questions included in the survey are lifted from previous studies which have examined similar variables; Kahn, Weingarten, & Townsend, (2013) and Bearden, Netemeyer, & Haws, (2011). For the relevent questions respondents were asked to answer with a number rangeing form 1 to 7 for easier analysis (Verplanken & Herabadi, 2001). Furthermore the direction of the scale is randomly changed by an randomization algorith in accordance with Jacobsen (2002) recommendations.

4.5. Experiment design

This study attempts to explain customer behaviour with position being the independent variable. As such the experiment design had to be constructed in a way that would eliminate as many other variables as possible. To observe the effects of individual positions an experimental design similar to Chandon, Hutchinson, Bradlow, & Young (2009). Since 12 positions were included in the experiment there was 12 experimental cells, to isolate the effect of position 12 different planograms were was used. The table below shows planogram 1 and how the 12 products were distributed in said planogram, appendix C shows includes a planogram for each of the 12 planograms used in the study.

Table 1: Planogram 1

	Column 1	Column 2	Column 3	Column 4
Row1	1	2	3	4
Row2	5	6	7	8
Row3	9	10	11	12

Furthermore to minimize the store-specific and calander effects this experiment uses a traditional Latin-Square style of experiment. By using three different online retailers and changing the planograms over several days, calendar and store-specific factors could be minimized. This allows the experiment design to isolate consumers response to position as the dependant variable. Since the number of days and number of stores were limited each store used 4 planograms per day, the planograms were randomly distributed to consumers as they visited the site and then tied too their IP for the rest of the day, so a consumer only saw one of the planograms each day per store. This means that each of the twelve products were in each of the 12 positions an equal amount of time (See appendix C for planogram design). (Hinkelman & Kempthorne, 2005)

Table 2: The experiment design

		Monday	Tuesday	Wednesday
Store no.	**1**	Planogram 1/2/3/4	Planogram 5/6/7/8	Planogram 9/10/11/12
	2	Planogram 9/10/11/12	Planogram 1/2/3/4	Planogram 5/6/7/8
	3	Planogram 5/6/7/8	Planogram 9/10/11/12	Planogram 1/2/3/4

Under the three experiment days the three stores garnered a total of 143700 page views. Since the stores are different sizes they did receive significantly different amount of differences, the distribution is shown in the table below:

Table 3 Views per store

		Views
Store no.	**1**	68159
	2	43935
	3	31606
	Total	143700

Planograms where randomly distributed to visitors based on their IP address, as such each planogram received an amount of visitors close to the average of 11978 per planogram, the amount of visitors for each planogram can be seen in the table below:

Table 4 views per planogram

Planogram	Views
1	11283
2	11640
3	12053
4	13110
5	12330
6	11495
7	12305
8	11128
9	11974
10	12499
11	11522
12	12361

The three retail stores who participated in this experiment were chosen because they have a normal looking webpage, now every webpage is of course unique but there are some things in common. All of the participating stores have 3 rows with 4 products on each row on their front page. When customers completed a purchase they were asked to answer a short survey, since the survey can be viewed as intrusive and affect customer's perception of the online retailer in a negative way the number of surveys was kept to a minimum. Each store collected 30 complete survey results each day for a total of 30x3x3=270 survey answers (results from the survey can be found in chapter 5.10). The image below shows exactly how the planogram looked in the three stores used in this study:

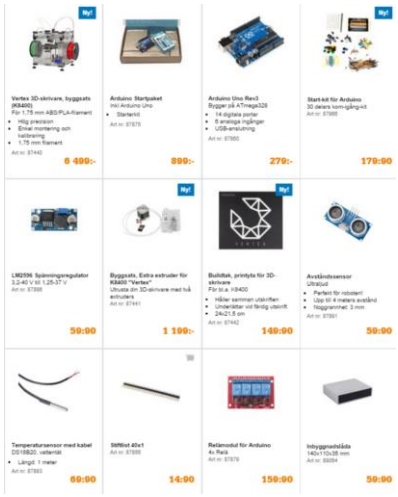

Figure 4: Example layout for an online retailer

To eliminate the effect of product specific qualities all stores had the same products on their main page, the electronics market is highly competitive with very few store specific products which made it easy to agree upon 12 products to be used during the duration of the experiment, four in each of the three rows. The 12 products were then arranged in 12 different planograms to make sure that each product was placed on each position once. This design allows us to isolate the effect of both vertical, horizontal, and individual placement.

It's important to note that the visitors of a website is not random. Websites target different demographics and have different users who regularly visit them, also which day of the week it is can affect who visits the page and when. This means that the responses recorded aren't representative off the whole Scandinavian population, not every Scandinavian uses the internet. However the responses could to some degree be said be representative of each specific stores customer base. All of the population who visited the websites during the time of the experiment was recorded and who was asked to complete the survey was randomized, since the randomization was done by computer software there was no possible selection bias by a human.

4.6. Course of action

On the selected Monday 00.00 each of the three stores started using their four planograms for the day and kept it as such until 23.59. Then they changed it to the next set of planograms and put that up for a day and then again for the third set. During each day each store was tasked with administering a survey and obtaining 30 fully completed surveys, the surveys were handed out to visitors after a completed purchase as to not influence their behaviour. Everything else was kept as normal and other than fixing the position of products on the front page and administering the survey everything else was kept as normal.

4.7. Analysis

The results obtained from the three stores was put into a common database for analysis. The three stores did not collect their data in exactly the same way so some of the data were converted to fit a common pattern. For database analysis the statistical tool SPSS, developed by IBM was used. This software is provided to students and researchers at Stockholm School of Economics for analysis.

The results from the survey were combined into common variables if their Cronbach Alfa reached a satisfactory level, which in this case was 0.75. If not otherwise stated all statistical tests in this study uses a confidence interval of 95% ($\alpha = 0.05$). The survey had n=270 respondents and the observed amount of unique visitors during the three days reached n=143700.

To test the hypothesis, analysis of variance was used to see if there was a significant difference in averages. Linear regression models were used to see if there were significant relationship between variables. In every statistical test it was also controlled if the necessary assumptions were true. For analysis of variance it was tested for homoscedasticity using the generalized Breusch-Pagan test, normality was tested for using the Kolmogorov-Smirnov test and lastly the Pearson's chi-square test was used to test for independence. For the regression analysis only continuous variables were used, scatterplots were used to confirm a linear relation, outliers were excluded, Durbin-Watson statistic was used to check the independence, the generalized Breusch-Pagan test was used here as well to check for homoscedasticity, lastly a normal P-P plot was used to check if the residuals were normally distributed.

4.8. Validity of study

It's important to evaluate if the results obtained from a study reflect a correct picture of the real world or if there are flaws which make the results invalid and not applicable in any contexts outside of this study. According to Jacobsen (2002) there are two requisites that needs to be met if the results are to be regarded as correct. First the results need to be valid and secondly the results needs to be reliable. Reliability means that the collected data is reliable, for example respondents answering a 10 minute survey in 1 minute would indicate that they did not read through the questions but instead quickly clicked through the answers, which would make the data unreliable since the data would not reflect what the respondent actually thought in regards to the questions. Validity instead encompasses the measurement, does the selected method and questions measure what we want or does it measure something else? This can be a serious problem for laboratory experiments since it can be hard make people behave in a normal way in a clinical setting. Furthermore validity is divided into two categories, internal and external. The subchapters below will go more into length how this study deals with questions regarding validity and reliability. (Jacobsen, 2002)

4.8.1. Internal validity

Amount of clicks, purchases, total basket size and time spent in the store are all gathered from real world data from up and running online stores, thus they are measurements of how consumers really do behave in the online world. The survey that was prompted to some of the visitors use questions from other similar studies that have tested the same things. The survey also uses questions with several dimensions to allow respondents to express a varying answers based on their experience. Respondents were also timed when they answered the survey so respondents who answered the survey unrealistically quick were excluded. Since the surveys were prompted on the website only

consumers who actually visited and browsed the store were participants in the survey. (Jacobsen, 2002)

4.8.2. External validity

How relevant is the study for other contexts? The study uses three different stores which decreases the likelihood that the results are store-specific effects which in turn increases the likelihood that one can apply the results to other stores. However only one product category was examined, electronics. Thus it is uncertain if the results can be applied to stores who sell other product categories. Also statistical tests were used to ensure that there is a high likelihood that the results are significant and not just a random occurrence. However it is still possible that respondents answered insincerely on the questions, since there was no other quality control other than excluding those who answered too quickly.

A great concern for the study is that the majority of previous studies that it is based upon are performed in a physical store environment. Other studies are general psychology studies which further increases the uncertainty of their applicability in a retail setting. This means that some aspects of some research is expected to be replicable in our experiment while other aspects are not even applicable in our experiment. (Jacobsen, 2002)

4.9. Reliability

Since this study has a number of limitations that has been previously mentioned one has to conduct a discussion about how reliable the obtained results are and if they are applicable outside of the scope of this study. Only using electronics stores can make the results problematic to replicate. Electronics on the internet are mainly bought by young males, which also holds true from the surveys that were conducted, also only Scandenavian websites were used. One would think that products position is something that exhibits similar effect on both males and females, and young and old people alike. However there is a real possibility that the measured effects would be different if people from different socioeconomic and demographic backgrounds were used its possible that the results would be different.

The survey does use scales and questions that are well examined and often used. Also the questions were indexed to see if respondents were upright with their answers or if they answered randomly or insincerely. Cronbach Alfa was used for this to achieve an acceptable level of significance.

Only the days of Monday, Tuesday and Wednesday were used in the experiment, it is possible that different consumers and effects would be observed of other days of the week were observed since day of the week certainly can influence consumers purchasing behaviour.

One of the goals of this study is to try and link certain behaviour (clicks, purchases, time spent, and basket size) to other variables such as position and questions asked for in the survey. However proving a causal relationship is problematic and regression analysis only measures the relationship for the collected data and there is no guarantee that this relationship is in anyway true outside the scope of the collected data. (Jacobsen, 2002)

5. Result

Firstly off any outliers were removed. This included people who visited the websites for a long time but were completely inactive e.g. visiting the site for hours yet clicking or buying nothing. People who also visited the website for less than a second were also regarded as outliers. It is not reasonable to include these types of visitors in the data since they would skew the result. Respondents who responded to the survey to quickly were also excluded.

5.1. Assumptions

To not clutter the following subchapters with repeating the same 3-6 tests from testing if the assumptions could be said to be true, the following is a short reporting of the assumption testing that was done prior to each test. If applicable to the test and if otherwise is not stated a 95% confidence interval was used ($\alpha = 0.05$).

To run analysis of variance tests three assumptions must be true: Homoscedasticity, normality and independence.

Since we will be performing analysis of variance and regression analysis it is important that the data is not heteroskedastic. The generalized Breusch-Pagan test was used. No heteroskedastic were found in any of the performed test. Thus the assumption of homoscedasticity was statistically significantly true.

Since the sample size is large the Kolmogorov-Smirnov test for normality was used. The test was performed on all of the variables tested. All variables tested normal with a 95% confidence interval. Thus the assumption of normality is statistically true.

An assumption for ANOVA tests is that the variables are independent of each other. Pearson's chi-square was used to test for independence between the variables used in the ANOVA tests. No statistically significant association between the examined variables. Thus the assumption of independence was statistically significantly true for all tests.

Since these three assumptions hold true all assumptions can be said to be true for the performed ANOVA tests. For regression analysis there are 6 assumptions that need to be true, here is a short rundown of the assumptions and how they were tested for or controlled for.

(1) For the regression analysis all used variables are measured at the continuous level. (2) Scatterplots were performed to confirm a linear relationship. (3)Outliers were excluded. (4) Durbin-Watson statistic were performed to confirm the independence of observations. (5)Test for homoscedasticity were discussed above and also held true for the regression analysis. (6) Lastly a normal P-P plot was used to check that the residuals of the regression line were approximately normally distributed.

Thus all assumptions for regression analysis also holds true to the performed analysis.

5.2. Control period

During the control period none of the products used in the experiment were featured on the front page. On average 0.16% of the visiting consumers bought any one of the products used in the experiment during the control period, 1.57% of consumers clicked on any one of the products.

5.3. Testing for possible interference

To see if the obtained results were tainted by any possible interferences, tests to detect any possible interference were controlled for first.

H7: The twelve planograms do not influence perceived variation amongst consumers.

Hypothesis seven is to test the reliability of the reported results. Since we want to test for position effect. Thus we want the perceived perception for each of the planograms to be the same. If then we denote $average\ perceived\ variation = \mu$ our null hypothesis becomes H_0: $\mu_1 = \mu_2 = \cdots = \mu_{12}$

360 respondents were asked about their perceived variation of the store, 30 for each planogram. ANOVA test followed by a Scheffe Post-Hoc test was performed to see if there was a statistically significant difference between the groups.

$F_{obs} = 1.003$, The critical value of F at $\alpha = 0.05$ (confidence level 95%) is 1.82.

$F_{crit}(1.82) > F_{obs}(1.003)$

Since the critical value is higher than the three observed values we cannot reject the null hypothesis. This was expected since a difference in the perceived variation would be a possible interference. Now we cannot for certain know that the twelve planograms would result in significant perceived

difference in variation if our sample size was larger. But we can say that the data obtained does not indicate a perceived difference in variation with 95% confidence interval. Thus our data gives no indication of any perceived difference in variation among the twelve planograms.

5.4. Does position matter?

H1a: Products absolute position influences the number of clicks received on said product.

To test if there was a statistically significant difference in the number of clicks an ANOVA test was conducted. The null hypothesis is $H_0: \mu_1 = \mu_2 = \cdots = \mu_{12}$ with μ_n denoting the average amount clicks per position. $F_{obs} = 29.62$, The critical value of F at $\alpha = 0.05$ (confidence level 95%) is 1.79. $F_{obs}(29.62) > F_{crit}(1.79)$ The tests showed significant differences with a confidence interval of 95% ($\alpha = 0.05$). Thus the null hypothesis can be rejected.

H1b: Products absolute position influences the number of purchases of said product.

The null hypothesis is $H_0: \mu_1 = \mu_3 = \cdots = \mu_{12}$ with μ_n denoting the average amount purchases per position. ANOVA test was performed. $F_{obs} = 11.05$, The critical value of F at $\alpha = 0.05$ (confidence level 95%) is 1.80. $F_{obs}(11.08) > F_{crit}(1.80)$ The tests showed significant differences with a confidence interval of 95% ($\alpha = 0.05$). Showing that there is a significant difference in purchases based on position. Null hypothesis is rejected.

5.5. Time and money

H2: Time spent in the online store influences the amount of purchased goods.

To test if time spent in a store causes the consumer to buy more products a regression analysis was done. The null hypothesis then becomes $H_0: \beta_1 = 0$ with the regression coefficient being total time spent in store compared to total amount of purchased goods (denoted in SEK) as the dependant variable. $F_{obs} = 1.34$, The critical value of F at $\alpha = 0.05$ (confidence level 95%) is 1.80. $F_{obs}(1.34) < F_{crit}(1.80)$ The tests showed no significant relationship with a confidence interval of 95% ($\alpha = 0.05$).

There is no statistical significant regression between time spent in the online store and the amount of purchased goods. Respondents exhibited a large very large variation in their relation between purchased goods and time spent. Notably one group of consumers spent a long amount of time in the store yet not buying anything. If we segment the consumers into two groups, buyers and none buyers and then exclude non buyers from this test and only include people who actually bought

products we get different results. With these changes to the data time spent in the store has 18 % regression with amount of purchased goods (in SEK). However for the whole sample this is not true thus the null hypothesis is accepted.

5.6. Clicks

Table 5: Percent of visitors who clicked on any row/column/position

	COLUMN 1	**COLUMN 2**	**COLUMN 3**	**COLUMN 4**
	6.36%	**6.92%**	**6.87%**	**5.99%**
ROW 1	Position 1	Position 2	Position 3	Position 4
8.33%	**3.88%**	**4.65%**	**4.51%**	**3.73%**
ROW 2	Position 5	Positon 6	Position 7	Position 8
7.48%	**3.44%**	**3.91%**	**3.84%**	**3.09%**
ROW 3	Position 9	Position 10	Position 11	Position 12
6.21%	**2.05%**	**2.37%**	**2.23%**	**1.89%**

Several consumers pressed on more than one product, the numbers under "COLUMN" and "ROW" denotes the percentage of unique consumers who pressed at least one product from said row or column.

H3a: Different vertical positions will receive different amount of clicks.

To test if there was a statistically significant difference in the number of clicks an ANOVA test was conducted. The null hypothesis is $H_0: \mu_1 = \mu_3 = \mu_3$ with μ_n denoting the average amount of clicks per row. $F_{obs} = 7.84$, The critical value of F at $\alpha = 0.05$ (confidence level 95%) is 3.00. $F_{obs}(7.84) > F_{crit}(3.00)$ The tests showed significant differences with a confidence interval of 95% ($\alpha = 0.05$). Thus the null hypothesis can be rejected.

H3b: Different horizontal positions will receive a different amount of clicks.

To test the significance of horizontal position ANOVA tests were conducted between columns 1-4. The null hypothesis is $H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4$ with μ_n denoting the average amount of clicks per row. $F_{obs} = 6.13$, The critical value of F at $\alpha = 0.05$ (confidence level 95%) is 2.61. $F_{obs}(6.13) > F_{crit}(2.61)$ The tests showed significant differences with a confidence interval of 95% ($\alpha = 0.05$). Thus the null hypothesis can be rejected.

H3c: The higher up an item is on the vertical axis the more number of clicks it will receive.

The null hypothesis is $H_0: \mu_1 \leq \mu_3 \leq \mu_3$with μ_n denoting the average amount of clicks per row in reality what we want to do is two separate t-tests, we want to test if row 1 receives more clicks than row 2 and we also want to see if row three receives more clicks than row 3. Since we are comparing two groups at a time we will use t-tests. The tests showed that row 1 received significantly more clicks than row 2 which in turn received statistically more clicks than row 3. As a control a t-test was also performed between row 1 and 3 which showed that row 1 received more clicks than row 3.

$F_{obs1} = 8.72, F_{obs2} = 8.51, F_{obs3} = 9.31$ The critical value of F at $\alpha = 0.05$ (confidence level 95%) is 3.00. $F_{obs1}(8.72) > F_{crit}(3.00)$, $F_{obs2}(8.51) > F_{crit}(3.00)$ and $F_{obs3}(9.31) > F_{crit}(3.00)$. The tests showed significant differences with a confidence interval of 95% ($\alpha = 0.05$). Therefore we can say that the higher up a product is on the vertical axis the more clicks it receives. The null hypothesis is rejected.

H3d: Centre position on the horizontal axis will receive more clicks.

Since there is an even number of products on the horizontal plane there is no product in the true centre position. The second and third column are regarded as both being in the centre, the two groups were combined into one variable. Thus the null hypothesis becomes $H_0: \mu_{1+4} \geq \mu_{2+3}$. An ANOVA test was conducted. $F_{obs} = 10.02$, The critical value of F at $\alpha = 0.05$ (confidence level 95%) is 3.00. $F_{obs}(10.02) > F_{crit}(3.00)$ The tests showed significant differences with a confidence interval of 95% ($\alpha = 0.05$). Meaning that column 2 & 3 received more clicks. The null hypothesis can be rejected.

Even though it was outside the scope of the hypothesis tests were also conducted to see if there were differences between the two positions within each group (centre & non-centre). There was no statistically significant difference between the centre columns 2 & 3. However the non-centre columns showed a statistically significant difference with column 1 receiving a statistically significant larger amount of clicks than column 4.

5.7. Purchases

Table 6: Percent of visitors who purchased a product on any row/column/position

	COLUMN 1	**COLUMN 2**	**COLUMN 3**	**COLUMN 4**
	0.68%	**0.97%**	**0.95%**	**0.65%**
ROW 1	Position 1	Position 2	Position 3	Position 4
1.04%	**0.29%**	**0.37%**	**0.35%**	**0.27%**
ROW 2	Position 5	Positon 6	Position 7	Position 8
0.98%	**0.27%**	**0.32%**	**0.31%**	**0.26%**
ROW 3	Position 9	Position 10	Position 11	Position 12
0.71%	**0.20%**	**0.22%**	**0.21%**	**0.19%**

Several consumers pressed on more than one product, the numbers under "column" and "row" denotes the percentage of unique consumers who pressed at least one product from said row/column.

H4a: Different vertical positions will receive different amount of purchases.

To test if there was a statistically significant difference in the number of purchases an ANOVA test was conducted. The null hypothesis is $H_0: \mu_1 = \mu_3 = \mu_3$ with μ_n denoting the average amount of purchases per row.

To test the significance of vertical position ANOVA tests were conducted between rows 1-3.
$F_{obs} = 5.22$, The critical value of F at $\alpha = 0.05$ (confidence level 95%) is 3.00.
$F_{obs}(5.22) > F_{crit}(3.00)$. Thus the null hypothesis can be rejected.

H4b: Different horizontal positions will receive a different amount of purchases.

To test the significance of horizontal position ANOVA tests were conducted between columns 1-4. The null hypothesis is $H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4$ with μ_n denoting the average amount of purchases per row.

$F_{obs} = 5.17$, The critical value of F at $\alpha = 0.05$ (confidence level 95%) is 2.61.
$F_{obs}(5.17) > F_{crit}(2.61)$ The tests showed significant differences with a confidence interval of 95% ($\alpha = 0.05$).Thus the null hypothesis can be rejected.

H4c: The higher up an item is on the vertical axis the more number of purchases it will receive.

The null hypothesis is $H_0: \mu_1 \leq \mu_3 \leq \mu_3$with μ_n denoting the average amount of purchases per row in reality what we want to do is two separate t-tests, we want to test if row 1 receives more clicks than row 2 and we also want to see if row three receives more clicks than row 3. Since we are comparing two groups at a time we will use t-tests. The tests showed that row 1 received significantly more clicks than row 2 which in turn received statistically more clicks than row 3. As a control a t-test was also performed between row 1 and 3 which showed that row 1 received more clicks than row 3.

$F_{obs1} = 7.62, F_{obs2} = 7.45, F_{obs3} = 7.88$ The critical value of F at $\alpha = 0.05$ (confidence level 95%) is 3.00. $F_{obs1}(7.62) > F_{crit}(3.00)$, $F_{obs2}(7.45) > F_{crit}(3.00)$ and $F_{obs3}(7.88) > F_{crit}(3.00)$.The tests showed significant differences with a confidence interval of 95% ($\alpha = 0.05$). Therefore we can say that the higher up a product is on the vertical axis the more purchases it receives. The null hypothesis is rejected.

H4d: Centre position on the horizontal axis will receive more purchases.

Since there is an even number of products on the horizontal plane there is no product in the true centre position. The second and third column are regarded as both being in the centre, the two groups were combined into one variable. Thus the null hypothesis becomes $H_0: \mu_{1+4} \geq \mu_{2+3}$. An ANOVA test was conducted. $F_{obs} = 9.42$, The critical value of F at $\alpha = 0.05$ (confidence level 95%) is 3.00. $F_{obs}(9.41) > F_{crit}(3.00)$ The tests showed significant differences with a confidence interval of 95% ($\alpha = 0.05$). Meaning that column 2 & 3 received more purchases. The null hypothesis can be rejected.

Even though it was outside the scope of the hypothesis tests were also conducted to see if there were differences between the two positions within each group (centre & non-centre). There was no statistically significant difference between the centre columns 2 & 3. However the non-centre columns showed a statistically significant difference with column 1 receiving a statistically significant larger amount of clicks than column 4.

5.8. Relationship between clicks and purchases

H5: an increased number of clicks leads to an increased number of purchases.

To test if there is a relationship between clicks and if that good was purchased a regression analysis was performed to see if there was a causal relationship between the two measurements. The null hypothesis is $H_0: \beta_1 = 0$. Then the null hypothesis can be rejected if the regression coefficient is not equal to zero, i.e. there is a relationship. The performed linear regression analysis turned up a regression coefficient of 9%. $F_{obs} = 14.47$, The critical value of F at $\alpha = 0.05$ (confidence level 95%) is 1.80. $F_{obs}(14.47) < F_{crit}(1.80)$ The tests showed significant relationship with a confidence interval of 95% ($\alpha = 0.05$).

The regression analysis confirms that there is a significant relationship between number of clicks and number of purchases thus we can reject the null hypothesis.

5.9. Total basket size

H6: Position influences the total number of goods purchased.

To test if number if position influences consumers to buy more products a regression analysis was done. The null hypothesis then becomes $H_0: \beta_1 = 0$ with the regression coefficient being total time spent in store compared to total amount of purchased goods (denoted in SEK) as the dependant variable. There are a number of different ways to take on this question. On one extreme end you can group all 12 positions together and see if the having products on the observed product page influences consumers' total amount of purchased goods. On the other extreme end you can test each individual position and see if that individual position has an effect on goods purchased. In between one can also examine the effect of group positions such as columns, rows or centre position. These different ways have different advantages and disadvantages, but here we will conduct all of the possible regression tests discussed to provide a basis for a broad analysis. The implication of these regression models are discussed in the later chapters.

To start off, a regression analysis were conducted with the whole page (the 12 product positions), the regression model showed significance at the 95% confidence interval with the regression coefficient being 27%.

Next up, regression analysis were conducted with the three rows. Only the top row showed significance at the 90% interval with a regression coefficient of 11 %.

Regression models were then conducted on the columns. None of the columns showed significance. The columns were then grouped into the earlier specified groups of centre-columns and non-centre-

columns this regression showed significant results for the centre-columns with a regression coefficient of 14% at the 95% confidence interval. The non-centre-columns showed no significance.

Lastly a regression model was conducted with each of the 12 individual positions. No position showed statistical significance.

It then becomes a bit of an interpretation issue if the null hypothesis can be rejected. For individual positions the null hypothesis cannot be rejected however certain groups of positions do influence the total amount of goods purchased so in that regard the null hypothesis can be rejected.

5.10. Survey results

Following is the result from the questions asked in the survey (full survey can be found in appendix A).

First respondents were asked why they chose to purchase the product that they purchased just before being prompted to partake in the survey.

Table 7 Survey question 1

Reason for chosen product	
Impulse	22%
No alternative	11%
Planned purchase	52%
Other reasos	15%

Then they were asked how often the purchase products online, first any product, then specifically from the electronics category.

Table 8 Survey question 2

Frequency of online shopping	
Once a week or more often	13%
Once a month	39%
Once every six months	35%
Once every year	9%
More seldom than once every year	4%

Table 9 Survey question 3

Frequency of online shopping (electronics)	
Once a week or more often	10%
Once a month	17%
Once every six months	44%
Once every year	20%
More seldom than once every year	9%

Respondents then got to answer a series of questions regarding their perception of the online store.

Table 10 Survey question 5

Perceived variation of assortment (scale 1-7)	Mean
Colorful	2.8
No products I want	2.6
Many alternativs	5.9
Feels inviting	3.8

Lastly, a couple of demographics questions were asked.

Table 11 Survey question 6

Sex	
Man	78%
Woman	20%
Other	2%

	Mean
Age	34 years

None of the questions asked showed any statistical significant difference, not between the stores, nor between the planograms.

6. Discussion & Analysis

This analysis starts off with discussing the main intention if this study; if position does matter then it is structured to somewhat follow the results in the order they would appear during a visit to an online store i.e. consumer visits website→forms an impression of the website (evolves continuously during visit) →clicks any number of products→purchases any number of products. So to start of the analysis begins with looking at consumers' perception of the webpage and if position does matter. Then it follows to look at the clicking behaviour followed by the purchasing behaviour. Lastly the analysis will look at the whole picture such as how time effects the purchasing behaviour and how position influences the total size of the basket

6.1. Relevance of position

We have been able to conclude that a products position can increase the sales of said product. However the most important question from a retailer's perspective is if the positioning increases the overall sales. There is a possibility that position does not increase the overall sales, think about this example, a consumer visits a store determined to buy MacBook air, and said person visits the store and sees a MacBook Air on the front page in an attractive position and buys it immediately. So did putting the MacBook air in an attractive position increase the overall sales for the business? No, in

our thought experiment the consumer would have bought the product regardless of where it was placed on the webpage. (Stilley, Inman, & Wakefield, 2010b)

Thus it is possible that spending time and resources into figuring out which products goes where can be completely wasted work since said product would be bought anyway

H1a: Products absolute position influences the number of clicks received on said product.

H1b: Products absolute position influences the number of purchases of said product.

The first hypothesis was to serve as a confirmation for if there is an effect at all. And there was. Not all position received the same amount of clicks and purchases. This is in line with what has been found in previous studies. (Christenfeld, 1995; Chandon, Hutchinson, Bradlow, & Young, 2009; Dréze, Hoch, & Purk, 1994)

6.2. Impression of website

H7: The twelve planograms do not influence perceived variation amongst consumers.

The survey questions asking about respondents perception of the website was largely in place to check for any possible interference that could potentially void the results that were the main focal point of this study. As outlined by Kahn & Wansink, (2004), perceived variation can greatly influence consumers purchasing behaviour. Since this study does not look at the effect of variation it was important to test if there was any accidental difference in perceived variation between the three exposures since this would then influence the results.

The organization techniques used in previous studies have been according to colour, brand, shape and random. Since this experiment required the products to change position yet the perceived variation to remain constant this needed to be controlled for. The planograms used were not constructed in a way to have any semblance of organized organization, it was supposed to be perceived as random. Thus the expected result was for the perceived difference in variation to not be statistically significant, and indeed this was confirmed. However it is important to note that this does not necessarily mean that there was no perceived difference in perception it is possible that our sample size was just too small to detect said difference, which still makes it possible that there was a small interference that could not be detected. However that is the nature of all statistical tests, they do not achieve a 100% confidence interval. But we can with a 95% confidence interval say that there was no perceived difference in variation among the planograms. Which means that the results are not tainted by this effect and the effect of position has been further isolated in our data.

6.3. Clicks

After landing on the webpage the consumer naturally has to click on something, either click to enter another page on the website or click to exit the website. Next up is the analysis of clicks.

Only clicks that were pressed on of the 12 products on the front page were observed, thus it was not recorded if consumers entered another page and found the same product there, and it was not recorded where the consumer went if they did not press on one of the twelve products.

H3b: Different horizontal positions will receive a different amount of clicks.
H3d: Centre position on the horizontal axis will receive more clicks.

Several previous studies such as Christenfeld (1995) showed that the centre position on a shelf was the most favourable position on a shelf in a physical store. This is in line with the results found in this study. Centre position did receive more clicks. However one difference was found that was not found in the physical stores. Products placed on the left end of the shelf received more clicks than products placed on the right end. A possible explanation for why this is could be that with the Latin alphabet we read from left to right, products to the left are the ones we see first (Hendrickson & Ailawadi, 2014) also the . In a physical store it is often possible to enter a shelf from two ways so there isn't a default position that is the first position everyone looks at, which, it could be argued, there is in an online store.

H3a: Different vertical positions will receive different amount of clicks.
H3c: The higher up an item is on the vertical axis the more number of clicks it will receive.

Next it was tested if the vertical position played a role. In previous studies done in physical stores picking height was found to be the best position to place a product (Dréze, Hoch, & Purk, 1994). However there is no physical action involved in picking an item in an online store, so it was unreasonable to expect the same effect to be true in an online store. It was instead hypothesized that the top row on the digital shelf would be the most clicked positions. Often when you land on a website only the top 1-2 rows are visible and also we look at products the same way we read (Hendrickson & Ailawadi, 2014). Which is why it was expected that the higher up a row was the more clicks it would receive. This turned out to be true for all three rows that were included in the experiment. An interesting result is that the top two rows received a relatively small differences in amounts of clicks while the bottom row received significantly lower which might be because of the salient visibility of the top two rows.

6.4. Do clicks lead to purchases?

H5: an increased number of clicks leads to an increased number of purchases.

Online stores do not make their money by generating clicks. An increase in the amount of clicks on each product doesn't mean anything if the clicks do not transform into purchases some of the time. Therefor it was tested if clicking on a purchase increases the chance of that consumer also purchasing the product. Now it stands to reason that the more a consumer is exposed to a product the more likely that consumer is to purchase the product. This is a fundamental theorem for advertisers, expose product increase sales. This is not just something that is relevant for advertisers. Studies done in physical stores has also shown that putting products in positions that are passed by many consumers can increase the sales of that product (Rossiter & Percy, 1997). Based on these previous studies it was reasoned that this also works in an online store, if a consumer presses on a product they most likely spend at least a small amount of time looking and/or reading about the product, thus more exposure to the product.

A regression analysis was tested to see if such a relationship does indeed exist and if so, how quantifiably large that relationship is. The performed regression analysis was 9%. It's hard to interpret this number since there does not exist any well-established benchmarks for this. Is a 9% conversion rate from clickers into buyers normal, good or bad? Now that interpretation is beyond the scope if this experiment so we will leave it at that. But what we can say is that certain positions are prone to receive more clicks and more clicks has a 9% provable relationship to purchasing behaviour, we can say that position does influence purchasing behaviour, partly or wholly because it influences the number of clicks. (Degeratu, Rangaswamy, & Wu, 2000; Park & Lessig, 1981)

6.5. Purchasing behaviour

H4a: Different vertical positions will receive different amount of purchases.
H4b: Different horizontal positions will receive a different amount of purchases.
H4c: The higher up an item is on the vertical axis the more number of purchases it will receive.
H4d: Centre position on the horizontal axis will receive more purchases.

We have already established in the previous two subchapters that position influences the amount of clicks a product receives, and we have also established that there is a clear relationship between the amount of clicks a product receive and its position. But let's take a closer look at the purchasing behaviour.

Just like with clicks; products placed higher up, and products placed on the centre columns were the most attractive. The same positions are the most attractive regardless if you look at clicks or purchases. Hardly surprising since there was a provable relationship. However upon closer inspection it becomes clear that not all the positions have a proportional conversion rate from clicks into purchases. (Christenfeld, 1995)

The table below shows the click→purchasing behaviour as a ratio between the two (%purchases/%clicks). The numbers in the table do seem peculiar, the height relationship is inverse from the previous numbers we have looked upon. So the lower positions have a better conversion rate. Yet at the same time the centrally placed products still seem to be going somewhat strong, on the top two rows column 2 & 3 have a higher conversion rate than the other two columns.

Table 12: Conversion rate, from clickers into buyers

	COLUMN 1	**COLUMN 2**	**COLUMN 3**	**COLUMN 4**
	NA	**NA**	**NA**	**NA**
ROW 1	Position 1	Position 2	Position 3	Position 4
NA	**7.5%**	**8.0%**	**7.8%**	**7.2%**
ROW 2	Positon 5	Positon 6	Position 7	Position 8
NA	**7.8%**	**8.2%**	**8.1%**	**8.4%**
ROW 3	Position 9	Position 10	Position 11	Position 12
NA	**9.8%**	**9.3%**	**9.4%**	**10.1%**

Now the experiment design in this study was not constructed with the purpose of rooting out the effects of conversion rate between clicks and purchases thus we do not possess the necessary information to be able to claim with certainty what has caused these seemingly peculiar effects. However based on previous research there are a couple of possible explanations that could explain the numbers.

As shown by (Valenzuela & Raghubir, 2009) products placed in the centre are viewed as being more popular. Then this is a likely reason for why the centre columns receive a higher conversion rate. This however fails to explain why the lower the row the higher the conversion rate, despite the fact that the number of purchases exhibits the inverse relation.

This is likely a result of selection bias, to not disrupt the stores sales they were prompted to select and agree upon 12 products to use, 12 products that all three actors expected to have at least

decent sales, because it is generally well selling items that are exposed on the front page. However this selection bias isn't simply a flaw in this experiment design, this selection bias is a conscious and thought out process for all online retailers, it is only natural that they select the best products to place in the best positions. Therefore it is still relevant to look deeper into this matter since the selection bias is part of the business.

Let's take a look at the sales of the 12 products from the three control days and compare this to the table of percent sales from the experiment days, since this is where the answer can be found.

By dividing the total amount of visitors during the control days by the total number of products sold from the 12 products included in the experiment we can see the percentage amount of the 12 products were bought by the average consumer. Observed number of visitors during the period was 143 700 visits, and with a total of 2810 sales of the chosen product this results in $\frac{2810}{143700} \approx 0.01955$, then lets divide this number by the number of products (12) to get a percentage that is easy to compare to our table below. $\frac{0.01955}{12} \approx 0.00163 \approx 0.016\%$. Now this 0.016% number is a very interesting number and it can provide the explanation for our conundrum.

Let's again take a look at our table of percentage of sales per position that was presented in the results. As you can see below the range of percentages is 0.19%-0.37%. The number we just calculated, average percentage of buyers of our 12 products from the control days, 0.016% landed just below this range. This is likely not a coincidence, let's try to put these numbers into context.

Under normal circumstances when none of the 12 products are put in especially attractive position each of the 12 products are bought by 0.016% of the total number of visitors. This is the normal rate of sales for these products during the period of Monday-Wednesday. Let's consider this to be the natural demand for these products without them receiving any special attention.

Let's assume that this natural rate of demand is constant so that every Monday-Wednesday it is approximately the same and this would mean that during our experiment days 0.016% of the visitors would have bought said product under the three days regardless of if there were exposures or not. Now let's adjust the previous table to reflect this insight:

Table 13: Percent of visitors purchased a product on any position above the ratio observed in the control period.

	COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
	NA	NA	NA	NA
ROW 1	Position 1	Position 2	Position 3	Position 4
NA	**0,13%**	**0,21%**	**0,19%**	**0,11%**
ROW 2	Position 5	Positon 6	Position 7	Position 8
NA	**0,11%**	**0,16%**	**0,15%**	**0,10%**
ROW 3	Position 9	Position 10	Position 11	Position 12
NA	**0,04%**	**0,06%**	**0,05%**	**0,03%**

Now we have isolated the effect of position in the sales number, since 0.16% was the natural rate of demand the remaining is the effect from position.

Now this explains why the lower rows have such a high conversion rate, the high conversion rate isn't a consequences of position effects rather the lacklustre effect of position effect. Products placed on the lower rows gain very little additional sales beyond their natural demand rate. Thus most of the clicks and purchases recorded on products on these positions are purchases that would have happened regardless of where the product was placed. This s in direct contrast to products placed on the higher rows. These positions see an influx of clicks and purchases that normally would not occur for these products. The consequence of this is that you get consumers pressing the product who didn't visit the site to explicitly buy this product. And rationally it is harder to convert a consumer who does not have an intention to buy said product than it is to convert a consumer who does have the intention of buying said product.

So the reason that the more attractive, higher up rows receive a lower conversion rate is because these positions attract more clicks from consumers who did not visit the store looking for products placed on said positions.

Now this is very important to realize for retailers. Putting these numbers into context gives a whole other story than they may tell at first glance. For example lower positions aren't better at converting clickers into buyers just because these positions have a high conversion rate, their high conversion rate is a consequence of not being clicked on that much and their natural demand ratio.

6.6. Time is money, or is it?

H2: Time spent in the online store influences the amount of purchased goods.

As established by Turley & Milliman (2000). The relationship between time spent in a store and amount of purchased goods can be a tricky relationship. There are situations were more time does not equal more goods purchased but there are also situations where more time in a store does generally mean a greater amount of purchased goods.

The results from the study was also somewhat ambiguous. First a regression analysis was performed to find if there was a statistically significant relationship between time spent and amount of purchased goods. No relationship was found. However individuals who spent a long time on the website not buying anything and not browsing were excluded from the results. Then a faint relationship was found. So in an online store a browsing consumer will generally purchase more goods the longer that person spends in the online store if they do purchase products.

This makes sense, if you were to imagine a couple of different purchasing contexts that an online consumer visiting an online electronics store be in it become clearer. Imagine someone who is out looking for new products in electronics or someone who often buys products on impulse (Stilley, Inman, & Wakefield, 2010a). Someone who has recently moved and would like to upgrade his/her electronics gadget in the new home, then it makes sense that the longer these persons spend on the website the more they are going to buy. On the other end lets imagine someone who's TV recently broke and is looking to buy a new one and wants to make sure to get the most for his/her money. Then more time in the store would not translate into more purchases, the consumer is only ready to buy a TV only probably only have a mental budget that allows for a TV and the more time the person spends in the store reflects the amount of TV the person's looks at (Stilley, Inman, & Wakefield, 2010b).

The ways to stimulate these two groups are very different. The ones prone to buy unplanned products you want to present products in a way that increases perceived variation (Kahn & Wansink, 2004). You want to stimulate their visit in the store, you want to make them stay longer and make the website user-friendly. However for the consumers looking for a specific product and who will only buy product, you want to keep them happy so they return and you want to be informative and keep the information decisive so they will make up their minds and actually complete their purchase. If these consumers take too long you may even run the risk of them going to a competitor where they may get better advice and expertise such as a physical store or a price/spec comparison website, both alternatives would be bad for the business.

Depending on which type of consumer a store wants to appease can greatly change the store position strategy. If a store wants to appease browsers it may be best to present new products, exciting products and products that increase consumers perception of the store on the most clicked product positions since this would stimulate consumers to spend more time on the store.

However if a store likes to appease consumers who only come for one thing, and one thing only it makes more sense to make the consumers more easily comparable, this would mean exposing product categories together for example show 4 different types of TVs on the same row or 3 mixers. This would make it easier for consumers to compare products and by also placing the product which brings greatest profit in the most attractive positions a store could stimulate their profits. (Kahn & Wansink, 2004)

6.7. Total basket size

H6: Position influences the total number of goods purchased.

Now this is an important question. It can seem obvious that position influences the total amount of goods purchased since we have already established that position can influence the sales of individual products. However this is faulty reasoning. It has been established by that consumers often have some form of a mental budget when the visit a store, some sort of limit that they would rather not go above (Stilley, Inman, & Wakefield, 2010b). Let's look at that implication and how it would influence the online store. A consumer visits the online store with the intention of buying a couple of speakers for about 5000 kronor, ideally not more, since the consumer doesn't feel that he/she can spend more than that at the moment. When the consumer lands on the front page of the website he/she immediately sees a great deal for a television and immediately decides that the TV for 5000 is exactly what he/she is looking for and buys it. In this scenario is it likely that the consumer will also buy the speakers? Probably not since the consumer was short on money. The TV was placed in a very attractive position so in the stores statistic it looks like they gained a sale for 5000 by putting a product in an attractive position. However the consumer would have spent 5000 regardless of if the TV was there or not, no additional sale was actually gained by putting the TV there, they gained a TV sale but lost a speaker sale of equal value.

Now even if this was always the case position wouldn't be a useless tool since position would still allow stores to steer sales towards product with a greater profit margin. For example in the above example maybe the speakers only have a 10% profit margin while the TV has a 20% profit margin thus the store still doubled its profit even no it did not increase its revenue.

While it is likely that there are consumers where position does not increase their total basket size because of mental budgets let's look at the revere relationship, how position can increase the consumers total basket size.

To find out positions influence on total basket size several regression analysis on different levels were performed. At the smallest level, individual positions no relationship was found at a 95% confidence interval, thus meaning that there is no statistically significant relation between an individual position and total basket size. However the expected relationship between just one individual position and the total basket size is small, if a relationship would have been found it would have been expected to be tiny. So let's go up a level to see if the lack of statistical significance is because of a lack of enough data or if it is because there really is no relation.

Next individual columns and rows were examined if the exhibited any signs of a relationship to total basket size. Only one of rows/columns returned significant result at the 95 confidence interval and showed a regression coefficient of 11%. The columns were then grouped into "centre" and "non-centre" columns, with this grouping the centre columns showed a regression coefficient of 14% with a 95% confidence interval. Based on these results we can deduce that individual positions do most likely influence the total basket size, but that our data is too small to pick up the effect, since grouping these positions into groups of 4-8 products do show a significant effect on the total basket size.

An additional regression analysis was also performed with all 12 product positions which returned a regression coefficient of 27%. Meaning that having products in these 12 positions increased consumers' basked size by 27%. Which means that exposing products on the front page is a great way to entice consumers into making purchases that they would otherwise not have bought. (Stilley, Inman, & Wakefield, 2010a)

7. Conclusion

This study has focused on examining the role products position plays for an online retailer. Several important findings have been established. The higher up a product is placed the more clicks and sales it will generally receive. Also the centrally placed products received more clicks and purchases compared to their counterparts placed at the ends. A statistically significant relationship was then established between the number of clicks and the amount of purchases, clicks do lead to purchases.

We also looked at how time spent in the online store influences the total amount of purchased goods and found that for some consumers' purchase more products the longer they spend in the store while others don't. Lastly we looked if positions had an impact on consumers' total basked size

or if it just changed what items they bought. We were able to prove that such a relationship exist, which means that products placed on the front page and on attractive position help increase the revenue of the business.

8. Implications

This study has several important implications for both researchers and online retailers alike. Not just the role position plays in online but in regards to other avenues as well.

8.1. For researchers

To understand online consumers you need to examine real world behaviour, some behaviour is the same as in physical stores other things are completely different. Centrally placed on the horizontal plane are the most attractive, just as in physical store. However the properties of the vertical plane exhibit completely different properties, there is not even such a thing as picking height. These are commonalities and differences that needs to mapped out not just between physical and online stores, but with the emergence of a varying degree of devices to visit online stores such as tablets and phones there are even more differences that needs to be examined. These are important differences to research to stimulate and provide understanding for a still very young market.

8.2. For online retailers

Most online retailers still alive have probably already realized long ago that position is indeed an important aspect in selling their offerings. But this study has rooted up several insights that could be of great use for online retailers.

Just as in physical stores centrally placed products on the horizontal axis are the most selling positions, because products placed here are perceived as more popular Thus if an online retailer wants to increase consumers' concept of popularity for a product they should place it in the centre.

The top row is the most selling position, so products with a high profit margin or products that you want to increase sales of in other ways should be placed here.

The positional effect on the front-page can have a big impact on consumers total basket size so it can be a very worthwhile endeavour to invest into optimizing your front page position strategy.

9. Future research & limitations

Consumer behaviour is for certain a complicated process and there are an immense number of variables that can effect this behaviour, there are far more factors in play than just position, and we have touched upon a few of them briefly but there are many more that need to be explored.

This study only looked on the most well-established online product category in Scandinavia, electronics. It is possible that position has a different degree of effect on other categories, there is certainly need to map these differences and segment them based on for example level of engagement, price range and etc.

Only the front page was used in this experiment since this is the page that would receive the most data, it is possible that position has other effects on other pages on the website so other pages beyond the front page need to be researched.

We were only able to observe consumers when they were on one of the three observed websites. But a more holistic view is needed to better understand consumers' online behaviour. By following consumers and mapping all of the different websites they visit in a sitting would provide a greater understanding of the stages online consumers go through.

Since we obtained the data for the amount of time a consumer visited the websites we briefly discussed its effects, but the experiment design was in no way design to focus on this aspect of online behaviour. So there is certainly a need to look at how time plays into online behaviour. Do we want to encourage consumers to spend as much time as possible on the website? Do we want to make it as easy as possible for people to quickly be done with their purchasing session? Are there different consumer types which this effects differently? These are all insightful and important questions that need answers.

There is a need to better understand *who* are choosing to click the products that are put in attractive positions. Certainly not all consumers are enticed by a product just because they happen to see it in an attractive position. Is this impulse buyers? Maybe it is consumers who actively look for deals or consumers who just browses for interesting stuff. A better understanding of online consumer behaviour would be of great benefit to researches and retailer alike.

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Appendix

Appendix A: The Survey

Chosen product(s)

Why did you buy the products you bought today // Why did you not purchase any products during your visit?

When I saw it I wanted it

I could not find a better alternative

I had already planned to buy the product before I visited the store

Other reason, please specify.

Online shopping behaviour

How often do you purchase products online?

Once a week or more often

Once a month

Once every six months

Once every year

More seldom than once every year

How often do you purchase electronics products online?

Once a week or more often

Once a month

Once every six months

Once every year

More seldom than once every year

Perceived variance

On a scale from 1-7 to what degree do you agree with the following questions:

The assortment was colourful

The assortment in this store have no products that I prefer.

The assortment in the store has many product alternatives to choose from.

The assortment in this store feels inviting.

Demographics

Sex:

Woman

Man

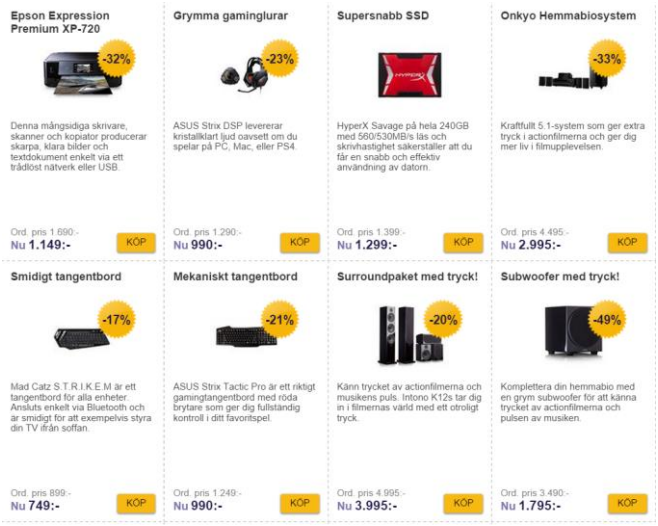
Other

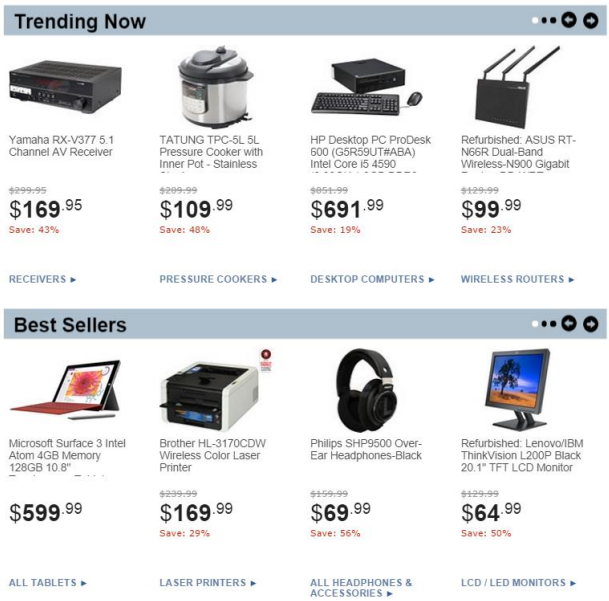
Age:

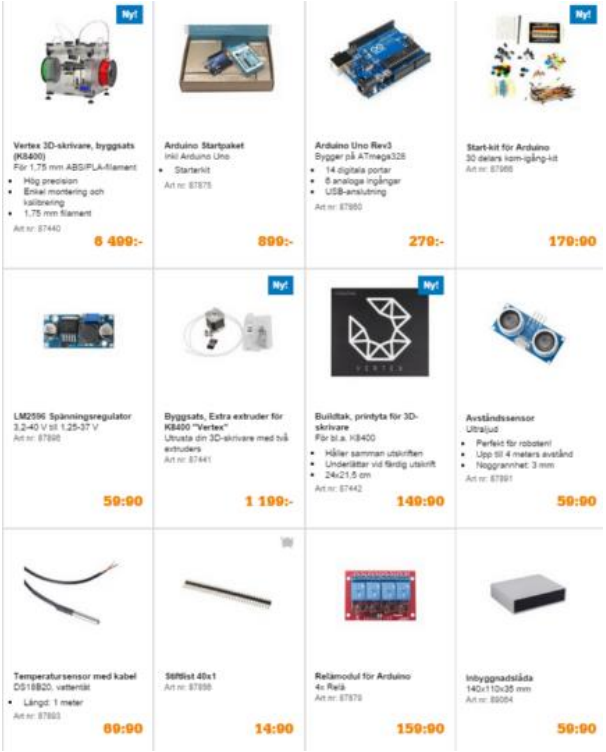
Please specify your age.

Appendix B: Example layouts

Please note that not the entire websites were included, only a sample of their product constellations on the front page.







Appendix C: Planogram design

	Column 1	Column 2	Column 3	Column 4		Column 1	Column 2	Column 3	Column 4
Row1	1	2	3	4	Row1	7	8	9	10
Row2	5	6	7	8	Row2	11	12	1	2
Row3	9	10	11	12	Row3	3	4	5	6
Row1	12	1	2	3	Row1	6	7	8	9
Row2	4	5	6	7	Row2	10	11	12	1
Row3	8	9	10	11	Row3	2	3	4	5
Row1	11	12	1	2	Row1	5	6	7	8
Row2	3	4	5	6	Row2	9	10	11	12
Row3	7	8	9	10	Row3	1	2	3	4
Row1	10	11	12	1	Row1	4	5	6	7
Row2	2	3	4	5	Row2	8	9	10	11
Row3	6	7	8	9	Row3	12	1	2	3
Row1	9	10	11	12	Row1	3	4	5	6
Row2	1	2	3	4	Row2	7	9	9	10
Row3	5	6	7	8	Row3	11	12	1	2
Row1	8	9	10	11	Row1	2	3	4	5
Row2	12	1	2	3	Row2	6	7	8	9
Row3	4	5	6	7	Row3	10	11	12	1