Product-related videos influencing online purchasing behavior

-A Case study of five Nordic online stores

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Master's thesis

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Tiivistelmä — Referat — Abstract

The key objective of this master's thesis is to look at product-related video displays in online retailing and whether product presentation videos could positively impact purchasing behavior. In this master's thesis I discuss the importance of online product display, focusing especially on the business-to-consumer area. Online business is growing rapidly but there is still a lot of potential that is underexploited.

Online product presentation is vital in an online retail environment since customers do not get to touch or see the products before buying them and must rely on the descriptions of the products provided by the seller. Successful online product presentation strategies can be used to alleviate the lack of physical examination of products in online retailing.

In this master's thesis I examine five Nordic online stores by utilizing A/B test data provided by a tech company; Videoly. This study found that product presentation videos had a positive impact on users' purchasing behavior. Using product presentation videos in online stores result in higher conversions. Findings of this thesis bring additional evidence to the power of visual and dynamic product presentation forms in online retailing.

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Online product presentation, online retailing, customer behavior, online shopping

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Tuote-esittely videoiden vaikutus kuluttajien ostokäyttäytymiseen verkossa – Tapaustutkimus viidestä pohjoismaalaisesta verkkokaupasta

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Tiivistelmä — Referat — Abstract

Tämän maisterin tutkielman tarkoituksena on tarkastella tuote-esittely videoiden käyttöä verkkokaupassa ja niiden vaikutusta kuluttajien ostokäyttäytymiseen. Tutkielmassa käsitellään tuote-esittelyn merkitystä verkkokaupassa, sekä verkkokaupan kasvun esteitä.

Tuote-esittelyn merkitys on verkkokaupassa korostunutta, sillä asiakkailla ei ole mahdollisuutta varmistua tuotteiden laadusta ennen ostopäätöstä. Kuluttajien ostopäätökset nojaavat verkkokaupassa yrityksien tuotesivuilta löytyviin tuotetietoihin. Kattavat tuotekuvaukset ovat näin ollen avainasemassa hyvän asiakaskokemuksen varmistamisessa.

Tässä maisterin tutkielmassa tarkastellaan A/B testituloksia viidestä pohjoismaalaisesta verkkokaupasta, aineiston tutkielmalle tarjosi teknologiayritys Videoly. Tutkimuksessa ilmeni, että tuote-esittely videot verkkokaupassa johtavat aiempaa korkeampaan konversioon. Tämä tutkimus vahvistaa aiempia löydöksiä liittyen visuaalisten ja dynaamisten tuote-esittely muotojen tehokkuuteen verkkokaupassa.

Avainsanat — Nyckelord — Keywords

Verkkokauppa, tuote-esittely, verkko-ostaminen, kuluttajakäyttäytyminen

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1 Introduction

1.1 Research background

The exponential growth of e-commerce has revolutionized the traditional way of doing business over the past decade. New web and mobile technologies have improved the convenience of online shopping for today's consumers (Diwanji & Cortese, 2020) and it is no surprise that online shopping rapidly became a new norm in our societies (Kaur, 2011). According to Statista (2021) around 1.92 billion people purchased product online in 2019 and the annual sales surpassed 3.5 trillion U.S dollars worldwide.

Online retail has major advantages compared to the traditional business models which has contributed to its fast growth. Some advantages, for instance, are speed, personalization, disintermediation, and lower overhead costs (Kaur, 2011). Overall, the efficiency of supply chains, huge variety of products and services as well as personalized customer service and marketing, has been key factors in increasing the popularity of e-commerce (Chen, 2020).

Online shopping initially attracted consumers due to higher convenience, lower prices, and a larger range of products (Chen, 2020; Fan et al., 2020). Consumers were no longer limited to buy from businesses that operated locally. Additionally, the increased competition because of the global open access market, helped to regulate the prices of products (Fan et al., 2020).

Despite all the positive attributes of e-commerce, there are still barriers that decelerate the growth of online retail. All the biggest limiting characteristics of e-commerce have to do with the lack of physical interaction with products. In virtual business environments the inspection of products does not occur before the purchase decision which increases the perceived risk for the consumer (Flavián et al., 2017; Fan et al., 2020). Customers that shop online have traditionally depended completely on the descriptions of the products provided by sellers (Anumba et al., 2008).

Online businesses today are greatly dependable on successful online display strategies since the physical examination of products is limited (González et al., 2021). Online retailers provide information on their products and communicate on the product attributes via online product presentation (Hao et al., 2019). Online product display greatly affects the overall shopping experience of consumers when they are interacting with the website (Aljukhadar & Senecal, 2017).

Online retailers are constantly trying new ways to simulate the experience of shopping in a real environment because the lack of physical evaluation and unrealistic expectations of products can result in an unsatisfactory customer experience (Fan et al., 2020).

In recent years retailers have started to add video content to their websites to better educate their users on product attributes. Previous findings have shown evidence that videos improve information processing and facilitate visualization, which can lead to an improvement in purchasing behavior (Orús et al., 2017; Berni et al., 2020; Jiang & Benbasat, 2007; Hao et al., 2019).

1.2 Research objectives

This master's thesis explores online product-related videos as a means of product presentation in online retailing. In this study I attempt to provide additional evidence to support previous research conducted on the effectiveness of product-related videos. This thesis consists of literature review combined with secondary data to test the hypothesis.

The empirical part of this research attempts to answer the following question:

- Do product-related videos in online retailing positively influence customers' purchase decisions?

My hypothesis is that visual and dynamic presentation forms, meaning videos, positively influence customers' perceptions and therefore product-related videos, used in online product display, impact users' purchasing behavior and increase conversions.

The hypothesis formulation of this master's thesis is anchored in the Stimulus-Organism-Response (S-O-R) Model (Mehrabian & Russel 1974) which is presented in the hypothesis formulation section of this thesis. The basic concept of the model demonstrates that a person's responses to stimuli stem from the external environment. This thesis adopts the concept of the S-O-R model, the (S) stimulus being the product presentation video which enhances internal processing (O) and result in an increase in conversions (R).

I will be testing my hypothesis using data provided by Videoly, that is a leading company in video solutions. The received data is from an A/B split test in which half of the users had a visible video widget and another half had a hidden video widget when browsing on the website.

The purpose of the A/B test was to demonstrate how product-related videos influence customers' online shopping performance (Figure 1).

The main contribution of this thesis is to confirm previous findings regarding the use of product presentation videos in online retailing and provide new applications for the use of product-related videos. The novelty factor of this thesis is to offer additional findings regarding the effectiveness of video depiction for mobile users. The impact of video presentation on different devices has not yet been explored.

1.3 Theoretical background

The theoretical background of this master's thesis is grounded on the media richness theory (Daft & Lengel, 1984, 1986) and the information vividness paradigm.

The media richness theory was originally developed by Daft and Lengel (1984, 1986) to support the successful distribution of information in organizations by using rich media. The theory has since evolved and expanded into various research fields (Ishii et al., 2019). The media richness theory has remained the foundation for many studies related to communication technology (Ishii et al., 2019). The media richness theory was chosen as the theoretical background for this master's thesis since it provided an explicit approach for this study.

According to the media richness theory, rich representation of information generates a perception of credibility and persuasion in the minds of the recipients (Xu et al., 2015). Various cues enhance the clarity, saliency, and attention-grabbing, of the transmitted message. When the media richness theory is applied to the context of product presentation videos, it should lead to a better performance and outperform any other textual or pictural methods (Aljukhadar & Senecal, 2017).

Research revolving e-commerce has compared different product presentation forms with differing vividness and interactivity levels to understand their influence on consumer behavior. Generally, it is agreed upon that vivid source of information positively affects consumers' attitudes and purchase intentions (Coyle &Thorson, 2001; Flavián et al., 2017; Orús et al., 2017). Townsend and Kahn

(2014) states that “visual preference heuristic” causes people to prefer visual information on product assortments over textual.

Previous findings have found positive indications that videos are effective in giving a more realistic picture of the product and thus reduce the risk of buying products that customers would end up disliking (Hao et al. 2019). Additionally, there has been found evidence that videos improve information processing and facilitate imagination (Orús et al., 2017; Berni et al., 2020; Jiang & Benbasat, 2007).

From a managerial standpoint, online product-related videos could be a beneficial factor in removing the limitation of the lack of physical interaction in online environments. Videos can help consumers to visualize how the product is without having to see it physically (Orús et al., 2017).

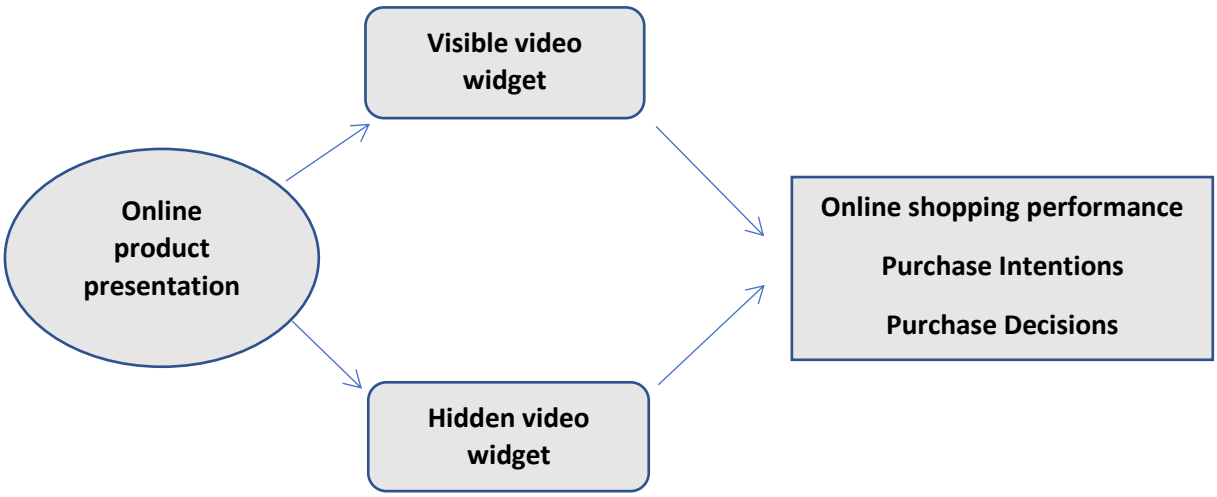

Figure 1. Overview of the A/B test

2 Online product presentation

2.1 Product presentation in online retailing

The rise of e-commerce has contributed to a more consumer centric way of doing business. On the internet, the consumer decides on what to click and where to navigate on the site (Mohammed, 2010) which has evoked an interest towards examining digital customer experiences and online product presentation (Kolesova & Singh, 2019).

Prior marketing literature has highlighted the significance of consumer' online shopping experiences. Consumers' experience of purchasing products online should be seamless and easy. Customers want their online shopping experiences to be reminiscent of traditional shopping offline and therefore it is often assumed that online stores should resemble offline stores as much as possible. However, customers' purchasing behavior online deviates vastly from their offline interactions (Kolesova & Singh, 2019).

The limitations of e-commerce can be divided into technical limitations and non-technical limitations. The technical limitations are related to security, databases, and applications, and when these issues occur, they are easily fixed by investing money and resources. Whereas the non-technical limitations are not as easy to transcend (Kaur, 2011; Anumba et al., 2008).

These non-technical issues are not related in technology but manifest inside the minds of customers. For instance, the lack in trust, attitudes, resistance to change and faceless transactions are non-technical issues that obtrude customers from buying. (Kaur, 2011; Anumba et al., 2008).

E-commerce is still a relatively new form of commercial activity and therefore contains more perceived risk and uncertainty than the traditional commerce (Anumba et al., 2008). Gurjeet and Khanam Quareshi (2015) look at factors interfering with online shopping. Biggest perceived obstacles for not buying products online are lack of testing the quality of the product before buying it, lack of information on the product as well as security issues and undesirable visual displays and layouts on the site.

In virtual business environments the inspection of the product does not occur before the purchase decision and hence customers must depend completely on the description of the product provided by the seller (Anumba et al., 2008). For this reason, online businesses are greatly dependable on successful display strategies since examining products is not possible (González et al., 2021).

According to Hernandez et al. (2011) socioeconomic factors such as age, gender, and income do not influence online shopping behavior but rather the perceptions and behaviors of online shoppers are connected to their experiences. Hernandez et al. (2011) argue that socioeconomic factors do not influence behavior nor the perceptions of ecommerce in experienced shoppers, thus the Internet is a shopping platform suitable for all ages, incomes and both genders. Individuals that have attained the status of an experienced online shoppers have similar behaviors.

Therefore Hernandez et al. (2011) suggests that online retailers and marketers should pay more attention to the customers' online experiences and focusing on socioeconomic profiles of customers and targeting a certain audience should be reconsidered. It is good news for the customer experience strategies, since marketers can apply the same strategies for all audiences and likely the behaviors are being influenced similarly.

Consumers usually perceive their online shopping experiences easy and timesaving but there are still some resistances from the consumers' side. For instance, many consumers find themselves being annoyed when looking for information and downloading files. Some of them bounce from the website if the navigation is too difficult or if they cannot readily find the information they were looking for (Mohammed, 2010). Customers' shopping experience is greatly influenced by the retailer's ability to educate the consumers on their product characteristics.

Bente et al. (2012) show that missing product information causes mistrust in consumers, therefore information regarding the products should be sufficient. Their findings show that trustworthy photos and positive reputation increased buyers' level of trust and purchase rates. Surprisingly, missing information performed worse than negative information. Negative information led to a neutral trust, whereas missing information resulted in distrust. These findings highlight the significance of providing the consumer with enough information regarding products. By adding product information on the website, trust is positively impacted (Bente et al., 2012).

The way products are presented on the website help consumers absorb information on the product attributes and enables retailers to deliver product information (Yoo & Kim, 2014; Li et al., 2016). Well represented products facilitate consumers' cognitive processes and imagination, which positively affect customers' purchase decisions.

Helping the consumer to obtain product information is even more highlighted in product categories where sensory elements of the product play an important role in the purchase decision making (Kim & Lennon, 2008; Yoo & Kim, 2012). There are roughly two major information types, visual and textual information, previous research has debated in favor of both (Li et al., 2016).

2.2 Information processing fluency

Once the online retailer has succeeded in grabbing customers attention, the knowledge on how customers process information on ecommerce websites becomes crucial. Online retailers are constantly finding new ways to enhance customers' information processing because reducing uncertainty is of high importance when it comes to online retailing. (Orus et al., 2016; Kahn, 2017).

Information processing fluency should be considered, when designing online product presentation since fluency plays a big part in consumers' decision making (Novemsky et al., 2016). Even if there is plenty of useful product information on the website, online retailers should help customers to process that information properly. Information does not serve a purpose if it is hard to understand.

Product assortments and product information that is straightforward and easy to understand will increase positive feelings and thoughts. When products are more complex, retailers should add tools and structures to the website that help the customers' cognitive processing (Kahn, 2014; Monsteller et al., 2014). Positive perceptions of the assortments are more likely to occur when fluency is high, vice versa when the assortments are more complex and harder to process, the assortment is not as liked (Kahn, 2017).

According to Monsteller et al. (2014) customers' behavioral outcomes reflect the presented information. Customers' perceptual fluency affects customers' cognitive and affective processes. Previous research show that there is a correlation between the customer's perceptual time and effort used to perform the shopping task, and the perceptual fluency. In other words, if the consumers perceive the online information pleasant and coherent, they perceive the shopping task more enjoyable and their thoughts and feeling associated with it are more likely to be positive. Additionally, marketers can relieve consumers' choice overload by helping the consumer to compare products with informative display (Novemsky et al., 2016).

2.3 Visual versus textual depiction of information

Product display information is generally visual or verbal information and online retailers combine both types of information in product depictions. The use of different presentation forms is carefully evaluated since they trigger different responses. Visual information refers to images of the products, portraying the product attributes from different angles, or with short animations. Textual information

means verbal description of the product and usually the characteristics are described in detail (Blanco et al., 2010)

Online retailers tend to focus more on the visual presentation of products, since it has been considered more superior in affecting purchase intention based on prior literature (Kim & Lennon, 2008). Previous studies surrounding online presentation forms have concluded that visual versus textual depiction is more easily consumed. Images can be processed in the mind all at once whereas words are internalized in sequences (Hart, 1997). Product attributes are therefore identified from images more easily and visual information is greater in producing a perception of variety (Townsend & Kahn, 2014).

Townsend and Kahn (2014) argue that "visual preference heuristic" causes people to prefer visual information on product assortments over textual. This is likely due to the lack of sensory experience that can be compensated with visual cues. In the early stage of examining a product, the visual properties are highlighted and command more attention (Geise & Baden, 2015).

Online experiences can be easily elevated by using pictures and other visual elements hence it is an effective way to facilitate mental imagery. Visual concrete pictures are effective in facilitating virtual experience through greater elaboration of mental imagery. The mental imagery evoked by product presentation enhances positive emotions which in turn increase behavioral intentions (Yoo & Kim, 2014).

Geise & Baden (2015) state that visual imagery is processed quicker and easier and sinks deeper into the memory, recalling visual imagery is therefore greater than recalling text and visuals stay in the memory longer. The superior processing of images versus text is likely a result of easier encoding in the mind combined with the creation of vivid and rich memories (Unnava & Burnkrant, 1991). The dual coding theory suggests that visual and textual information is processed in different mental departments in the brain. The theory offers an explanation to why visual and textual information generate different cognitive processing and action. The two information forms are remembered, recognized, and comprehended differently (Sadoski & Paivio, 2004).

As mentioned before, previous research has highlighted the significance of visual depiction of products, however, Kim and Lennon (2008) suggest that retailers should not forget the importance verbal information. According to their study detailed products descriptions had a positive influence on the shopping experience of the consumer. Another factor that should be taken account of is that visual information is processed rapidly but can result in choice overload if overly applied (Townsend & Kahn, 2014).

To conclude, it is important to include both visual and textual depiction styles since product knowledge and recognition can be influenced with both visual and textual information. Visual and textual information combined, offers the best results for remembering product information (Blanco et al., 2010).

3 Product- related videos in online retailing

3.1 Vividness paradigm

Customers make online purchase decisions essentially by relying on product descriptions. Vivid information helps the consumer to picture in their minds how the product would be used in a consumption situation. Customers more likely see the value in a product if the product and its functionalities are easy to visualize (Orús et al., 2017; Flavián et al., 2017).

Previous research has compared presentation forms with differing vividness and interactivity levels to understand their influence on consumer behavior. A vivid source of information has been shown to positively affect consumers' attitudes and purchase intentions (Coyle & Thorson, 2001; Flavián et al., 2017).

Vividness of the information usually refers to information that stimulates customers' imagination and likely attracts their attention (Flavián et al., 2017). The term, vivid information, has a broad definition, and it is used to refer to any piece of information that mimics the physical and experimental aspects of shopping. Rich and vivid information, such as video, audio, or animation increases vividness and generates a perception of telepresence (Coyle & Thorson, 2001).

The effectiveness of vivid information use, such as videos, can be explained by the lack of physical and experimental aspects of shopping online. Vivid information helps the users to imagine the product in a real-life setting. Increased vividness correlates with feelings of telepresence and evokes positive perceptions (Coyle & Thorson, 2001; Flavián et al., 2017).

3.2 Media Richness Theory

Most studies that cover the performance of different communication methods in marketing and organizational research, have been largely based on the media richness theory, MRT (Aljukhadar & Senecal, 2017) The media richness theory was first introduced by Daft and Lengel (1984, 1986) and it is rooted in organizational research.

The MRT paradigm was initially used to describe the effectiveness of communication mediums and their ability to reproduce information. The original purpose of the theory was to reduce unclear

communication and support successful distribution of information in organizations by using rich media (Daft & Lengel 1984, 1986).

The MRT paradigm has valuable applications for this thesis because the theory discusses the effectiveness of different presentation forms. The theory provides support for the use of product presentation videos since videos are part of rich media. The MRT therefore, further validates the hypothesis of this thesis.

According to MRT, information richness of the medium increases persuasion and positively influences trust due to the elevated number of social cues and social information delivered (Aljukhadar & Senecal, 2017; Xu et al., 2015). According to the theory, people enjoy rich media interactions because they resemble real face-to-face interactions.

Media richness theory implies that various cues enhance the clarity, saliency and attention-grabbing of the transmitted message. Combining verbal and nonverbal cues, creates more attention and helps the recipient to better internalize the message. Rich representation of information therefore generates a perception of credibility and persuasion in the mind of the recipient (Xu et al., 2015). When the media richness theory is applied to the context of product presentation videos, it should lead to better performance and outperform any other textual or pictural methods (Aljukhadar & Senecal, 2017).

Jiang and Benbasat (2007) compared different product presentation formats such as static pictures, videos with and without narration and virtual product experience (VPE). Product understanding was then examined by using two constructs: website's usefulness and product knowledge. Results show that using virtual product experience and videos, generate higher levels of product knowledge than mere pictures. In addition, the websites were perceived more helpful which positively affected customers' willingness to revisit the websites. Consequently, the richer means of media, meaning the product videos and VPE, generated higher levels of knowledge.

Aljukhadar and Senecal (2017) provide additional insight regarding MRT. Their research demonstrates that the use of rich media, such as a streaming video, significantly affects the perceived quality, trustworthiness, and arousal, among consumers that are browsing recreationally. However, consumers with specific goals were not as affected by rich media use. If we think of consumers that are seeking certain items, it makes sense that the textual method would be as effective, since they do not require help in visualizing the product since product searchers are usually aware of what the searched after product looks like and what it does.

When the consumer has no prior knowledge of a product, videos can be very useful in demonstrating the product attributes. Berni et al. (2020) compared participants' visual behavior when depicting pictures (static stimuli) and videos (dynamic stimuli) of creative products. Their study found that videos were successful in communicating the purpose of use and utility of products that would otherwise be doubted of their usefulness.

According to previous research, video- based product content rank higher in credibility, helpfulness, and persuasiveness, than text-based reviews, which results in greater purchase intention. (Xu et al., 2015; Flavián et al., 2017; Orús et al., 2017) similarly suggests that online product presentation videos can facilitate consumers' visualization and can therefore be used as a powerful marketing tool. Their findings indicate a positive correlation between the presence of online product presentation videos and the quality of consumers' product-related thoughts. Videos can be thought as facilitators of visualization and cognitive elaboration. Research has demonstrated that the ease of visualizing a product, has a direct impact on attitudes of and purchase intention (Orús et al., 2017).

By facilitating consumers' cognitive processes, companies can gain favorable attitudes and positively impact purchase decisions if the videos are not featured by the company (Orús et al., 2017). This mechanism can be explained by the perceived volume of information that is connected to the perceived value. In other words, the more information is given to a consumer on product attributes, the more they see value in the product and their willingness to pay for it increases (Hao et al., 2019).

3.3 Impacts of videos in different products categories

Prior research has stated that videos are especially effective when demonstrating features of products (Flavián et al, 2017; Orús et al., 2017; Berni et al., 2020) Additionally, the perspective of different product categories should be discussed. Also, the question of whether product-related videos are an effective form of online display across all product categories should be addressed.

Some studies have found indications that product presentation videos work especially well in product categories where the product attributes need an explanation (Berni et al., 2020) such as a usage tutorial. For instance, video display is effective in presenting new products entering the market or gadget type of products. The previous applies also vice versa, when consumers are experienced with certain products, videos do not have as significant effect in terms of influencing the perceived information quantity but can still positively affect the attitudes that form towards the products (Hao

et al., 2019). Retailers should add tools and structures to the website that help the customers' cognitive processing when the products attributes are more complex and need demonstrating (Kahn, 2017).

There has been found support for the use of videos in display of hedonic products and services, such as designer fashion, cosmetics, high-end electronics, and hotels. Hedonic products typically need to evoke a willingness to pay a higher price. According to the vividness paradigm, visual and dynamic presentation increases visualization of products. Hedonic products require more sensory and visual stimulation than other product categories. Therefore, hedonic products should be presented by using dynamic and visual display, since it is most effective in showcasing the hedonic product attributes (Roggeveen et al., 2015).

3.2 User versus brand generated videos

To lay the foundation for the empirical part of this thesis, it is a matter of interest to discuss whether user-generated videos are perceived more trustworthy compared to brand-generated videos.

The significance of peer endorsement content has been widely recognized as a key component of creating trust among consumers. According to Godes and Mayzlin (2004), almost half of all Internet users base their purchase decisions on other users' recommendations and reviews on e-commerce websites. Peer endorsement strategies are extensively followed by online marketers and used by biggest online stores such as Amazon. The common understanding is that endorsements from other customers are perceived as more trustworthy than any advertising content created by the company and therefore positively affects buying intentions (Lee et al., 2015).

Since peer recommendation has been established as an effective strategy to reduce consumer's uncertainty (Godes & Mayzlin, 2004), it would be safe to assume that user-generated videos would outperform brand-generated videos (Diwanji & Cortese, 2020). Prior research has debated on this issue, but findings have not reached consensus. Orús et al. (2017) suggest that when product presentation videos are featured by the brand, the ease of visualizing the product does not relate to purchase intention.

Diwanji and Cortese (2020) compared user-generated and brand-generated videos. Contrary to expectations, the video source had no effect on the consumers' purchase intention, but user generated videos had a greater impact on the attitude towards the brand, as well as the ad (Diwanji & Cortese, 2020).

Lim et al. (2014) offers valuable insight to this discussion. Lim et al. (2014) suggests that the quality of the peer endorsements matter to their trustworthiness. The study found that positive customer endorsements by similar peers who were nonforeign, was influencing trusting beliefs about the store which then led to purchasing behaviors, but endorsements made a foreign peer did not have the same effect. In other words, consumers trust recommendations given by consumers that they feel similarity towards (Lim et al 2014). This implies that the effectiveness of peer recommendation is more unpredictable as thought previously. However, research on the topic has been scarce and therefore it is hard to draw any undisputed conclusions. More research is still required (Xu et al., 2015).

4 Literature review and hypothesis development

4.1 The Stimulus-Organism-Response Model

The theoretical framework of this thesis is based on the adaptation of the Stimulus-Organism-Response (S-O-R) Model (Mehrabian & Russell, 1974) and the literature review.

The Stimulus-Organism-Response (S-O-R) Model was developed by Mehrabian and Russel (1974) and originally used in environmental psychology. The S-O-R model is frequently applied when examining customer responses to stimuli coming from the online environment (Maganari et al., 2011).

The S-O-R model demonstrates a person's responses to stimuli derived from the external environment. The basic concept of the model reveals that environmental stimuli (S) triggers internal processing (O) and causes a response (R) (Hetharie et al., 2019). The S-O-R paradigm integrates environment and behavior

According to the paradigm customers' internal states are affected by external stimuli which then influences consumers' responses (Maganari et al., 2011). The S-O-R paradigm is used in various contexts. For instance, the model is frequently referenced in e-commerce literature to demonstrate customers' responses to online stimuli, such as website layouts (Maganari et al., 2011).

In this present study S-O-R (Stimulus-Organism-Response) framework is applied to conceptualize the effect of product video display stimuli. The S-O-R (Stimulus-Organism-Response) model is a useful framework when examining customers' responses to stimuli coming from online environment (Maganari et al., 2011). According to the paradigm customers' internal states are affected by external stimuli which then influences consumers' responses and actions (Maganari et al., 2011).

In this study the S-O-R framework is applied as follows; product- related video display stimulus (S) affects the cognition and information processing (O) which then influences customers' purchase intention and result in higher conversions (R) due to enhanced information processing, visualization, and increased trust (Figure 2).

The S-O-R Model can be tied to the MRT. According to the MRT, by adding the richness to the communication medium (S), produces enhanced internal processing (O) which then results in favorable responses (R) (Aljukhadar & Senecal, 2017).

Another theory that is frequently used in consumer behavior research is the Elaboration Likelihood Model (ELM) of persuasion (Petty & Cacioppo, 1981) that discusses internal processing in terms of attitude formation and change regarding products and services. The Model explains the different ways to process stimuli and aims to show their impact attitude formation.

The ELM has evolved to cover online shopping behavior (Ho, 2014; Lowry et al., 2012) and could have offered some interesting perspectives for this thesis in terms of how customer's beliefs and attitudes are influenced by video product presentation. The Elaboration Likelihood Model framework focuses more on examining the internal processing of the consumers (O) than the responses that the processing results in (R). The Elaboration Likelihood Model can offer valuable qualitative insight to this research topic in the future, but this study is limited to quantitative data and therefore the S-O-R model was chosen as the framework for this study.

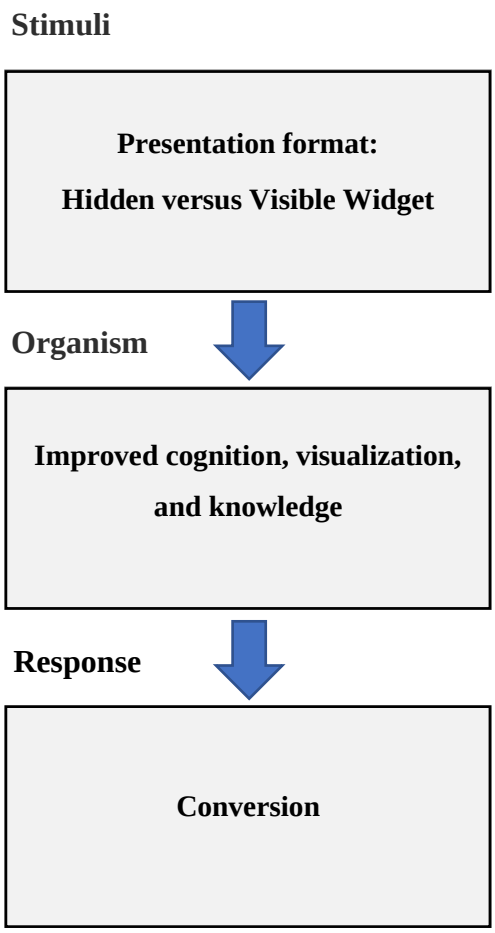

Figure 2 Overview of the S-O-R paradigm (modified from Chang et al. 2011)

4.2 Hypothesis formulation

Previous literature and findings suggest that online presentation formats act as an important element in affecting consumers' perceptions of products (Table 1). In online shopping the physical examination of products is prohibited and therefore well-presented products help consumers to absorb information on the product attributes (Yoo & Kim, 2014; Li et al., 2016).

Previous literature has demonstrated the importance of visual and dynamic presentation forms in online retailing. Visual information enhances consumers' information absorption (Orús et al., 2017). Previous research show that customers make online purchasing decisions essentially by visualizing the products in their minds, since the evaluation of products is restricted by the lack of physical evaluation (Geise & Baden, 2015; Yoo & Kim, 2014; Bente et al.,2012; Aljukhadar & Senecal, 2017; Berni et al., 2020).

H1: Dynamic presentation formats are more effective in influencing purchasing behavior

Product presentation videos are a visual and dynamic source of information (Hao et al., 2019). According to the vividness paradigm, visual and dynamic information helps the users to envision products in a real-life setting because visual information is processed more efficiently in the minds of consumers (Yoo & Kim, 2014; Geise & Baden 2015). Previous findings stress that it is important to facilitate the consumers' imagination to provoke favorable attitudes towards products.

Videos help consumers to absorb product information since visual information is processed more efficiently. Easy absorption of information should then increase the consumers' willingness to pay for products, because of added perception of value (Hao et al., 2019; Orús et al., 2017).

H2: Product- related videos impact positively customers' purchase decisions

Product- related videos are a rich and vivid source of information and hence, in the light of the theory, should enhance purchase intentions. Previous research has shown that using rich media is a powerful tool for increasing trust and persuasion (Aljukhadar & Senecal, 2017) and therefore could positively influence shopping outcomes.

H3: Product presentation videos work most efficiently with mobile device

This hypothesis assumes that textual based depiction of products is more challenging with a smartphone because reading product descriptions from a small screen is not perceived comfortable and for this reason product presentation videos could be a useful tool for sharing product information in mobile retailing.

Purchasing products via smartphones will be a recurring event in the future. Visual aspects of product display will be emphasized, and stimuli will be short-lived. Videos could potentially be the main media when browsing products with a smartphone (Kahn, 2017).

Generation Z consumers are used to using mobile when purchasing products and video depiction is likely to appeal to younger consumers (Mulier, 2021). It is possible that products that are aimed at younger consumers benefit more from video presentation of products since they use mobile for purchasing more often than older generations and consume a lot of video content online.

In addition to the main research questions this study can provide an interesting outlook on the effectiveness of product videos within different product categories. Previous research has shown evidence to support the use of videos in the display of hedonic products and services, because hedonic products must evoke a willingness in the mind of the consumer to pay a higher price. (Roggeveen et al., 2015). Another product category that has been highlighted by previous research is in which product attributes need explaining or demonstrating (Berni et al., 2020).

Table 1. Literature review table

	References	Results
Visual presentation of product information in online display	Townsend & Kahn (2014)	Consumers prefer visual over verbal presentation of product information; this is referred as "visual preference heuristic". Textual stimuli are processed individually and separately whereas visual information is scanned through all at once.
	Geise & Baden (2015)	The lack of sensory experience can be compensated with visual cues. Online experiences can be elevated by using visual information.
	Yoo & Kim, (2014)	The mental imagery evoked by product presentation enhances positive emotions which increase behavioral intentions.
	Bente et al. (2012)	Trustworthy photos and positive product reviews lead to positive perceptions and trust. Surprisingly, negative reviews and untrustworthy photos results in neutral perceptions but completely missing information causes mistrust.
S-O-R Model (Stimulus-Organism-Response)	Mehrabian & Russel (1974)	The S-O-R model demonstrates a person's responses to stimuli. The basic concept of the model reveals that external stimuli (S) triggers internal processing and triggers a response (R)
Media Richness Theory, MRT	Daft & Lengel (1986)	MRT highlights that rich media use is more effective for communicating and distributing information.
	Aljukhadar & Senecal (2017)	Rich media such as a streaming video significantly affects the perceived quality, trustworthiness, arousal for consumers that are browsing recreationally.
Online Video Product Presentation Videos (OPPV)	Orus et al. (2017)	OPPVs are a vivid source of information that improve cognitive processing. OPPVs facilitates imagination and enhances cognitive responses, which will then impact purchase intention.
	Berni et al. (2020)	Videos are successful in communicating the purpose of use and utility of products that would otherwise be doubted of their usefulness.
	Jiang & Benbasat (2007)	Results show that using virtual product experience and videos generate higher levels of product knowledge than mere pictures. Additionally, websites were perceived more helpful, which positively affects customers' willingness to revisit the websites.

5 Research methodology

5.1 Research objective

The purpose of this master's thesis is to look at the impact of product- related videos on customer's online purchasing behavior. My objective is to look at whether product related videos can increase customer's purchase decisions. This is a case study of five online stores located in the Nordic countries. There are prior studies indicating that videos do impact consumers' purchasing processes positively and this thesis will offer supportive evidence. The data for this thesis is provided by Videoly.

Videoly was selected for this research, because it is the leading tech company in e-commerce video solutions in the Nordics. Videoly has its own search engine that finds, and curates product videos automatically, and then embeds videos on the right product pages (Figure 3, 4,5). Product videos are both user and brand generated. This study was conducted as a A/B split test, which was used in five online retailers' stores. This thesis can offer valuable insight for retailers on online display and whether using product videos for sharing product information could be a profitable solution. This chapter will discuss the collected data and analysis methods for this thesis.

5.1 Research approach

This thesis uses quantitative methods to analyze the data. The data was collected from the retailers' websites with computational techniques using Google Analytics tools. This study is an experimental census study. Census method is also referred to as a complete enumeration survey method. Census method indicated that all members of a certain population are included in the study (Heikkilä 2014). Data was collected in a natural non-recurring setting.

5.2 Data and execution

Data used in this thesis is provided by Videoly and was collected in 2018 and 2019 by using data derived from the online retailers' websites to Videoly's Google Analytics, where the data was then analyzed. In this study A/B tests were conducted on five online stores in Finland, Norway, Sweden,

and Denmark. The stores operate in different industries: cosmetics, sports and outdoor, electronics, tools and constructions and a department store (Table 2).

In the A/B split study all website visitors were included during the test period. Videoly's backend split users into two groups using a 50/50 ratio. Users consisted of desktop, tablet, and mobile users. Approximately half of the online store visitors were shown a video widget attached to the product and the other half of the visitors had a hidden video widget and did not have an option to see a video (Figure 3). The data from the website visits was collected through Google Analytics and detailed reports were made separately for desktop, tablet, and mobile.

The metrics were targeted to examine the changes in the conversion rate between users that had access to a video display stimulus and between those users that did not have access to a video showing product attributes. The metrics from Google Analytics included the number of visitors, buyers, rate, and number of conversions and actual purchases. The click-through rate on the "Add-to-cart" button ("ATC") was measured by monitoring click events on the button. The data can be used to compare the effectiveness of product videos on the conversion rate in different industries, countries and using different devices.

These metrics can be illustrated with a marketing funnel (Figure 6). The retailer aims to convert the visitors and proceed to convert them to buyers. Visitors refer to users that are browsing on the website and a conversion is achieved when the visitor adds a product to their virtual basket. The goal for the retailer is to get the converted visitors to further purchase the products, a purchase is achieved when the user proceeds to checkout.

In this study I attempt to prove the effectiveness of product- related videos by examining the conversion percentage improvement and the changes in the buyer to visitor ratio, when a visible video widget is shown to the visitors.

The buyer to visitor ratio is included to provide real transactional evidence for the effectiveness of product videos and to ensure that the conversions did not result in abandoned cart.

The buyer to visitor ratio describes the percentage of visitors that ended up buying products from the online store. Compared to the conversion rate which describes the products added to the cart, the buyer to visitor ratio shows the number of converted customers that proceeded to checkout and bought the products they had added to their carts.

The increase in buyers in relation to visitors indicates an increase in sales because more visitors end up buying products then before. The buyer to visitor ratio is used in this study to examine whether

people that had a visible video widget more likely bought products, whereas conversion improvement percentage measures the increase in customers' likeliness to add products to their carts.

Table 2. Information on participants

Shop	Country	Industry	Test period	Visitors Desktop (h/v)	Visitors Tablet (h/v)	Visitors Mobile (h/v)
Shop: 557	Sweden	Tools & Construction	1 month	51338 | 38127 (57.4% | 42.6%)	20115 | 14927 (57.4% | 42.6%)	114878 | 79069 (59.2% | 40.8%)
Shop: 674	Sweden	Cosmetics	7 days	1586 | 1550 (50.6% | 49.4%)	348 | 340 (50.6% | 49.4%)	8336 | 6290 (57.0% | 43.0%)
Shop: 411	Norway	Electronics	14 days	N/A	N/A	N/A
Shop: 510	Finland	Department store	1 month	2518 | 2315 52.1% | 47.9%	737 | 720 50.6% | 49.4%	827 | 827 50% | 50%
Shop: 537	Denmark	Sports & Outdoor	7 days	3176 | 3030 51.2% | 48.8%	931 | 931 50% | 50%	3106 | 2913 51.6% | 48.3%

h=hidden widget, v= visible widget

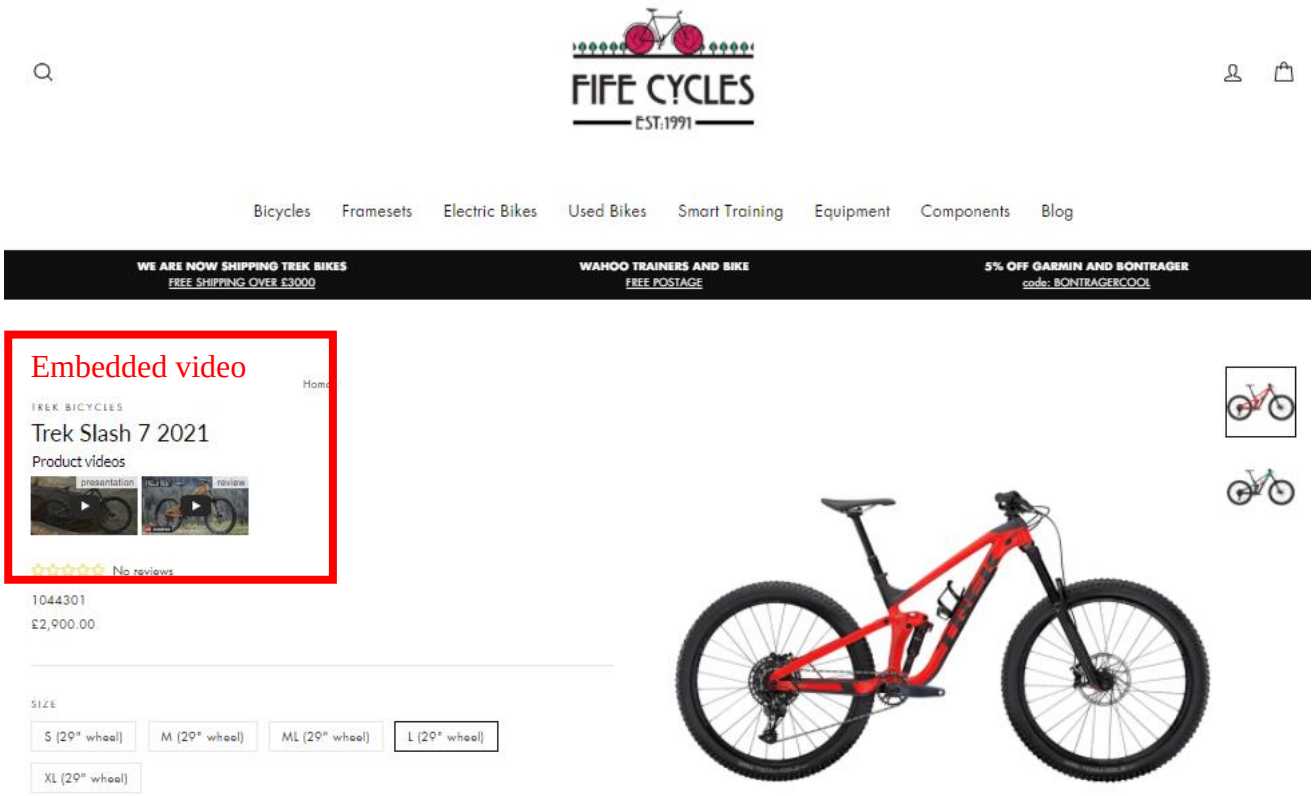

Figure 3. Example of a product presentation embedded on a website. This imagine is not from the companies included in the A/B test.

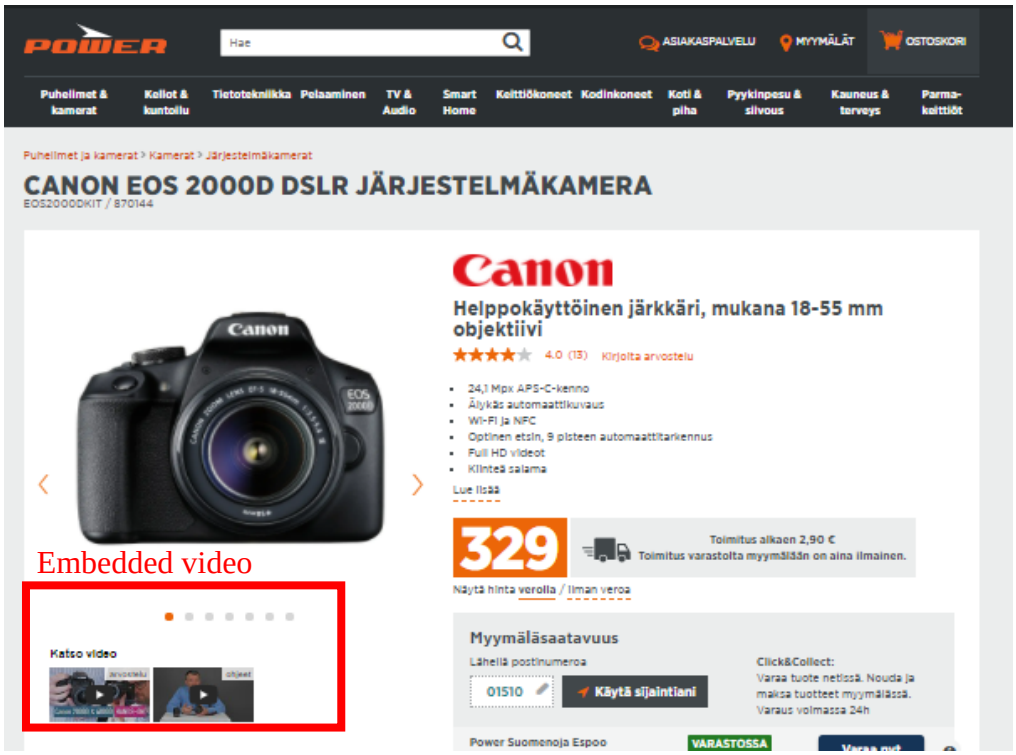

Figure 4. Example of a product presentation embedded on a website. This imagine is not from the companies included in the A/B test.

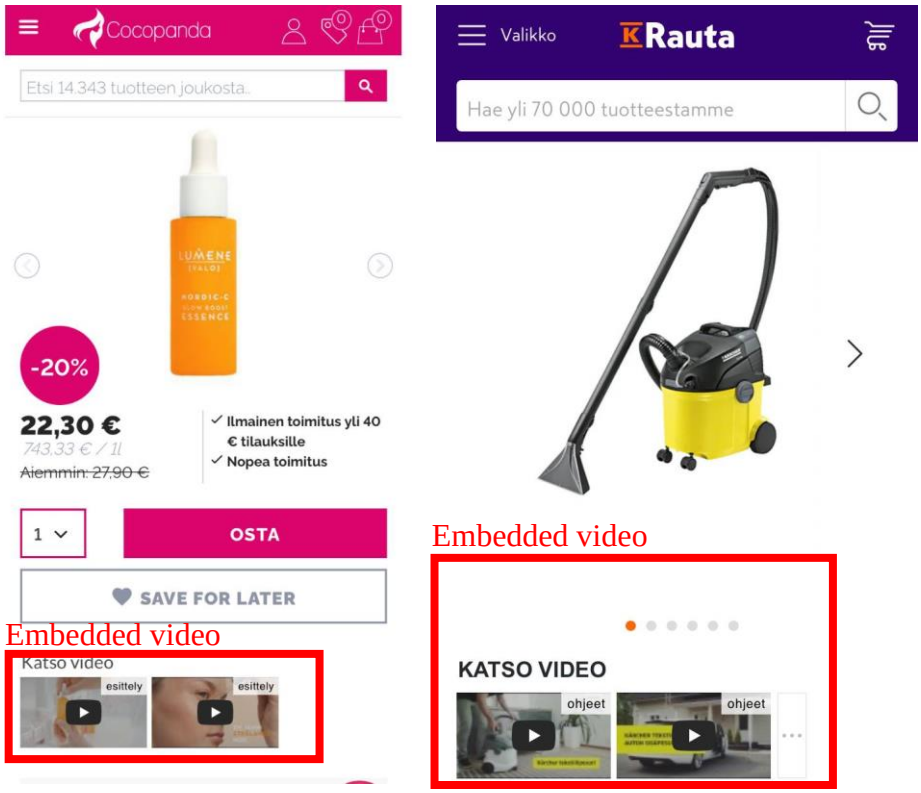

Figure 5. Example of video display embedded on a websites' mobile version. This imagine is not from the companies included in the A/B test.

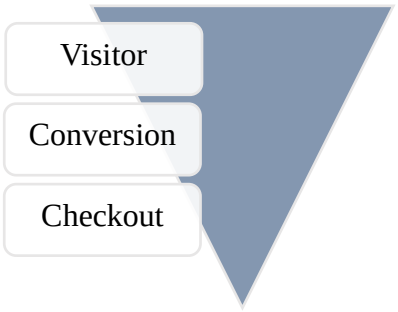

Figure 6. Marketing funnel

5.3 Validity of the data

A successful result would be considered a change in click-through rate of 10-30% or more, when a video widget is added to the site. The CTBO level should aim as close as possible to 100% and should be over 95% to consider the results significant. CTBO (changes to beat the original) is the percentage, showing how significant the gain is to consider the test results compelling. It is calculated by taking two things into account: the difference in conversion rate between the groups and the number of conversions in the test. For shops with a big amount of traffic, relatively small gain in conversion is enough to prove the power of videos, because large audiences provide certainty to the hypothesis. Shops with smaller traffic need a higher gain in the conversion rate, because more shoppers on the next day may reduce the conversion by a lot (Table 3). Therefore, there is a correlation between the website traffic and the certainty of the test. Shops with smaller traffic do not reach CTBO of 100% as easily but the results can still be considered legitimate.

Additionally, to eliminate the effect of out-of-stock products, the in- stock status of the products curated was ensured.

Table 3. Validity of the data, CTBO (chances to beat the original)

Online retailer	Desktop	Tablet	Mobile
Shop: 557 (Tools & Construction, Sweden)	100%	99.2%	100%
Shop: 674 (Cosmetics, Sweden)	71.4%	55.1%	100%
Shop: 411 (Electronics, Norway/Finland)	-	-	-
Shop: 510 (Department Store, Finland)	75.4%	69.2%	95.6%
Shop: 537 (Sports & Outdoor, Denmark)	98,4%	78,9%	93,7%

6 Results

6.1 Conversion rate improvement

Conversion rate was higher among users that had visible video widget. This was the case in all the online stores that participated in this A/B split test. In other words, there was an improvement in the quantity of products added to the basket when the video widget was visible to the users. Users that had a hidden video widget were not as likely to add the product to their shopping carts (Table 4).

Percentages from the shop 411 are not included in the table, hence the customer did the analysis based on the real transactional conversion in their Google Analytics. The transactional conversion rate improvement with the visible widget was 4.29% on their Norwegian online store and 5.88% in the Finnish online store. The difference is significant considering that the transactional conversion rate is naturally smaller than the conversion rate, that measures purchase intention or decision, but not the actual purchases.

Shop 557 (tools & construction, Sweden) had the highest improvement percentages on all devices compared to other shops when the visible video widget was present. The results are considered very significant because the change in click-through rate between 10-30% was surpassed on desktop (33.08%), on mobile (44.80%), and on tablet (17.99%). The results are especially compelling, since the CTBO reached 100% on mobile and desktop, and 99.2% on tablet.

The results of the shop 674 (cosmetics, Sweden) provides very strong evidence for the use of videos on mobile. Mobile had a significant (between 10-30%) improvement of 29.54 % and CTBO was 100%, which further validates this result. However, there was no strong support of the use of product videos on desktop (2.32%) and on tablet (1.51%) hence the improvement percentage did not reach 10% to be considered a significant result. This can be explained by the low traffic in tablet and desktop users, which likely resulted in a low CTBO score.

Shop 510 (department store, Finland) had very compelling conversion percentage of improvement on mobile (29.64 %), additionally the increase in conversion percentage on desktop (8.04%) and on tablet (13.73%) can be considered very significant. CTBO on mobile was the highest 95.6%, desktop had 75.4% and tablet 69.2%, which indicates that the results for mobile are most significant.

The results of the shop 537 (sports & outdoor, Denmark) had the least variation in the conversion rate between the devices. Exceptionally, all the results are as compelling. The improvement on desktop was the highest 14.37% but very close to the improvement percentage on mobile users, which was 12.06%. Tablet had an improvement of 8.22%. CTBO percentage of all three devices was high enough to validate the results, Desktop 98.4%, mobile 93,7% and tablet 78,9%.

Overall, in almost all the shops, except in the Finnish shop 510, tablet had the lowest improvement percentages. Then again, tablet had the least traffic in all industries which likely contributed to the lower percentages.

In almost all the industries, conversion rate on mobile, improved the most. The sports and outdoor store (shop 537) is an exception, where the conversion rate improvement percentage between devices did not vary significantly.

Table 4. Conversion rate improvement percentage

Online retailer	Desktop	Tablet	Mobile
Shop: 557 (Tools & Construction, Sweden)	33.08%	17.99%	44.80%
Shop: 674 (Cosmetics, Sweden)	2.32%	1.51%	29.54 %
Shop: 411 (Electronics, Norway/Finland)	-	-	-
Shop: 510 (Department Store, Finland)	8.04%	13.73%	29.64 %
Shop: 537 (Sports & Outdoor, Denmark)	14.37%	8.22%	12.06%

6.2 Buyer to visitor ratio

The buyer to visitor ratio did improve in most stores and platforms, which was expected. The improvement in the number of buyers in relation to visitors indicates an increase in sales, because a

bigger percentage of visitors end up buying products than before. The buyer to visitor percentage was higher in most shops, when the visible video widget was attached to the page. This indicates that product- related videos positively influence consumers purchase decisions.

The results are in correlation with the changes in the conversion percentage improvement, which is a sign that the conversions did not result in abandoned cart. The results show that users that had the visible video widget more likely add products to their shopping carts and proceed to checkout (Table 5).

The shop 557 (tools & construction, Sweden) had the most increase in the buyer to visitor percentage with the visible video widget. The increase occurred on all devices. The results are very significant and in correlation with the conversion rate improvement. The increase was 31.1% on desktop, 22% on tablet, and 44.2% on mobile. The shop 557 had the most visitors compared to any other shops that participated in the A/B split test. The website traffic further validates the result.

The results of shop 674 (cosmetics, Sweden) show that mobile users with the visible widget were 31.3% more likely to buy products. The results derived from desktop (-3.23 %) and tablet (-5.81 %) did not have that same effect. The poor results are likely due to the low traffic in tablet and desktop users, which also contributed to a low CTBO score. The results from tablet and desktop users are therefore disputable. Contrarily the result for mobile is valid because traffic was substantial and CTBO score reached 100%.

In the shop 510 (department store, Finland) buyer to visitor percentage improved 22.5% on mobile and 15 % on tablet. Desktop users experienced an increase in conversion percentage of 8.04% but it did not show improvement in the buyer to visitor ratio (-13.4 %). This indicates that desktop users were 8.04% more likely to add product to their carts but some users then ended up abandoning their carts.

Shop 537 (sports & outdoor, Denmark) had improvement on all platforms. The buyer to visitor ratio enhanced 12.4% on desktop, 4.65% on tablet, and 5.43% on users. Exceptionally, the Shop 537 was the only shop where the improvement in conversions and buyer to visitor ratio among mobile users was not the highest.

Table 5. Buyers/Visitors ratio increase

Shop	Platform	Hidden	Visible	Increase%
Shop: 557	Desktop	2.06 %	2.70 %	31.1 %
	Tablet	1.68 %	2. 05 %	22.0 %
	Mobile	2.06 %	2. 97 %	44.2 %
Shop: 674	Desktop	31.0 %	30.0 %	-3.23 %
	Tablet	24. 1 %	22.7 %	-5.81 %
	Mobile	19.5 %	25. 6 %	31.3 %
Shop: 441	Desktop	N/A		
	Tablet	N/A		
	Mobile	N/A		
Shop: 510	Desktop	4.49 %	3.89 %	-13.4 %
	Tablet	3.26 %	3.75 %	15 %
	Mobile	2.62 %	3.21 %	22.5 %
Shop: 537	Desktop	9.16 %	10.30 %	12.4 %
	Tablet	9.24 %	9.67 %	4.65 %
	Mobile	8.11 %	8.55 %	5.43 %

7 Discussions

7.1 Summary

The objective for this master's thesis was to look at the impact of online product presentation videos on customer's purchase behavior. A/B test data was used to analyze whether product-related videos can increase conversions in online stores. These findings show a significant impact of video widget being visible when browsing in an online store. The percentages do vary depending on the device and industry, which is presumable, but this test provides supportive evidence that video display does in fact influence consumers positively. In other words, consumers were more likely to click the "Add-to-cart" button when the video widget was presented.

The buyer to visitor ratio was included in the study to verify that the conversions did not result in abandoned cart and to provide real transactional evidence, meaning, increase in sales. The results show that the buyer to visitor ratio did increase accordingly, which indicates that the conversions resulted in purchases.

7.2 Discussion

This thesis contributes to the understanding of the effectiveness of dynamic presentation formats. Previous research has shown that product presentation videos positively affect customers' attitudes and behavior (Flavián et al.,2017; Orus et al., 2017; Aljukhadar & Senecal 2017; Berni et al., 2020). This study offers further evidence to support previous findings indicating that product presentation videos positively affect purchasing behavior.

These findings are in line with the rich media theory and vividness paradigm, according to which visual and dynamic information is processed more efficiently and facilitates visualization (Yoo & Kim, 2014; Geise & Baden, 2015). Previous findings have indicated that helping consumers with

information processing, evoke positive impacts on purchasing behavior (Hao et al., 2019; Orús et al., 2017). This study demonstrates that visual and dynamic presentation formats result in better performance.

7.2 Implications of the comparison between devices and industries

Interestingly, in all industries mobile users had the highest conversion improvement percentages. The sports and outdoor industry (shop 537) was the only exception, where the conversion rate improvement percentage was as compelling on all devices. The high improvement in the rate of conversions on mobile can be an indication that video formatting is especially appreciated when shopping online with a smartphone.

Reading product descriptions on a smartphone is possibly not perceived comfortable and therefore product presentation videos offer a convenient option for absorbing information quickly. Previous research has confirmed that visual information is processed more efficiently (Orus et al., 2017). Another reason could be that mobile sites are generally lacking responsiveness as well as product information and therefore adding the video element significantly improves the user experience which relates to their purchase intentions.

A quick comparison between the results from different industries shows that the shop 557 (tools & construction, Sweden) had overall the most significant improvement in conversions, on all devices. This could be due to video widgets being perceived especially helpful in the industry of construction. The products are more complex in this product category and hence people may be interested in how easy it is to use a certain tool, or what its main functions are, before making a purchase decision. Previous research has shown evidence that product presentation videos are useful in product categories in which products attributes need explaining (Berni et al., 2020). This result adds evidence to the usefulness of product videos in product categories where product attributes are more complex. It is advised that retailers help the customers' cognitive processing with video display. However, this type of generalization should be taken with a grain of salt because more research is needed to draw any certain conclusions.

Previous research had additionally shown support for the use of product presentation videos in hedonic product categories. Roggeveen et al. (2015) highlights that video display is especially

effective in showcasing the hedonic product attributes because hedonic products require more sensory and visual stimulation. In this research shop 674 that caters cosmetic products belongs distinctly in that hedonic product category. Cosmetics shop 674 had the most significant conversion rate improvement on mobile (29.54%) but the percentages were only 2.32% on desktop, and 1.51% on tablet. Tablet and desktop had significantly lower numbers in website traffic, which affects this result. Nevertheless, the result implies that video display is important for mobile users that are browsing a beauty website. When it comes to the usefulness of video when displaying specifically hedonic products, this study does not provide evidence to support that statement since all the stores did in fact benefit from the video widgets being added to their web stores. Therefore, product related videos should be considered as a powerful marketing tool across all industries.

7.3 Managerial implications

Managerial implications of this study for online retailers are that using videos in online product presentation is advised, since consumers were more likely to purchase products when there was a video widget presented on the website. Online product-related videos should be viewed as a powerful tool to positively impact consumers' purchasing behavior. Adding video presentations of products to webstores as part of online product display strategy is a profitable solution.

Additional findings of this research show that video presentation format had especially strong influence on mobile users. Mobile had the highest improvement in conversion percentages from adding the video widget. These findings are relevant for retailers that have a huge traffic on their mobile site but struggle to convert visitors. According to this present thesis, video display seems to be especially effective for visitors that use a smartphone for online shopping. Practitioners should start to invest in video product presentation for mobile.

These findings are significant, when considering that purchasing via mobile device is becoming increasingly more frequent. 60 % of all retail visits in 2019 were made via a smartphone. People are increasingly adopting new technology for shopping and M-commerce has already increased its popularity in Asia (Statista 2021). Kahn (2017) suggests that videos could potentially be the main media when browsing products with a smartphone in the future.

Finally, these results showed slight support to the usefulness of product videos in product categories where product attributes are more complex. Hence it is advised that retailers help the customers' cognitive processing with video display.

7. 4 Limitations and future research

This thesis has several limitations that offer possibilities for future research. This study successfully confirms that product-related videos do have an impact in affecting consumer behavior and by adding product presentation videos, retailers can increase conversions.

Mobile users had the highest improvement in conversion percentages across all industries. Aforesaid presents a possibility for future research; should product presentation videos be the primary presentation format on mobile browsers? Future research could cover this question more deeply.

Another research gap to be filled, is the question of brand versus user-generated videos. Orús et al. (2017) states that purchase intention is not influenced by video display when the product presentation video is featured by a brand. In this present study the sourced videos were a combination of brand and user generated content, yet purchases were greatly affected. This could imply that the previous claims about the ineffectiveness of videos featured by brands should be reconsidered.

When it comes to the validity of the data, a few results did not reach a CTBO percentage close to 100%, which chips way some significance of a few results. This is likely due to the lower traffic because with a lower traffic, higher gain in the conversion rate is needed to prove the impact of the video widget. Nevertheless, considering the number of very strong positive results and the fact that all results showed an increase in the conversion percentage, provide enough evidence to demonstrate the power of online product presentation videos with high certainty.

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A/B-tests

Shop: 557 (Tools & Construction, Sweden) (2019)

Split was done on Videoly's side, a customer was analysing conversion in their Google Analytics based on events that Videoly sends.

```
Report generated on 28.08.2019 17:02, testId = 3982
SHOP: 557

Period: 25.07.2019 00:00 - 26.08.2019 00:00
-- ATC Label: buy
---- Platform: DESKTOP, CR improvement: 33.08%, CTBO: 100.0%, Visitors: 28.09%
```

Metric	Hidden Widget	Visible Widget
Conversion Rate	2.50%	3.33%
CR interval	2.37 - 2.64 (%)	3.15 - 3.51 (%)
Buyers/Visitors	2.06%	2.70%
Conversions	1283	1268
Buyers	1056	1031
Visitors	51338 (57.4%)	38127 (42.6%)
Active Products	970	970
Products Sold	370	353

```
---- Platform: TABLET, CR improvement: 17.99%, CTBO: 99.2%, Visitors: 11.00%
```

Metric	Hidden Widget	Visible Widget
Conversion Rate	2.20%	2.59%
CR interval	2.00 - 2.41 (%)	2.35 - 2.86 (%)
Buyers/Visitors	1.68%	2.05%
Conversions	442	387
Buyers	338	306
Visitors	20115 (57.4%)	14927 (42.6%)
Active Products	928	928
Products Sold	198	212

```
---- Platform: MOBILE, CR improvement: 44.80%, CTBO: 100.0%, Visitors: 60.90%
```

Metric	Hidden Widget	Visible Widget
Conversion Rate	2.61%	3.78%
CR interval	2.52 - 2.71 (%)	3.65 - 3.92 (%)
Buyers/Visitors	2.06%	2.97%
Conversions	3001	2991
Buyers	2361	2349
Visitors	114878 (59.2%)	79069 (40.8%)
Active Products	1014	1014
Products Sold	431	449

Shop: 674 (Cosmetics, Sweden) (2018-2019)

A short test on our side. Later the test has been performed on customer's side. The customer hasn't shared any numbers with us. Customership continues.

```
Report generated on 26.12.2018 16:38, testId = 2385
SHOP: 674

Period: 19.12.2018 09:00 - 26.12.2018 18:37
-- ATC Label: buy
---- Platform: DESKTOP, CR improvement: 2.32%, CTBO: 71.4%, Visitors: 17.00%
┌──────────────────────────────┬──────────────────┬──────────────────┐
| Metric                       | Hidden Widget    | Visible Widget   |
| Conversion Rate              | 43.13%           | 44.13%           |
| CR interval                  | 40.71 - 45.58 (… | 41.67 - 46.61 (… |
| Buyers/Visitors              | 31.02%           | 30.00%           |
| Conversions                  | 684              | 684              |
| Buyers                       | 492              | 465              |
| Visitors                     | 1586 (50.6%)     | 1550 (49.4%)     |
| Active Products              | 928              | 928              |
| Products Sold                | 291              | 278              |
└──────────────────────────────┴──────────────────┴──────────────────┘
---- Platform: TABLET, CR improvement: 1.51%, CTBO: 55.5%, Visitors: 3.73%
┌──────────────────────────────┬──────────────────┬──────────────────┐
| Metric                       | Hidden Widget    | Visible Widget   |
| Conversion Rate              | 35.06%           | 35.59%           |
| CR interval                  | 30.23 - 40.21 (… | 30.68 - 40.81 (… |
| Buyers/Visitors              | 24.14%           | 22.65%           |
| Conversions                  | 122              | 121              |
| Buyers                       | 84               | 77               |
| Visitors                     | 348 (50.6%)      | 340 (49.4%)      |
| Active Products              | 489              | 489              |
| Products Sold                | 94               | 95               |
└──────────────────────────────┴──────────────────┴──────────────────┘
---- Platform: MOBILE, CR improvement: 29.54%, CTBO: 100.0%, Visitors: 79.27%
┌──────────────────────────────┬──────────────────┬──────────────────┐
| Metric                       | Hidden Widget    | Visible Widget   |
| Conversion Rate              | 27.10%           | 35.10%           |
| CR interval                  | 26.16 - 28.06 (… | 33.93 - 36.29 (… |
| Buyers/Visitors              | 19.47%           | 25.64%           |
| Conversions                  | 2259             | 2208             |
| Buyers                       | 1623             | 1613             |
| Visitors                     | 8336 (57.0%)     | 6290 (43.0%)     |
| Active Products              | 1534             | 1534             |
| Products Sold                | 533              | 528              |
└──────────────────────────────┴──────────────────┴──────────────────┘
```

Shop: 411 (Electronics, Norway) (2018-2019)

Split was done on Videoly's side, a customer was analysing Ecommerce Conversion Rate (real transactional conversion) in their Google Analytics based on events that Videoly sends.

Test period: January 02, 2019 - January 15, 2019

Improvement of CR on Norwegian store: 4.29%

Improvement of CR on Finnish store: 5.88%

Shop: 510 (Department Store, Finland) (2018)

A/B-test completed on Videoly's side.

```
Report generated on 02.07.2018 08:09, testId = 1423
SHOP: 510

Period: 27.05.2018 21:00 - 02.07.2018 08:08
-- ATC Label: buy
---- Platform: DESKTOP, CR improvement: 8.04% CTBO: 75.4%
```

Metric	Hidden Widget	Visible Widget
Conversion Rate	5.92%	6.39%
CR interval	5.06 - 6.91 (%)	5.46 - 7.47 (%)
Buyers/Visitors	4.49%	3.89%
Conversions	149	148
Buyers	113	90
Visitors	2518	2315
Active Products	998	998
Products Sold	103	117

```
---- Platform: TABLET, CR improvement: 13.73% CTBO: 69.2%
```

Metric	Hidden Widget	Visible Widget
Conversion Rate	3.66%	4.17%
CR interval	2.51 - 5.30 (%)	2.91 - 5.91 (%)
Buyers/Visitors	3.26%	3.75%
Conversions	27	30
Buyers	24	27
Visitors	737	720
Active Products	541	541
Products Sold	25	29

```
---- Platform: MOBILE, CR improvement: 29.64% CTBO: 95.6%
```

Metric	Hidden Widget	Visible Widget
Conversion Rate	3.15%	4.08%
CR interval	2.53 - 3.91 (%)	3.32 - 5.00 (%)
Buyers/Visitors	2.62%	3.21%
Conversions	78	89
Buyers	65	70
Visitors	2478	2181
Active Products	827	827
Products Sold	55	62

Shop: 537 (Sports & Outdoor, Denmark) (2018)

A/B-test completed on Videoly's side

```
Report generated on 23.04.2018 13:30, testId = 1227
SHOP: 537

Period: 16.04.2018 10:30 - 23.04.2018 13:25
-- ATC Label: buy
---- Platform: DESKTOP, CR improvement: 14.37% CTBO: 98.4%
```

Metric	Hidden Widget	Visible Widget
Conversion Rate	13.13%	15.02%
CR interval	12.00 - 14.35 (…	13.79 - 16.33 (…
Buyers/Visitors	9.16%	10.30%
Conversions	417	455
Buyers	291	312
Visitors	3176	3030
Active Products	1131	1131
Products Sold	281	266

```
---- Platform: TABLET, CR improvement: 8.22% CTBO: 79.8%
```

Metric	Hidden Widget	Visible Widget
Conversion Rate	12.64%	13.67%
CR interval	11.03 - 14.43 (…	12.00 - 15.54 (…
Buyers/Visitors	9.24%	9.67%
Conversions	186	198
Buyers	136	140
Visitors	1472	1448
Active Products	931	931
Products Sold	141	149

```
---- Platform: MOBILE, CR improvement: 12.06% CTBO: 93.7%
```

Metric	Hidden Widget	Visible Widget
Conversion Rate	10.11%	11.33%
CR interval	9.10 - 11.22 (%)	10.23 - 12.53 (…
Buyers/Visitors	8.11%	8.55%
Conversions	314	330
Buyers	252	249
Visitors	3106	2913
Active Products	1035	1035
Products Sold	201	195