

To persuade, or not to persuade

An experimental case study of e-commerce consumer responses to persuasive messages

One of the biggest challenges e-commerce face today is how to encourage website visitors to act. The purpose of this thesis was to explore whether persuasion strategies had the potential to get website visitors to act by bridging the gap between attitudes (i.e. what people think) and behaviors (i.e. what people do) in the context of sustainable e-commerce. In addition, the study investigated whether exposure to persuasion stimuli generated the same attitudes and intentions as identified in prior research. Persuasion strategies based on Cialdini's principles of authority, commitment & consistency, and social proof have been applied through environmentally imbued pop-up messages on the website of the case company Sellpy, a Swedish e-commerce platform for second-hand goods. When statistically analyzing purchase data, no significant behavioral effects were seen after treatment, indicating that the tested persuasion stimuli could not bridge the gap between attitudes and behavior. Nonetheless, persuasion stimuli generated high attitudes towards the ad and purchase intentions after analyzing complete surveys, confirming the discrepancy between e-commerce consumers intentional and behavioral responses. In addition, brand attitude was found to mediate the effect of ad attitude on purchase intention, which is in line with existing research.

Keywords: Persuasion, Green Pop-up Advertisement, Attitude-Behavior Gap, E-commerce, Second-Hand Retail

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Definitions

Ad attitude	In the context of this study; ad recipients' affective reactions toward the ad itself (Lutz et al., 1983).
Brand attitude	In the context of this study; ad recipients' affective reactions toward an advertising brand (Lutz et al., 1983; Shimp, 1981).
Bridging the attitude-behavior gap	In the context of this study; increased sales among customers of the case company.
Consumer/Customer	A person who has purchased goods or services for personal use.
Conversion	In e-commerce; the act of measuring purchases is referred as conversion i.e. converting store visits into purchases (Moe & Fader, 2004).
Purchase intention	Survey respondents' assessments of the likelihood that they will purchase a brand in the future (Lutz et al., 1983).
Website visitor	In the context of this study; someone who visits a website but has not yet made a purchase on that particular visit.

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1 Introduction

The introductory chapter provides a background to the thesis topic followed by identified research the gaps and expected contributions. Thereafter follows the study's purpose, the research questions and delimitations made. Lastly, the structure of the thesis is presented.

1.1 Background

For 40 years, Joe Girard was the undisputed king of sales. According to the Guinness Book of World Records, Girard sold 1,425 cars in 1973, a record that still stands. Consequently, generations of salespeople have been eager to discover and learn his tactics. As a response, Girard revealed his most important persuasion secrets in multiple books and seminars. One special tactic that he used recurs – Girard sent all his customers a handwritten letter with a single line written on it; "I like you" (Girard & Brown, 1977; Glenday et al., 2016; Marks, 2018).

Explaining the success of this extraordinary simple and elegant sale solution is harder than one might think. Human behavior is complex and can be approached at many levels, from underlying cognitive processes to social pressure (Ajzen & Fishbein, 1980). However, the understanding of consumer behavior and how to convince people to buy more will always be of great value to companies, salespeople, and marketers. Girard's one-liner-tactic is just one of many persuasion strategies used for this purpose (Szmigin & Piacentini, 2015).

One company in need of sales increasing assistance is the case company of this study; the Swedish start-up Sellpy. The company was founded in 2014, with the business idea to redistribute second-hand goods through an online platform. While they have experienced an impressive growth in their first years in business, the demand for second-hand goods on their e-commerce platform is not sufficient to drive prices to adequate levels. The issue at hand could be related to the second-hand aspect. Decisions for environmental conscious consumption often result in trade-offs between conflicting issues and results in a "*motivational and practical complicity of green consumption*" (Moisander, 2007). This means that consumers have a tendency to not translate motivation and attitude into behavior, even though they have

a motivation and a positive attitude toward a more sustainable lifestyle. In short, there is a gap between attitude (i.e. what people think) and behavior (i.e. what people do) (Park & Lin, 2018; Marcinkowski & Reid, 2019). One way of bridging the gap between attitude and behavior is to apply tactics of persuasion (Girard & Brown, 1977).

Could a simple message, such as Girard's "I like you", trigger attitudes and intentions that translates into actual behavior? That is the focus of this study, which will explore the use of persuasion in an e-commerce context by sending environmentally imbued persuasive messages to customers of Sellpy and analyzing the persuasive effect through attitude and behavior data.

1.2 Research gap and expected contribution

To begin with, consumers are often suspicious of the motives of marketers, skeptical towards advertisement claims, and perceptive of manipulative intents (Foreh & Grier, 2003; Kirmani & Zhu, 2007). According to Barone & Miniard (1999), consumers may perceive claims as deceptive even when the claims are factually based. Consequently, persuasion attempts often result in less favorable attitudes as soon as a consumer notices the true intentions of marketers, which creates a resistance to the persuasion effort (Jain & Posavac, 2004). Despite this, there is a widespread use of persuasion strategies among businesses and marketers in e-commerce, and one can find examples at many large e-commerce websites such as Amazon, Ebay and Google. For example, these e-commerce websites communicate the persuasion principle of "scarcity" as a strategy to sell more, i.e. they make site visitors believe that there are just a few items left, which creates an urgency to buy before an item becomes unavailable (Cialdini, 2001). In academia, there are several studies exploring the use of persuasion strategies in a general online context, such as Markey et al. (2001), Guéguen & Jacob (2002), and Petrova et al. (2007). However, there are fewer studies of persuasion strategies in e-commerce contexts to be found, this is one of the research gaps that this study will address.

Furthermore, persuasion strategies are often communicated through advertisements and messages to consumers. There has been an increased pressure on the effectiveness of ads and communication targeted at consumers throughout the evolution of the internet, with marketers

trying to maximize the output of their investments (Rohrer & Boyd, 2004). As a result, advertising has become increasingly intrusive. Compared to the first discrete banners in the late 1990s, today's online ads are considerably less avoidable. Pop-up messages, videoclip pre-rolls that must be watched for a certain amount of time, or banners in the middle of news articles, are a given. Despite this development, the effectiveness of intrusive ads and messages has been questioned. While there are successful examples of how online advertising has had a direct positive effect on sales (Peng et al., 2014; Lewis & Reiley, 2009), ads can result in a decline of the consumer experience (Rohrer & Boyd, 2004) and be a source of annoyance, resulting in a negative attitude towards the website and brand (Zha & Wu, 2014; Cho & Cheon, 2004). Similarly, the use of green advertisements, i.e. promotions communicating a pro-environmental image, has shown varied results (Leonidou et al., 2011) and studies suggest that the effectiveness of green ads can be related to the specific context of the advertisement effort (Raska et al., 2015). While there are several studies investigating the effect of intrusive communication and interruptions online, there is limited research covering the consequences of such interruptions in an e-commerce environment (Chatterjee, 2008; Rejón-Guardia & Martínez-López, 2014). Therefore, how intrusive online communication and green advertising affect e-commerce consumers is of interest to both researchers and marketers.

Moreover, when researches have investigated the effects of ads and persuasive communication on consumer behavior, they have mainly focused on attitudes and intentions, as in the case of Mitchell & Olson (1981), MacKenzie et al. (1986), Evans et al. (2017) and Homer (1990). Attitudes and intentions can be registered through customer surveys which makes these variables relatively accessible. However, attitudes and intentions are not always direct predictors for actual behavior. For example, Miniard & Cohen (1983) states that the relational strength between intentions and behavior varies extensively depending on the studied context. In addition, people tend to answer surveys in a way that is socially desirable, which might lead to misleading results (Maio et al., 2012). The uniqueness of this study is embedded in the granted access to Sellpy's customer database. This access will allow the authors to analyze actual consumer behavior on a real e-commerce website, which will give a more accurate picture of persuasion strategies' effect on consumer behavior in comparison to survey-based studies and laboratory experiments. As the

study will also include a complete survey registering customers' self-assessment of attitudes and intentions, this will allow a comparison to behavior, and whether the attitude-behavior gap can actually be bridged.

One should also address the attitudes and intentions that derives from of advertisement exposure, which has been thoroughly studied. Several regarded frameworks and theories have concluded that exposure to advertisements generates ad attitudes and brand attitudes which in turn affects purchase intentions in different ways (Ajzen & Fishbein, 1980; Lutz et al., 1983). In the understudied context of e-commerce, it is of interest to investigate whether the previously identified attitudes and intentions is still valid. Therefore, this thesis will include a classical attitude and intention analysis based on the previously mentioned separate survey.

To summarize, the study aims to contribute to marketing and persuasion literature by complementing already existing literature of persuasion and advertising by investigating applications of these concepts in an understudied e-commerce context. Furthermore, this study will complement the existing literature's assessment of attitudes and intentions with actual behavioral implications.

In addition to academic contributions, the study also strives to contribute to business and marketing practices. Practitioners are trying to communicate with consumers in a time where people experience an overflow of information (Viglia, 2014). The understanding of how communication shapes behavior, as well as attitudes and intentions, will provide valuable insights for companies with conditions similar to the case company of this study. The insights from the study will guide practitioners in whether persuasion strategies and its application will be a viable option to increase sales, or if it is rather a waste of time and resources. As such, contributions are expected to have implications for academia and practitioners alike.

1.3 Purpose and research question

The purpose of this study is to explore whether persuasion strategies have the potential to bridge the gap between attitudes and behaviors in the context of e-commerce and sustainable business. In addition, the study strives to investigate whether exposure to persuasion stimuli generates the same attitudes and intentions as seen in previous studies. This will be examined through the following research questions:

RQ1: Does persuasion strategies, communicated through environmentally imbued pop-up messages, affect the purchase behavior of e-commerce consumers on a second-hand website?

RQ2: When exposed to a persuasion message, is the effect of ad attitude on purchase intention mediated by brand attitude?

1.4 Delimitations

The thesis is subject to a couple of delimitations in order to adjust the thesis to a suitable scope due to time limitations and in order to reach a certain depth in the analysis. Firstly, data will only be collected from one domain - the case company's customer base.

Secondly, the authors will have access to a wide range of data points from the case company, but only variables related to sales will be analyzed as sales is the most important metric in general for e-commerce and for the case company.

Thirdly, the literature of persuasion strategies is broad in terms of persuasive approaches and principles. An admitted researcher in the field of persuasion strategies is Robert Cialdini, who has uncovered six general principles of persuasion. In order to limit the scope, three of these principles of persuasion are chosen to be investigated and studied, namely "Authority", "Commitment & Consistency", and "Social Proof". The principles that were not chosen were deemed as difficult in terms of application. For example, the principle of "Reciprocation" implies

that all subjects get something, e.g., a monetary gift or a free sample, which was not an option in this study as it includes approximately 6000 individual participants.

Lastly, these principles of persuasion are general concepts of how to persuade people and reach compliance. As the three principles are general concepts, their application can vary greatly. In this study, the application of the principles will be conducted through pop-up text messages sent to website visitors communicating the sustainable benefits of using the case company's service.

1.5 Thesis outline

This thesis consists of nine chapters, introduction, theory, method, results and analysis, discussion, conclusion, implications, study limitations and future research.

Firstly, the introduction presents the subject, identified research gaps, expected contributions and the purpose of the study. The introductory chapter ends with delimitation made. Secondly, follows a theory chapter which includes a literature review summarizing prior research to generate the hypotheses. Hypotheses are formed in order to answer the research questions of the study. The theory chapter also presents the theoretical framework and is concluded by summarizing the hypotheses. Thereafter follows a method chapter that outlines and argues for the scientific approach of the study and describes the procedure for the preparatory work and the main study in detail. The method chapter also includes a section describing the quality of data collected, where reliability, validity and replicability is discussed. Chapter four presents the results of the empirical study and hypothesis testing. Chapter five discusses the empirical results in relation to prior research in general and to the theoretical framework in particular. Chapter six concludes the thesis by answering the study's two research questions. Chapter seven considers the potential implications of the study from a managerial, academical and other stakeholders' points of view. Chapter eight outlines the limitations and criticism of the study, and chapter nine suggests future starting points for scholars to further develop the researched area.

2 Theory

The following chapter presents a review of the literature and theories that are going to lay the foundation for the study. Firstly, relevant literature in the research field is presented, thereafter follows the theoretical framework which the study's hypotheses are built on. The theoretical framework is divided into part one and part two. The first part of the theoretical framework presents research on persuasion strategies, and their effect on consumer behavior, while the second part of the theoretical framework outlines research and a hypothesis related to the attitudes and intentions that emerges when being exposed to persuasion strategies.

2.1 Attitude-Behavior gap

There is a gap between what people think and what people do. The attitude-behavior gap has been researched for almost a century. An early example is LaPiere (1934) who concluded that restaurant owners who claimed they would not welcome Chinese visitors, did in fact do so in reality. LaPiere's study has been followed by a body of research about the discrepancy between people's attitudes and behavior, and an attitude-behavior gap has been established in numerous contexts (Marcinkowski & Reid, 2019).

Research has taken multiple perspectives explaining the gap, two perspectives are more recurrent in research. The first perspective; the gap as an outcome of psychological or physical barriers that in some way limit the impact of attitudes on actual behavior which constrain consumer behavior. (Chatzidakis et al., 2007). An example of a psychological barrier could be to act based on habits rather than taking well-informed decisions. The second perspective; the gap as an outcome of a social desirability bias in survey research, that respondents offer a positive version of themselves to researchers (Davies et al., 2012). For example, it is today socially desirable to live sustainably, and therefore one might state to have a more environmentally friendly lifestyle than in reality.

This thesis will focus on overcoming psychological barriers by leveraging persuasion theory in the form of persuasion strategies in order to alter consumer behavior and bridge the gap.

2.2 Study-environment-related theory

2.2.1 Persuasion online

Internet is a tool with many purposes, but perhaps primary, it is a tool for communication and has had a huge impact on how people communicate and interact with each other (Kraut et al., 1998). The nature of interactions online is very different compared to interaction through more traditional communication mediums, and according to McKenna & Bargh (2000), this is due to several reasons. One reason is that people online can communicate and act while being completely anonymous, for example by choosing an alias. This allows them to act in non-normative ways, such as being unjustifiably rude. There is also an absence of social cues from others, which can have an impact on online communication. For example, Dubrovsky et al. (1991) found that expertise and status cues have less impact on behaviors in computer-based interactions compared to real-life face-to-face interactions. Consequently, important communicator cues commonly utilized in persuasion, such as liking of a person or a person's expertise, may be less important in online environments and thus also in online persuasion attempts.

Partly because of the lack of the above-mentioned cues, Guadagno & Cialdini (2009) states that online information is centrally processed, rather than peripherally. When information is centrally processed, people focus on the content of the message and are influenced by the quality of the arguments used in persuasion attempts. In contrast, when peripherally processing information, people tend to use heuristics, such as focusing on personal traits of the sender, or quantity of arguments, rather than argument quality. With the absence of social cues, online consumers cannot use heuristics to the same extent as in the real world and must therefore process information centrally to a larger degree (Chaiken et al., 1996; Petty & Cacioppo, 1984). As a result, people tend to make their decisions based on the quality of arguments in online persuasion attempts, rather than cues and heuristics (Guadagno & Cialdini, 2009).

2.2.2 Persuasion in e-commerce

In order to use persuasion strategies in an e-commerce context, a general understanding of e-commerce consumer behavior is necessary. One of the most salient characteristics that differentiates visiting an e-commerce store and a physical store is the “transportation cost”, which is close to zero when visiting a virtual store. This has several consequences on the online consumer behavior. As the transportation cost of visiting an online store is low, online shoppers are more likely to visit a store without the intention to buy. Another consequence of the low transportation cost is that people tend to delay online purchase decisions, re-visit the virtual store multiple times and return later to buy (Moe & Fader, 2004).

Persuasion professionals and marketers can use the behavior of e-commerce consumers in their favor. The re-visit behavior creates the opportunity to easily and continuously communicate with the customer in a customized manner (Viglia, 2014). Persuasion professionals and advertisers must take into account that a lower transportation cost also works against them, as customers easily can choose to make their purchase from another site if they do not approve of the communicated content (Moe & Fader, 2004).

The main goal of applying persuasion in e-commerce is to reach a return on investment. The most used and apparent metrics to measure the return on investment for a marketing or design effort is to measure actual purchases (Flores, 2013). In e-commerce, the act of measuring purchases is generally referred to as conversion i.e. converting store visits into purchases (Moe & Fader, 2004). The conversion rate is defined as the percentage of total unique visitors entering a site that chose to purchase a product (McDowell et al., 2016). For online retailers the conversion rate is generally low, spanning between 2% to 4%. The low conversion rate creates a general incentive for conversion increasing tactics such as applying persuasion strategies (Silverstein et al., 2001), and one way of communicating such persuasion strategies in an online environment is through advertisement and messages.

2.2.3 Online ads

The opinions differ regarding the value and impact of online ads and online marketing messages. On the one hand, internet advertisement can bring positive effects and benefits for both internet consumers and advertisers, such as providing target groups with accurate and rapid information about services and products (Becker-Olsen, 2003). Additionally, several studies have shown that advertisement can have a positive impact on company sales. For example, Lewis & Reiley (2009) conducted an experiment in cooperation between Yahoo! and a major retailer. The study showed that advertisement had a significant impact on sales, and that the effect of the advertisement persisted several weeks after treatment. In fact, the total effect of revenues was estimated to be eleven times the advertisement spending. Similarly, Peng et al. (2014) showed how online advertising had significantly positive effects on sales in a study measuring the effects of online advertisement spending on automobile sales.

However, studies such as Robertson & Rossiter (1974) concluded long before the birth of the internet that people tend to discredit and dislike advertisement and commercials in general, and that potential customers are especially reluctant to purchase advertised commodities when they detect a persuasive intent in the communication. Today, similar psychological mechanisms are present in online contexts. Internet advertisers confront a phenomenon called ad avoidance, which is that people consciously or unconsciously ignore banner-like information (Cho & Chang-Han, 2004), and one can easily understand why. While browsing e-commerce sites people can expect multiple interruptions in various forms, from GDPR information to direct advertisements, resulting in several documented negative effects for website visitors. For example, it has been shown that specially tailored messages can have a negative impact on the performance of the visitor's original task (Burns & Lutz, 2006; Moe, 2006), as well as decrease their psychological well-being (Speier et al., 2003; Zijlstra et al., 1999). Disruptive ads, i.e. ads that interrupt the intended purposes of visitors, are also generally perceived as an annoyance, which can result in a negative attitude towards the website and brand (Zha & Wu, 2014; Cho & Cheon 2004; Zhang & Kim 2008). Another study showed that the most disliked advertising technique was dialog windows that forces the visitor to interact with it before they can return to the original window (Nielsen Norman Group, 2017). Digitally native generations such as millennials and Gen Z, who

have been raised with a presence of the internet and social media, have been shown to be especially reluctant towards online advertisement. In these age groups, a study showed that 74% objected being targeted by brands in their social media feed, and 56% considered stop using social media sites due to advertisements in their feed (Harris Poll, 2016).

2.2.4 Green ads

During the 90s and 00s, the use of green advertisements, i.e. promotions communicating a pro-environmental image, rose exponentially as a response to increased public awareness of environmental issues and a rapidly growing demand for eco-friendly products (Futerra, 2008; Dande, 2012; Easterling et al., 1996; Polonsky et al., 1997). While companies embrace green advertisement to appeal to a growing consumer group of environmentally concerned consumers, green advertisements have also met several problems in terms of skepticism about credibility and usefulness (Pfanner, 2008). Concerns about misleading claims and complaints to watchdog organizations have been growing with the number of companies striving to promote environmental aspects of their businesses (Knight, 2008).

The development of green advertisement has impacted consumers perception of green ads. Several studies have been conducted to evaluate conditions for green promotion and develop recommendations for how companies can reach consumers with environmental messages. Unfortunately, the results of these studies are often contradictory. For example, Zinkhan & Carlson (1995) and Chitra (2007) claim that green consumers tend to have a negative attitude about businesses and the advertisement industry in general, to the disadvantage of advertisers. A more up-to-date study confirmed this and stated that the more environmentally concerned the consumer is, the more skeptical he or she will be toward green claims on product packages or in ads (do Paço & Reis, 2013). In contrast, Haytko & Matulich (2008) found that consumers with a more pro-active approach to environmental issues also tended to have a more positive attitude toward green advertisements, and implied that companies therefore should target those consumers who were already practicing a green lifestyle for best advertising effects.

The same inconclusiveness exists regarding more specific applications of green ads. For example, Goldstein et al. (2008) found evidence suggesting that the use of descriptive norms (i.e. indicating that a certain behavior is preferable since many others have done likewise) would be an effective way of fostering green behaviors. In contrast, Raska & Shaw (2015) found that the inclusion of descriptive norms in green advertisement can indicate a deceptive intent, which will trigger negative attitudes and less compliant green buying intentions among consumers. The conclusion of Raska & Shaw was rather that the success of such tactics is contextually based.

2.3 Theoretical framework part 1: Applying persuasion principles in e-commerce

The above presented theory has introduced a contextual background to the research subject. The following theory sections will form the study's theoretical framework and hypotheses. The theoretical framework and the hypotheses will be based on three principles of persuasion. These principles will be explained below, both in general, their use and the potential effect on purchase behavior in set context.

2.3.1 Persuasion theory: Cialdini's principles

Of all researchers in the field of persuasion and how to make people comply with one's goals, Cialdini is one of the most recognized. In his book *Influence: Science and Practice* Cialdini examined universal ways of how people get strategically influenced by compliance professionals. Cialdini uncovered six principles of influence, and the key premise of all the principles are that they produce an automatic, mindless compliance from people, utilizing people's automatic mode of behaving (Cialdini, 2009). Furthermore, the principles cover many of the most commonly used strategies regarding how to alter consumer behavior. For example, the initially mentioned card sent by Girard to his automobile customers can be derived from Cialdini's principle "liking", which states that people tend to conform to a higher degree to requests of people they like. In this study, three principles were chosen to be investigated; "Authority", "Commitment & Consistency", and "Social Proof".

2.3.2 Authority

Authoritarianism and authority as a strategy for persuasion are very different concepts. Authoritarianism is a hierarchical relationship where one group or person dominates and governs another (Hastings & Shaffer, 2008). Authoritarianism and theorization about how authorities shape social structures have been examined in multiple research fields. These discussions and theories are not of interest in this study. Instead the study's focus lays at the behavioral psychology perspective of authority and its ability to utilize people's automatic mode to reach compliance, which Cialdini (2009) labels as the authority principle of persuasion.

One of the more famous studies of the persuasive power of authorities is the Milgram experiment, where Stanley Milgram demonstrated a strong obedience to authority figures. In the study, experiment participants obedience stretched way beyond their own will, resulting in experiment participants obeying immoral orders (Milgram, 1963). Even if the Milgram experiment showed that the persuasive powers of authorities could be used destructively, Tversky & Kahneman (1974) argue that obeying authorities is a cognitive bias and a judgment heuristic that is highly economical and usually effective for decision making. People want to make good choices and the influence of an authority figure is often central, partly because they are perceived as experts in the field (Guadagno & Cialidini, 2009).

The judgement heuristic of obeying and complying with authorities can sometimes also trigger irrational behavior. In his review of previous research, Cialdini (2009) concludes that mere symbols of authorities, such as titles, are enough to trigger the persuasive power of authorities. For example, in a study by Hofling et al. (1966), nurses let go of their professional intelligence and did not comply with hospital policy when receiving a phone call from a doctor who gave them instructions.

People trust the expertise and truthfulness of authorities to take fast decisions instead of collecting information themselves. Compliance professionals such as advertisers can use authority heuristics to reach automatic mode compliance from people (Ramos, 2019; Tversky & Kahneman 1974). The authority principle is about a quality endorsement, which is commonly utilized in e-commerce settings. A real-world example would be when a site includes a "trust

badge” provided by a third party to prove a secure transaction. Other examples are Adidas communicating Leonel Messi’s endorsement of their football shoes, or when a website communicate an organic standard (e.g., the KRAV-label) (Forbes, 2019; Krav, 2018; Forbes 2014).

The research of the authority persuasion principle does not suggest an unequivocal recipe in terms of application. However, the mechanism of the principle, i.e. that people listen to and follow the recommendations of authorities since authorities are perceived as experts and endorsers of quality, has been proven to shape behavior in numerous online contexts. Based on this theoretical comprehension, the authority principle is hypothesized to influence the behavior of consumers in the context of the case company:

Hypothesis 1:

*Using an **Authority** persuasion strategy will have a positive effect on purchase conversion.*

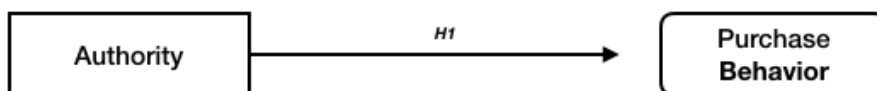


Figure 1: Hypothesis 1

2.3.3 Commitment & consistency

Once someone has taken a decision, placed a bet or taken a stand, that someone will encounter an interpersonal and personal pressure to act consistently with that commitment (Fazio et al., 1992). The pressure of being consistent steams from multiple underlying pressures and processes (Burger, 1999). Consistent behavior is correlated with physical and phycological well-being, seen as a desired personality trait by others and is highly valued in our culture (Sheldon et al., 1997; Allgeier et al., 1979). The most common process to explain how commitment & consistency strategies work is drawn from self-perception theory. According to self-perception theory people usually have quite ambiguous and weak attitudes, instead people use self-observation of their own behavior to infer their attitudes (Bem, 1972). By complying with an initial request or behave in a certain way, people infer that they must feel favorably about the cause from then on. Thus,

there is a very natural tendency to stubbornly act consistently with a stand when a stand is initially taken (Brownstein et al., 2004).

Moriarty (1975) showed that the act of commitment has a very powerful impact on consistency through a simple “beach study”. The researcher investigated if onlookers to a crime would intervene or not. In the study, an accomplice to the researcher left a blanket with a radio on it a few feet away from the experiment subject. Then the accomplice to the researcher went down to the beach to swim, soon thereafter a mock thief would grab the radio and try to run away with it. In 4 out of 20 times the onlooker intervened and tried to hinder the thief, but if the accomplice to the researcher before leaving the blanket asked if the onlooker could watch her things, 19 of 20 experiment subjects intervened the crime. In the case of the beach study, the researcher argues that the consistency effect is stronger as the commitment act is publicly displayed, a mechanism that researchers such as Vaidyanathan & Aggarwal (2005) also finds.

One version of the commitment & consistency principle frequently used by marketers and salesmen is the “foot-in-the-door”-technique. A company begins by asking for a minor commitment, such as signing a petition. Thereafter, the company builds on this commitment to gain compliance with a second commitment, such as paying a monthly fee for membership or a subscription. This second commitment was the end goal all along. Since the consumer strive for internal consistency, there is a higher chance that he or she will comply with the second commitment after having signed the petition, than if directly asked to pay for the membership (Guadagno & Cialdini, 2009).

Because it is usually in people’s best interest to be consistent, people fall into the heuristic of automatic mode consistency, even in situations when it is not the sensible way. Cialdini (2009) argue that it can be used by compliance professionals to influence behavior. The “foot-in-the-door”-technique, where an initial minor commitment request is followed by a larger one, has been seen to work just as well in online contexts as in other communication mediums, because it functions through people’s internal needs to be consistent rather than the prominence of the sender company (Eastwick & Gardner, 2009).

Furthermore, there is strong evidence that behavioral consistency after an initial commitment extends to purchase intentions in a marketing and communication context. An example of the commitment & consistency strategy used in an e-commerce context is Amazon who continuously informs customers about which products they have placed on their “wish list”. Because the customers “admitted” they want products on their wish list, they will be more likely to buy the items later on (Close & Kukar-Kinney, 2010). Given the proven applicability of the commitment & consistency principle in multiple contexts, both offline and online, the principle is hypothesized to influence the behavior of consumers also in the context of the case company:

Hypothesis 2:

*Using a **Commitment & Consistency** persuasion strategy will have a positive effect on purchase conversion.*

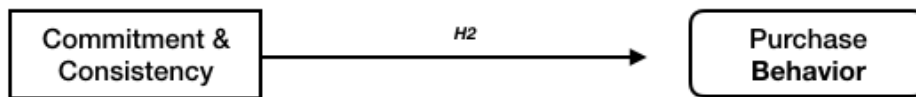


Figure 2: Hypothesis 2

2.3.4 Social proof

For a long time, psychologists have been aware of the tendency among people to look to the actions of others for guidance in their own conduct. Among early studies, one can mention Bandura & Menlove (1968) who found that fear of dogs among children could be mitigated if they watched films of other children playing with dogs. Another example of the potency of social proof is when a group of people are looking up towards the sky. With most certainty, other people will turn their head towards the very same point, even if there is nothing to be seen, as shown in a study by Milgram et al. (1969).

According to Cialdini (2009), people tend to follow the example of others since it usually indicates the correct conduct and the norm in a certain situation. If we do as other people do, we tend to make fewer mistakes. Consequently, one can persuade people to comply with a certain behavior by indicating that many others have complied, and it is the norm to do so.

Furthermore, the principle of social proof works best under certain conditions. One condition is the similarity between people. In the previously mentioned study of treating children's fear of dogs, it was essential that the films pictured other children playing with dogs, rather than adults. Another example of the similarity condition is when Aune & Basil (1994) showed how charitable workers received more donations on school campuses when stating that they were students themselves.

Akerlof (1978) argues in his article about information signaling that quality signaling is a solution for information asymmetry. Quality signaling can refer to the reputation of a product, brand or service. Information asymmetry is present in all market transactions, but particularly in transactions over the internet, as the buyer cannot physically evaluate the product (Mavlanova et al., 2012). Quality signaling is related to the social proof principle in the sense that a social proof from other people provides a quality signal for the product, something that online retailers have understood and adopted (Amblee & Bui 2011; Cheung et al., 2014). For example, Amblee & Bui (2011) found that in an e-commerce context, electronic word of mouth conveyed the reputation of the product, the brand and for complementary products, and thus became a significant driver for demand.

One e-commerce related example is again Amazon, which successfully utilizes the power of collaborate shared information to inspire sales, such as customer reviews, ratings and recommendations (Amblee & Bui, 2011). E-commerce giants' widespread display of customers' behavioral information indicates that the principle of social proof, i.e. that one can influence people's behavior by indicating that many other people have behaved in a certain way, also applies in an e-commerce setting. Given this reasoning, the principle of social proof is hypothesized to influence the behavior of consumers also in the context of the case company:

Hypothesis 3:

*Using a **Social Proof** persuasion strategy will have a positive effect on purchase conversion.*



Figure 3: Hypothesis 3

2.3.5 Persuasion principle comparison

No theory states that one specific persuasion principle is superior in an e-commerce context. However, it is of interest to both the study, the case company and other stakeholders to investigate if one of the chosen principles will affect the behavior of receivers to a greater or lesser extent in comparison with other investigated principles. With no theory or previous research to rely on, there will be no hypothesis about the result of such a comparison. Nonetheless, the comparison will be made, and the results will be presented and discussed together with other investigated hypotheses in the result and discussion sections.

2.3.6 Advertisement repetition and variation

In advertisement literature, there is a consensus that repeatedly displaying advertisement increases the effect of the advertised message. Schmidt & Eisend (2015) describes a U-shaped curve, where the effectiveness of an advertisement message will increase until a certain point. Thereafter, the effect of the message will decrease, as people tend to become tedious of the ad when exposed to the same message repeatedly.

Furthermore, Schumann & Clemons' (1988) review of literature within the research field shows that a variation in the content of repetitive messages can create a better liking towards the brand, which results in a steeper U-shaped curve in terms of brand attitude and recall. Additionally, Schumann et al. (1990) showed that both cosmetic and substantive variation of product advertisement created a higher degree of motivation of consumers to process the ads compared to a static ad repetition. Similar findings have been shown in an online context where subjects

judged video advertising on a streaming platform as more intrusive and irritating with static repetition compared to participants who were exposed to varied advertisements including the same message (Kim, 2018). As repetition has been proven to increase the effectiveness of advertisements, and even more so if the advertisement is varied in its content, it is hypothesized that the persuasion messages will be more effective if they are sent multiple times with variation, than if the exact same message is sent repetitive times.

Hypothesis 4:

Content variety of persuasive strategies will have a positive effect on purchase conversion.

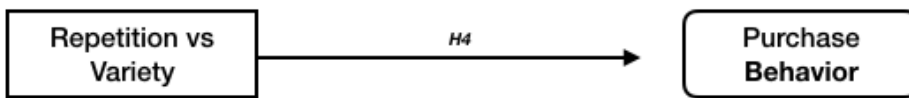


Figure 4: Hypothesis 4

The four above mentioned hypotheses lead to the construction of the first part of the thesis's theoretical framework.

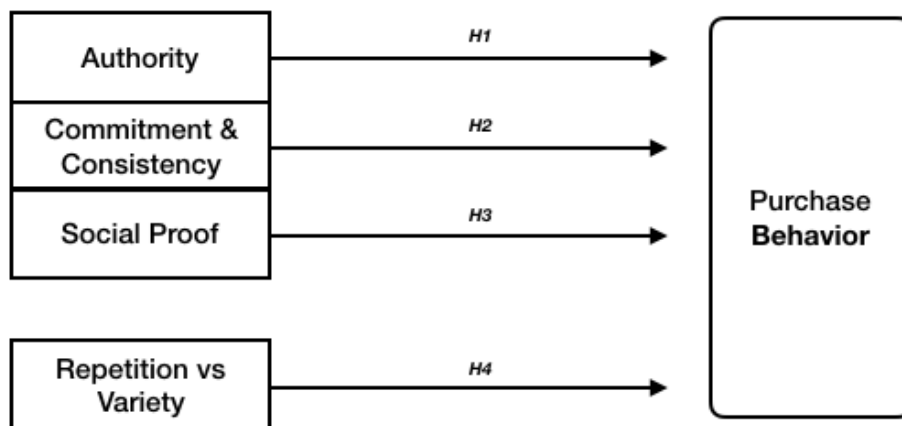


Figure 5: Theoretical Framework Part 1

2.4 Theoretical framework part 2: Attitudes and intentions

The second part of the theoretical framework presents the attitudes and intentions formed when being exposed to persuasion strategies. The purpose of the second part of the theoretical framework is to lay a theoretical foundation to assess whether the same attitudes and intentions emerges among consumers as if being exposed to advertisement, as well as outlining variables to asses any discrepancy between e-commerce consumers' intentional and behavioral response.

Application of the persuasion principles in the study (persuasive pop-up messages) fits in the scope of what is defined as an advertisement. Therefore, theories about the responses of advertisement exposure are used to build the second part of the theoretical framework.

The subject of how advertisements generate responses among consumers has been thoroughly investigated by multiple researchers (Najmi et al., 2012). Already in the 1930s, Nixon (1936) argued that logically, attitudes should play a role in whether a customer decides to buy or not to buy a product. His arguments were later backed by researchers such as Fishbein & Ajzen (1975). They stated that there must be a distinction between attitudes and intentions, and that beliefs about a product create attitudes, which in turn influence the intention to purchase that product. Furthermore, Mitchell & Olsson (1981) stated that attitudes are stable prepositions to behave, and therefore widely considered by marketers as one of the most essential predictors of consumer behavior towards a service or a product.

Studying the connection between attitudes and behavior saw a breakthrough in the 80s when pioneering studies such as Mitchell & Olson (1981) and Lutz et al. (1983) expanded the understanding of responses to advertisement by identifying and mapping decisive variables and their relationships. These studies concluded that exposure to an advertisement generates cognitions about the advertisement itself and about the brand, which leads to a formation of ad attitudes and brand attitudes. These attitudes will in turn affect the purchase intention, which affects the actual purchase behavior (Ajzen & Fishbein, 1980; Ajzen, 1985). Literature on these variables (ad attitudes, brand attitudes, and purchase intentions) and how they relate to each other, will be presented below.

2.4.1 “Advertisement – Ad attitude” relationship

The idea that advertisements can evoke feelings that will affect its effectiveness is not novel. Silk & Vavra (1974) summarized literature dating as far back as 1929, covering the subject. For example, the research highlighted the fact that advertisers often tested and rated the likeability of the advertisement before putting it to print.

According to Lutz et al. (1983), an ad will stimulate positive or negative cognitions, based on factors such as the mood of the recipient, attitude towards advertising in general, or perceived ad credibility. Ultimately, all these cognitions determine the ad attitude, defined as “the recipients' affective reactions (e.g., like or dislike) to the ad itself” (Lutz et al., 1983).

In this study, the persuasive messages will serve as the ads. Consistent with the above-mentioned theories, the ad (persuasive message) is expected to trigger an ad attitude.

2.4.2 “Ad attitude – Brand attitude” relationship

Similar to ad cognitions, Lutz et al. (1983) state that consumers have positive or negative cognitions about a brand. According to Shimp (1981) such cognitions can for example be based on a good matching between product attributes and consumer needs, which is why specific product benefits are often emphasized. Based on these cognitions about the brand, a brand attitude is formed, defined as “recipients' affective reactions toward the advertised brand” (Lutz et al., 1983).

In addition, brand attitudes can also be influenced directly by ad attitudes. This was stated by Lutz et al. (1983) and Mackenzie et al. (1986) who concluded that ad attitudes affect the brand attitude directly, as well as indirectly through brand cognitions.

With regard to the above-mentioned research, the attitude towards persuasive message (ad attitude) sent to Sellpy customers is expected to influence the attitude towards Sellpy's brand (brand attitude).

2.4.3 “Brand attitude – Purchase intention” relationship

According to Lutz et al. (1983), purchase intention can be defined as “recipients' assessments of the likelihood that they will purchase the brand in the future”. It has been shown in several studies that a customer’s readiness to buy a product is significantly impacted when the customer has a positive attitude for a brand (Keller & Lehman, 2006). In fact, Abzari et al. (2014) claims that brand attitude is the single most important determinant of purchase intention. Thus, there is strong support for the fact that customers’ brand attitude has a significant effect on purchase intention, and that the Sellpy customers’ attitude towards Sellpy’s brand will affect the purchase intention of these customers.

To conclude, an ad generates ad attitudes which will in turn affect the brand attitude. The brand attitude is a major determinant for the purchase intention. As such, brand attitude is expected to mediate the effect of ad attitudes on purchase intention, which is also the presumption hypothesis 5:

Hypothesis 5:

Brand attitude will mediate the effect of Ad attitude on Purchase intention:

- I) For an Authority persuasive strategy*
- II) For a Commitment & Consistency persuasive strategy*
- III) For a Social Proof persuasive strategy*

These hypotheses lead to the construction of the second part of the thesis’s theoretical framework.

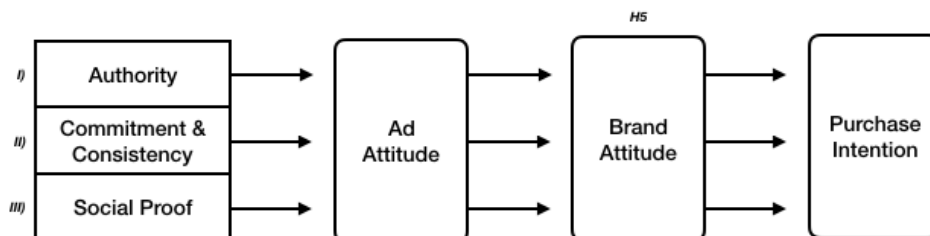


Figure 6: Theoretical Framework Part 2

One must bear in mind that the theoretical discussion leading up to hypothesis 5 is based on one doctrine within the field of advertisement research and relational connections made of the authors based on this doctrine. The studies conducted by Lutz et al. (1983), Mackenzie et al. (1986) & Mitchell & Olson (1981) has resulted in theoretical frameworks which proposes several potential variable relationships and mediating variables. These frameworks provide enough evidence to propose brand attitude as a mediator of ad attitude on purchase intention, which therefore will be basis for the generation of hypothesis 5. The investigation of other potential roles for brand attitude and other attitude- and intention variables, for example testing ad attitude as a mediator, or brand attitude as a moderator, would be interesting. However, it is not within scope of this thesis to investigate all potential relationships of the tested variables. Nonetheless, it must be clarified that such potential relationships cannot be ruled out as they are not tested in this study.

2.5 Summary hypotheses

H1: Using an Authority persuasion strategy will have a positive effect on purchase conversion.

H2: Using a Commitment & Consistency persuasion strategy will have a positive effect on purchase conversion.

H3: Using a Social Proof persuasion strategy will have a positive effect on purchase conversion.

H4: Content variety of persuasion strategies will have a positive effect on purchase conversion.

H5: Brand attitude will mediate the effect of Ad attitude on Purchase intention:

- I) For an Authority persuasion strategy
 - II) For a Commitment & Consistency persuasion strategy
 - III) For a Social Proof persuasion strategy
-

Table 1: Summary Hypotheses

3. Method

The method chapter outlines the researchers methodology used in order to answer the studies research questions. The chapter introduces the researchers scientific approach to the research design and delineates the research setting. Subsequently, the procedure and conclusions from the pre-study will be described. Next follows a description of the main study's methodology, which is divided into two studies, Study 1 and Study 2. Lastly the chapter elaborates on the quality of data based on reliability, validity and replicability.

3.1 Scientific research approach

Given that the study's purpose was to test what is theoretically known, applied in a new context, a deductive scientific approach was deemed as appropriate. Furthermore, the deductive approach was chosen since the study aimed to develop existing theory (Bryman & Bell, 2015). The theoretical framework and hypotheses were constructed by combining literature revolving consumer behavior and persuasion theory. The deductive process appears to be linear, but there are instances where this is not the case, for example the relevance of a set of data may be apparent first after the data has been collected (Bryman & Bell, 2015). Another risk of the deductive approach is that factors beyond the variables tested might influence the result. These risks have been taken into consideration when constructing the theoretical chapter and interpreting and discussing the results of the study.

The study was set in a field context and explored a bounded situation in the company Sellpy. The organization is an entity with a purpose and functioning parts which entails that the study has a case study design (Bryman & Bell, 2015). The aim of the study was to examine the causal consequence of applied persuasion strategies and potential behavioral reactions; in order to examine these casual consequences, experiments were conducted (Söderlund, 2010). The experimental design allows for deliberate manipulation of independent variables, with the intention to determine if the treatment has any effect on dependent variables and mediators (Bryman & Bell, 2015). The experimental design allowed the research to include relevant variables while excluding irrelevant factors.

3.2 Main study

In order to get qualitative data on both consumer behavior and consumer attitudes, two main studies were conducted. Study 1 constituted of visitors being exposed to stimuli in the form of persuasive messages and a consumer behavior analysis of the exposed visitors. The analysis was performed on data extracted from Sellpy's database. Study 2 investigated a mediator of the purchase behavior process, by analyzing attitudes and intentions. In addition, registration of attitudes and intentions were used to compare to behavior data from Study 1. Study 2 was conducted through an online self-reporting survey, including the same persuasive treatments that served as stimuli in Study 1. The two studies aimed to answer the research question by either confirming or rejecting the thesis hypotheses (Bryman & Bell, 2015).

The standard assumption in consumer research is that you can measure respondents' opinions, attitudes and behavior through surveys. However, research shows that the process of survey measurements can alter behaviors, attitudes and intentions. The mere act of asking questions about for example purchase intention creates a tendency for customers to buy more (Morwitz et al., 1993; Fitzsimons & Morwitz, 1996). In the thesis, the risk of affecting results by letting respondents answer questions has been avoided by the above-mentioned setup with two separate studies; one study measuring actual consumer behavior and one study measuring consumer attitudes and intentions. This allowed measuring behavior, attitudes and intention without leaving the risk of biased behavior data.

3.3 Application of stimuli: Text-based pop-up messages

The theoretical review of persuasion principles revealed that there are numerous practical applications of persuasive principles (e.g., through design, socially direct interventions and through text-based messages). Gerber & Green (2012) argue that stimuli through video, text or image allow the researcher to get a high level of control over the stimuli. In this study, text-based pop-up messages were chosen as application method of the persuasion principles, because of several reasons described below.

Firstly, research suggests that written messages are more persuasive in computer-mediated communication. The reason for this is that people online cannot put the same focus on cues that otherwise have a great impact, such as personal cues of the communicator. Thus, a text-based message allows the target to be more focused on the message content than the source (Guadagno & Cialdini, 2009). Furthermore, studies suggest that banner ads and pop-ups tend to be centrally processed rather than peripherally, similar to the processing of online information in general, which also allows the target to be more focused on the content of the persuasive message. Pop-up messages can be categorized as intrusive, nevertheless intrusive online ads were found to have persuasive effects even when people did not actively attend to them (Guadagno & Cialdini, 2009). Therefore, text-based pop-up messages seemed like a suitable method of application.

Secondly, and perhaps primarily, the choices of application were limited. Sellpy is a growing company with several major investors pushing for its financial success. Disrupting applications of persuasion that could have led to a loss of customers if unsuccessful was not an option, such as major changes in interface or in Sellpy's general communication and tonality. Rather, the application had to be a relatively safe choice with a limited impact on customers perception of Sellpy as a company and service. Consequently, the messages had to be adapted to the tonality of Sellpy and the persuasion formulations were toned down to mitigate the risk of intimidating customers.

3.4 Preparatory work for the main study

A pre-study in the form of a manipulation check was conducted in order to develop texts that would communicate the persuasion principles used in both Study 1 and Study 2. The manipulation check purpose was to confirm that the intervention of the stimulus made participants perceive, comprehend and react as expected to the manipulation of interest (Gerber & Green, 2012; Bryman & Bell, 2015).

3.4.1 Manipulation check procedure

Firstly, three stimuli were developed in the form of text-based advertisement messages, clearly conveying the central essence and the underlying mechanisms of each persuasion principle. The messages were developed based on the three persuasion principles; commitment & consistency, social proof and authority. The content of the messages was conveying the sustainable advantages of purchasing second-hand goods. The choice of communicating sustainable benefits led to a delimitation in terms of message content. Sustainability is a versatile concept and to match the actual advantages of purchasing goods from the case company, only environmental aspects of sustainability were included in the messages. It was also considered appropriate that the text of the messages would be held short, not longer than three sentences. This was decided due to technical limitations of Sellpy's message platform which would be used to distribute the messages and in order to minimize the risk that lengthy messages would not be read.

In order to test the stimuli, a physical survey was distributed to 30 respondents. 10 respondents per persuasion message. In the first part of the survey, respondents got introduced to an e-commerce context and it was explained that they would receive a message while browsing an imaginary second-hand online marketplace. In the survey, the respondents got exposed to a stimulus message formulated based on one persuasion principle and had to rank on a bipolar ten-point Likert scale (1 = do not agree/10 = agree completely), how they perceived the message (Albaum, 1997). The manipulation check included three questions; the first question measured the general attitude towards the message (ad attitude), the second question measured the respondent's perception of the persuasion principle incorporated in the message and the third question measured the underlying mechanism of the persuasion principle included in the message. See appendix 1 for the manipulation check design.

3.4.3 Result manipulation check

To ensure that the results from the manipulation check were interpreted correctly, a dialogue took place with the thesis supervisor, Professor Magnus Söderlund. Based on these discussions, a conclusion was reached that the most important result from the manipulation check was the results measuring the respondent's perception of the persuasion principle incorporated in the

message. These results ensured that the respondents perceived the persuasion message as intended i.e. the stimulus was perceived and comprehended as expected. Even though the small sample meant that the result was non-significant a mean higher than 5.5 in the variable referring to respondent's perception of the persuasion principle incorporated in the message proved that the result from the manipulation check was satisfactory.

All three messages passed the determined criteria for the manipulation check and were used in the main study ($M_{\text{Commitment \& Consistency}} = 7.2$, $M_{\text{Authority}} = 7.1$ and $M_{\text{Social Proof}} = 6.7$).

3.5 Study 1

The aim of Study 1 was to explore if advertisement messages imbued by persuasive principles sent to the case companies' site visitors would have any direct effect on behavior, in the form of purchases. The variables investigated were purchase (conversion) or no-purchase after exposure to stimuli and total sum spent.

3.5.1 Procedure

Study 1 was initiated through Sellpy's customer interaction tool, Intercom, which is directly linked to Sellpy's site. Intercom is usually used by Sellpy as a customer service tool in the form of a chat where site visitors can ask Sellpy's employees questions. Based on the results from the manipulation check (see 3.4.3), persuasive messages were designed, see Appendix 2 for persuasive message design. While the text of the messages was the same as in the manipulation check the design (e.g., font and color) were customized to match Sellpy's graphic profile. The persuasive messages appeared as full-screen pop-ups when site visitors entered Sellpy's site. After receiving the messages visitors could simply close the pop-up or click on a button that redirected them to the landing page of Sellpy's marketplace. In order to ensure that site visitors only received the stimulus messages and no additional information, visitors ability to respond to the message, i.e. start to chat with a Sellpy employee, was restricted.

The experiment of the study had a 1x6 factorial design, with the recipients of the messages being randomly assigned to six different sample groups. Three groups received text messages based on one of three respective persuasion principles tested; social proof, authority and commitment & consistency. These three groups received the persuasion message once. To investigate hypothesis 4 of the study and compare the effectiveness of repeated messages with the effectiveness of multiple messages with content variation, one group received the social proof message three times as a static repetition stimuli and one group received one of each persuasion principle message as a varied stimuli. The sixth group did not receive any message. This group served as a control group to ensure that the experiment's effect indeed depended on the treatment and minimized group dependent effects (Shadish, Cook et al. 2002). See table 2 for message-group allocation.

	Message 1	Message 2	Message 3
Social Proof	X		
Commitment & Consistency	X		
Authority	X		
Social proof x3	X	X	X
Social Proof - Commitment & Consistency - Authority	X	X	X
Control Group			

Table 2: Message-sample-group allocation

The experiment of Study 1 was performed between 28 Feb 2020 – 23 Mar 2020; the time span was chosen to match the purchase cycle of Sellpy's customers.

3.5.2 Sample

In order to ensure that as many site visitors as possible got exposed to the persuasive message, a sample of active Sellpy site visitors were chosen. In a discussion with a data scientist at Sellpy, active visitors were defined as consumers who had been active on the marketplace at any time in the month leading up to the experiment, 1 Jan 2020 – 31 Jan 2020. Further definition of active

visitors was consumers that had placed at least one order and had at least one other interaction with the marketplace, for example placed a product in the virtual shopping cart. A total n of = 6000 potential recipients were included in the experiment, with a n of 1000 recipients in each sample group, all of these 6000 potentials recipients were active site visitors.

The condition for recipients to receive their stimulus was that they had to log in to the marketplace within the time span the experiment was ongoing. This meant that not all site visitors in the sample groups received their intended stimulus i.e. the persuasion message. The number of site visitors that received their persuasion messages in the respective sample groups are listed in table 3. The control group did not receive a persuasion message. In order for the control group to be comparable with the treatment groups, the same condition as for the treatment groups was used for the control group i.e. site visitors in the control group had to log in to the marketplace in the time span of the experiment to be categorized as recipients. In the analysis the control group was only compared to the groups receiving the persuasive message once, and the groups receiving messages three times were compared with each other.

	n potential recipients	n recipients
Social Poof	1000	794
Commitment & Consistency	1000	781
Authority	1000	784
Social Proof x3	1000	523
Social Proof - Commitment & Consistency - Authority	1000	511
Control	1000	844

Table 3: n message recipients Study 1

3.5.3 Variables

In the study the researchers had access to the case company's database and two types of data to investigate customer purchases; total sum spent, and number of products purchased. This data

was extracted for the time of measurement, i.e. 28 Feb 2020 – 23 Mar 2020, and specified for each individual customer in the database. The total sum spent data was taken as it was. In order to measure the conversion rate, the data for the number of items purchased was converted to binary values; customers who had made a purchase and customers who had not made a purchase, hereinafter referred to as “Binary Purchase variable”.

3.5.4 Data analysis

The data points extracted for Study 1 were transformed into variables in SPSS and two statistical methods were used for hypothesis testing. The first test used was a non-parametric Cross-tabulation with Chi-Square comparison. This non-parametric test assumes two assumptions;

Chi-Square assumptions

Assumption #1: The variables measured must be with categorical data.

Assumption #2: The variables should consist of two or more independent groups.

(Greenwood & Nikulin, 1996)

In the Chi-Square test the “Binary Purchase variable” was used in order to test; The respective treatment groups compared to the control group and the in-between treatment group difference i.e. hypotheses 1-3. The Chi-Square test and “Binary Purchase variable” were also used for the comparison between the group who received the same static treatment multiple times and the group who received multiple treatments with content variety, i.e. hypothesis 4. As the “Binary Purchase variable” was binary coded, the assumptions for the Chi-Square were met. The Chi-Square test was chosen as it would measure the conversion of site visitors to buyers, a metric used by both the case company and across the e-commerce industry.

A one-way analysis of variance (ANOVA) was also used for the analysis of Study 1. This parametric test assumes six assumptions;

One-way ANOVA assumptions

Assumption #1: The dependent variable must be measured at an interval or ratio level.

Assumption #2: The independent variable should consist of two or more categorical, independent groups.

Assumption #3: There should be an independence of observations i.e. no relationship between the observations in each group or between the groups themselves.

Assumption #4: There should be no significant outliers.

Assumption #5: The dependent variable should be normally distributed for each category of the independent variable.

Assumption #6: There needs to be homogeneity of variances i.e. the variances in the sample groups can be considered equal.

(Malhotra, 2019)

In the one-way ANOVA analysis, the “Sum Spent” variable was used in order to test if the treatment effect differed between the sample groups which were treated once. Initially, the data was positively skewed and did not meet the required normality assumption. To solve this issue two measures were taken. Firstly, all site visitors who had not made a purchase during the time of the experiment were removed, since these people made up a large proportion of the data and therefore caused a considerable part of the data skewedness. Secondly, the data was transformed using a logarithm i.e. all data points in the variable were returned to the base-10 logarithm, as suggested by Tabachnick & Fidell (2007). With this data transformation, the variable “Sum Spent” became normally distributed (see variable distribution before and after transformation in appendix 3).

In order to further examine if the variable meet the ANOVA assumptions a Levene’s test was performed on the logarithmic “Sum Spent” variable to investigate the sample homogeneity of variances (homoscedasticity). The result was statistically non-significant, see table 4, and the null hypothesis of equal variances could not be rejected, i.e. the requirement of homoscedasticity could be considered fulfilled. After the variable transformation and the Levene’s test, the researchers concluded that all the assumptions for the one-way ANOVA were met.

	Levene Statistics	Sig.
Based on Mean	1.493	0.225
Based on Median	1.447	0.236

Table 4: Levene test of log transformed "Sum Spent" variable

As a consequence of the above-mentioned data manipulation, the ANOVA investigates the difference in money spent between people who have made at least one purchase during the time of the experiment. This considered a relevant measure of comparison in the effectiveness of different persuasion messages, since how much the buyers are spending is of great importance to e-commerce businesses.

3.5 Study 2

Study 2 further investigated the purchase process by asking Sellpy's site visitors about their attitude towards the persuasive message (ad attitude), attitude towards Sellpy as brand (brand attitude) and their future purchase intention on Sellpy's marketplace after being exposed to the persuasive message. The aim of Study 2 was to compare if persuasion messages would trigger the same attitudes and intentions as seen in other studies. In addition, the aim of Study 2 was to compare if attitudes and intentions matched the results from Study 1 of actual consumer behavior. The study design for Study 2 was scenario-based with a following self-reporting survey. The design made it possible to make the environment identical (Söderlund, 2010).

3.5.1 Procedure

Study 2 was initiated through Sellpy's customer interaction tool, Intercom. Sellpy site visitors got a pop-up message welcoming them to take part in a survey in order to give feedback on the case company's communication. To give site visitors an incentive to take the survey, a spot in a raffle for a Sellpy marketplace gift card worth 1000 SEK was offered. See appendix 4 for the pop-up

message inviting site visitors to take the survey. Site visitors that took the survey were redirected to an external survey-site. The survey was set up in the survey tool Google Forms.

The survey started with participants being exposed to one of three persuasive messages. Thereafter followed questions concerning attitudes, behavior intention and a control question, in that order. The flow of questions was chosen in order to limit the risk for earlier questions to influence the answers of later questions (Bradburn et al., 2004). The control question ensured that respondents paid sufficient attention to the stimulus so that the difference between groups would not be assumed accidental (Söderlund, 2010). The respondents were asked to identify what the persuasion message concerned, which was, sustainable consumption. All respondents who failed to answer this question correctly, which was the control question, were excluded from the following analysis and hypothesis testing. To ensure that the questionnaire and scales were comprehensible and interpreted in the correct way, the survey was sent to six selected persons that provided feedback before the survey was distributed (Saunders et al., 2012).

Every question in the survey had forced answer, meaning that the respondents had to answer all the questions in order to complete the survey. The questions were measured on 10-point bipolar Likert scales; this choice was guided by best practice procedure from previous research for the variables that the survey intended to measure (further discussed in section 3.5.3) (Maio et al., 2012; Morwitz, 2014).

The survey was sent out and completed between the 23 Mar 2020 – 27 Mar 2020. See appendix 5 for survey design.

3.5.2 Sample

The respondents that were welcomed to take part in the survey was based on a similar sample of active visitors that were used in Study 1, i.e. visitors who had been active on the marketplace at any time in the month leading up to the experiment, 1 Jan 2020 – 31 Jan 2020. With the further definition of active visitors as; visitors that had placed at least one order and had at least one other interaction with the marketplace, for example placed a product in the virtual shopping cart. A total n of = 3000 potential recipients were included in the experiment, with a number of 1000

recipients in each sample group receiving the respective persuasion message. All of these 3000 potentials recipients were active site visitors.

Only potential recipients that had been exposed to the respective persuasive message in Study 1 were chosen to answer the survey about the same persuasive message in Study 2. This choice was made as these site visitors had a stronger familiarity with the message and had experienced it in its true environment and application (pop-up message) before, and therefore could answer the survey questions more accurately.

In Study 2, 790 surveys were filled out, the number of survey respondents for each persuasive message are stated bellow.

	n potential respondents	n respondents
Social Poof	1000	267
Commitment & Consistency	1000	240
Authority	1000	283

Table 5: n survey respondents Study 2

3.5.3 Variables

3.5.3.1 Measuring ad attitude and brand attitude

According to Maio et al. (2012) the most common way to capture attitudes is by self-reports. In these reports, participants are asked to rate their attitude on bipolar evaluation dimensions, such as negative/positive, bad/good, and favorable/unfavorable. A limitation of self-reports is that people tend to respond in a socially desirable manner. Despite this limitation, alternative methods of capturing attitudes, such as psychophysiological techniques or implicit measures were not viable methods in this study. For example, it would require a higher level of access to customers, such as face-to-face customer contact, to apply psychophysiological techniques, or time restrictions to apply implicit measures (Maio et al., 2012). Consequently, self-reporting was chosen as a method for capturing attitudes towards the ad and the brand. Above-mentioned

bipolar multi-item evaluation dimensions were used with literature suggesting response alternatives of (1=negative/10=positive), (1=bad/10=good), and (1=favorable/10=unfavorable) (MacKenzie et al., 1986).

3.5.3.2 Measuring purchase intention

The measuring of the purchase intent variable was guided by Morwitz (2014) and Morwitz et al. (2007) who have summarized 60 years of research on the topic. The studies' purchase intent measurement and scaling method are based on their conclusions. Intent questions yield more reliable information if questions are formulated based on scale probabilities rather than binary yes/no answers. There is no clear-cut answer for the optimal number of scale points of the items, with the reliability of intention scales increases with the number of scale points, but in the same presence, response style biases increase with the number of scale points.

Intention questions should include a time horizon and be based on a short rather than long horizon. Respondents should also be asked to provide intentions to buy specific brands or models rather than asked to provide intentions to buy a product at a category level. Morwitz (2014) also means that the purchase intention question that most accurately predicts subsequent purchase includes asking respondents their probability of future purchase with a one-item question.

3.5.4 Data analysis

For Study 2 three variables were investigated; "Ad Attitude", "Brand Attitude" and "Purchase Intention". Regarding "Ad Attitude" and "Brand Attitude", data was collected with question batteries containing multiple questions. These batteries were combined into indexes, in these indexes internal consistency was controlled for using Cronbach's alpha, with an accepted level of Cronbach's alpha at > 0.8 (Bryman & Bell, 2015). See appendix 6 for the indexed variables Cronbach's alpha. Variables were transformed into SPSS and one statistical method was used for hypothesis testing; Hayes mediation PROCESS tool with bootstrapping analysis including 5000 samples. The process tool was used to control "Brand Attitude" indirect mediating effect of "Ad Attitude" on "Purchase Intention".

Regarding mediation analysis, one should also mention the criticism that has been raised against it. Although widely used, researcher such as Fieldler et al. (2011) claims that a significant mediation analysis result does not prove the tested variable as an actual mediator, which leads to common misunderstandings in the interpretation of statistical mediation analyses. In this thesis, significant mediation analysis will still be used as it has been used in other research and studies. However, one should have in mind the above-mentioned potential flaws in its interpretation.

3.6 Statistical method

IBM SPSS v.25 was used in order to analyze collected data. Three statistical tests were used; Cross-tabulation with Chi-Square comparison, one-way ANOVA and Hayes mediation PROCESS tool (Hayes, 2017). Hypotheses were accepted at 95% significance (Fisher, 1992).

3.7 Data quality

The most important dimensions in order to evaluate the data quality of quantitative experimental studies are reliability, validity and replicability. These dimensions concern quality for the design of the study, conclusions drawn, and measures used (Bryman & Bell, 2015). These three dimensions are addressed bellow.

3.7.1 Reliability

Reliability refers to the overall consistency of a measure. The study is deemed to be reliable if it produces similar results under consistent conditions. Even though reliability is a particular issue for quantitative research, this study fulfills conditions that strengthen the studies reliability. To increase internal consistency reliability, multi-item scales were used when deemed theoretically appropriate, containing similar expressions for variables intended to be measured. Measured variables were also accepted with Cronbach's $\alpha > 0.8$ to ensure internal consistency reliability (Söderlund, 2010; Bryman & Bell, 2015). See appendix 6 for used question batteries and their

respective indexed Cronbach's alpha. Based on these conditions, the reliability of this study is considered satisfactory.

3.7.2 Validity

Validity refers to whether the results from a study are measuring the correct constructs, i.e. whether the constructs intended to be measured are the ones actually measured in the study (Bryman & Bell, 2015). There are two dimensions of validity in the experimental research design, external and internal validity.

Internal validity is the concern whether it is sound to state a causal relationship between two or more variables, i.e. how sure one can be that x causes the variation in y and that it is not something else that produces an apparent causal relationship (Bryman & Bell, 2015). The experimental design of Study 1 eliminates rival explanations of casual findings, as the control group is a benchmark to the groups that received stimulus. Furthermore, the studies used random selection for the different groups which ensured that there were no subjective measurements in the studies (Shadish et al., 2002).

External validity refers to the degree that findings can be generalized across settings. Our study is an experimental case study with a specific case company which affects the study design. For example, the stimuli was delivered to the site visitors through the case companies internal customer service tool which decreases the direct transferability and external validity (Bryman & Bell, 2015; Jacobsen & Sandin 2002).

3.7.3 Replicability

Replicability concerns the capability and process of the study to be replicated in order to support or disprove findings from the original study. The ability for perfect replication in business research is quite uncommon because of the popularity of case studies, a form of research where ecological factors are constantly changing. As the study was conducted through a case study design, there are replication limitations to this study (Bryman & Bell, 2015).

In order to enhance the possibility to replicate the study, procedures for the design of the studies, development of stimuli, methods for sampling, collection of data and methods of analysis were carefully documented in the method section. Measures and scales used in the study were also chosen based on best practice in prior research, research that has already been testing scales and measurements for replicability which further enhances the studies replicability.

4 Result and analysis

The result chapter presents the results from Study 1 and Study 2. Results and analysis for each hypothesis are presented. The chapter ends with the findings from the two studies in a list of the hypotheses.

4.1 Study 1

Study 1 aimed to examine the effects of online persuasion messages on purchase behavior. The study data were not normally distributed; therefore, hypotheses 1-4 were tested with a non-parametric statistical test, a Chi-Square test. In addition, a one-way ANOVA was used to further test hypothesis 4 after one of the dependent variables used in this hypothesis testing had been transformed to meet normality (see section 3.5.4 for further test argumentation).

The Chi-Square was conducted through an SPSS cross-tabulation with Chi-Square comparison. In order to identify differences in purchase behavior, the sample groups of each stimulus were compared with the control group, testing whether the visitor make a purchase or did not make a purchase after exposure to the stimulus. The results and hypothesis testing for hypotheses 1-4 are presented below.

Hypothesis 1

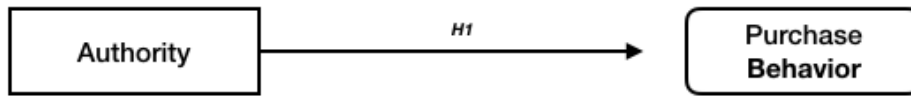


Figure 7: Hypothesis 1

According to the first hypothesis, visitors who received an authority persuasive message, would be more inclined to convert and make a purchase than visitors who did not receive an authority persuasive message.

	No orders	1 ≤ orders	Total n
Authority	369 (47%)	415 (53%)	784 (100%)
Control	427 (50,6%)	417 (49,4%)	844 (100%)

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	2.022	1	0.155

Table 5: Descriptive and Chi-Square test; After exposure to an authority persuasive message

The result shows that the percentage of visitors who conducted a purchase after being exposed to the stimulus was higher for receivers of a persuasive message based on the authority principle (53%), compared to non-receivers (49.4%). However, the results were statistically non-significant (Pearson Chi-Square = 2.022; df = 1; p = 0.155 > 0,05). As the p-value is greater than the chosen significance level ($\alpha = 0.05$), the null hypothesis cannot be rejected. Rather, the results show that there is not enough evidence to suggest an association between an authority persuasion message and increased purchase behavior.

Hypothesis 2

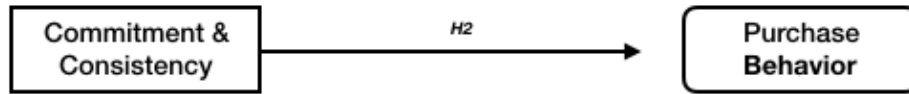


Figure 8: Hypothesis 2

The second hypothesis predicts that visitors who received a commitment & consistency persuasive message would be more inclined to convert and make a purchase in comparison to visitors who did not receive a commitment & consistency persuasive message.

	No orders	1 ≤ orders	Total n
Commitment & Consistency	374 (47,9%)	407 (52,1%)	781 (100%)
Control	427 (50,6%)	417 (49,4%)	844 (100%)

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.188	1	0.276

Table 6: Descriptive and Chi-Square test result; After exposure to a commitment & consistency persuasive message

The result shows that the percentage of visitors who conducted a purchase after being exposed to the stimulus was higher for receivers of a persuasive message based on the commitment & constancy principle (52.1%), compared to non-receivers (49.5%). However, the results were statistically non-significant (Pearson Chi-Square = 1.188; df = 1; p = 0.276 > 0.05). As the p-value is greater than the chosen significance level ($\alpha = 0.05$), the null hypothesis cannot be rejected. Rather, the results show that there is not enough evidence to suggest an association between a commitment & constancy persuasion message and increased purchase behavior.

Hypothesis 3

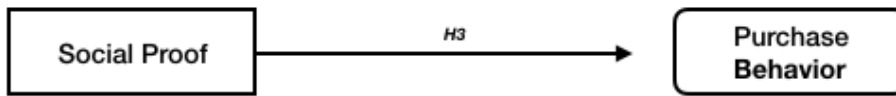


Figure 9: Hypothesis 3

The third hypothesis suggests that visitors who received a social proof persuasive message would be more inclined to convert and make a purchase in comparison to visitors who did not receive such a message.

	No orders	1 ≤ orders	Total n
Social Proof	399 (50,3%)	395 (49,7%)	794 (100%)
Control	427 (50,6%)	417 (49,4%)	844 (100%)

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	0.019	1	0.890

Table 7: Descriptive and Chi-Square test result; After exposure to a social proof persuasive message

The result shows that the percentage of site visitors who conducted a purchase after being exposed to the stimulus of a persuasive message based on the social proof principle (49,7%), compared to non-receivers (49,5%) was very similar. The results were statistically non-significant (Pearson Chi-Square = 0.019; df = 1; p = 0.89 > 0.05). As the p-value is greater than the chosen significance level ($\alpha = 0.05$), the null hypothesis cannot be rejected. Rather, the result shows that there is not enough evidence to suggest an association between a social proof persuasion message and increased purchase behavior.

Persuasive principle comparison

This analysis was set out to investigate whether purchase conversion and total sum spent on the case company's marketplace would differ between different persuasive messages, i.e. between

the three persuasive treatments. To test this, two statistical tests were conducted; a cross-tabulation with Chi-Square comparison on the “Binary Purchase variable” after exposure to the stimulus and a one-Way ANOVA comparison on the variable “Sum Spent”.

	No orders	1 ≤ orders	Total n
Social Proof	399 (50,3%)	395 (49,7%)	794 (100%)
Commitment & Consistency	374 (47,9%)	407 (53,1%)	781 (100%)
Authority	369 (47%)	415 (53%)	784 (100%)

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1.731	2	0.421

Table 8: Descriptive and Chi-Square test result; Treatment comparison

The results from the Chi-Square test shows that the result is statistically non-significant as the p-value is greater than the chosen significance level ($\alpha = 0.05$) with the corresponding results (Pearson Chi-Square = 1.731; df = 2; p = 0.421). Thus, no association of difference was found between the respective persuasion message and conversion.

To further analyze the difference in effect between the respective persuasive messages a one-way ANOVA was performed on the variable “Sum Spent”. To meet the assumptions for an ANOVA, the underlying data for the variable “Sum Spent” was cleansed from outliers and transformed using a logarithm. For further description of variable transformation see section 3.5.4.

Group	Comp. Group	Mean-Difference	Std. Error	Sig.
Authority	Commitment & Consistency	0.0100	0.0267	0.709
	Social Proof	0.0084	0.0268	0.755
Commitment & Consistency	Authority	-0.0100	0.0267	0.709
	Social Proof	-0.0016	0.0271	0.953
Social Proof	Authority	0.0084	0.0268	0.755
	Commitment & Consistency	0.0016	0.0271	0.953

Table 9: Between groups Fishers LSD ANOVA post hoc test

As shown in the post hoc table 9, there was no significant difference in the variances between the specific receiver groups, and the in between-group ANOVA analysis shows a $p = 0.922$. The p-value in the post hoc is greater for all significance measures than the chosen significance level ($\alpha = 0.05$). Thus, the results show that there is not enough evidence to suggest that one of the persuasion messages have a greater impact than the others regarding how much customers spend after being exposed to a persuasive message.

Hypothesis 4

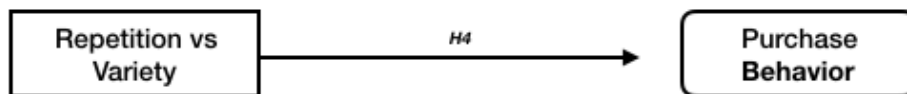


Figure 10: Hypothesis 4

The fourth hypothesis stated that variety in the content of persuasive messages would have a positive effect on purchase conversion, in comparison to receiving the same message repetitive times. This hypothesis got tested through a comparison between two groups; A sample group

that received identical persuasion message multiple times and a sample group which received multiple persuasion messages with content variety. The test was conducted to identify differences in purchase behavior. The dependent variable “Binary Purchase variable” was tested through a Cross-tabulation with Chi-Square comparison.

	No orders	1 ≤ orders	Total
Social Proof, Authority and Commitment & Consistency	188 (36,8%)	323 (61,2%)	511 (100%)
Social Proof x3	164 (31,4%)	359 (68,6%)	523 (100%)

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.398	1	0.065

Table 10: Descriptive and Chi-Square test result; After exposure to repeated treatment with content variety

The results show that the conversion rate of site visitors was lower after being exposed to persuasive messages with content variety (61.2%), compared to receivers of identical persuasive messages (68.6%). However, the results were statistically non-significant (Pearson Chi-Square = 1.188; df = 1; p = 0.276 > 0.05). As, the p-value is greater than the chosen significance level ($\alpha = 0.05$), the null hypothesis cannot be rejected. The results show that there is not enough evidence to suggest an association between a content variety of persuasion messages and increased purchase behavior. Nonetheless, the result does in fact indicate the opposite relationship, i.e. a stronger effect for repetition of messages, even though the result is non-significant.

4.2 Study 2

Study 2 aimed to examine the attitudes and intentions of visitors after receiving an online persuasion message. The data is based on an online self-reporting survey, and the study has used the same persuasive treatments that served as stimuli in Study 1.

Hypothesis 5

This hypothesis states that the brand attitude will mediate the effect of ad attitude on purchase intention. In order to assess hypothesis 5, mediation analyses were conducted for the mediating variable brand attitude, using Hayes PROCESS tool in SPSS (Hayes, 2017). Bootstrapping analysis included 5000 samples at $\alpha = 0.05$ significance level. The analysis was conducted for each respective persuasive strategy (message):

(I) For an Authority persuasion strategy

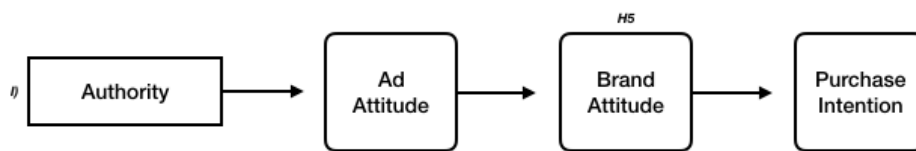


Figure 11: Hypothesis 5 (I)

Path	β	p	95% Conf. Interval	
BrAtt			LLCI	ULCI
A	0.41	0.00	0.32	0.50
B	0.44	0.00	0.30	0.57
C (Direct Effect)	-0.05	0.44	0.16	0.70
AxB (Indirect effect)	0.18		0.01	0.28

Independent Variable = AdAtt.

Dependent variable = Purchase Intention

n = 278

Table 11: Mediation analysis result, Authority persuasion strategy

The mediation analysis is examining whether there is an indirect effect of ad attitude on purchase intention through brand attitude. Result reveals that there is an indirect effect of 0.18. The confidence interval of the analysis is 95% excluding zero (0.01 to 0.28). The direct effect is -0.05 which is non-significant $p=0.44$, and the total effect is 0.13. The results show that for an **authority**

persuasion message, the brand attitude positively mediates the relationship between ad attitude and purchase intention. Hypothesis 5 (I) is thus confirmed.

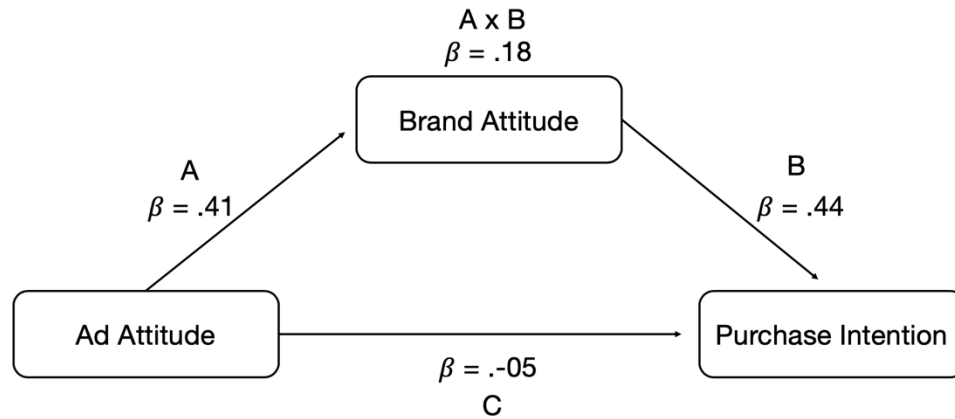


Figure 12: Mediation analysis result, Authority persuasion strategy

(II) For a Commitment & Consistency persuasion strategy

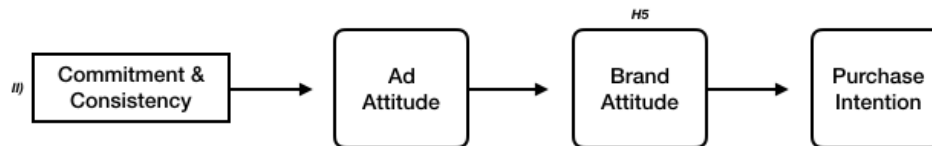


Figure 13: Hypothesis 5 (II)

Path	β	p	95% Conf. Interval	
BrAtt			LLCI	ULCI
A	0.61	0.00	0.50	0.72
B	0.59	0.00	0.45	0.73
C (Direct Effect)	-0.10	0.16	-0.25	0.04
AxB (Indirect effect)	0.36		0.19	0.56

Independent Variable = AdAtt.

Dependent variable = Purchase Intention

n = 238

Table 12: Mediation analysis result, Commitment & Consistency persuasion strategy

The mediation analysis is evaluating whether there is an indirect effect of ad attitude on purchase intention through brand attitude. The result reveals that there is an indirect effect of 0.36. The confidence interval of the analysis is 95% excluding zero (0.19 to 0.56). The direct effect is -0.10 which is non-significant $p=0.16$, and the total effect is 0.26. The results show that for a **commitment & consistency** persuasion message, the brand attitude positively mediates the relationship between ad attitude and purchase intention. Hypothesis 5 (II) is therefore confirmed.

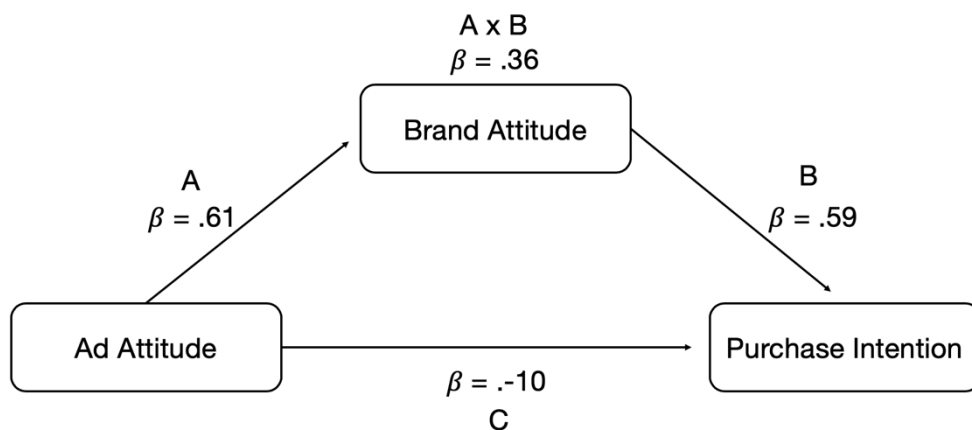


Figure 14: Mediation analysis result, Commitment & Consistency persuasion strategy

(III) For a Social Proof persuasion strategy

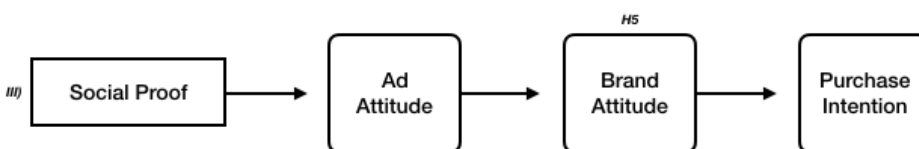


Figure 15: Hypothesis 5 (III)

Path	β	p	95% Conf. Interval	
BrAtt			LLCI	ULCI
A	0.67	0.00	0.57	0.77
B	0.54	0.00	0.39	0.69
C (Direct Effect)	0.10	0.21	-0.06	0.27
AxB (Indirect effect)	0.36		0.22	0.51

Independent Variable = AdAtt.

Dependent variable = Purchase Intention

n = 265

Table 12: Mediation analysis result, Social Proof persuasion strategy

The mediation analysis is analyzing if there is an indirect effect of ad attitude on purchase intention through brand attitude. The result reveals that there is an indirect effect of 0.36. The confidence interval of the analysis is 95% excluding zero (0.22 to 0.51). The direct effect is 0.10 which is non-significant $p=0.21$, and the total effect is 0.46. The results show that for a **social proof** persuasion message, the brand attitude positively mediates the relationship between ad attitude and purchase intention. Hypothesis 5 (III) is confirmed.

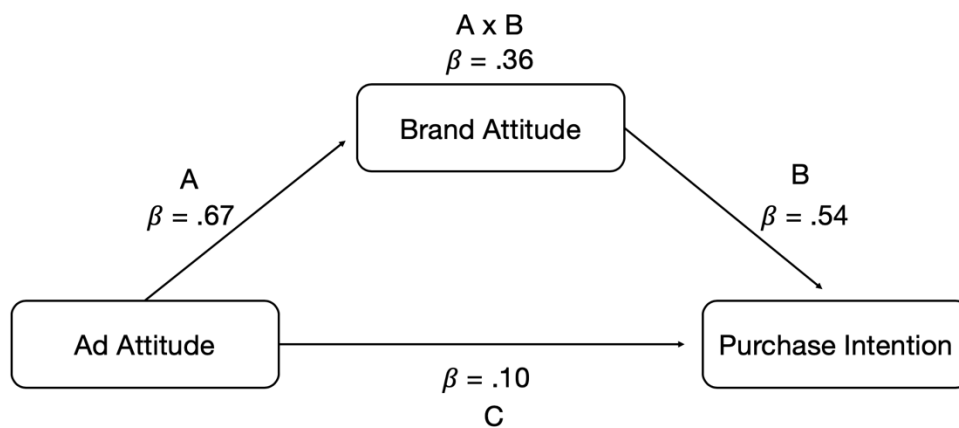


Figure 16: Mediation analysis result, Social Proof persuasion strategy

In addition to the mediation analysis, a one-way ANOVA was conducted to investigate whether the three messages were perceived differently by the survey respondents. The results shows that

there is a significant difference between the respondents regarding the ad attitude ($p = 0.022 < 0.05$), i.e. the receivers of an authority persuasion message reported a significantly different ad attitude compared with receivers of a commitment & consistency or a social proof persuasion message. Furthermore, there is a non-significant difference between the survey respondents in regard to brand attitude ($p = 0.79 > 0.05$), and purchase intentions ($p = 0.55 > 0.05$). Further descriptive statistics of the results from the online self-reporting survey can be seen below in table 13 and table 14.

Group	Variable	Mean	SDS
Authority	AdAtt	8.82	1.53
	BrAtt	8.89	1.29
	Purchase Intention	9.21	1.39
Commitment & Consistency	AdAtt	8.97	1.47
	BrAtt	8.95	1.54
	Purchase Intention	9.16	1.56
Social Proof	AdAtt	9.16	1.20
	BrAtt	8.97	1.28
	Purchase Intention	9.07	1.47

Table 13: Descriptive statistics; online self-reporting survey

Variable		AdAtt	BrAtt	Purchase Intention
AdAtt	Pearson's Correlation	1	0.56	0.24
BrAtt	Pearson's Correlation	0.56	1	0.48
Purchase Intention	Pearson's Correlation	0.24	0.48	1

Table 14: Descriptive statistics; online self-reporting survey

4.3 Hypotheses summary of results

H1: Using an Authority persuasion strategy will have a positive effect on purchase conversion.	<i>Rejected</i>
H2: Using a Commitment & Consistency persuasion strategy will have a positive effect on purchase conversion.	<i>Rejected</i>
H3: Using a Social Proof persuasion strategy will have a positive effect on purchase conversion.	<i>Rejected</i>
H4: Content variety of persuasion strategies will have a positive effect on purchase conversion.	<i>Rejected</i>
H5: Brand attitude will mediate the effect of Ad attitude on Purchase intention:	
I) For an Authority persuasion strategy	<i>Supported</i>
II) For a Commitment & Consistency persuasion strategy	<i>Supported</i>
III) For a Social Proof persuasion strategy	<i>Supported</i>

Table 15: Summary hypotheses testing

5 Discussion

The following chapter discusses the results in relation to prior research and the theoretical framework. Each study is discussed separately, followed by a general discussion. The general discussion combines insights from both studies as well as elaborates on contributing factors to found results.

5.1 Study 1

The purpose of Study 1 was to determine if persuasion strategies communicated through environmentally imbued pop-up messages had a positive effect on conversion in an e-commerce context and if this effect differed among the persuasion strategies tested. Study 1 also tested whether repeated pop-up messages with content variety contributed to a positive effect on purchase conversion, in comparison to repeated pop-up messages with the same content.

5.1.1 Receivers vs non-receivers (H1-3)

In Study 1 there was no significant result on conversion when comparing each receiver group of persuasive messages with the control group. This indicates that none of the persuasive messages had an effect on the behavior of receivers. This is contrary to similar experiments performed in other contexts, such as Lewis & Reiley (2009) or Peng et al. (2014) where sales increased with spending on advertisement. Instead, these results are in line with studies such as Zha & Wu (2014), Cho & Cheon (2004) and Zhang & Kim (2008), which concludes that ads and persuasive messages that interrupt the visitor are often disregarded.

Vaidyanathan & Aggarwal (2005) states that the most effective way to investigate persuasion theories applicability and boundary conditions is through testing them in field settings, which has been done. Even though hypotheses 1-3 were rejected, the result establishes boundary conditions for the three tested persuasive strategies. For further discussions regarding factors causing rejection of hypotheses 1-3, see section 5.3.

5.1.2 Comparison of receivers

Previous studies and persuasion literature did not indicate that one persuasion principle would be more or less effective than the other in an e-commerce context. Nor this study can suggest such a conclusion, as there were no significant results when comparing the receiver groups in terms of conversion or money spent among buyers. When interpreting the results of the treatment comparison, one must also consider that hypotheses 1-3 were rejected, i.e. there were no significant results comparing the respective persuasion messages with a control group. Consequently, the prerequisite for a comparison among the treatment groups was not optimal.

5.1.3 Advertisement repetition and variation (H4)

The result showed no significant difference in conversion when comparing receivers of repeated similar messages with receivers of repeated messages with content variety. This is contrary to the theoretical reasoning that indicates an increase in brand liking and purchase behavior when receiving ads with content variation in comparison to the static repetition of ads, since increased brand liking has a positive effect on purchase behavior (Ajzen & Fishbein, 1980; Ajzen, 1985; Schumann & Clemons, 1988).

One must again consider that the underlying theoretical assumption of hypothesis 4 is that treatments should have a positive effect on purchase behavior. As the treatments used to test hypothesis 4 were the same as in hypotheses 1-3, which proved to have no significant effect, a straight-line comparison with prior research is imperfect.

5.2 Study 2

The purpose of Study 2 was to gain a deeper understanding of the attitudes and intentions that emerges when receiving persuasive messages. This process was investigated through information collected in consumer surveys regarding attitudes and purchase intention after receiving pop-up messages based on persuasion principles.

5.2.1 Mediation analysis (H5)

There was a significant mediation for all tested persuasive messages, i.e. brand attitude mediates the effect of ad attitude on purchase intention. More specifically, it means that the ad attitude affects the brand attitude, and that the brand attitude, in turn, affects the purchase intention.

The results from Study 2 supports the theoretical reasoning regarding how attitudes affect intentions. The basis of Lutz et al. 1983; Ajzen & Fishbein, 1980; Ajzen, 1985 studies is that ad attitude and brand attitude are affecting purchase intention, which subsequently are affecting purchase behavior. This mediating effect of attitudes is supported by the result in Study 2, which means that the theoretical reasoning is true also for the persuasive messages used in this study.

5.3 General discussion

To begin with, it is of interest to discuss why there were no significant effects on behavior seen in Study 1. As seen in theory, people process online information centrally and tend to focus on the content and arguments of the message (Guadagno & Cialdini, 2009). This has been proven true also for pop-up messages, and especially for text-based messages, since other cues that can distract the focus are absent. Looking at the survey results from Study 2, one can conclude that the general attitude towards all messages (ad attitudes) were high (Authority = 8.80, Commitment & Consistency = 8.93, Social Proof = 9.12 on a 1-10 bipolar Likert scale). This indicates that the statistically non-significant effects of persuasive messages on purchase behavior does not relate to a neutral or negative attitude about the content or the argumentative logic of the messages used in this study. Moreover, the persuasive principles of authority, commitment & consistency and social proof have been effective when implemented by practitioners in e-commerce contexts through other applications, for example in social proof-based strategies such as communicating customer reviews, ratings and recommendations (Amblee & Bui, 2011). Thus, the statistically non-significant effects in the results of this study should neither be explained by a general ineffectiveness of persuasion principles in e-commerce contexts. Instead, the statistically non-significant results of Study 1 could be derived from several potential factors, of which a few are discussed below.

Firstly, the messages might have been formulated in a way and applied under such circumstances that the persuasion principles were not sufficiently triggered. For example, the persuasion principle of commitment & consistency is proposed to be most effective when the commitment act is done publicly, so that other people can hold you to your statement (Bem, 1972). Such applications were not possible in this experiment, as the authors were restricted by the experiment environment, i.e. the website interface of Sellpy. Additionally, message formulations had to be adjusted to fit Sellpy's tonality and communicative standards, which also restricted communication and content so that the persuasive mechanisms could not be fully emphasized. For example, Sellpy did not allow messages to contain any information about how many customers Sellpy has, which made it harder to emphasize the social proof principle.

Secondly, the low effectiveness of the persuasive messages could be derived from the medium itself, i.e. a pop-up message on the website. People today receive a lot of pop-up messages in e-commerce contexts, containing advertisements or GDPR related information, which can result in people not reading and processing the content of the messages (Burns & Lutz, 2006; Moe, 2006).

Thirdly, people do not feel the same pressure to conform to normative behavior in an online context due to the anonymity in the online environment (Moe & Fader, 2004; McKenna & Bargh, 2000). With anonymity, people have less social pressure to make "the right choice" as people in one's proximity cannot tell whether one conformed to the sustainable arguments of the pop-up messages or not, potentially limiting the impact of the messages. Moreover, since people are not exposed to what similar people are doing, there are fewer indications on whether the act of conforming to a persuasive attempt is the right thing to do (Cialdini, 2009).

Furthermore, research about green advertisements has shown varied and contradictory results (Leonidou et al., 2011). Studies have found that green advertisements can be both skeptically and positively received and the effectiveness of such advertisements can be contextually based (Raska & Shaw, 2015). This study indicates that green advertisement is not effective in an e-commerce context, at least not for the tested method of application.

Lastly, regarding online behavior, a low transportation cost makes online shoppers more prone to delay online purchase decisions. Consequently, one cannot rule out the possibility that purchase behavior increased after the monitoring of treatment groups had ended.

Regarding Study 2, the study results show that in an e-commerce context, the effect of ad attitude on purchase intention is by large mediated by brand attitude. From a customer perspective, this means that when a customer receives an advertisement or a message, the attitude towards this message will first affect the brand attitude. Thereafter, it is the brand attitude that affects the purchase intention. The same attitudes and intentions has been seen and in several prior studies. Now, it can be confirmed that previously seen relationships of attitudes and intentions are also present in an e-commerce context for persuasive messages, which can be added to existing literature.

Nonetheless, the most interesting findings from Study 2 can perhaps be done when comparing its results with Study 1. All visitors exposed to the persuasive messages reported high numbers in the survey results in terms of ad attitude (average 9.15/10 for all messages), brand attitude (average 9.17/10 for all messages) and purchase intention (average 8.83/10 for all messages). Despite these values, there were no significant results seen when measuring actual behavior in Study 1. Morwitz (2014) argues that there is a positive correlation between purchase intention and behavior, however there is a wide discrepancy to what extent an intention results in a behavior depending on context (Miniard & Cohen, 1983). Since these attitudes and purchase intentions did not result in a change in actual behavior in this study, one can conclude that in the study context there is a clear gap between what people think and what people do, and that persuasive strategies with the application used in this study cannot bridge that gap.

6 Conclusion

RQ1: Does persuasion strategies, communicated through environmentally imbued pop-up messages, affect the purchase behavior of e-commerce consumers on a second-hand website?

The results of this study indicate that a persuasive message in the conducted format will not have a significant effect on purchase behavior in an online second-hand context. The answer to RQ1 is therefore no. Why this is the case remains to be further investigated.

RQ2: When exposed to a persuasion message, is the effect of ad attitude on purchase intention mediated by brand attitude?

The results from Study 2 exhibit that persuasion messages follow the same cognitional process as prior research has been concluding to be true for advertisement i.e. that a persuasive message is mediated by brand attitude. The answer to RQ2 is therefore yes. Based on previous research as well as investigated data observations and surveys in this study, one can conclude that persuasive messages generates similar attitudes and intentions as when exposed to other advertisements.

7 Implications

This chapter summarizes how findings from the study could be transferred to academic, managerial, and other stakeholders' domains.

7.1 Theoretical implications

The authors contributed to the literature of persuasion strategies by determining a boundary condition for an application of three persuasion principles' ability to alter behavior. This boundary condition was established by showcasing a setting where the persuasive principles failed to reach their intended purpose. The authors have also contributed to academia as the results were in line with previous studies in adjacent research fields. This framework was built on a theory that had advertisement as its starting point. With this study's result, one can conclude that this theory extends to persuasive messages as well. By using persuasion in online pop-up messages, the authors have contributed to the online marketing literature by extending already existing research of disruptive ads. Receivers of the treatment showed a positive attitude towards the disruptive ads in the form of persuasive messages, as well as high intentions to purchase, but the result shows that the messages did not cause behavior alterations. This indicates that other studies that investigate behavior by looking at purchase intentions in self-estimated surveys should be perceived with a certain amount of carefulness, as it has been seen in this study that intentions do not always translate to actual behavior in line with those intentions.

7.2 Managerial implications

Based on the results of this study, businesses should carefully conduct persuasion treatments intended to alter consumer behavior, since theory-based treatments could fail in practice. Businesses should also consider that treatment effects could look promising when testing them on customers by asking how they would react (e.g., through surveys), but when the treatment is applied in a real setting, customers could behave differently. Thus, businesses should distinguish

between what is happening in a customer's head and the actual behavior effect when sending communication such as advertisements or persuasive messages.

Additionally, the medium used to influence consumers should be thoroughly considered. Based on the study's results, pop-up messages are not an effective medium of persuasion in an e-commerce context. Furthermore, if using persuasion strategies, one should strive to fulfill the conditions that have been proven to be successful in literature and real-world cases. For example, the social proof principle is thought to be more effective when there is a high similarity between people. Therefore, the segmentation of consumer groups might be a suitable pre-work before applying this persuasive principle.

Regarding Study 2, the results highlight the importance of brand attitude and its value to practitioners. Companies and marketers should closely monitor how consumers perception of their brands is affected by marketing, advertisement and other communication efforts, as it is the effect on brand attitude that will determine purchase intention, rather than the ad directly affecting purchase intention. Additionally, one could see a discrepancy between purchase intent and actual behavior in the study. Again, this is an indication of that businesses should critically evaluate to what extent purchase intention serves as a valid variable to forecast a purchase behavior in businesses specific domain.

7.3 Further implications

It is not only academic and managerial implications that can be transferred from this study, one can also take a more holistic view of the results. The purpose of the study was to test theoretically determined persuasion strategies in a new context and the results were not in line with much of prior research. Therefore, one can conclude that theories do fail, and that even thoroughly researched theories should not be accepted as a fact. This insight is useful to have in mind in various situations; For scholars creating courses based on classical theories at university, people of a country that believes strongly in a theory-based strategy to fight Covid-19 or for legislators building an economic system based on how people should act according to a certain theory. The

authors do not want to produce an un-called skepticism towards scientifically proven theory but emphasize that textbook reality and real-world reality is two widely separate constructs.

8 Limitations of the study

A general limitation to the deductive research approach used in the study include the narrowness of data collection when only focusing on the research question (Jacobsen & Sandin, 2002). This limitation became apparent as the results of the study triggered further questions to thoroughly explain the results, but the narrowness of data collected made it difficult to sufficiently answer these new questions. For example, it would have been interesting to make a deeper investigation regarding why there were no significant results in terms of behavior change. In the discussion of this thesis, several potential reasons are discussed. However, in retrospect one would have liked to design a study with the potential to statistically identify those reasons, rather than speculating about which they were.

Furthermore, the study is limited to one case company, operating with a relatively new and unresearched business model. The results from the study are therefore only applicable for the researched setting i.e. persuasion strategies applied on online second-hand goods platforms. The empirical data was collected through Sellpy's marketplace, which limited the study in several aspects. The treatment could only consist of messages, and the content of the messages had to be customized to certain principles and tonality to fit Sellpy's standards. The technical limitations of Sellpy's communication tool affected how treatments were set up.

Selecting a homogenous sample consisting only of active visitors is argued for in section 3.4.2 and 3.5.2 and was deemed most suitable for the design of the experiments. However, this could be considered as a limitation, as the selection excludes a part of Sellpy's customer base; customers that are not yet frequent visitors of their site. Subsequently, the sample used is not representative of Sellpy's whole customer base, which limits the transferability of the results.

9 Future research

To get a clearer view of the investigated subject, one would like to expand the understanding of online pop-up messages. An interesting subject of investigation would be whether such messages can in fact be effective in certain situations, or if they are mostly ignored without consideration of their content. Similarly, the research field of green advertisement should be more thoroughly examined. In a world where environmental issues are of increasing concern to people and businesses alike, there is an urgent demand for research that can determine how to efficiently communicate sustainable messages and thus affect consumer behavior.

Regarding the investigated principles of persuasion, one could explore other areas of application methods to understand which applications that generate the best results in an e-commerce context. When implementing the principles in the form of a text message, as in this study, a potential area of investigation could be if the messages themselves can be reformulated to alter consumer behavior in a more efficient way. Another potential area of investigation is to determine to what degree underlying mechanisms of each persuasion principles must be present in a message in order to trigger a behavior alteration.

Finally, and perhaps most importantly, the question remains how a company in a sustainable e-commerce context can bridge the attitude-behavior gap.

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Appendices

Appendix 1 – Manipulation check survey

Ett företag som heter **2hand** säljer second hand-varor på nätet, framförallt kläder från kända märken. Som användare av deras tjänst använder du din telefon och går in på deras plattform. Där får du följande meddelande:



Vad tycker du om meddelandet?

Dåligt Bra

1 2 3 4 5 6 7 8 9 10

Blir du inspirerad att följa andra människors exempel?

Till låg grad Till hög grad

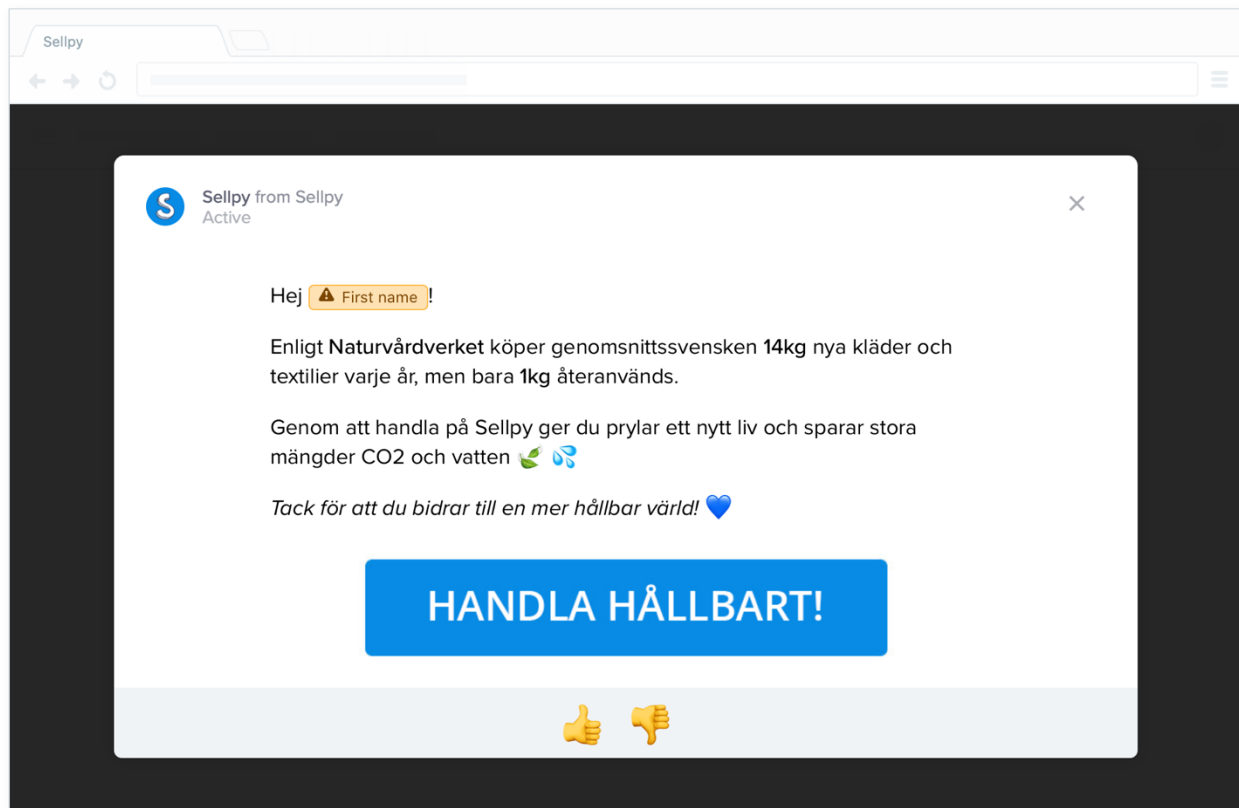
1 2 3 4 5 6 7 8 9 10

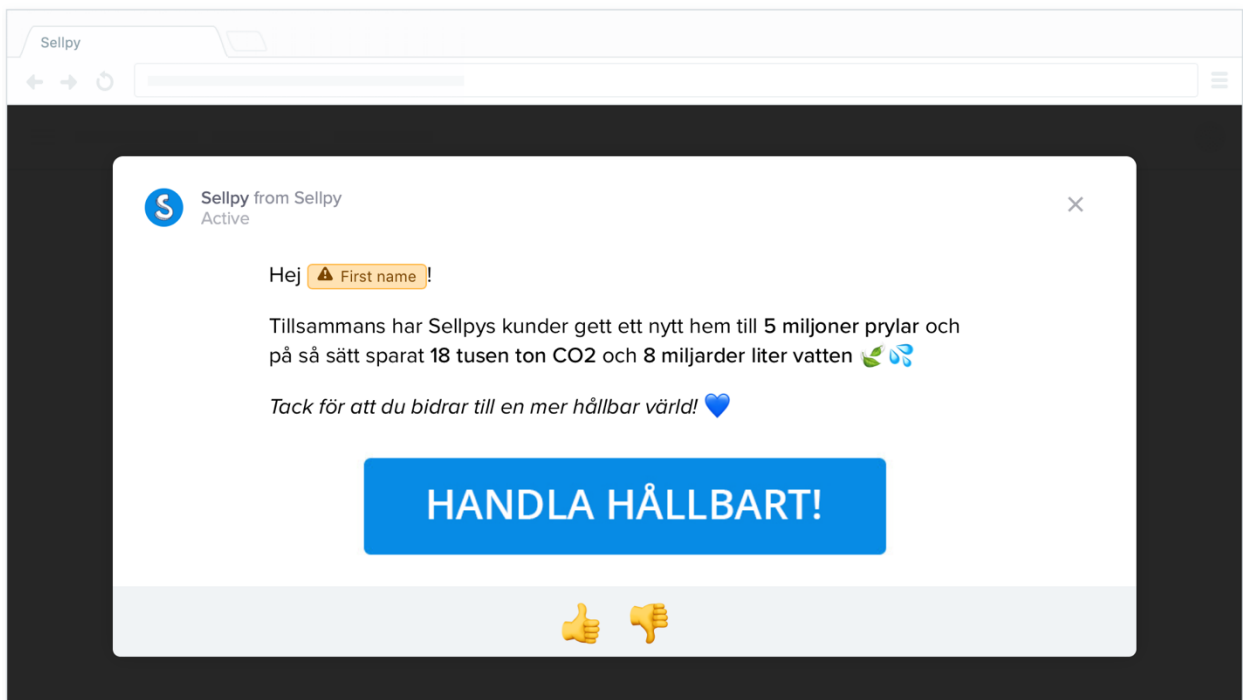
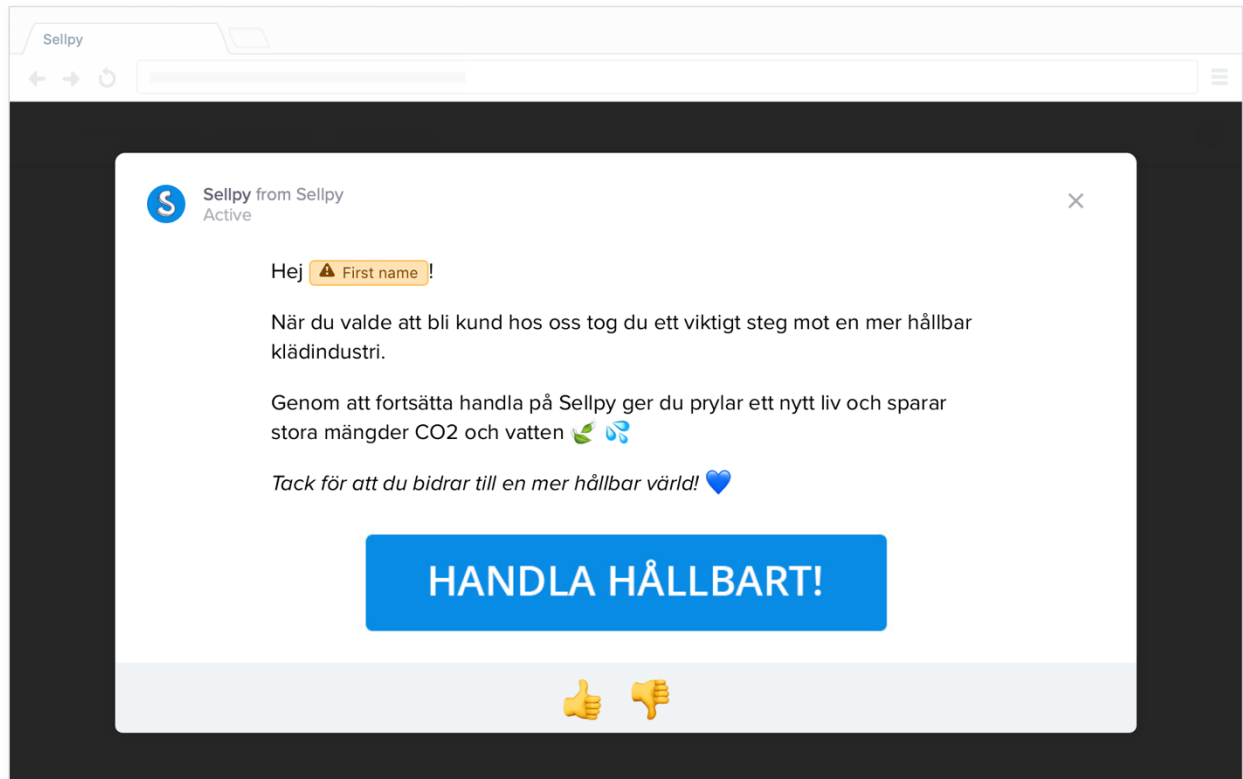
Präglas meddelandet av andra människors intygande av tjänsten?

Till låg grad Till hög grad

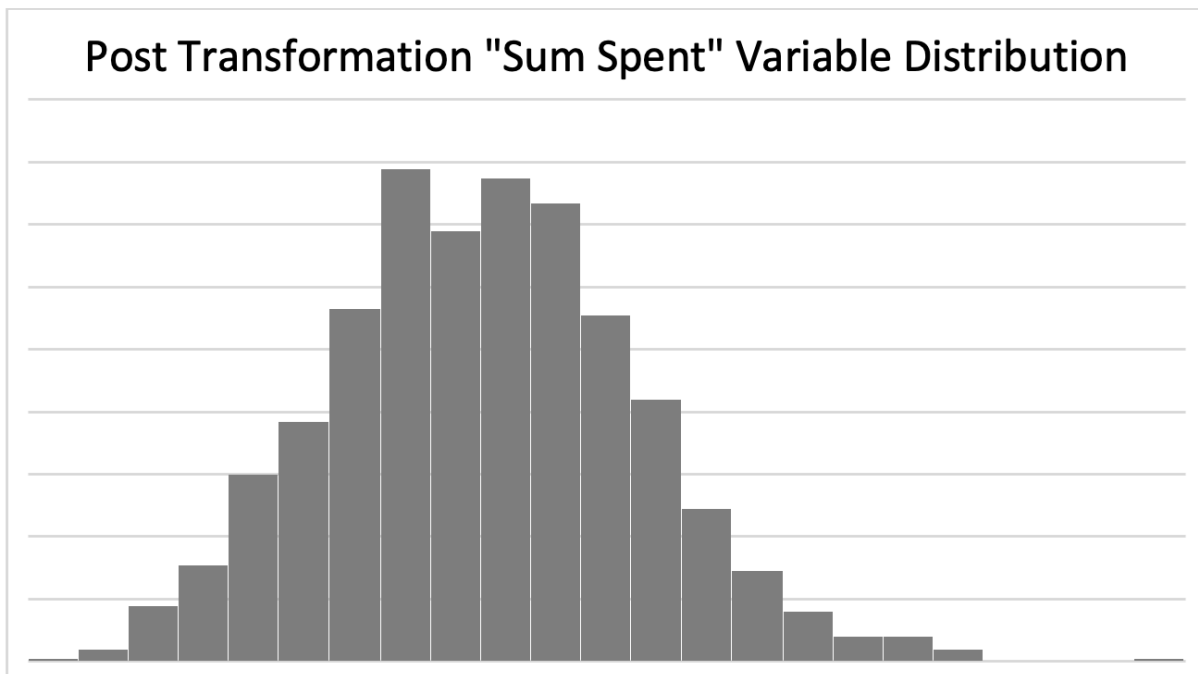
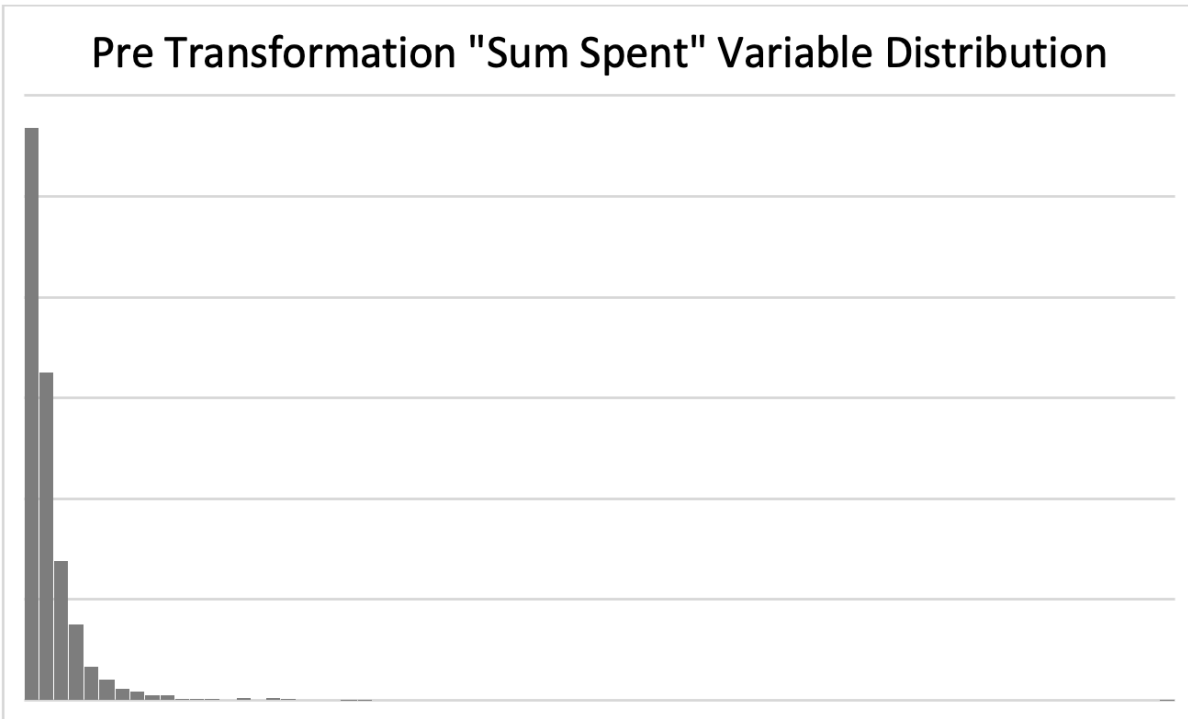
1 2 3 4 5 6 7 8 9 10

Appendix 2 – Study 1: Persuasive Message Design

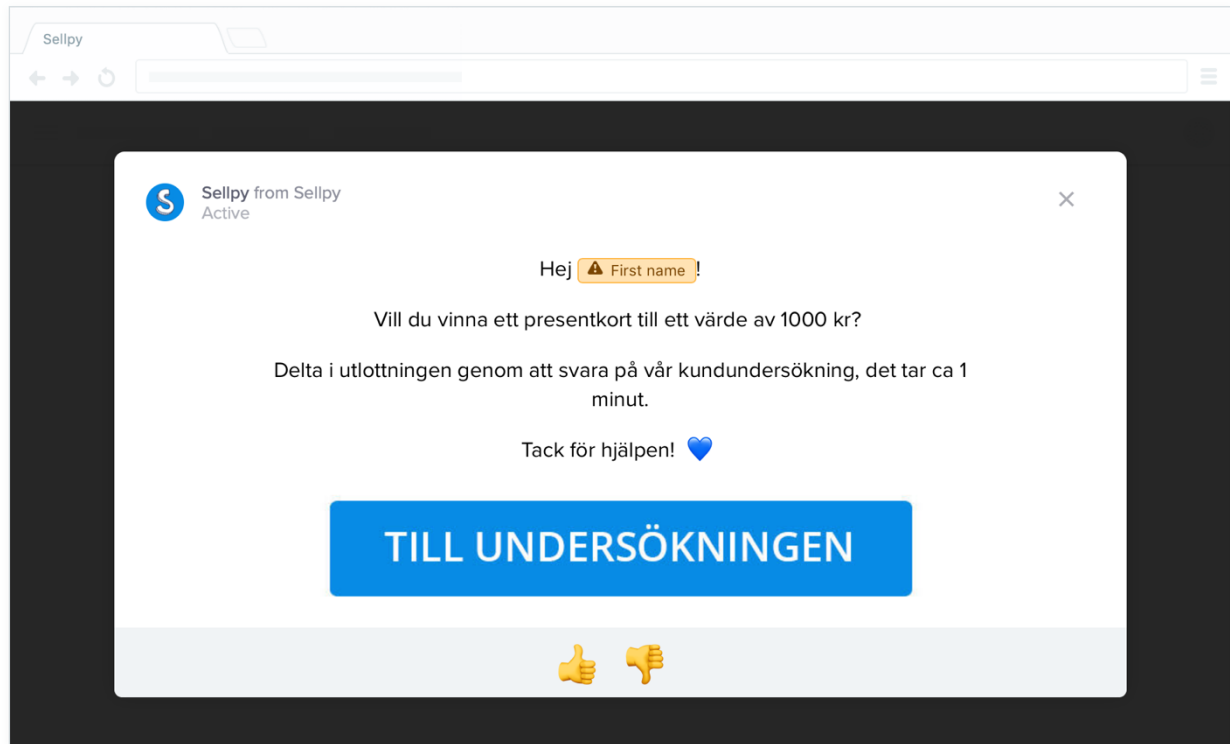




Appendix 3 – Study 1: Transformation of “Sum Spent” variable



Appendix 4 – Study 2: Invitation to take part in survey



Appendix 5 – Study 2: Customer survey

Vi på Sellpy försöker hela tiden förbättra vår kommunikation. Därför är vi tacksamma om du läser meddelandet nedan och svarar på några frågor.

*Obligatorisk

Hej,

Tillsammans har Sellpys kunder gett ett nytt hem till **5 miljoner prylar** och på så sätt sparat **18 tusen ton CO2** och **8 miljarder liter vatten** 🌱💧

Tack för att du bidrar till en mer hållbar värld! 💙

HANDLA HÅLLBART!

Vad tyckte du om meddelandet?

1. *

Markera endast en oval.

	1	2	3	4	5	6	7	8	9	10	
Negativt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Positivt

2. *

Markera endast en oval.

	1	2	3	4	5	6	7	8	9	10	
Dåligt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Bra

3. *

Markera endast en oval.

	1	2	3	4	5	6	7	8	9	10	
Ofördelaktigt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Fördelaktigt

Vad tycker du om Sellpy?

4. *

Markera endast en oval.

	1	2	3	4	5	6	7	8	9	10	
Negativt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Positivt

5. *

Markera endast en oval.

	1	2	3	4	5	6	7	8	9	10	
Dåligt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Bra

6. *

Markera endast en oval.

	1	2	3	4	5	6	7	8	9	10	
Ofördelaktigt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Fördelaktigt

7. Vad är chansen att du kommer att köpa något från Sellpy den närmaste månaden? *

Markera endast en oval.

	1	2	3	4	5	6	7	8	9	10	
Inte alls sannolikt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Mycket sannolikt

8. Meddelandet ovan handlade om? *

Markera endast en oval.

- ☐ Hållbar konsumtion
- ☐ Bilindustrin
- ☐ Godis

Appendix 6 – Study 2: Batteries of Questions and Cronbach’s Alpha Values

Persuasion principle survey	Name of measure	Statement	Cronbach Alpha
Authority (n=283)	Ad attitude	What did you think about the message? <ul style="list-style-type: none"> Negative/positive Bad/good Favorable/unfavorable 	0.861
	Brand attitude	What is your attitude towards Sellpy? <ul style="list-style-type: none"> Negative/positive Bad/good Favorable/unfavorable 	0.873
Commitment & Consistency (n=240)	Ad attitude	What did you think about the message? <ul style="list-style-type: none"> Negative/positive Bad/good Favorable/unfavorable 	0.847
	Brand attitude	What is your attitude towards Sellpy? <ul style="list-style-type: none"> Negative/positive Bad/good Favorable/unfavorable 	0.911
Social Proof (n=267)	Ad attitude	What did you think about the message? <ul style="list-style-type: none"> Negative/positive Bad/good Favorable/unfavorable 	0.868
	Brand attitude	What is your attitude towards Sellpy? <ul style="list-style-type: none"> Negative/positive Bad/good Favorable/unfavorable 	0.909