

Radboud Universiteit



The Effect of Community Appeal on the Adoption of Clothing Swap Stores

A real-world experiment assessing the impact of a community-based intervention on sustainable fashion adoption

Student	Rafke Langenveld
Student	1118159
e-mail	Rafke.langenveld@ru.
Subject	MSc Thesis
First	Dr. Simone Ritter
Second	Dr. Csilla Horvath
Version	01
Date	16 June 2025

MSc Marketing Thesis- Rafke Langenveld

Inhoudsopgave

1. Introduction	4
1.1 Research gap	5
1.2 Research question	6
1.2.1 Sub-research question:	7
1.3 Outline	7
2. Theoretical framework	8
2.1 Clothing swapping and adoption	8
2.1.1 Clothing swap stores	8
2.1.2 Resistance	8
2.1.3 Adoption	9
2.2 Community appeal	10
2.2.1 Belongingness	10
2.2.2 Practical application of community appeal in clothing swapping practices	10
2.2.3 The role of nudging in fostering community appeal	11
2.3 Environmental concern	13
2.3.1 Applicability of environmental concern in the fashion industry	14
2.4 Conceptual model and hypotheses	15
3. Methodology	16
3.1 Research Design	16
3.2 Context	16
3.3 Participants and sampling	17
3.3.1 Exclusion criteria	17
3.4 Intervention Strategy	18
3.5 Measures	20
3.5.1 Store-level data	20
3.5.2 Individual-level data	21
3.6 Materials	21
3.6.1 Intervention (experimental and control location)	21
3.6.2 Personal handover of flyers	21
3.6.4 Flyers	22
3.7 Survey	22
3.8 Data analysis	23
3.9 Quality of analysis	25
3.10 Ethical considerations	25
4. Results	26
4.2 Reliability analyses	26
4.3 Hypotheses testing	26
4.3.1 Hypothesis 1: Clothing swapping behavior	26
4.3.2 Hypothesis 2: Intention to return	27
4.3.3 Hypothesis 3: Positive word of mouth	27
4.3.4 Hypothesis 4: Flyer response	27
4.3.5 Hypothesis 5: Environmental concern	28

4.4 Manipulation check.....	28
5. Discussion	30
5.1 Overview of key findings	30
5.2 Interpretation of findings and theoretical implications	30
5.3 Practical implications	31
5.4 Limitations.....	32
5.5 Future recommendations	33
References.....	35
Appendix 1: Flyers.....	41
.....	41
Appendix 2: Survey questions	42
Appendix 3: messages flyer distribution	45
Appendix 4: flyer distribution	46
Appendix 5: Data analyses SPSS	48
5.1 Data cleaning process	48
5.1.1 Output: Frequency tables for checking missing data.....	49
5.2 Descriptive statistics.....	58
5.2.1 Output: descriptive statistics	58
5.3 Reliability analyses.....	60
5.3.1 Output: reliability test	61
5.4 T-test: comparing groups	63
5.4.1 Output: transformed variable	64
5.4.2 output: T-tests.....	66
.....	66
5.5 Mann-Whitney U test: comparing groups.....	67
5.6 Two-way ANOVA assumptions	69
5.6.1 Checking normality	70
5.6.2 Checking equal variance	79
5.6.3 Checking linearity	82
5.7 Two-way ANOVA for manipulation check	86
5.8 Chi-square test	88

1. Introduction

The fashion industry is often ranked as the second most polluting sector after oil industry (Mengling et al., 2023; Bonnail et al., 2023). Seasonal production leads to massive textile waste, much of which is incinerated or ends up in landfills (Mengling Wu et al., 2023). According to Bailey et al. (2022), fashion contributes 8% of global carbon emissions and 20% of water waste. This ongoing cycle escalates waste and puts a lot of pressure on resources, with less than 1% of materials being recycled, the urgent need for a circular transition is highlighted (EMF n.d.; Aldalbahi et al., 2021; Lang & Armstrong, 2017). While EU policies and regulations, such as the sustainable textiles strategy support this change (European Commission, 2024), regulation alone is insufficient. A successful change requires consumer behavior to align with policy goals (Kollmuss & Agyeman, 2002; Koch et al., 2023).

A promising system that aligns with circular consumption principles is collaborative fashion consumption, such as clothing swapping. Collaborative fashion consumption is a system focussing on extending product life cycles and reducing waste (Becker-Leifhold & Iran, 2018; Henninger et al., 2021). Collaborative fashion consumption, also called swapping, has been studied recently as a sustainable alternative for traditional fashion consumption (Becker-Leifhold & Iran, 2018; Karpova et al., 2022). Temporary clothing swaps enable people to trade clothing without transferring ownership permanently, which lowers the need for new production while satisfying consumer fashion-related desires (Karpova et al., 2022). Clothing stores that apply the swapping concept are distinguished from swapping events by their permanent and ongoing nature. This continuous nature makes it more accessible and stimulates long-term swap behavior (Lang & Zhang, 2019; Matthews & Hodges, 2016).

Despite the potential of clothing swapping, it remains a niche behavior. Although consumers express environmental concern, they do not always act accordingly. This discrepancy is also called an attitude-behavior gap (Kollmuss & Agyeman, 2002; Matthews & Rothenberg, 2017). Consumers are often influenced by pragmatic aspects such as price, sensitivity, convenience, fashion innovation, which may outweigh their ecological intentions in practice. Consequently, a key challenge in promoting sustainable fashion consumption is identifying what closes this intention-behavior gap (Matthews & Rothenberg, 2017).

Recent studies have shown that several factors beyond individual attitudes, such as social factors may positively impact the adoption of sustainable behavior. The theory of Planned Behavior highlights subjective norms as a key motivator for behavioral intention, as well as personal attitudes

and perceived behavioral control (Ajzen, 1991). More recent perspectives build upon this foundation by emphasizing the role of group dynamics, identity, and belonging. For instance, people are more likely to adopt sustainable behavior when these behaviors are reinforced through social ties and a shared community ethos (Fu et al., 2018; Steg & Vlek, 2009). This highlights the potential of community appeal, as a socially embedded influence mechanism that fosters sustainable behavior by enhancing feelings of group belonging and shared purpose.

Although community appeal and environmental concern are conceptually distinct, they may interact meaningfully for closing the attitude-behavior gap regarding sustainable fashion consumption. Research indicates that social belonging and normative influence can stimulate sustainable behavior, even if strong environmental concern is absent (Baumeister & Leary, 1995; Ajzen, 1991). This makes community appeal a potential powerful tool for activating sustainable behavior among less environmentally motivated people (Van Acker et al., manuscript in preparation).

Moreover, from a behavioral economics perspective, nudging theory suggests that modifying the social psychological environment can subtly guide behavior to adopting desired behavior without restricting individual choices (Thaler & Sunstein, 2008). In the context of this study, community appeal can be considered as a social stimulus, also known as a nudge, that activates desired behavior, such as clothing swapping. Early adopters of sustainable habits, who often have social influence, also have a mediating role in persuading others to adopt (Rogers, 2003; Li et al., 2024).

1.1 Research gap

A relevant experimental study by Sloot et al. (2019) revealed that fostering a sense of shared belonging also stimulates adoption of sustainability initiatives (Sloot et al., 2019). The study explored the role of community engagement in energy initiatives. The results show that when individuals feel connected to a community and its sustainable goals, their drive to participate remains strong, even when there is no monetary incentive. Even though the study of Sloot et al. (2019) focused on energy initiatives instead of fashion consumption behavior, their findings about community engagement are valuable for understanding that social incentives can motivate people to participate in sustainable behavior. Similarly, Bianchi and Birtwistle (2011) investigated consumer behavior in clothing disposal and found that social norms influence sustainable practices. However, their survey-based approach did not test real-world interventions. Notice, few empirical studies have tested the effect of social incentives on adoption of clothing swapping. Although there is qualitative and survey-based research about social norms and swap motivation, no real-world field experiments regarding community appeal within clothing swapping ecosystems are yet found (Henniger et al., 2019; Banytė et al.,

2023). Thus, a lack of evidence regarding how community appeals function within the domain of sustainable fashion. Most studies in this field rely on self-reported intentions or qualitative insights, frequently focussed on psychological or attitudinal predictors of behavior. As a result, lack of knowledge about how social-contextual mechanisms, like community appeal, affect actual adoption behavior in fashion context. Furthermore, the extent to which such interventions align differently across consumer segments, such as those with high versus low environmental concern, remains under explored. Studies reveal that communal appeal may be especially effective for people who are less intrinsically motivated by environmental cues (Steg & Vlek, 2009; Van Acker et al., manuscript in preparation). However, this proposition has not been assessed in a real-world experimental setting within the context of clothing swapping.

While the research of Sloot et al. (2019) revealed valuable insights into the motivational power of community appeal, the research was conducted in the context of community energy initiatives, an area involving collective investment. In this study, clothing swapping is an individual, voluntary behavior shaped not only by personal preferences but also by social norms, and community cues. Additionally, Sloot et al. (2019) relied on informal letters which included community aspects, whereas this study implements more concrete communal appeals through a physical in-store intervention. This offers a more engaging and tangible approach for incorporating community appeal. Moreover, Sloot et al. (2019) consisted of existing initiative members, possibly introducing a selection bias toward pro-environmental or community-oriented individuals. This study includes spontaneous consumer response in a public real-world setting, offering broader generalizability for consumer-focused interventions in circular fashion context.

Building on these insights and considerations this study focusses on whether community appeal can increase the adoption of clothing swap stores in a real-world setting. Specifically, it assesses whether including community cues in an in-store setup leads to more adoption of clothing swap stores.

Derived from this, the following research question arises:

1.2 Research question

“Is a community appeal intervention effective in increasing the adoption of a clothing swap store?”

Exploring the difference between community appeal and clothing swapping for those with high environmental concern versus low environmental concern is in particular interesting, since previous research shows that this differs per level of environmental concern. According to Steg and Vlek (2009) community goalsetting in contrast to pursuing sustainable goals on individual level, may have a significant impact on pro-environmental behavior, especially for those with low environmental

concern. The study of (Van Acker et al., Manuscript in preparation) supports the fact that community appeals might act as powerful external motivators in realizing adoption of sustainable behavior for those with lower environmental concern.

1.2.1 Sub-research question:

"How does the level of environmental concern within the customer base of the clothing swap store evolve over time as a result of the community appeal intervention?"

It is important to note that for the variable 'environmental concern', only people who visit the store are surveyed, which provides valuable insights into the profile of the visitors and thus to whom the intervention resonates most.

1.3 Outline

This research paper is divided into five chapters that collectively advance the objectives of this experimental study. By providing an overview of the nature, contextual background and relevance, the first chapter serves as the foundation of this research paper. The second chapter focuses on the theoretical background including a theoretical framework by critically analysing and substantiating the concepts and theories. Followed by the third chapter which includes the methodology, to provide an extensive explanation about how the experimental study is designed and conducted, including a reasoning behind the methods used. Additionally, the results of the experimental intervention are presented in chapter four. Finally, the discussion chapter presents the conclusion of the results, theoretical and practical implications, limitations and future recommendations.

2. Theoretical framework

2.1 Clothing swapping and adoption

Modern fashion follows a linear model focused on ongoing production and consumption, leading to massive textile waste (Becker-Leifhold & Iran, 2018; Lang & Armstrong, 2017). This linear consumption process contributes significantly to global resource depletion and pollution (Karpova et al., 2022). Collaborative fashion consumption (CFC) offers a sustainable alternative by enabling access to existing clothing instead of buying new (Iran & Schrader, 2017). CFC includes practices like swapping, gifting, second-hand purchasing, and temporary use through renting or sharing. Swapping, as a form of permanent ownership transfer without monetary exchange, fits well within circular economy principles of reducing waste and maximizing resource use (Becker-Leifhold & Iran, 2018; Armstrong & Lang, 2017). While Karpova et al. (2022) describe swapping broadly as peer-to-peer exchange of goods, this study adopts the more specific definition by Becker-Leifhold and Iran (2018), focusing solely on garment exchange.

2.1.1 Clothing swap stores

Temporary clothing swap events have increased in popularity (Bogosavac et al., 2025) since they are easily accessible for those who are new with the swapping concept (Lang & Armstrong, 2017). However, due to their episodic character, those swap events have limited change to foster long-term relationships, habitual engagement and community feeling. Instead, swap stores benefit from consistent consumer interaction, which increases the chances for establishing lasting consumer involvement, a stronger community bond and adoption of the swapping behavior (Henninger et al., 2019; Matthews & Hodges, 2016).

2.1.2 Resistance

Despite the potential of clothing swapping, consumer engagement remains low. A study by Planbureau voor de Leefomgeving (2023) identified 92 circular practices, grouped by three engagement levels, ranging from low to high circular behavior. The study reveals that most people hesitate to shift from traditional to circular consumption, even with supportive legislation and policies (European Commission, 2024). This highlights a discrepancy between sustainability goals and actual participation (European Commission, 2024; Koch et al., 2023).

Barriers include hygiene concerns, social stigma, and doubts about garment quality (Becker-Leifhold & Iran, 2018), along with low perceived control, subjective norms, negative attitudes, materialism,

and the need for uniqueness (Wu et al., 2023; Lang & Armstrong, 2017). These obstacles emphasize the complexity of transitioning to sustainable clothing consumption behavior on an individual level.

2.1.3 Adoption

Based on the given barriers, insights into the concept of adoption are required to understand what is needed for a transition in the clothing industry. In academic literature, the concept of adoption is multifaceted, but within the context of this research adoption refers to the process in which people start performing and integrating sustainable behavior into their daily lives, specifically clothing swapping behavior (Fu et al., 2018). While definitions of adoption in academic literature frequently focused on acceptance of new ideas or technologies, in behavioral research it is better understood as the transition from awareness to the consistent practice of particular behavior (Ajzen 1991). The term is often used to characterize people who accept a new activity after seeing its potential value and forming the intention to act upon it (Ajzen 1991).

In this study adoption is defined as the acceptance, integration and consistent execution of environmentally conscious actions, such as clothing swapping. This interpretation of adoption has emerged based on insights from the Theory of Planned Behavior (Ajzen, 1991). According to this theory adoption partly depends on attitude towards behavior, subjective norms, and perceived behavior control (Ajzen, 1991). In the beginning, not every individual is convinced to embrace new behavior. Early adopters, who typically have great social influence, indirectly have a mediating role in convincing others to adopt (Rogers, 2003; Li et al., 2024).

To capture the complexity of adoption, the concept is operationalized through three dimensions. The first dimension is clothing swapping behavior, given that this is a directly observable action that clearly identifies individuals' behavior. Clothing swapping behavior is operationalized and measured based on the number of clothes brought and taken, which concretely reflects the integration of environmentally conscious actions, thus the start of the adoption process (Henninger et al., 2019). Considering adoption is not limited to accepting and integrating sustainable behavior just once, but consistent execution is required, two additional adoption dimensions are included for the sake of the completeness. Namely, continued adoption and positive word of mouth, these reflect the ongoing commitment and the social influence of others to engage in clothing swapping behavior. Specifically, continued adoption, gives insights into person's willingness to keep being engaged in clothing swapping behavior, aligning with the Theory of Planned Behavior (Ajzen, 1991). Positive word of mouth reflects the social transmission and advocacy of sustainable behavior (Zeithaml et al., 1996; Chatterjee, 2001).

2.2 Community appeal

In order to understand what motivates individuals to adopt clothing swapping behavior, the concept of community appeal is a critical concept. Community appeal draws on the desire for social connection and belonging. According to Baumeister and Leary (1995), fulfilling the need for connection and belonging has a powerful impact in motivating individuals to engage in sustainable practices. When this internal need is fulfilled, it can influence peoples' behavior by promoting emotional well-being and motivating people to engage in community-driven practices, such as sustainable activities.

2.2.1 Belongingness

Since consumers hesitate to adopt sustainable behavior, a promising strategy to overcome the related barriers (mentioned in paragraph 2.1.2) is appealing to individuals' inherent social motives. The Need to Belong Theory of Baumeister and Leary (1995) implies that individuals have a fundamental urge to belong somewhere. This is characterized by strong interpersonal connections and interactions in a continuous social environment. They state that when this social urge to belong is fulfilled, it influences emotional well-being, cognitive processes, and behavior. Thus, community appeal, defined as the design and dynamics of a social environment that fosters a sense of connection and belonging, can be an effective tool for promoting the adoption of behaviors such as clothing swapping. By creating a social atmosphere that emphasizes community involvement, people may feel more likely to engage in sustainable activities as part of a broader social identity (Baumeister & Leary, 1995; Broska, 2021; Sloot et al., 2019; Hafner et al., 2019).

2.2.2 Practical application of community appeal in clothing swapping practices

The empirical findings of Broska (2021), support the effectiveness of social motives in relationship to the adoption of sustainable behavior. Social capital, social needs, and environmental concerns within community settings are often motivators for individuals to participate in sustainable practices. Broska (2021) found that individuals view community, cooperation, ecology/ sustainability, age appropriateness, and place as key motivators for participating in sustainable practices. The findings show that 87% of the respondents mentioned "community" when they were asked what drives them to join sustainable projects. Compared to other key drivers, community was also ranked as most important by 57% of the respondents, followed by ecology/ sustainability. Especially for those who are relatively late in embracing sustainable practices, the community incentive convinced them to

adapt sustainable behavior. Early adopters and those who join in the realization stages of sustainable practices emphasize both, community incentives as well as sustainability incentives.

Research by Sloot et al. (2019) used community appeal on community energy initiatives. They examined how being involved in local energy initiatives impacts peoples' sense of community and their motivation to participate in sustainable practices. The findings show that community appeal is a significant predictor of initiative involvement in sustainable practices. Community appeal was therefore found to be a valuable incentive for participation in sustainable initiatives. In contrast to the experiment of Sloot et al. (2019) this study takes a more active approach by manipulating community appeal directly through an intervention. Rather than only measuring the impact of community appeal, a social environment fosters a sense of connection through community set-up and a flyer communication intervention. This approach differentiates from Sloot et al. (2019) since it not only measures the impact of community appeal but actively stimulates social interaction among participants by creating a sense of community that enhances their willingness to engage in clothing swapping.

Given the theoretical framework of The Need to Belong theory and the empirical evidence this study introduces community appeal as independent variable, to examine its influence on the adoption of clothing swapping behavior (Baumeister & Leary, 1995; Broska, 2021; Sloot et al., 2019). In practice, community appeal is operationalized as the physical and social design of the clothing swap store, specifically this includes a welcoming and social inviting atmosphere, characterized by warmth, friendliness and opportunities for social interaction. Chapter 3.2 "Intervention strategy" provides a more detailed description about the welcoming and social inviting atmosphere.

2.2.3 The role of nudging in fostering community appeal

While community appeal and the need for belongingness (Baumeister & Leary, 1995), can effectively increase people's intention to engage in clothing swapping, intention alone is not sufficient to guarantee actual behavior. Transforming intention into actual behavior is crucial for achieving sustainable behavior change. According to Gollwitzer (1999), intention must be paired with concrete plans to translate them into action. To deal with the discrepancy between intention and actual behavior, nudging is often employed as a tool to subtly guide individuals in the right direction. Nudging, defined by Thaler and Sunstein (2008), is any aspect of the choice architecture that modifies behavior in a predictable way, but importantly, without limiting options or significantly changing economic incentives. Hansen (2016) adds to the definition of Thaler and Sunstein (2008) that nudging relies on cognitive limitations, biases, routines and habits in decision-making.

In sustainability contexts, nudging has proven to be particularly useful. Amiri et al. (2024) suggested that behavioral interventions such as default settings, social norm cues, and feedback mechanisms have successfully promoted sustainability actions. According to their findings nudging is successful tool for encouraging low-effort yet high-impact behavior changes, such as clothing swapping (Amiri, 2024).

Moreover, effective nudging must be tailored to specific contexts to create long-term behavior change. This aligns with White et al. (2019), they argue that fostering sustainable behavior depends not only on motivating people through values and intentions but also on reshaping the environment in a way that it guides people towards desired behavior. By reshaping the environment, it becomes easier and more salient to behave in a desired way (White et al., 2019).

In this study, community appeal can be understood as a socially defined behavioral cue that draws on nudging principles to encourage clothing swapping activities. Instead of promoting environmental benefits of clothing swapping, the intervention presents participation in swapping activities as inclusive, socially fulfilling, and integrated in local community. This aligns with the findings of Nguyen-Van et al. (2021) and Silvi and Padilla (2021), which imply that social motives, such as community engagement and network connections, often outweigh environmental motivations in influencing sustainable behavior.

By incorporating nudging principles in both the physical environment of the swap store and in communication about the in-store changes, this study aims to subtly influence (also known as nudge) people's behavior.

Based on the insights in the concept of adoption, how adoption can be influenced based on community appeal, strengthened by nudging techniques, this study hypothesizes that a community appeal intervention influences various adoption measures. Since Nudging principles are utilized to subtly modify the environment, the expectation is that these environmental changes and communication about these changes lead to an increase in engagement in clothing swapping behavior. Building on the theoretical substantiation, four hypotheses about the relation between community appeal and adoption arise:

Hypothesis 1a (Clothing swapping behavior- clothes taken): In the experimental condition, the quantity of clothing items brought increases more strongly over time following the community appeal intervention, compared to the control condition where no changes are implemented.

Hypothesis 1b (Clothing swapping behavior- clothes brought): In the experimental condition, the quantity of clothing items taken increases more strongly over time following the community appeal intervention, compared to the control condition where no changes are implemented.

Hypothesis 2 (Intention to return): In the experimental condition, the intention to return for future visits increases more strongly over time following the community appeal intervention, compared to the control condition where no changes are implemented.

Hypothesis 3 (Positive word of mouth): In the experimental condition, positive word of mouth increases more strongly over time following the community appeal intervention, compared to the control condition where no changes are implemented.

Besides these behavior-based measures, the last hypothesis about adoption focuses on the initial decision to engage with clothing swapping activities. In specific, whether people are motivated to visit the swap store in the first place. In this study, a flyer-based intervention was used to communicate the community appeal atmosphere in the swap store. Because adoption begins with willingness to accept a behavioural invitation. Response to the flyer is considered as an early indicator of behavioural adoption or resistance. The hypotheses that arise from this is:

Hypothesis 4 (flyer response): *The number of customers will increase more in the experimental store that underwent a community appeal intervention, than in the control store, which did not undergo a community appeal intervention.*

2.3 Environmental concern

Environmental concern is the level of awareness individuals have of environmental issues, and their willingness to contribute to protecting the environment from damaging human practices (Diekmann & Franzen, 2019). As already described, environmental concern is a motivating aspect for adopting sustainable behaviors, like clothing swapping (Broska, 2021; Hiller Connell, 2011; Cervellon & Wernerfelt, 2012; Armstrong et al., 2015; Yan et al., 2015). Nevertheless, research found that individuals remain unresponsive to environmental incentives to join sustainable practices. Because individuals prioritize their interests, social pressures, and economic aspects more than they are concerned about the environment (Bettin & Wollni, 2019). The findings of Bettin and Wollni (2019) implicate environmental concern is not a strong universal stimulator. This aligns with research by Saracevic et al. (2022) who investigated how normative appeals affect pro-environmental behavior. According to their findings, people are frequently more impacted by communal engagement and social norms than environmental aspects. Concluding, while some individuals are driven by environmental concern, others are more motivated by different incentives, like social or financial aspects.

A closely related study by Van Acker et al. (manuscript in preparation) conducted research about the effect of collective efficacy on adoption of clothing swapping in a real-life setting. Results show that there was no effect found for those with high environmental concern, but for those with low environmental concern there was a significant effect. Despite it being a small effect, it is a meaningful insight, since at first glance it seems counterintuitive. However, the reasoning behind their findings clarifies it. Those who already have high environmental concern do not need an external incentive to join sustainable practices, for instance, as swapping clothes. For those who have low environmental concern the external incentive, like community appeal, potentially has a bigger impact on the adoption process of clothing swapping behavior. This aligns with the research of Bettin & Wollni (2019) and Saracevic et al. (2022) who found that some individuals don't prioritize concerns about the environment.

2.3.1 Applicability of environmental concern in the fashion industry

In this research, the main focus is on how communal appeal, as an external motivator, impacts the adoption of clothing swapping behavior. Environmental concern serves as important driver to motivate people to adopt clothing swapping. However, existing research has shown that individuals with low environmental concern are less likely to be driven by environmental factors alone (Bettin & Wollni, 2019; Saracevic et al., 2022).

In line with this Wu et al. (2023) revealed that, while environmental concern can influence behavior, social factors, such as social norms and community engagement and tend to influence sustainable behavior adoption stronger, especially for those with low environmental concern. Resonating with this, the premise of this study is that community appeal, rather than just environmental incentives, may serve as a powerful driver for adoption of clothing swapping for those who are less environmental concerned.

Through measuring environmental concern in an experimental real-world setting, this study aims to see whether there is a shift in the profile of visitors in the clothing swap store.

Considering that the community appeal intervention leads to specifically attracting individuals with lower environmental concern, a shift in visitors composition over time in the experimental store compared to the control store where no intervention is implemented, was expected. Details of the experimental design and procedures for hypothesis testing are provided in chapter 3.

Hypothesis 5 (Environmental concern): *Due to the community appeal intervention, the composition of visitors in the experimental location, will shift over time, with a higher proportion of individuals indicating a lower level of environmental concern compared to the control store.*

2.4 Conceptual model and hypotheses

The two hypotheses expected that peoples' incentive to visit to the swap store KrijgdeKleertjes (the experimental location in this study) relies more on social motivation rather than environmental motivation. The expectation is that the profile of the individuals, visiting the store before the communal appeal intervention, differs from those who visit the store afterward. In specific, a decrease in the level of environmental concern is expected for individuals visiting the store after the communal appeal intervention. Based on these considerations the following conceptual framework arises:

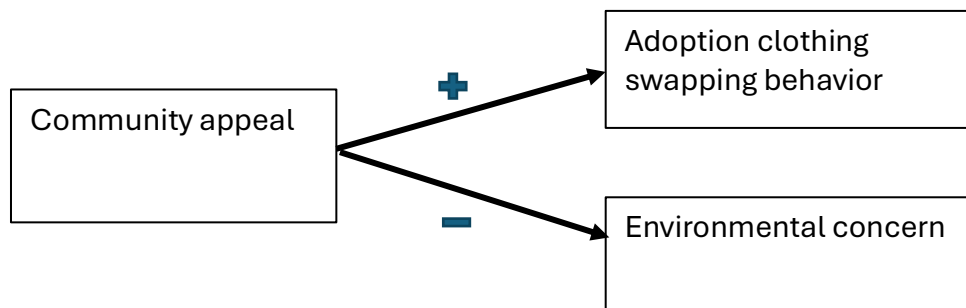


Figure 1: conceptual framework

The framework visualizes the main relationships between the independent variable "community appeal" and the two separate dependent variables "adoption of clothing swapping behavior" and "environmental concern". The relationship between community appeal and adoption of clothing swapping behavior, an increase was expected, visualized with a plus sign. In the second relationship, a decrease between community appeal and average level of environmental concern among visitors was expected. This is visualized with a minus sign. Important to note to prevent misunderstanding; the minus sign between community appeal and environmental concern does not imply that community appeal reduces individuals' environmental concern. Instead, the decrease between those two variables reflects a change in the profile of the visitors, engaging more individuals with lower level of environmental concern who may not have participated otherwise.

3. Methodology

This chapter outlines the methodology used to examine the effect of the community appeal intervention on clothing swapping adoption. It begins with the research design and context, followed by participant details, sampling, and exclusion criteria. Additionally, intervention strategy is outlined, along with the measures and materials used. Next, survey method and data collection procedure are explained. The chapter concludes with data analysis, quality assurance measures, and ethical considerations.

3.1 Research Design

The objective of this research was to explore how community appeal influences the adoption of clothing swapping behavior. It also examined whether a community appeal intervention attracts a broader audience, potentially including visitors with lower level of environmental concern who are motivated to visit the store because of social incentives. Community appeal in this context referred to the social inviting design of the clothing swap store that fostered informal interaction and a sense of belonging. Adoption was measured based on, clothing swapping behavior (clothes brought and clothes taken), positive word of mouth intention to return and flyer response. Given the practical limitations of random assignment, a quasi-experimental design within a quantitative research approach was used (Field, 2005). It was not practical to randomly assign participants to experimental or control locations (i.e., the swap stores). Therefore, this study leverages two comparable swap store locations to assess the effect of a two-part intervention (Charness et al., 2012; aciejewski et al., 2013). In paragraph 3.4, the two-part intervention will be explained in detail.

Quantitative methods enabled objective measurement of perceptions, which improved validity and minimized bias, and were therefore well-suited to test the hypotheses (Lim, 2024; Mohajan, 2020). Note all hypotheses, presented in chapter 2, included a comparison between the experimental location and the control location, which is typical for a between-subject design (Charness et al., 2012). Consistent with this design, the research followed a primarily deductive approach, aiming to test five hypotheses based on theoretical concepts and prior research. Data was collected, and the hypotheses were either be supported or rejected based on the results (Barroga et al., 2023; Lim, 2024).

3.2 Context

In this study KrijgdeKleertjes, a non-profit second-hand swapping organization, was utilized for experimenting. At KrijgdeKleertjes, customers can either donate clothing and receive an equivalent weight in return or collect stamp credits for future exchanges (Pluryn, n.d.) KrijgdeKleertjes has over 5500 members and runs 30 sites. Two of its stores, were incorporated in the experiment, which are

KrijgdeKleertjes Elst, the control store, and KrijgdeKleertjes Nijmegen, the experimental store. Because these sites had similar characteristics, like shopping concept, offerings, and a diversity of their customer base, these two sites were chosen to compare in this study (KrijgdeKleertjes.nl, n.d.-a, -b). The intervention took place in public open spaces, in the neighbourhoods surrounding the swap stores.

3.3 Participants and sampling

In both locations, flyers were distributed at the local market and in nearby mailboxes within a 1-kilometre radius of the swap store, to minimize distance as a potential confounding factor. Appendix 4 lists the specific streets where flyers were distributed. The community appeal flyer was handed out only in Nijmegen, while the control flyer was only distributed in Elst (between-subjects). Flyer return was assessed during post-measurement, with four participants identified as having responded to the flyer.

Next, by engaging with people passing by, on a random basis, the researcher ensured that the influence of community-driven efforts on clothing swapping behavior was accurately measured. Moreover, a basic understanding of the Dutch language was required, as communication in this language was crucial in this study.

By targeting the local market and mailboxes for both locations, inclusiveness was ensured, as these public spaces were open and accessible to everyone.

A G-Power analysis indicated that a minimum of 351 participants was needed to achieve sufficient statistical power (Faul et al., 2007). The actual sample included 478 valid participants, 188 in Elst (control) and 290 in Nijmegen (experimental), thus meeting power requirements. The overall average age was 44, ranging from 19 to 85, with Nijmegen participants slightly older (45 vs. 41). Gender distribution was similar across locations: 92.8% female, 6.8% male, and 0.4% other. Regarding education, 63.2% completed higher education, 27.2% vocational education, and 7.9% secondary school. No significant differences in environmental concern were found between the groups. Appendix 5.2 provides full overview of descriptive statistics.

3.3.1 Exclusion criteria

People who are 17 years or younger were not targeted when running the intervention, guaranteeing that each participant is able to make responsible decisions for their spending and swapping habits, and legally authorized to make their own decisions.

3.4 Intervention Strategy

The intervention consisted of two parts. First, a community appeal intervention was implemented in the experimental store (Nijmegen). This involved an in-store setup inviting visitors to connect, talk, or relax with coffee and magazines (see Figure 3). This setup was exclusive to the experimental store, the control store remained unchanged. By intervening only in the physical environment in Nijmegen, this study examined whether the community appeal influenced adoption of clothing swapping behavior. Specifically, clothes brought and taken, intention to return, word of mouth, and flyer response (see Hypotheses 1a till 4, Chapter 2).



Figure 2: baseline in-store setup



Figure 3: experimental in-store setup

To communicate the in-store community setup, a flyer communication intervention was added as the second part of the intervention. Flyers were distributed at local markets in both the experimental and control locations to ensure consistency. However, only in the experimental location did the flyer align with an outdoor setup reflecting the in-store atmosphere, and the flyer content differed. Figure 4 visualizes the experimental flyer, which displays people chatting over coffee or tea, supported by the phrase “de koffie staat klaar!” and visuals of magazines to emphasize inclusivity. Appendix 1 presents both flyers. The control flyer only shared practical store details, without any community cues. The experiment ran over six weeks, divided into three phases: pre-measurement, intervention, and post-measurement, each lasting two weeks.



Figure 4: back and front experimental flyer

Pre-measurement: The pre-measurement served as a baseline and as a manipulation check, during which the adoption variables and control variables were assessed. In both, the experimental condition as well as the control condition, the number of visitors was counted, and a survey was conducted. This process was as follows: visitors were counted when entering the store, after they have finished shopping, they were asked to complete the survey.

Intervention: As explained, the intervention consisted of two parts, the in-store intervention and the flyer communication intervention. For the in-store intervention, the children's play corner was transformed into a coffee and tea corner (see Figures 2 and 3). During the flyer communication intervention, 600 flyers per day were distributed in both locations. Distribution took place on market days during spring break. This period was chosen because running the intervention and post-measurement phases concurrently would have required more manpower.

To maximize the flyer distribution in both conditions, the flyers were also delivered in mailboxes of households within a 1-kilometre radius from the clothing swap store. The flyer distribution in the mailboxes took place during afternoon hours on planned intervention days. Notice that the flyer distribution at the local market in the experimental condition differed from the flyer distribution on the local market in Elst (control condition) based on a few aspects. In Nijmegen, the setup consisted of a clothing rack displaying four clothes, a small rug and a small table, creating a representative impression of the in-store setup. This arrangement was chosen to enhance a sense of community and to convey a warm and welcoming message (see Figure 5). Appendix 3 consist of the pre-defined script which was used to ensure consistency and provided guidance. Furthermore, the researchers approached passersby in pairs in Nijmegen, to further support a sense of community.

Post-measurement: Like the pre-measurement, the number of visitors was counted assessing changes over time. The same survey questions were used to test hypotheses 1a until 4 on the impact of community appeal on adoption measures. Surveys were again conducted as visitors exited the store. One addition was made: in the post-measurement, a new answer option for “reason to visit” was included to measure flyer response, because flyers were only distributed after the pre-measurement. Appendix 2 shows all survey items. This remained a between-subjects design, comparing data from two time points across separate visitor groups. Again, this is a between-subjects design because it involves comparing data from two different time points (before and after the intervention) across distinct groups (those surveyed before and after the intervention).

3.5 Measures

To evaluate the impact of the community appeal intervention, store-level data and individual level data was collected. While store-level data provided insights into broader effects of the intervention, like number of visitors, individual-level data gave insights into the underlying attitudes and characteristics of visitors. Both types of data were collected in both conditions, Nijmegen (experimental condition) and Elst (control condition), before and after the intervention.

3.5.1 Store-level data

Store-level data was collected by counting the number of visitors and tracking clothing swapping activity in both conditions, during pre- and post-measurement stages. This allowed for a comparison of change overtime, between the two conditions.

By counting the number visitors, the fourth hypothesis was evaluated (regarding flyer response). While this store-level comparison gave initial insights into the effectiveness of the flyer communication intervention, individual-level data on visitors’ motives to visit the store, were used to further verify flyer influence (see 3.3.2).

Furthermore, store-level data was used to test hypothesis 1a,1b, which concerns changes in clothing swapping behavior (clothes brought and clothes taken). This hypothesis was assessed by comparing the total number of clothing items swapped before and after the intervention in each store. The difference in swapping activity over time reflects the potential behavioral impact of the community appeal intervention

To establish a fair comparison, the total number of hours spent collecting data was similar across both locations (18 hours).

3.5.2 Individual-level data

To collect individual-level data short in-store surveys were utilized, during both pre-and post-measurement phases. Adoption related variables as well as questions about personal characteristics were included in the survey. To measure adoption four items were included, intention to return, positive word of mouth, clothing swapping behavior and flyer response. Furthermore, the control variables which were included are environmental concern, loneliness, financial strain, and demographics (age, gender, education, postal code). Despite the fact that loneliness and financial strain was outside the scope of this research, it was still included for parallel research but was not analyzed during data analyses.

To evaluate the perceived community appeal, a manipulation check was incorporated, employing statements like “this store feels like a social, welcoming place”. Notice, in post-measurement surveys one answer option to the question “what is the reason you came to KrijgdeKleertjes (swap store) today?” was added, whether they come to the store because of the flyer. This provided insights into the effectiveness of the flyer communication intervention.

3.6 Materials

3.6.1 Intervention (experimental and control location)

An experimental intervention was compared with a control intervention, by separating these two, cross-contamination of effects was prevented (Shadish et al., 2002). As described in paragraph 3.4 the two-part intervention consisted of the in-store community appeal setup and a flyer communication intervention. To create a community appeal setup in the experimental swap store, furniture, mugs and decoration were borrowed from a local secondhand store. Furthermore, a coffee machine and a kettle of the researcher were used during the post-measurement phase. Some beverages were bought from the supermarket (coffee, coffee filters, tea bags, cookies). To create a cozy atmosphere, some decorative and practical materials were bought from a retailer (picture frames, tissue box, tray, candles, cleaning supplies). Finally, a music Bluetooth box from one of the researchers was lent, in order to play calm music in the coffee and tea corner.

3.6.2 Personal handover of flyers

The researcher personally distributed flyers. By personally distributing the flyers, there was more control over communication style. This is important since the communication style must be conducive to the community appeal. To ensure consistency in communication style, a predefined script was made (see appendix 3). In addition to the flyer, a communal appeal atmosphere setup was arranged. This setup was only implemented in the experimental condition (see Figure 5). By adding this communal appeal setup, a visually immersive experience was crafted aiming to attract passersby.

To create this community appeal atmosphere, attributes like a rug, table, and fashion rack were collected.



Figure 5: Impression of community atmosphere setup

3.6.4 Flyers

In the control condition, only basic flyers that provided factual information about KrijgdeKleertjes were distributed (see appendix 1). In addition to the factual information also social benefits were covered in the experimental flyer (figure 4). To limit possible biases, equal exposure was guaranteed, 600 flyers were distributed in each condition.

The back of the experimental flyer also had a social component, “Welcome to the KrijgdeKleertjes community”. Since the experiment was conducted in a Dutch neighborhood, the text on the flyer was in Dutch. Furthermore, the background of the back of the flyer visualized a fashion rack in a cozy setting. The flyer for the control condition had a more basic backside. The fashion rack in the cozy atmosphere was replaced by a monotonous colored background(see Appendix 1).

3.7 Survey

During pre- and post-measurement phase a survey was conducted to gather individual-level data about the store visitors. As explained in 3.4, the surveys in the pre- and post-measurement were almost identical to assess difference over time. The survey started with measuring the construct community appeal based on three items. Followed by items measuring adoption, this construct was operationalized into four variables. Most important the variable “clothing swapping behavior” was measured based on the items “How many clothing items have you handed in today?” “How many clothing items have selected (taken) today?”, which reflects behavioral adoption. The variables intention to return (in SPSS continuous adoption) and positive word of mouth measured attitudinal adoption, for both a 5-point Likert scale was used. Lastly, “reason for visiting” includes in the post-measurement the answer option “because of the flyer”, this reflects flyer response and also contributes to insights in behavioral adoption.

Notice, respondents selected applicable reasons for visiting the store from four predefined options (handing in clothes, choosing clothes, chatting with others, drinking coffee/tea + because of flyer (only in post-measurement)) and one open-ended answer option to specify other motivations. After assessing these key variables in the survey, some control variables, like age, postcode, gender and education level were asked. Followed by a statement about environmental concern, which people could answer based on a 5-point Likert-scale. Lastly statements about loneliness and financial status were presented, but these concepts fall outside the scope of this study. For a total overview of all constructs and corresponding items, see appendix 2.

The question order was designed to optimize clarity and response accuracy, key measures like, community appeal (for manipulation check), and adoption were placed first, followed by control items, with demographic sensitive questions and environmental concern at the end. All questions were phrased in B1-level Dutch, and cognitively demanding items were interpreted with simple ones to reduce fatigue and dropout risk (Schneider et al., 2024).

While several of the original scales were originally 7-point Likert-scale, this was adjusted to a 5-point Likert-scale to improve clarity and accessibility for respondents with B1 level Dutch. The scale of the concept of environmental concern was based on combining existing scale items of Tornatzky (1977) and Bianci and Birtwhistle (2012). These two scales were merged since they either failed to represent the environmental concern part or focused too heavily on climate change rather than a broader environmental degradation. Van Acker et al. (manuscript in preparation) revealed that reducing the scale to four items, internal consistency was still sufficient ($\alpha=0.865$) (Field, 2005). However, to prevent drop out during the intervention, the final survey used a single representative item, making the construct more practical for field implementation.

3.8 Data analysis

To assess the effectiveness of the community appeal manipulation intervention, a two-way ANOVA was conducted, using the mean score of community appeal as the dependent variable. ANOVA was chosen since this analysis is able to test interaction effects (Field, 2005). For the manipulation check (community appeal mean score), violations of normality and linearity were observed. Although the assumptions of normality and linearity were violated, these violations were considered manageable due to the sufficiently large sample size (>25) (Schmider et al. 2010; Field, 2005). In this case, despite the assumption violations, ANOVA was still deemed the most appropriate method for testing the interaction effects related to the manipulation check. Since the manipulation via the community appeal intervention was central to the research, measuring the interaction between time (before/after) and location (experimental vs. control) was desirable. ANOVA was the most suitable test for measuring these interactions, even with the assumption violations (Field, 2005).

However, the situation for hypothesis testing was different.

For all hypotheses, at least three ANOVA assumptions were violated, and some assumptions were violated even more. This means that the majority of ANOVA assumptions were violated for the hypotheses. Table 1 presents all dependent variables regarding the hypotheses, including which assumptions were violated.

Hypothesis	ANOVA assumptions violated
Hypothesis 1a: clothes brought	Normality, homogeneity, and linearity were violated
Hypothesis 1b: clothes taken	Normality, homogeneity, and linearity were violated
Hypothesis 2: intention to return	Normality, linearity and measurement level were violated
Hypothesis 3: positive word of mouth	Normality, homogeneity, linearity, and measurement level violations were found
Hypothesis 4: flyer response	Normality, linearity, and measurement level violations were present
Hypothesis 5: Environmental concern	Normality, homogeneity, linearity, and measurement level violations were found.

Table 1: assumptions check ANOVA

Given that the majority of assumptions were violated for all hypothesis, it was decided to use alternative comparison tests and Chi-square test. Instead, the Mann-Whitney U test was used for ordinal data (intention to return, positive word of mouth, flyer response, and environmental concern), while the T-test was utilized for continuous data (clothes brought and clothes taken). This approach ensured consistency, as the T-test and Mann-Whitney U test are appropriate for testing group differences without violating the assumptions of ANOVA (Field, 2005). Only for hypothesis 4, Chi-square test of independence was utilized. The Chi-square test was most appropriate given the binary nature of the variable (visited due to flyer: Yes/ No). Again, ANOVA was not possible because majority of the assumptions were not met, but also because ANOVA as well as T-test and Mann-Whitney U test required ordinal or continuous variables, which was not the case. However, the assumption of a minimum of five cases per cell was violated (four flyer responses in Nijmegen, zero in Elst), statistical reliability of the results got violated (Field, 2005). Full outputs of all statistical tests are presented in Appendix 5. Notice, before conducting all analyses, data got cleaned, taking exclusion criteria into account, Appendix 5.1 elaborates on the data cleaning process. Moreover, a reliability

test was conducted prior testing all hypotheses and manipulation check, to assess internal consistency of multi-item constructs (Field, 2005).

3.9 Quality of analysis

The use of a between-subject design was intended for enhancing the reliability of this research as it minimized biases and confounding variables, thus it ensured consistent measurements across different groups (Field, 2005). The between-subject design allows for comparison between two different groups. Specifically, the comparison between the experimental store (Nijmegen) and the control store (Elst) (Efron, 1971). Given that the original analysis plan included the between-subject design to track changes in visitor numbers and personal characteristics over time, and comparing changes over time between the two groups, the analysis approach was adjusted due to violations of ANOVA analysis. Consequently, alternative tests had to be conducted, as explained in paragraph 3.8. The study maintained internal validity by comparing the experimental location with the control location, while accounting for variations between participants. Finally, by using a robust quantitative framework for measuring the concepts, transparency and reproducibility of this research was ensured, even with the constraints imposed by the dataset (Plumb et al., 2023).

3.10 Ethical considerations

All participants were asked for their informed consent before starting with the survey and during their initial interaction with the researchers in the intervention weeks. This consent entailed a clear explanation of the research. Furthermore, the consent highlighted the anonymity of their response and the voluntary nature. The researchers made sure that participants understood potential risks, like emotional discomfort resulting from questions about loneliness. However, to minimize discomfort, personal information was also processed anonymously. Additionally, respondents could complete the survey privately and comfortably. During distributing flyers, researchers had a consistent and respectful communication style, aligning with the research goal to emphasize community appeal. However, this communication was without any undue pressure, as the researcher wanted to avoid manipulation of participants' behavior. After data was collected, it was securely stored and only accessible for the researchers, supervisor and examiner. Furthermore, data was stored temporarily, following the guidelines of Radboud University (Radboud University, n.d.).

4. Results

In this chapter, the results derived from the intervention are presented. Before running all statistical analyses, the dataset was cleaned, all steps for data cleaning are described in Appendix 5.1. In order to get insights in the distribution and tendency of the key variables, a table including the mean scores, and standard deviations is presented in Appendix 5.2. Additionally, a reliability test was conducted to test internal consistency of the constructs 'community appeal' and 'adoption'. After preliminary analyses, the results of the statistical analyses, which were used for testing all five hypotheses and checking the manipulation, will be provided. The findings are presented per hypothesis, to provide a structured overview.

4.2 Reliability analyses

A reliability analysis was conducted to assess the internal consistency of the items used to measure community appeal. A Cronbach's alpha of 0,783 was found, reflecting an acceptable internal consistency of the items measuring community appeal ($>0,7$). The reliability test for the five items measuring adoption, resulted in a Cronbach's alpha of 0.328, which is below threshold (0.7). Items were deleted one by one in an iterative process to see whether it would improve internal consistency. Nevertheless, even after removing the weakest correlating items, Cronbach's alpha remained below threshold. In Appendix 5.3 the results of the stepwise deletion are presented.

4.3 Hypotheses testing

4.3.1 Hypothesis 1: Clothing swapping behavior

Hypothesis 1a: *In the experimental condition, the quantity of clothing items brought increases more strongly over time following the community appeal intervention, compared to the control condition where no changes are implemented.*

Hypothesis 1b: *In the experimental condition, the quantity of clothing items taken increases more strongly over time following the community appeal intervention, compared to the control condition where no changes are implemented.*

To test the first hypotheses concerning the first adoption measure "clothing swapping behavior" divided in clothes brought and clothes taken, an independent samples T-test was conducted. The independent variable was location (experimental versus control), the dependent variables were number of clothes brought (hypothesis 1a) and taken (hypothesis 1b). This test compared means between two independent groups (experimental versus control location), using continuous outcome variables. Although the initial plan was to conduct a two-way ANOVA to assess the interaction effect between measurement time (pre- and post-measurement) and location (experimental and control

location), ANOVA assumptions were violated, as discussed in 3.8. Consequently, an independent T-test was used instead, to ensure reliable group comparisons under these constrained circumstances (Field, 2005). The results of the T-test revealed that clothes taken ($t = -2,423$, $p = ,004$) differed significantly between the two groups. Participants in Nijmegen (experimental location) took significantly more clothes than in Elst (control location). For clothes brought, a non-significant effect was found ($t = -0,814$, $p = 0,184$), meaning that there is no significant difference in clothes brought between the swap stores.

4.3.2 Hypothesis 2: Intention to return

Hypothesis 2: *In the experimental condition, the intention to return for future visits increases more strongly over time following the community appeal intervention, compared to the control condition where no changes are implemented.*

Like hypothesis 1, the assumptions of ANOVA were not met (see 3.8). Because of violating the assumptions ANOVA was not possible, instead a Mann-Whitney U test was considered appropriate. Similar to the T-test, which was used for hypothesis 1a and 1b the Mann-Whitney U test measured difference between groups. T-test was not suitable for variables at nominal or ordinal- level, therefore Mann-Whitney U test was used, as it is appropriate for comparing ordinal data (Field, 2005). The results of the Mann-Whitney U-test revealed significant difference for intention to return ($U = 25059.0$, $Z = -2.18$, $P = 0.029$), meaning higher intention to return in the experimental location (Nijmegen).

4.3.3 Hypothesis 3: Positive word of mouth

Hypothesis 3: *In the experimental condition, positive word of mouth increases more strongly over time following the community appeal intervention, compared to the control condition where no changes are implemented.*

Because of similar considerations as with the second hypothesis, a Mann-Whitney U test was conducted to test whether positive word of mouth increased more in the experimental location than in the control location. The results showed a non-significant difference in positive word of mouth between the experimental and the control location ($U = 26119,500$, $Z = -0.939$, $p = 0.348$).

4.3.4 Hypothesis 4: Flyer response

Hypothesis 4: *The number of customers will increase more in the experimental store that underwent a community appeal intervention, than in the control store, which did not undergo a community appeal intervention.*

The fourth hypothesis proposes that the number of visitors would increase more strongly in the experimental store compared to the control store. To examine whether the flyer intervention contributed to increased store visits, a Chi-square test was conducted. However, as described, only four visitors responded to the flyer in the experimental condition by coming to the swap store. In the control store no respondents came because of the flyer. This extremely low result violates one of the core assumptions of Chi-square test, namely, at least five respondents should be in each cell (Howell & University of Vermont, n.d.). Consequently, statistical results from the Chi-square test are not reliable. However, the test results of the Chi-square test can be found in appendix 5, and the outcome was non-significant ($\chi^2(1, N=243) = 2.66, P=0.103$). Because of the minimal respondents on the flyer ($4/1600 * 100 = 0,25\%$) no meaningful statistical outcomes were found. Thus, these findings suggest that the flyer intervention had no significant impact on store visits to either location.

4.3.5 Hypothesis 5: Environmental concern

Hypothesis 5: *Due to the community appeal intervention, the composition of visitors in the experimental location, will shift over time, with a higher proportion of individuals indicating a lower level of environmental concern compared to the control store.*

To test the last hypothesis about environmental concern, same considerations were made as with previous hypotheses. Again, the assumption of ANOVA concerning normality and internal consistency were violated, meaning ANOVA was not suitable. Instead, a Mann-Whitney U test was conducted, and the output showed a non-significant result ($U=24944.00, Z = -1.319, p= 0.187$). Meaning that the effect of the community appeal intervention on the adoption of clothing swapping does not significantly differ between people with lower and higher environmental concern.

4.4 Manipulation check

A two-way ANOVA was conducted to assess whether the perceived community appeal differed between the two locations over time, as a test of the manipulation's effectiveness. The manipulation, which included the flyer intervention, and the in-store community appeal set-up, took place in Nijmegen (Experimental location). For running the ANOVA, independent variable's location (experimental location vs. control location) and measurement time (pre-measurement vs. post-measurement) were used. Notice, in the ANOVA analysis, the initial independent variable "community appeal" served as statistical dependent variable because the purpose of this analysis is to check whether community appeal manipulation is effective. To run the analysis, the variable community appeal was transformed into mean community appeal variable, making it a continuous variable suitable for ANOVA (Field, 2005). Before running the ANOVA, all assumptions were checked.

Assumptions regarding homogeneity and linearity were not met

The assumption of homogeneity of variance tested with Levene's test revealed that this assumption was met ($P > 0.05$) since all p-value was non-significant ($P = 0.746$), which means assumption for homogeneity was met. The Q-Q plot for both groups was also inspected, a moderate deviation of the diagonal was found. Suggesting a small deviation from normality. Similarly, assumption of linearity was violated, (Appendix 5.6.3). However, given the large sample sizes ($N = 289$ Nijmegen, $N = 188$ Elst) and the resilience of ANOVA against moderate violations of normality, there is chosen to continue with the analysis (Schmider et al. 2010; Field, 2005).

Thus, the only effect that appeared to be significant, was the main effect of time ($F(1,473) = 5.90$, $P = 0.016$). Meaning that perceived community appeal increased over time. The main effect of location ($F(1,473) = 0.19$, $P = .663$) and the interaction effect ($F(1,473) = 0.40$, $P = 0.528$) were not significant. The output indicated a small portion of variance in perceived community appeal ($R^2 = .013$ Adjusted $R^2 = .006$).

5. Discussion

5.1 Overview of key findings

The findings of this study provide mixed evidence concerning the effectiveness of the community appeal intervention in increasing the adoption of clothing swapping behavior. Most hypotheses got rejected since non-significant effect was found, suggesting that the intervention did not significantly influence all adoption measures. Two hypothesis that got confirmed were regarding clothes taken and intention to return (Hypothesis 1b and 2). In conclusion, while the community appeal intervention had a positive influence on some adoption measures, it did not significantly affect clothes brought, positive word of mouth, flyer response and environmental concern.

5.2 Interpretation of findings and theoretical implications

According Baumeister and Leary (1995) people are driven to belong somewhere. In case people feel integrated in a social environment, they are more likely to participate in shared practices, such as clothing swapping. This study leveraged the belongingness principle by creating an in-store community appeal set up to engage people in clothing swapping. The ultimate goal was that adoption of clothing swap stores would increase because of the social incentives rather than environmental incentives. However, the results revealed that most hypotheses regarding adoption got rejected. Specifically, clothes taken as part of clothing swapping behavior, positive word of mouth and flyer response, which all reflect the construct "adoption" were non-significantly influenced by the intervention. These findings indicate that a socially inviting environment does not automatically translate into behavior changes. Furthermore, Baumeister and Leary (1995), indicated that belongingness requires strong interpersonal connections and interactions, which may have not been reinforced by the intervention sufficiently.

The intervention was designed based on principles of nudging (Thaler & Sunstein, 2008), which suggests that environmental restructuring and social norms subtly encourage engagement in desired behavior. Within the context of this study, the goal was increasing adoption of clothing swapping behavior. To achieve this, the intervention incorporated restructuring of the environment. In specific, the physical space in the experimental swap store got transformed by replacing the children's play corner with a cozy coffee and tea corner, arranging furniture in a circular format so that it would stimulate social interaction between visitors. By including decorative elements the intervention aimed to create a welcoming environment. Calm music contributed to a relaxed atmosphere, making participation in clothing swap stores effortless and inviting (White et al., 2019). Ultimately, the goal

was that these nudges would facilitate adoption of clothing swapping. Moreover, social norms influenced behavior by signaling what is common within a community (Nguyen-Van et al., 2021; Silvi & Padilla, 2021). For instance, when a visitor saw a peer sitting in the coffee and tea corner, the visitor in question did not ask for permission to make use of it. However, when the corner was unoccupied, some hesitation was noticed, people asked whether they were allowed to make use of the coffee corner. This indicated that the presence of others making use of the in-store setup reinforced descriptive norms, and subtly stimulates participation based on social validation. Although environmental restructuring stimulated activation of social norms the results revealed that the intervention did not lead to total adoption. Which may be due to minimal activation of social norms, resulting in inefficient nudging. Moreover, it drew attention to a boundary for the Nudging theory, namely, interventions that require high level behavioral effort (like visiting a physical store) subtle interventions may fall short. Prior research (Amiri et al., 2024) emphasized that dynamic nudging mechanisms, like real-time peer interaction, visible swapping statistics, or structured social participation, could enhance behavior adoption. Finally, the expectation regarding the change in customer profile over time, suggesting more people with low environmental visiting the store, was also rejected. This could be attributed to a lack of a targeted or personalized approach, or limited reach of the intervention duo to scarcity in time and manpower.

5.3 Practical implications

The findings of this study offered valuable insights for sustainability initiatives which aimed to promote sustainable consumption through clothing swapping. Although the community appeal intervention did not result in adoption on each aspect, it did result in higher intention to return. Thus, the community appeal in-store setup and communication about this in-store set up might have fostered continued engagement overtime. Practitioners should consider maintaining the in-store setup, since this community-driven in-store design supports continued participation overtime. However, since the other adoption measures, like clothes brought, positive word of mouth and flyer response, did not significantly differ in the experimental store, the community appeal intervention was non-sufficient. This suggests that the utilized nudges may have required more or stronger visible activation. Such as, enhancing descriptive social norms through visible social interaction or showing real-time swap statistics. By making behavior of peers visible it potentially leads to social validation, making it more accessible to adopt clothing swapping.

Specifically, practitioners could highlight peer behavior through posters, or by letting local committed customers serve as ambassadors. Ambassadors are those who model desired behavior and encourage others to do the same. Ambassadors are often recruited from within the target group, and are particularly effective in activating social norms which in turn stimulates social validation (Hassler

et al.,2025). When certain behavior is socially validated, this can help with nudging people towards desired behavior, such as clothing swapping.

5.4 Limitations

Statistical limitations

Ultimately, this study tested whether the intervention would have a significant effect on the adoption of clothing swap stores, and whether the intervention would attract more people with low environmental concerns, because of the social incentive rather than an environmental incentive. To assess this, an experimental intervention was implemented in a swap store and compared to a control store, where a control intervention was implemented. Furthermore, the effectiveness of the intervention was intended to be tested based on the comparison between before and after intervention period. To test the impact of the intervention and all corresponding hypotheses, ANOVA analysis was required, since ANOVA is able to assess interaction effect (interaction between measurement time and location) (Field, 2005). However, in order to conduct ANOVA analysis, assumptions had to be checked, and revealed that for all hypothesis, at least three ANOVA-assumptions per hypothesis were violated.

Although ANOVA is relatively robust against violations of normality and linearity when accounting for a sufficiently large sample (>25), the combination of three or more assumptions made ANOVA unfeasible (Field, 2005). Notice, ANOVA consists of five assumptions, meaning that the majority (3/5) assumptions was violated. Instead, T-tests and Mann-Whitney U tests were utilized to compare group differences (experimental versus control location). While T-tests and Mann-Whitney U tests were not able to test interaction effects, the consideration for alternative tests had to be made, in order to observe reliable results. In this research, ensuring methodological integrity and conformity of statistical assumptions was prioritized over following the initial statistical plan, as disregarding these violations would have compromised reliability and interpretability of the results.

Measurement issues

A second constraint focused on measuring the concept of environmental concern. The construct was measured, using a single-item, derived from merged scales (Lounsbury & Tornatzky, 1977; Bianchi & Birtwistle, 2011). While a four-item version from Juliette van Acker et al. (manuscript in preparation) revealed sufficient internal consistency, the construct eventually got measured using a single item (Field, 2005). The reduction limits construct validity, however, this consideration was made to prevent drop out during the survey. Moreover, some questions in the survey were misunderstood, specifically, amount of clothes taken and brought, leading to complications in measuring behavioral adoption accurately.

Practical limitations

External validity of the results was limited due to the study's scope and setting. The experiment was conducted in two specific swap stores, one experimental and one control store. Although the design enabled a real-world comparison, the narrow contextual and geographical scope limits broader applicability (Maciejewski et al., 2013). The flyers were distributed in a one-kilometer radius of the swap store in both locations, this radius is chosen because of the limited time and staffing.

Furthermore, the flyer intervention took place during spring break. On the one hand, this was in favor for the experiment, since it allowed for clean separation between outdoor and in-store intervention.

On the other hand, potential organizations and public places were unavailable during spring break.

Therefore, flyer distribution only took place at the local markets and by spreading flyer through mailboxes of people's houses. Additionally, the store's limited opening hours and temporary clothing intake pauses due to capacity issues, possibly led to missing respondents in data collection.

Moreover, the data collection took place during seasonal transition. Because of seasonal transition, people rejected the flyer since they already cleaned up their closets, and got rid of their selected clothing they did not wear anymore, prior to the intervention. Final limitation was that pre- and post-measurement only lasted two weeks, meaning that those who were willing to respond to the flyer but were unable to visit the store within two weeks, were not captured. The seasonal transition and relatively short post-measurement phase could partially explain low flyer response.

5.5 Future recommendations

This study revealed that a community appeal intervention alone was not sufficient to significantly increase total adoption of clothing swap stores. Although the intervention was grounded in Nudging theory and belongingness theory, findings suggested that subtle social cues may not be adequate when the targeted behavior requires effortful engagement, such as swapping clothes (Thaler & Sunstein, 2008; Baumeister & Leary, 1995). Future research could investigate boundary conditions of nudging, by comparing high-effort versus low-effort sustainable behavior activities. By testing whether more explicit or stronger social incentives, such as, facilitated group swaps or public recognition, are required in high-effort activities (Amiri et al., 2024).

Field research revealed that social validation played a critical role in engaging participants in the community appeal in-store setup. Future research should further investigate how real-time social validation cues, such as visible peer behavior, ambassadors, or social feedback, enhance the effectiveness of community-based nudges.

Moreover, future studies could extend the duration post-measurement. Because the limited ability to detect delayed behavioral response can be tackled. Because several passersby at the local market indicated that they were interested but lacked time or need, considering they recently got rid of clothes they did not wear anymore. Regarding methodological considerations, future research should improve measuring the construct environmental concern based on multiple items. Although, using a single-item prevented drop out during filling in the survey successfully, incorporating validated multi-item scales in a robust format would lead to higher internal consistency (Field, 2005). Additionally, broadening the research scope beyond two swap stores of KrijgdeKleertjes, could increase external validity, especially by including diverse neighbourhoods, store formats and socioeconomic groups (Maciejewski et al., 2013). Finally, future research should ensure ANOVA-assumptions, by first conducting a pilot study in which assumptions are checked. When assumptions are violated within the pilot study, consider adjusting research direction, if not continue procedure.

References

- Ajzen, I. & University of Massachusetts at Amherst. (1991). The Theory of Planned Behavior. *Organizational Behavior And Human Decision Processes*, 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Aldalbahi, A., El-Naggar, M. E., El-Newehy, M. H., Rahaman, M., Hatshan, M. R., & Tawfik A. Khattab. (2021). Effects of Technical Textiles and Synthetic Nanofibers on Environmental Pollution. In *Polymers* (p. 155). https://mdpi-res.com/polymers/polymers-13-00155/article_deploy/polymers-13-00155-v2.pdf?version=1609750118
- Amiri, B., Jafarian, A., & Abdi, Z. (2024). Nudging towards sustainability: a comprehensive review of behavioral approaches to eco-friendly choice. *Discover Sustainability*, 444. <https://doi.org/10.1007/s43621-024-00618-3>
- Alford, B. L., & Biswas, A. (2002). The effects of discount level, price consciousness and sale proneness on consumers' price perception and behavioral intention. *Journal of Business Research*, 55(9), 775–783. [https://doi.org/10.1016/S0148-2963\(00\)00214-9](https://doi.org/10.1016/S0148-2963(00)00214-9)
- Armstrong, M. J., Hull, D., Guo, K., Barton, D., Hazlehurst, J. M., Gathercole, L. L., Nasiri, M., Yu, J., Gough, S. C., Newsome, P., & Tomlinson, J. W. (2015). Glucagon-like peptide 1 decreases lipotoxicity in non-alcoholic fatty liver disease. *Journal of Hepatology*, 63(3), 640–648. <https://doi.org/10.1016/j.jhep.2015.03.014>
- Bailey, K., Basu, A., & Sharma, S. (2022). The Environmental Impacts of Fast Fashion on Water Quality: A Systematic Review. *Water*, 14(7), 1073. <https://doi.org/10.3390/w14071073>
- Barroga, E., Matanguihan, G., Furuta, A., Arima, M., Tsuchiya, S., Kawahara, C., Takamiya, Y., & Izumi, M. (2023). Conducting and writing quantitative and qualitative research. *Journal of Korean Medical Science*, 38. <https://doi.org/10.3346/jkms.2023.38.e291>
- Baumeister, R. F., Leary, M. R., & American Psychological Association, Inc. (1995). The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation. In *Psychological Bulletin* (Vol. 117, Nummer 3, pp. 497–529) [Journal-article]. American Psychological Association, Inc. https://d1wqtxts1xzle7.cloudfront.net/55748042/W1_Key_Reading_The_Need_to_Belong_Baumeister_and_Leary_1995-libre.pdf?1518093217=&response-content-disposition=inline%3B+filename%3DThe_Need_to_Belong_Desire_for_Interperso.pdf&Expires=1710387708&Signature=dfSQq~j4TvukEvFhF23i49rJh7gQk-rOht1msmYyRJFq0GDGaDrjbn0bw7D70OzqIWwyXkGZrd6ivPMQOpsTKagJcyaGoaS4WZfRSAlYiqq770jxz2ee1NS9yVqDfW-JVqzGWFZe~jpG4j7-aKjxDXUW0bN26wPnwcCi1pNx4IPxwJRDki5r4JkOzh-Raoy5fyxEv8hK316LFst6lM5V2MNdhdVcO807zLmygKGDfKGCs4W2EMO4xvR2piGoM3yrT3mf7AsCk7sIO9o2O6c-pHS8vQFNqdcIPX2JUHQmPLB-fg~EuGpeEPsBH1CkW3qkKuFK3pGeyY8VtpKFS7oclQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA

- Becker-Leifhold, C., Iran, S., & Department of Sustainability Management, Universitat Ulm. (2018). Collaborative fashion consumption – drivers, barriers and future pathways. In *Journal Of Fashion Marketing And Management* (Vols. 22–22, Nummer 2, pp. 189–208). <https://doi.org/10.1108/JFMM-10-2017-0109>
- Bettin, J., & Wollni, M. (2019). Environmental Concern, Income, and Nature Experience in India. *Sustainability*, 11(2), 346. <https://doi.org/10.3390/su11020346>
- Bianchi, C., & Birtwistle, G. (2011). Consumer clothing disposal behaviour: a comparative study. *International Journal Of Consumer Studies*, 36(3), 335–341. <https://doi.org/10.1111/j.1470-6431.2011.01011.x>
- Bogosavac, N., Sjouwerman, S., Bogosavac, N., & Sjouwerman, S. (2025, 18 februari). *Van shampoo tot winterjas: vraag naar gratis spullen uit weggeefwinkels groeit*. NOS. <https://nos.nl/artikel/2556344-van-shampoo-tot-winterjas-vraag-naar-gratis-spullen-uit-weggeefwinkels-groeit>
- Bonnail, E., Vera, S., Blasco, J., & DelValls, T. Á. (2023). Towards a Cleaner Textile Industry: Using ASEC to Decrease the Water Footprint to Zero Liquid Discharge. *Water*, 15(21), 3781. <https://doi.org/10.3390/w15213781>
- Broska, L. H. (2021). It's all about community: On the interplay of social capital, social needs, and environmental concern in sustainable community action. *Energy Research & Social Science*, 79, 102165. <https://doi.org/10.1016/j.erss.2021.102165>
- CBS Statline. (n.d.). <https://opendata.cbs.nl/#/CBS/nl/dataset/85900NED/table?ts=1742241892730>
- Centraal Bureau voor de Statistiek. (n.d.). *Hoe interpreteer je de SES-WOA-scores en hoe zijn deze bepaald?* Centraal Bureau Voor de Statistiek. <https://www.cbs.nl/nl-nl/faq/infoservice/hoe-interpreteer-je-de-ses-woa-scores-en-hoe-zijn-deze-bepaald->
- Centraal Bureau voor de Statistiek. (2025, March 19). *Sociaal-economische status; scores per wijk en buurt, regio-indeling 2024*. Centraal Bureau Voor de Statistiek. <https://www.cbs.nl/nl-nl/cijfers/detail/86092NED?q=socio%20economical%20status%20grootstal>
- Cervellon, M., & Wernerfelt, A. (2012). Knowledge sharing among green fashion communities online: Lessons for the sustainable supply chain. *Journal of Fashion Marketing and Management*, 16(2), 176–192. <https://doi.org/10.1108/13612021211222860>
- Charness, G., Gneezy, U., & Kuhn, M. (2012). Experimental methods: Between-subject and within-subject design. *Journal of Economic Behavior and Organization*, 81, 1-8. <https://doi.org/10.1016/J.JEBO.2011.08.009>.
- De Jong-Gierveld, J., & van Tilburg, T. G. (2006). A 6-item scale for overall, emotional, and social loneliness: Confirmatory tests on survey data. *Research on aging*, 28(5), 582-598.
- Diekmann, A., & Franzen, A. (2019). *Environmental Concern: a Global perspective* (J. Mayerl, Red.). https://www.soz.unibe.ch/e39893/e48983/e127077/e127485/e725419/Diekmann_Franzen_2018_ger.pdf

- Efron, B. (1971). Forcing a sequential experiment to be balanced. *Biometrika*, 58(3), 403–417. <https://doi.org/10.1093/biomet/58.3.403>
- ELST | KrijgdeKleertjes. (n.d.). <https://www.KrijgdeKleertjes.nl/ruilpunt/elst>
- European commission. (2024, December 10). *EU strategy for Sustainable and Circular Textiles*. European Commission. Geraadpleegd op 23 februari 2025, van https://environment.ec.europa.eu/strategy/textiles-strategy_en
- Field, A. F. (2005). *Discovering statistics using SPSS* (2de editie). SAGE Publications. <https://doi.org/10.1348/000709906X100611>. <https://doi.org/10.1348/000709906X100611>
- Faul, F., Erdfelder, E., Lang, A.-G., Buchner, A., & Psychonomic Society, Inc. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. In *Behavior Research Methods* (Vols. 39–2, pp. 175–191). <https://link.springer.com/content/pdf/10.3758/BF03193146.pdf>
- Hafner, B. R., Elmes, D., Read, D., & White, M. P. (2019). Exploring the role of normative, financial and environmental information in promoting uptake of energy efficient technologies. *Journal Of Environmental Psychology*, 63, 26–35. <https://doi.org/10.1016/j.jenvp.2019.03.004>
- Hansen, P. G. (2016). The Definition of Nudge and Libertarian Paternalism: Does the Hand Fit the Glove? *European Journal Of Risk Regulation*, 7(1), 155–174. <https://doi.org/10.1017/s1867299x00005468>
- Hassler, C. M. K., Mende, M., Scott, M. L., & Bolton, L. E. (2025). The prosocial ambassador effect: Adopting an ambassador role increases sustainable behavior. *Journal of Marketing*, 89(1), 19–38. <https://doi.org/10.1177/00222429241265000>
- Henninger, C. E., School of Materials, Bürklin, N., Institute for Marketing, Niinimäki, K., & School of Arts, Design and Architecture. (2019). The clothes swapping phenomenon – when consumers become suppliers [Journal-article]. *Journal Of Fashion Marketing And Management*, 23–23(3), 327–344. <https://doi.org/10.1108/JFMM-04-2018-0057>
- Howell, D. C. & University of Vermont. (n.d.). CHI-SQUARE TEST - ANALYSIS OF CONTINGENCY TABLES. <https://www.uvm.edu/~statdhtx/methods8/Supplements/Chi-Square-Folder/ChiSquareTests.pdf>
- Hiller Connell, K. Y. (2011). Exploring consumers' perceptions of eco-conscious apparel acquisition behaviors. *Social Responsibility Journal*, 7(1), 61–73. <https://doi.org/10.1108/174711111111114549>
- Iran, S., Schrader, U., & Institute of Vocational Education and Work Studies, TU Berlin, Berlin, Germany. (2017). Collaborative fashion consumption and its environmental effects. *Journal Of Fashion Marketing And Management*, 21–4, 468–482. <https://doi.org/10.1108/JFMM-09-2016-0086>
- Karpova, E. E., Jestratijevic, I., Lee, J., & Wu, J. (2022). An Ethnographic Study of Collaborative Fashion Consumption: The Case of Temporary Clothing Swapping. *Sustainability*, 14(5), 2499. <https://doi.org/10.3390/su14052499>

- Koch, J., Vringer, K., PBL Planbureau voor de Leefomgeving, Linda Steg, Ellen van der Werff, Ruben van Popering, Judith Roumen, Daniëlle Broeze, Frank Dietz, Olav-Jan van Gerwen, Maikel Kishna, Anne Gardien Prins, & Harry Wilting. (2023). *Hoe 'circulair' zijn Nederlandse consumenten? Een empirisch onderzoek naar gedrag, bereidheid en de potentiële milieuwinst van circulair consumeren*. PBL Planbureau voor de Leefomgeving. https://www.pbl.nl/uploads/default/downloads/pbl_2023_hoe-circulair-zijn-nederlandse-consumenten_5004.pdf
- Kollmuss, A., & Agyeman, J. (2002). Mind the Gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8(3), 239–260. <https://doi.org/10.1080/13504620220145401>
- KrijgdeKleertjes.nl. (n.d.-a). *Ruil makkelijk kleertjes en speelgoed*. <https://www.KrijgdeKleertjes.nl/>
- KrijgdeKleertjes.nl. (n.d.-b). *Over ons*. <https://www.KrijgdeKleertjes.nl/over-ons>
- KrijgdeKleertjes. (n.d.-c). *Nijmegen*. <https://www.KrijgdeKleertjes.nl/ruilpunt/nijmegen>
- KrijgdeKleertjes. (n.d.-d) *Elst*. <https://www.KrijgdeKleertjes.nl/ruilpunt/elst>
- Lang, C., & Armstrong, C. M. J. (2017). Collaborative consumption: The influence of fashion leadership, need for uniqueness, and materialism on female consumers' adoption of clothing renting and swapping. *Sustainable Production And Consumption*, 13, 37–47. <https://doi.org/10.1016/j.spc.2017.11.005>
- Lang, C., & Zhang, R. (2019). Second-hand clothing acquisition: The motivations and barriers to clothing swaps for Chinese consumers. *Sustainable Production And Consumption*, 18, 156–164. <https://doi.org/10.1016/j.spc.2019.02.002>
- Li, Z., Jiao, Y., Cheng, Y., Shen, Z., & Zhou, M. (2024). Unlocking the power of peer influence: Strategies for bridging the adoption chasm in new product diffusion. *Managerial And Decision Economics*. <https://doi.org/10.1002/mde.4379>
- Lim, W. (2024). What Is Quantitative Research? An Overview and Guidelines. *Australasian Marketing Journal*. <https://doi.org/10.1177/14413582241264622>.
- Lounsbury, J. W., & Tornatzky, L. G. (1977). A scale for assessing attitudes toward environmental quality. *The Journal of Social Psychology*, 101(2), 299-305.
- Maciejewski, M. L., Curtis, L. H., & Bryan Dowd. (2013). Study design elements for rigorous quasi-experimental comparative effectiveness research. *J. Compar. Effect. Res.*, 2(2), 159–173. <https://doi.org/10.2217/CER.13.7>
- Matthews, D., & Hodges (2016). Clothing Swaps: An Exploration of Consumer Clothing Exchange Behaviors. *Family And Consumer Sciences Research Journal*, 45(1), 91–103. <https://doi.org/10.1111/fcsr.12182>

- Matthews, D., & Rothenberg, L. (2017). An assessment of organic apparel, environmental beliefs and consumer preferences via fashion innovativeness. *International Journal Of Consumer Studies*, 41(5), 526–533. <https://doi.org/10.1111/ijcs.12362>
- Montoya, A. K., & Hayes, A. F. (2016). Two-condition within-participant statistical mediation analysis: A path-analytic framework. *Psychological Methods*, 22(1), 6–27. <https://doi.org/10.1037/met0000086>
- Nielsen, S. (2023). Examining the Psychology and Human Behavior of Sustainable Living: The Impact of Socioeconomic Status on Climate Change Education [Thesis]. In Kristen An Horton & Dr. Mark Burbach, *Environmental Studies Undergraduate Student Theses*. Environmental Studies Program. <https://digitalcommons.unl.edu/envstudtheses>
- Nijmegen | KrijgdeKleertjes. (n.d.). <https://www.KrijgdeKleertjes.nl/ruilpunt/nijmegen>
- Norman, G. (2010). Likert scales, levels of measurement and the “laws” of statistics. *Advances in Health Sciences Education*, 15(5), 625–632. <https://doi.org/10.1007/s10459-010-9222-y>
- Plumb, A. N., Lesnak, J. B., Berardi, G., Hayashi, K., Janowski, A. J., Smith, A. F., Bailey, D., Kerkman, C., Kienenberger, Z., Martin, B., Patterson, E., Van Roekel, H., Vance, C. G., & Sluka, K. A. (2023). Standing on the shoulders of bias: lack of transparency and reporting of critical rigor characteristics in pain research. *Pain*, 164(8), 1775–1782. <https://doi.org/10.1097/j.pain.0000000000002874>
- Pol, E. (2002). The Theoretical Background of the City-Identity-Sustainability Network. *Environment And Behavior*, 34(1), 8–25. <https://doi.org/10.1177/0013916502034001002>
- Radboud University. (n.d.). <https://www.ru.nl/en/staff/researchers/research-data/archiving-and-publishing-data#:~:text=At%20the%20end%20of%20your,a%20minimum%20of%2010%20years.>
- Rogers, E. (2003). *Diffusion of Innovations* [Review; Text]. https://d1wqtxts1xzle7.cloudfront.net/28804464/rogers1985-libre.pdf?1390875028=&response-content-disposition=inline%3B+filename%3DDiffusion_of_innovations_by_Everett_Roge.pdf&Expires=1710015439&Signature=ACFlirdMTxqOKv2I6Uxh9pHklw~T6G25qO1DIdbSY3TbQo6BdBN~ZMYz4M~cCuqYndZct~p-tzIUZ7rPEwWwrbJRCMX2Z0q-JYhd1z38kQRv5mkeVR-2SImc6puhD6dp-IIQfC8XB5phHv9p96~gljGg9jdCNj68tJqP7RbuAGcxepGiJyDYwOtWZDQZ0CkODjx0-UY4gni4WHGV6MlqgtqulbKDqY0YEndCd1UUaAOJ3YGFAI1SSlwNbr4Cyk2ePYmoCelWS9uwsqIN~g-JmiaoSuYI51u4DDW1sJBWEJ9ZelGsxTPS78Tjav3TOpjEKZjQL0B~u1vhpREv7CQELIQ__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA
- Saracevic, S., Schlegelmilch, B. B., & Wu, T. (2022). How normative appeals influence pro-environmental behavior: The role of individualism and collectivism. *Journal Of Cleaner Production*, 344, 131086. <https://doi.org/10.1016/j.jclepro.2022.131086>
- Schmider, E., Ziegler, M., Danay, E., Beyer, L., & Bühner, M. (2010). Is It Really Robust? *Methodology*, 6(4), 147–151. <https://doi.org/10.1027/1614-2241/a000016>

- Sloot, D., Jans, L., & Steg, L. (2019). In it for the money, the environment, or the community? Motives for being involved in community energy initiatives. *Global Environmental Change, 57*, 101936. <https://doi.org/10.1016/j.gloenvcha.2019.101936>
- Steg, L., & Vlek, C. (2009). Encouraging pro-environmental behaviour: An integrative review and research agenda. *Journal of Environmental Psychology, 29*(3), 309–317. [https://doi.org/10.1016/j.jenvp.2008.10.004:contentReference\[oaicite:0\]{index=0}](https://doi.org/10.1016/j.jenvp.2008.10.004:contentReference[oaicite:0]{index=0}).
- Talwar, M., Talwar, S., Kaur, P., Islam, A. K. M. N., & Dhir, A. (2021). Positive and negative word of mouth (WOM) are not necessarily opposites: A reappraisal using the dual factor theory. *Journal of Retailing and Consumer Services, 63*. <https://doi.org/10.1016/j.jretconser.2020.102396>
- Wu, M., Mamun, A. A., Yang, Q., & Masud, M. M. (2023). Modeling the reuse intention and practices of secondhand clothing: evidence from a developing nation. *Humanities And Social Sciences Communications, 10*(1). <https://doi.org/10.1057/s41599-023-02008-y>
- White, K., Habib, R., & Hardisty, D. J. (2019). How to SHIFT Consumer Behaviors to be More Sustainable: A Literature Review and Guiding Framework. *Journal Of Marketing, 83*–3, 22–49. <https://doi.org/10.1177/0022242919825649>
- Yan, R., Zhang, Y., Li, Y., & Xia, L. (2015). Structural basis for the recognition of SARS-CoV-2 by full-length human ACE2. *Science, 367*(6485), 1444–1448. <https://doi.org/10.1126/science.abb2762>
- Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing, 60*(2). <https://doi.org/10.1177/002224299606000203>

Appendix 1: Flyers

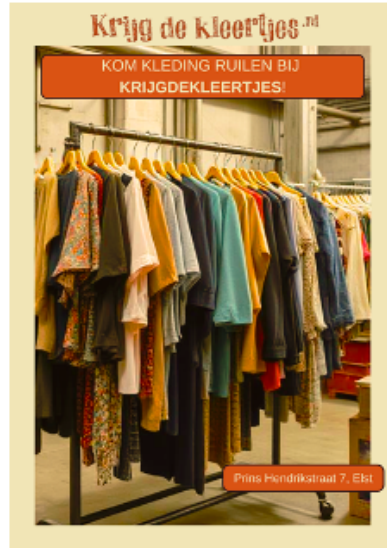


Figure 3: Flyer control location



People having a conversation and laughing should trigger interaction.

The text and the coffee ("koffie") should invite people to feel welcome to join and engage in communal swapping practices.

Magazines should create a warm feeling and a sense of shared space, like a community hub.

Figure 2: Flyer experimental location

Appendix 2: Survey questions

Items in pre-measurement survey

Concept	Items	Scale(s)
Manipulation check: Community appeal	<ul style="list-style-type: none"> The store helps me to meet other people. The store feels like a social, cozy place. In this store I feel connected with other people. 	
Positive word of mouth	<ul style="list-style-type: none"> I plan to recommend KrijgdeKleertjes to other people. There are many people I can trust completely. There are enough people I feel close to. 	Inspired by Zeithaml et al (1996) and Talwar et al. (2021)
Continues adoption	<ul style="list-style-type: none"> I plan to come back to KrijgdeKleertjes. 	
Clothing swapping behavior	<ul style="list-style-type: none"> How many clothing items have you handed in today? How many clothing items have selected (taken) today? 	
Questions specifically relevant for KrijgdeKleertjes	<ul style="list-style-type: none"> How many times have you visited KrijgdeKleertjes? What is the reason you came today to KrijgdeKleertjes? If KrijgdeKleertjes would have a membership, how much money would you be willing to pay per year to swap clothes unlimited? 	
Demographical questions	<ul style="list-style-type: none"> How old are you? What is your postal code? How do you identify yourself (gender)? What is your highest achieved education? 	
Environmental concern	<ul style="list-style-type: none"> I worry a lot about how the environment is doing 	Tornatzky (1977) and Bianci and Birtwhistle (2012).
Social loneliness (Measured for parallel research)	<ul style="list-style-type: none"> In my daily life I often feel lonely. 	De Jong-Gierveld and van Tilburg (2006).

Price consciousness (Measured for parallel research)	<ul style="list-style-type: none"> I have a small monthly budget to get by. 	Alford and Biswas (2002)
---	--	--------------------------

Items post-measurement survey

Concept	Items	Scale(s)
Manipulation check: Community appeal	<ul style="list-style-type: none"> The store helps me to meet other people. The store feels like a social, cozy place. In this store I feel connected with other people. 	
Positive word of mouth	<ul style="list-style-type: none"> I plan to recommend KrijgdeKleertjes to other people. There are many people I can trust completely. There are enough people I feel close to. 	Inspired by Zeithaml et al (1996) and Talwar et al. (2021)
Continues adoption	<ul style="list-style-type: none"> I plan to come back to KrijgdeKleertjes. 	
Clothing swapping behavior	<ul style="list-style-type: none"> How many clothing items have you handed in today? How many clothing items have selected (taken) today? 	
Questions specifically relevant for KrijgdeKleertjes, and for measuring the effect of the flyer intervention	<ul style="list-style-type: none"> How many times have you visited KrijgdeKleertjes? What is the reason you came today to KrijgdeKleertjes? Answer option added: “because of the flyer” If KrijgdeKleertjes would have a membership, how much money would you be willing to pay per year to swap clothes unlimited? 	
Demographical questions	<ul style="list-style-type: none"> How old are you? What is your postal code? How do you identify yourself (gender)? What is your highest achieved education? 	

Environmental concern	<ul style="list-style-type: none"> • I worry a lot about how the environment is doing 	Tornatzky (1977) and Bianci and Birtwhistle (2012).
Social loneliness (Measured for parallel research)	<ul style="list-style-type: none"> • In my daily life I often feel lonely. 	De Jong-Gierveld and van Tilburg (2006).
Price consciousness (Measured for parallel research)	<ul style="list-style-type: none"> • I have a small monthly budget to get by. 	Alford and Biswas (2002)

Appendix 3: messages flyer distribution

Message during flyer distribution on the market:

Guidelines for location Nijmegen:

Step 1: Hello, may I ask you something?

Are you familiar with KrijgdeKleertjes?

A: If so, ask whether they visit the store regularly.

B: If not, ask if they would like to get a flyer and explain the concept of KrijgdeKleertjes:

KrijgdeKleertjes is a cozy swapping place, where you can bring your clothes you do not wear anymore, in exchange you can choose new clothing items. Exchange without money. The store also has a coffee/ tea corner, where you can connect with others and enjoy free drinks.

Tip for during the conversation: highlight cozy atmosphere community spirit and the fact that it is easily accessible for everyone.

Guidelines for location Elst:

Step 1: Hello, may I ask you something?

Are you familiar with KrijgdeKleertjes?

A: If so, ask whether they visit the store regularly.

B: If not, ask if they would like to get a flyer and explain the concept of KrijgdeKleertjes:

KrijgdeKleertjes is a swapping place, where you can bring your clothes, you do not wear anymore, in exchange you can choose new clothing items.

Appendix 4: flyer distribution

For both, the experimental location and the control location, a route in a 1-kilometre radius from the swap store has been mapped out before distributing the flyers. Considering handing out flyers in mailboxes was more efficient, most flyers were distributed via this way. However, the researchers noticed that the community appeal aspect was better transferred by having a chat with people on the local market. Therefore, both ways of distributing were used.

The formula that was considered:

The goal was to distribute flyers in mailboxes of houses that were within a 1-kilometre radius of Hatertseweg 400, 6533 GV Nijmegen (KrijgdeKleertjes), spread over two afternoons each time with a minimum of two people from 13:00 till 16:00. Same for location Elst, so streets surrounding (within 1-kilometre) Prins Hendrikstraat 7, 6661 XL Elst.

Eventually 600 flyers were handed per day per location, of which 550 were handed out in mailboxes.

The neighborhood Hatert is characterized by a low socio-economic status (SES): -0,465. Notice, KrijgdeKleertjes lies just by a few hundred meters outside this neighborhood but attracts mostly people living in Hatert. Research found that neighborhoods with low socio-economic status (SES), often experience economic or social obstacles to adopt sustainable behavior (Nielsen, 2023).

Furthermore, the surrounding neighborhoods Grootstal and Goffert were similarly characterized by an SES that is below average (Centraal Bureau voor de Statistiek, 2025; Centraal Bureau voor de Statistiek, n.d.). In contrast, the control location Elst had a higher SES score, 0.082. Given the lower SES in Nijmegen neighborhoods, it was expected that the community appeal intervention would be more effective in attracting participants to KrijgdeKleertjes compared to the higher-SES in Elst.

The streets within a 1-kilometre radius of KrijgdeKleertjes Nijmegen were:

- **Gemstonesstreets (18 streets)**

Jadestraat, Turkooisstraat, Ametiststraat, Barnsteenstraat, Bergkristalstraat, Saffierstraat, Smaragdstraat, Agaatstraat, Diamantstraat, Opaalstraat, Robijnstraat, Lazuursteenstraat, Onyxstraat, Granaatstraat, Olivijnstraat, Azurietstraat, Topaasstraat, De Weem.

- **Main roads and surrounding streets:**

Hatertseweg, Vossendijk, Van Boetbergweg, Couwenbergstraat, St. Jacobslaan, Vossenhof

- **Other:**

Anna Blamanlaan, Marga Klompélaan, Annie Romein-Verschoorlaan, Clara Wichmannlaan, Harriët Freezerlaan, Joulestraat, Biotstraat, Keplerstraat, Lenardstraat, Von Fraunhoferhof

Total: 34 streets.

The streets within a 1-kilometre radius of KrijgdeKleertjes Elst were:

Elst-North West:

Prins Hendrikstraat (locatie van KrijgdeKleertjes), Prinses Beatrixstraat, Prinses Marijkestraat, Prinses Máximastraat, Koningin Wilhelminastraat, Koningin Emmastraat, Koningin Julianastraat, Prins Bernhardstraat, Anna Paulownastraat, 1e Molenbergstraat, 2e Molenbergstraat, Van der Duyn van Maasdamstraat, Kostverloren, De Kist, Koetseland.

Music Streets:

Bachstraat, Chopinstraat, Mozartstraat, Brahmsstraat, Wagnerstraat, Verdistraat, Bartókstraat, Sweelinckstraat.

Other:

Sint Maartenstraat, Morel, Kruisakkers, Aletta Jacobslaan, Aamsepad.

Suburb:

Kleine Molenhof, Koningstraat, Koningin Margrietstraat, Koningin Marijkestraat, Koningin Irenestraat

Total: 33 Streets.

Appendix 5: Data analyses SPSS

5.1 Data cleaning process

The data cleaning process consisted of 6 steps.

Stap 1: deleting cases

There were two cases that did not meet the inclusion criteria (>18). Therefore, these were deleted from the dataset.

Stap 2: Coding or transforming:

Open-ended qualitative answers regarding respondents' reason to visit the swap store were recoded. First, all qualitative answers were analyzed, then thematic clusters were made and numerically coded using SPSS 'recode into different variables'. Seven themes were eventually identified: 1. Social activity, 2. Sustainability, 3. Fulfillment, 4. Curiosity 5. Children, 6. Sociability, 7. Specific items. These themes were numbered, and the numbers served as code → RECODED VALUES.

In SPSS: transform recode into different variables select the variable old and new values
gezelschapsactiviteit = 1 duurzaamheid= 2, etc.

STAP 3: Missing data:

According to Field (2005), when there is less than 5% missing data, the impact of the missing data is negligible. Frequencies were inspected for all relevant variables to assess the extent of missing data. Across all variables, the percentage of missing values was negligible (0%) for all important variables, and thus no further data imputation or exclusion procedures were necessary.

SPSS: analyze → descriptive → statistics frequencies → Descriptive statistics of the dependent, independent and control variables.

DV: Adoption:

1. PWOM
2. Intention to return
3. Clothing swapping behavior: item clothes brought + clothes taken
4. Flyer response

DV environmental concern:

1. I worry about the environment...

IV: community appeal:

Item 1 Community appeal

Item 2 Community appeal

Item 3 Community appeal

Control variable: Age, zip code, gender, education level

All other variables like date, measurement time, location, but also irrelevant data that was outside the scope of this research (loneliness, financial items) were left out. For the data about date, measurement time, location, there was no missing since the researchers documented this data and made sure that all information about when and where the research was conducted, was captured. In 5.1.1 frequency tables of all key variables are presented, including missing data.

5.1.1 Output: Frequency tables for checking missing data

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	helemaal oneens	47	,0	9,9	9,9
	mee oneens	99	,0	20,8	30,7
	neutraal	183	,0	38,5	69,3
	mee eens	104	,0	21,9	91,2
	helemaal mee eens	42	,0	8,8	100,0
	Total	475	,0	100,0	
	Missing	missing	3	,0	
	System	1048095	100,0		
	Total	1048098	100,0		
Total		1048573	100,0		

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	helemaal oneens	11	,0	2,3	2,3
	mee oneens	9	,0	1,9	4,2

	neutraal	72	,0	15,2	19,4
	mee eens	254	,0	53,5	72,8
	helemaal mee eens	129	,0	27,2	100,0
	Total	475	,0	100,0	
Missing	missing	3	,0		
	System	1048095	100,0		
	Total	1048098	100,0		
Total		1048573	100,0		

COM_APP_3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	helemaal oneens	16	,0	3,4	3,4
	mee oneens	42	,0	8,8	12,2
	neutraal	203	,0	42,6	54,8
	mee eens	158	,0	33,2	88,0
	helemaal mee eens	57	,0	12,0	100,0
	Total	476	,0	100,0	
	Missing	missing	2	,0	
	System	1048095	100,0		
	Total	1048097	100,0		
Total		1048573	100,0		

CONT_ADOPTION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	helemaal oneens	6	,0	1,3	1,3
	mee oneens	4	,0	,8	2,1
	neutraal	6	,0	1,3	3,3
	mee eens	76	,0	15,9	19,2
	helemaal mee eens	386	,0	80,8	100,0
	Total	478	,0	100,0	
Missing	System	1048095	100,0		
Total		1048573	100,0		

REASON_VISITED_1					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1048095	100,0	100,0	100,0
	niet aangekruist	239	,0	,0	100,0
	aangekruist	4	,0	,0	100,0
	NA	235	,0	,0	100,0
	Total	1048573	100,0	100,0	

ENV_CON					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	helemaal oneens	9	,0	1,9	1,9
	mee oneens	13	,0	2,7	4,7
	neutraal	90	,0	19,0	23,7

	mee eens	162	,0	34,2	57,9
	helemaal mee eens	199	,0	42,1	100,0
	Total	473	,0	100,0	
Missing	missing	5	,0		
	System	1048095	100,0		
	Total	1048100	100,0		
Total		1048573	100,0		

CLO_BROUGHT					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1048095	100,0	100,0	100,0
	0	135	,0	,0	100,0
	1	4	,0	,0	100,0
	10	42	,0	,0	100,0
	11	2	,0	,0	100,0
	12	11	,0	,0	100,0
	13	1	,0	,0	100,0
	14	1	,0	,0	100,0
	15	31	,0	,0	100,0
	17	1	,0	,0	100,0
	18	4	,0	,0	100,0
	2	5	,0	,0	100,0
	20	39	,0	,0	100,0
	21	2	,0	,0	100,0
	24	1	,0	,0	100,0
	25	26	,0	,0	100,0
	28	1	,0	,0	100,0
	3	8	,0	,0	100,0
	30	66	,0	,0	100,0

	35	5	,0	,0	100,0
	4	10	,0	,0	100,0
	40	15	,0	,0	100,0
	5	9	,0	,0	100,0
	50	12	,0	,0	100,0
	54	1	,0	,0	100,0
	6	10	,0	,0	100,0
	60	3	,0	,0	100,0
	7	7	,0	,0	100,0
	8	10	,0	,0	100,0
	Total	1048557	100,0	100,0	
Missing	missing	16	,0		
Total		1048573	100,0		

CLO_TAKEN

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1048095	100,0	100,0	100,0
	0	35	,0	,0	100,0
	1	10	,0	,0	100,0
	10	76	,0	,0	100,0
	11	4	,0	,0	100,0
	12	12	,0	,0	100,0
	13	4	,0	,0	100,0
	14	2	,0	,0	100,0
	15	38	,0	,0	100,0
	16	6	,0	,0	100,0
	17	1	,0	,0	100,0
	18	4	,0	,0	100,0
	19	1	,0	,0	100,0
	2	25	,0	,0	100,0
	20	37	,0	,0	100,0
	22	1	,0	,0	100,0
	23	2	,0	,0	100,0

	25	13	,0	,0	100,0
	3	31	,0	,0	100,0
	30	28	,0	,0	100,0
	35	1	,0	,0	100,0
	4	21	,0	,0	100,0
	40	5	,0	,0	100,0
	45	1	,0	,0	100,0
	5	36	,0	,0	100,0
	6	25	,0	,0	100,0
	60	3	,0	,0	100,0
	65	1	,0	,0	100,0
	7	13	,0	,0	100,0
	8	28	,0	,0	100,0
	9	5	,0	,0	100,0
	Total	1048564	100,0	100,0	
Missing	missing	9	,0		
Total		1048573	100,0		

AGE					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	19	1	,0	,2	,2
	20	1	,0	,2	,4
	22	1	,0	,2	,6
	25	2	,0	,4	1,1
	26	2	,0	,4	1,5
	27	6	,0	1,3	2,8
	28	2	,0	,4	3,2
	29	14	,0	3,0	6,2
	30	8	,0	1,7	7,9
	31	26	,0	5,5	13,4
	32	26	,0	5,5	19,0
	33	14	,0	3,0	22,0

34	19	,0	4,1	26,0
35	22	,0	4,7	30,7
36	14	,0	3,0	33,7
37	32	,0	6,8	40,5
38	17	,0	3,6	44,1
39	18	,0	3,8	48,0
40	19	,0	4,1	52,0
41	22	,0	4,7	56,7
42	10	,0	2,1	58,8
43	21	,0	4,5	63,3
44	21	,0	4,5	67,8
45	9	,0	1,9	69,7
46	11	,0	2,3	72,1
47	9	,0	1,9	74,0
48	3	,0	,6	74,6
49	3	,0	,6	75,3
50	5	,0	1,1	76,3
51	2	,0	,4	76,8
52	4	,0	,9	77,6
53	5	,0	1,1	78,7
54	1	,0	,2	78,9
55	4	,0	,9	79,7
56	6	,0	1,3	81,0
57	4	,0	,9	81,9
58	2	,0	,4	82,3
59	3	,0	,6	82,9
60	5	,0	1,1	84,0
61	2	,0	,4	84,4
62	3	,0	,6	85,1
63	3	,0	,6	85,7
64	4	,0	,9	86,6
65	3	,0	,6	87,2
66	4	,0	,9	88,1

	67	6	,0	1,3	89,3
	68	7	,0	1,5	90,8
	69	9	,0	1,9	92,8
	70	3	,0	,6	93,4
	71	4	,0	,9	94,2
	72	5	,0	1,1	95,3
	73	5	,0	1,1	96,4
	74	2	,0	,4	96,8
	75	5	,0	1,1	97,9
	76	1	,0	,2	98,1
	78	1	,0	,2	98,3
	79	1	,0	,2	98,5
	81	3	,0	,6	99,1
	82	1	,0	,2	99,4
	83	1	,0	,2	99,6
	84	1	,0	,2	99,8
	85	1	,0	,2	100,0
	Total	469	,0	100,0	
Missing	missing	9	,0		
	System	1048095	100,0		
	Total	1048104	100,0		
Total		1048573	100,0		

GENDER					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	vrouw	437	,0	92,8	92,8
	man	32	,0	6,8	99,6
	anders	2	,0	,4	100,0
	Total	471	,0	100,0	
Missing	missing	7	,0		
	System	1048095	100,0		
	Total	1048102	100,0		

Total	1048573	100,0		
-------	---------	-------	--	--

EDU_LEVEL		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	1	,0	,2	,2
	basisschool	7	,0	1,5	1,7
	middelbare school	37	,0	7,9	9,6
	mbo	127	,0	27,2	36,8
	hoger onderwijs	295	,0	63,2	100,0
	Total	467	,0	100,0	
	Missing	missing	11	,0	
	System	1048095	100,0		
	Total	1048106	100,0		
Total		1048573	100,0		

STAP 4: cleaning up spaces in text:

Because SPSS did not clear out leading/ trailing spaces automatically, this was also done by SPSS: transform → compute variables → target variable (new name of the cleaned variable), numeric expression RTRIM(LTRIM(POSTCODE_)) OK.

STAP 5: Controlling type and measurement level:

Before doing analysis, the data was cleaned, and measurement level of each variable was checked.

Almost everything was labeled numeric, but some adjustments were made:

- **Ordinal level:** Community appeal1,2,3, POWM, continues adoption, times visited, education level, loneliness, environmental concern and financial
- **Scale:** clothes brought, clothes taken, subscription.

Step 6: outlier/ invalid values checking:

Anomalies were defined in this step, invalid observations were either corrected or removed. For instance, lots of participants responded to the question "amount of clothes brought" and "amount of clothes taken" in number of bags, for instance, one big shopper. One big shopper was quantified as 30 clothing items, since the researcher checked this in practice. By starting with 30 items as the basis

for one full shopper, all other values are calculated proportionally. For instance, half of a full shopper is assigned as a value of 15 (30/2).

5.2 Descriptive statistics

The table in 5.2.1 presents the distribution and central tendency of the dependent and independent variables. Behavioral adoption was notably skewed, with low responses for “clothes taken” and “flyer response”. Assuming a weak to moderate effect size, a minimum of 351 respondents in total was needed, thus 90 respondents per cell (before-after measurement phase/ experimental-control location). In reality over 100 people visited the store in each cell. Furthermore, 1200 flyers got distributed per location, resulting in four responses to the flyer in the experimental store, and none in the control store. Moreover, attitudinal adoption, including positive word of mouth and continues adoption, showed high scores, meaning that participants had positive attitude towards clothing swapping and were willing to continue engaging in such behavior as reflected by their response to positive word of mouth and intention to return. Environmental concern reflected a minimal spread, while community appeal indicated a slightly positive attitude towards the social environment of the store.

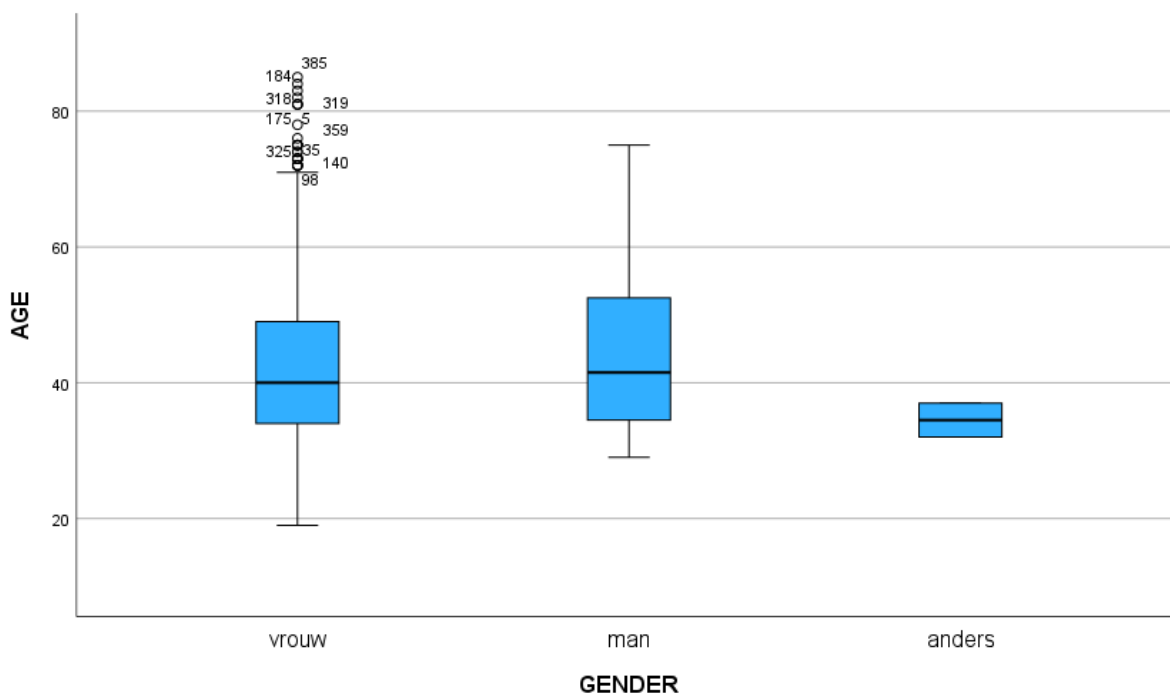
5.2.1 Output: descriptive statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
COM_APP_1	475	1	5	2,99	1,086
COM_APP_2	475	1	5	4,01	,842
COM_APP_3	476	1	5	3,42	,929
PWOM	477	1	5	4,67	,692
CONT_ADOPTION	478	1	5	4,74	,647
CLO_BROUGHT	462	0	60	14,24	14,003
CLO_TAKEN	469	0	65	11,14	9,910
TIMES_VISITED	472	1	4	3,44	,967
REASON_VISITED_1	243	0	1	,02	,128
REASON_VISITED_2	475	0	1	,72	,449
REASON_VISITED_3	475	0	2	,85	,367
REASON_VISITED_4	475	0	1	,06	,244
REASON_VISITED_5	474	0	1	,03	,157

REASON_VISITED_OTHER	28	1	7	3,07	1,884
SUBSCRIPTION	478	0	100	11,21	10,926
AGE	469	19	85	43,99	13,638
GENDER	471	1	3	1,08	,282
EDU_LEVEL	467	0	4	3,52	,725
ENV_CON	473	1	5	4,12	,938
LON	471	1	5	1,86	,958
PER_FINAN	471	1	5	2,42	1,294
Valid N (listwise)	10				

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	GENDER	N	Percent	N	Percent	N	Percent
AGE	vrouw	434	99,3%	3	0,7%	437	100,0%
	man	32	100,0%	0	0,0%	32	100,0%
	anders	2	100,0%	0	0,0%	2	100,0%



Only four visitors came to the store as response to the flyer, Attitudinal adoption, including positive word of mouth and intention to return, showed high scores, meaning that participants had positive attitude towards clothing swapping and were willing to continue engaging in such behavior as reflected by their response to positive word of mouth and intention to return. Environmental concern reflects a minimal spread, while community appeal indicated a slightly positive attitude towards the social environment of the store.

Variable	Mean	Standard deviation	Notes
Behavioral adoption			
Clothes brought	14.24	14.00	Skewed distribution, outliers present
Clothes taken	1.14	9.91	Skewed distribution
Flyer response	4	0	Four respondents in experimental location, none in control location
Attitudinal adoption			
Positive word of mouth	4.67	0.69	High scores on 5-point Liker scale
Intention to return	4.74	0.65	High scores on 5-point Liker scale
Environmental concern	4.12	0.94	Minimal spread, 5-point Likert scale
Community appeal	3.45	0.83	Slightly positive towards social atmosphere

Table 2: descriptive statistics

5.3 Reliability analyses

Since the constructs community appeal and adoption were measured based on multiple items, a reliability test was needed for both. The reliability test examined internal consistency of the multi-item scale. To analyze the degree to which multiple items in a scale reliably reflect the underlying construct, a Cronbach's Alpha was conducted (Field, 2005). According to Field (2005) a Cronbach's Alpha lies between 0 and 1, a Cronbach's Alpha of .70 or higher is acceptable. Lower than .70 means an unreliable scale. The two constructs that consist of multiple items are community appeal and adoption. For community appeal an acceptable Cronbach's Alpha of 0,783 was found. Since $0.783 > 0.7$.

SPSS: analyze → scale → reliability analysis → select all items of one construct → select in statistics scale if item deleted → OK.

5.3.1 Output: reliability test

Reliability Statistics	
Cronbach's Alpha	N of Items
,783	3

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
COM_APP_1	7,44	2,442	,618	,726
COM_APP_2	6,41	3,238	,599	,737
COM_APP_3	7,01	2,782	,671	,652

Furthermore, a reliability analysis is conducted for the construct adoption. Initially, the construct consisted of, clothing swapping behavior (clothes brought and clothes taken), intention to return, positive word of mouth, and flyer response. However, internal consistency of all items was low, therefore stepwise item deletion was performed. Removing the weakest items resulted in slightly higher internal consistency, but still not enough (the threshold is .70) (Field, 2005). The final scale, including clothes brought and clothes taken, still failed to be high internal consistency, suggesting low internal reliability. This result can be explained because these items, although related to clothing behavior, capture different aspects of adoption. Bringing clothes may reflect prosocial motivations, while taking clothes may indicate personal benefit or need.

This is also done for the construct adoption, which is measured based on the item's clothes brought, taken, intention to return (in SPSS continuous adoption), positive word of mouth, flyer response (in SPSS reason for visiting 1). The initial analysis including all items resulted in a low Cronbach's Alpha of 0.328, suggesting low internal consistency. Therefore, items which were least consistent with other variables were deleted. Even with only four, three and two items left, internal consistency was too low since they were below the threshold of 0.70 for acceptable reliability (Field, 2005). Given low internal consistency, each adoption item was treaded and analyzed separately in subsequent analysis.

Reliability Statistics

Cronbach's Alpha	N of Items
,328	5

Item-Total Statistics				
	Scale Mean if Deleted	Scale Variance if Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PWOM	30,86	416,720	,183	,340
CONT_ADOPTION	30,79	416,500	,216	,340
CLO_BROUGHT	20,51	94,260	,368	,063
CLO_TAKEN	24,59	225,418	,376	,024
REASON_VISITED_1	35,56	421,694	-,084	,351

Reliability Statistics	
Cronbach's Alpha	N of Items
,345	4

Item-Total Statistics				
	Scale Mean if Deleted	Scale Variance if Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PWOM	30,13	387,386	,156	,377
CONT_ADOPTION	30,04	388,194	,148	,379
CLO_BROUGHT	20,56	98,866	,345	,077
CLO_TAKEN	23,68	200,175	,362	,019

Reliability Statistics	
Cronbach's Alpha	N of Items
,379	3

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PWOM	25,37	384,172	,134	,492
CLO_BROUGHT	15,80	95,969	,347	,053
CLO_TAKEN	18,92	198,272	,357	,010

Reliability Statistics	
Cronbach's Alpha	N of Items
,492	2

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
CLO_BROUGHT	11,12	92,783	,349	.
CLO_TAKEN	14,23	196,434	,349	.

5.4 T-test: comparing groups

An independent sample T-test is conducted to compare the amount of clothes taken in the experimental group and the control group. A T-test compares mean scores of groups (Field,2005).

In order to conduct a T-test first all the constructs that are measured based on multiple items need to be transformed into mean scale variables. This goes up for community appeal. Not for adoption since the reliability analysis showed that the items are not internally consistent and need to be threaded as individual items, therefore no mean score for the construct adoption is made.

SPSS: transform → compute variable → target variable → COM_APEAL_MEAN = mean of (COMM_1, COMM_2, COMM_3) → OK.

5.4.1 Output: transformed variable

Group Statistics					
	LOC	N	Mean	Std. Deviation	Std. Error Mean
COM_APEAL_MEAN	Nijmegen	289	3,4556	,83023	,04884
	Elst	188	3,4876	,76648	,05590
CLO_BROUGHT	Nijmegen	277	13,81	14,384	,864
	Elst	185	14,89	13,424	,987
CLO_TAKEN	Nijmegen	283	10,25	9,390	,558
	Elst	186	12,51	10,532	,772
AGE	Nijmegen	284	45,71	14,034	,833
	Elst	185	41,36	12,595	,926
SUBSCRIPTION	Nijmegen	290	11,14	11,196	,657
	Elst	188	11,33	10,526	,768

The output of the T-test shows that most variables are not significant (see two-sided p-value). the variable clothes taken ($t = -2,423$, $p = ,004$) differed significantly between the two groups. Participants in Nijmegen (experimental location) took significantly more clothes than in Elst (control location).

Clothes brought ($t = -0,814$, $p = 0,184$) did not significantly differs between the groups.

To compute a T-test in SPSS: analyze → compare means → independent-Samples T test → test variables: clothes taken, clothes brought, Com_appeal_mean, grouping variables: Location → define groups; Nijmegen = 1, Elst = 2 → OK. In 5.4.2 T-tests outcomes are presented.

5.4.2 output: T-tests

Independent Samples Test											
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						One-Side d p	Two-Side d p			Lower	Upper
CLO_BR OUGHT	Equal variances assumed	1.770	.184	-.814	460	.208	.416	-1.083	1.330	-3.697	1.531
	Equal variances not assumed			-.826	41.2640	.205	.409	-1.083	1.312	-3.662	1.496
CLO_TA KEN	Equal variances assumed	8.582	.004	-2.423	467	.008	.016	-2.254	.931	-4.083	-.426
	Equal variances not assumed			-2.366	36.6669	.009	.019	-2.254	.953	-4.128	-.381
COM_A PPEAL_ MEAN	Equal variances assumed	.409	.523	-.424	475	.336	.672	-.03199	.07550	-.18034	.11635
	Equal variances not assumed			-.431	42.131	.333	.667	-.03199	.07423	-.17790	.11391
AGE	Equal variances assumed	7.054	.008	3.415	467	<.001	<.001	4.351	1.274	1.847	6.855
	Equal variances not assumed			3.494	42.2352	<.001	<.001	4.351	1.245	1.903	6.799
SUBSC RIPTION	Equal variances assumed	.166	.684	-.187	476	.426	.851	-.192	1.024	-2.204	1.820
	Equal variances not assumed			-.190	41.6818	.425	.850	-.192	1.011	-2.179	1.795

5.5 Mann-Whitney U test: comparing groups

For the variables where no T-test can be conducted because of the measurement level, a Mann-Whitney U test was conducted (ordinal and numeric measurement level = Mann-Whitney U test instead of a T-test). The results of the Mann-Whitney U-test showed a significant difference for intention to return (U- 25059.0, Z= -2.18, P= 0.029), suggesting partial higher adoption level in the experimental location (Nijmegen). For all other variables no significant group difference was found (all $P > 0.05$).

Also, reasons two and three for visiting the store were not significant, meaning that bringing and taking clothes would be the same for both locations. This does not align with the outcomes of the T-test for the variable's clothes brought and clothes taken. Clothes brought, was not significant, suggesting there was a significant difference between the groups on this item. The reason for this discrepancy is that both stores work with stamp card, meaning one stamp stands for 500 grams of clothes. Visitors can use this stamp card as a form of payment, and the stamps also work as credits and can be accumulated over time.

Ranks				
	LOC	N	Mean Rank	Sum of Ranks
PWOM	Nijmegen	289	235,38	68024,50
	Elst	188	244,57	45978,50
	Total	477		
CONT_ADOPTION	Nijmegen	290	231,91	67254,00
	Elst	188	251,21	47227,00
	Total	478		
TIMES_VISITED	Nijmegen	285	239,04	68126,00
	Elst	187	232,63	43502,00
	Total	472		
REASON_VISITED_1	Nijmegen	147	123,31	18126,00
	Elst	96	120,00	11520,00
	Total	243		
REASON_VISITED_2	Nijmegen	287	235,82	67679,00
	Elst	188	241,34	45371,00
	Total	475		

REASON_VISITED_3	Nijmegen	287	238,04	68317,00
	Elst	188	237,94	44733,00
	Total	475		
REASON_VISITED_4	Nijmegen	287	234,59	67326,00
	Elst	188	243,21	45724,00
	Total	475		
REASON_VISITED_5	Nijmegen	286	236,47	67631,00
	Elst	188	239,06	44944,00
	Total	474		
REASON_VISITED_OTHER	Nijmegen	18	14,53	261,50
	Elst	10	14,45	144,50
	Total	28		
GENDER	Nijmegen	284	234,75	66668,50
	Elst	187	237,90	44487,50
	Total	471		
EDU_LEVEL	Nijmegen	281	228,61	64240,00
	Elst	186	242,14	45038,00
	Total	467		
ENV_CON	Nijmegen	286	243,28	69579,00
	Elst	187	227,39	42522,00
	Total	473		

Test Statistics ^a												
	PWOM	CONTADOPTION	TIMES_VISITED	REASON_VISITED_1	REASON_VISITED_2	REASON_VISITED_3	REASON_VISITED_4	REASON_VISITED_5	REASON_VISITED_OTHER	GENER	EDU_LEVEL	ENV_CON
Mann-Whitney U	26119,500	25059,000	25924,000	6864,000	26351,000	26967,000	25998,000	26590,000	89,500	26198,500	24619,000	24944,000
Wilcoxon W	68024,500	67254,000	43502,000	11520,000	67679,000	44733,000	67326,000	67631,000	144,500	66668,500	64240,000	42522,000
Z	-,939	-2,178	-,610	-1,626	-,551	-,012	-1,590	-,741	-,024	-,549	-1,243	-1,319
Asymp. Sig. (2-tailed)	,348	,029	,542	,104	,582	,991	,112	,459	,981	,583	,214	,187
Exact Sig. [2*(1-tailed Sig.)]									,981 ^b			
a. Grouping Variable: LOC												
b. Not corrected for ties.												

5.6 Two-way ANOVA assumptions

To test an interaction effect and main effects for all hypotheses and the effectiveness of the manipulation (community appeal intervention) two-way ANOVA was planned to run. With an ANOVA the difference over time (pre-and post-measurement) between the two stores (experimental versus control store) could be measured. In order to check whether ANOVA analysis is appropriate to run, first all assumptions were checked. The assumptions of ANOVA are:

1. Independence of observations: This cannot be tested with a statistical test but has to be ensured through a proper experimental design. To ensure independence of observations, the experimental and control intervention were conducted separately, with no overlap between the participants in the two groups.

2. Normal distribution: to test normality, a Kolomogorow-Smirnov Test and Q-Q plots are analyzed. The SPSS output revealed that there was deviation from normality for all key variables, (including community appeal mean which refers to the manipulation), since Kolomogorow-Smirnov was significant (<.001) for all variables (Field, 2005).

SPSS: analyze → descriptive statistics → explore → add all dependent variables → plots: normality plots with tests → OK. (See appendix 5.6.1)

3. Homogeneity of variance: means that the variability or spread scores is roughly equal across all groups being compared. This was tested with Levene's test (Field, 2005). Output revealed that equal

variance is found for clothes brought, clothes taken, positive word of mouth, and environmental concern ($p > 0.05$). However, flyer response (in SPSS: reason_visited_1) and continuous adoption, the assumption of equal variance was not met ($p < 0.05$).

SPSS: Analyze → general linear model → univariate → select dependent variable (adoption measures and environmental concern) → factors → time and location → OK. (See Appendix 5.6.2)

4. Linearity: the assumption of linearity assumes that there should be a linear relationship between the independent variables and the dependent variables. For all variables (environmental concern, clothes brought, clothes taken, positive word of mouth, intention to return, flyer response, community appeal mean score) violations of the assumption about linearity was found. Because the residuals were not randomly scattered around zero, a pattern is present in all cases.

SPSS: Graph → scatter/dot → simple scatter → Y-as residuals (of dependent variable) → X-as predicted values. (See Appendix 5.6.3).

5. Scale of measurement: for testing ANOVA, dependent variables had to be continuous. The variables clothes brought, clothes taken and community appeal (transformed into new variable: Mean score community appeal) were continuous variables. Positive word of mouth, intention to return and flyer response had all ordinal level.

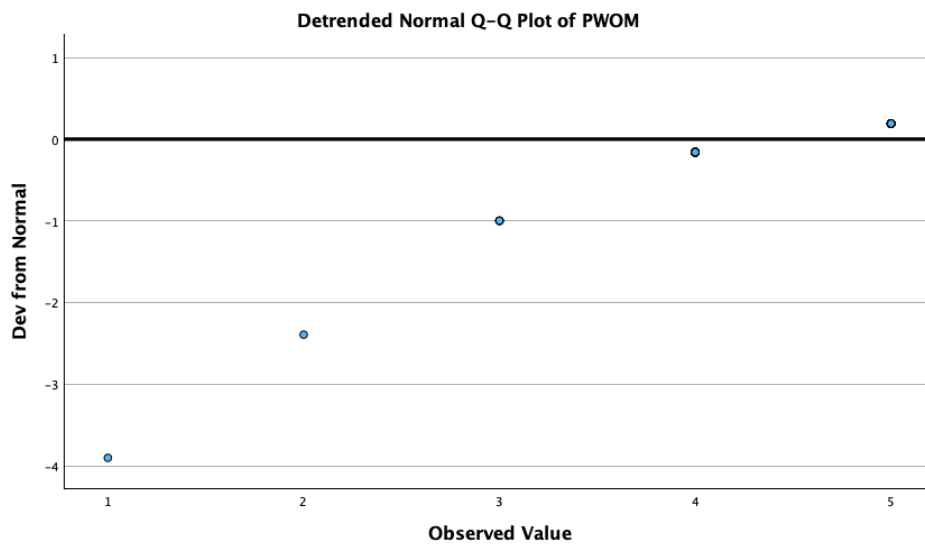
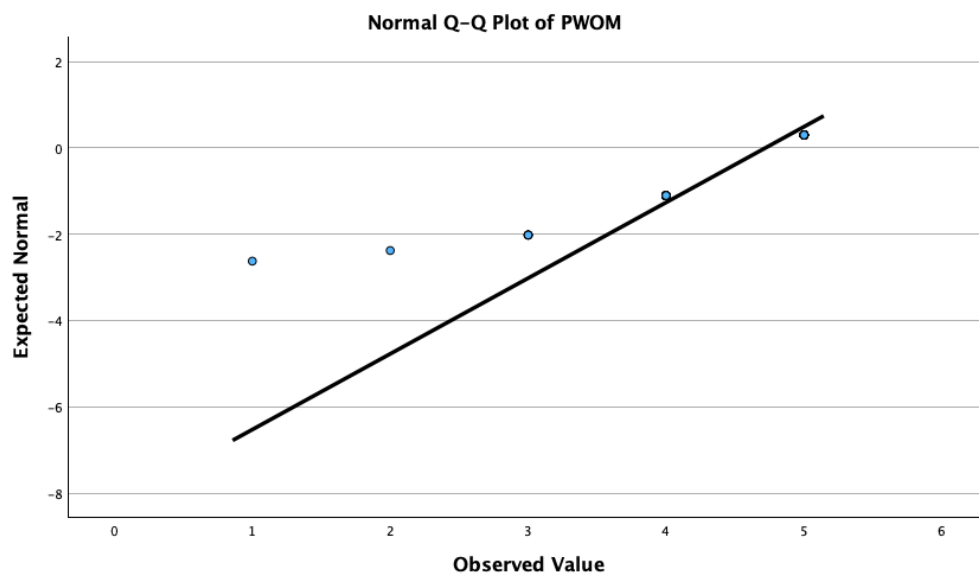
5.6.1 Checking normality

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
PWOM	.452	229	<.001	.530	229	<.001
CONT_ADOPTION	.478	229	<.001	.453	229	<.001
CLO_BROUGHT	.155	229	<.001	.876	229	<.001
CLO_TAKEN	.192	229	<.001	.882	229	<.001
REASON_VISITED_1	.533	229	<.001	.089	229	<.001
ENV_CON	.254	229	<.001	.803	229	<.001

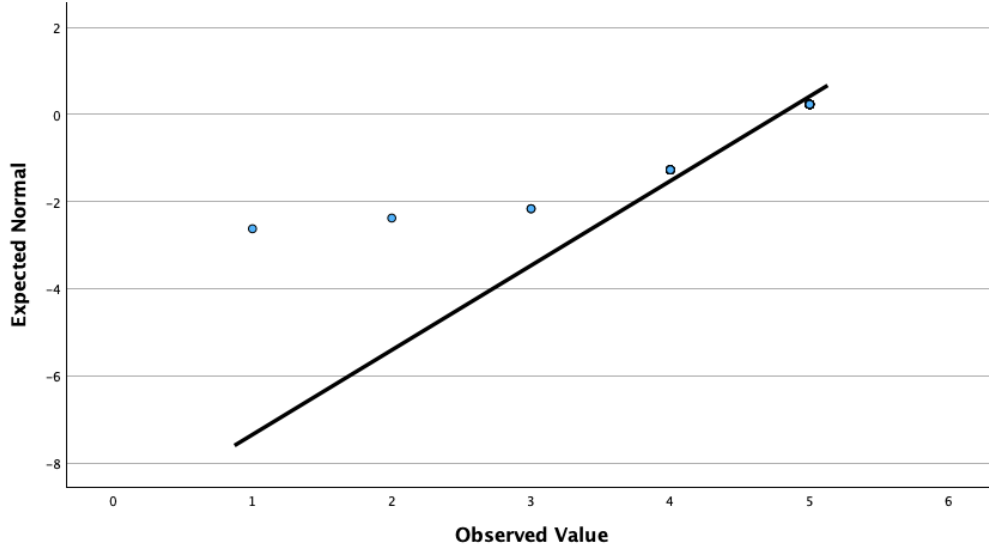
a. Lilliefors Significance Correction

Tests of Normality							
	LOC	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
COM_APPEAL_MEAN	nijmegen	,127	289	<,001	,959	289	<,001
	elst	,110	188	<,001	,966	188	<,001

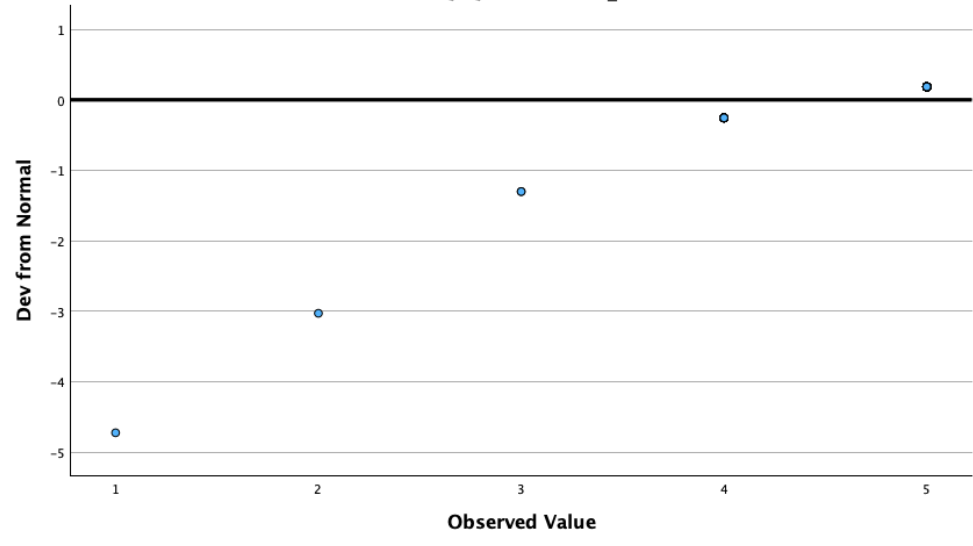
a. Lilliefors Significance Correction

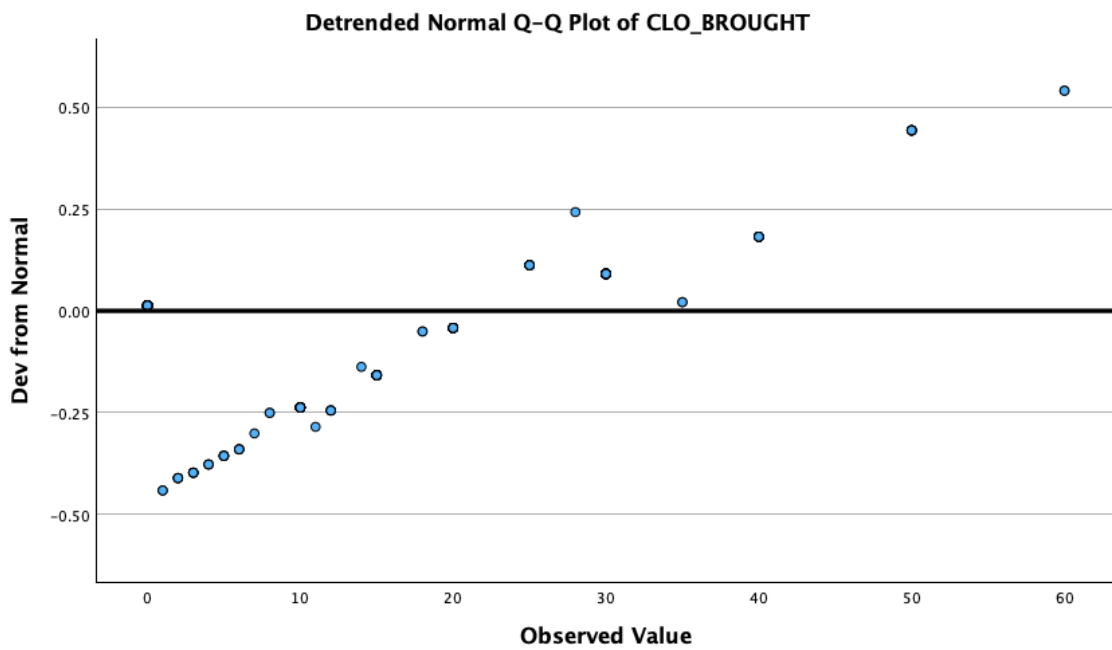
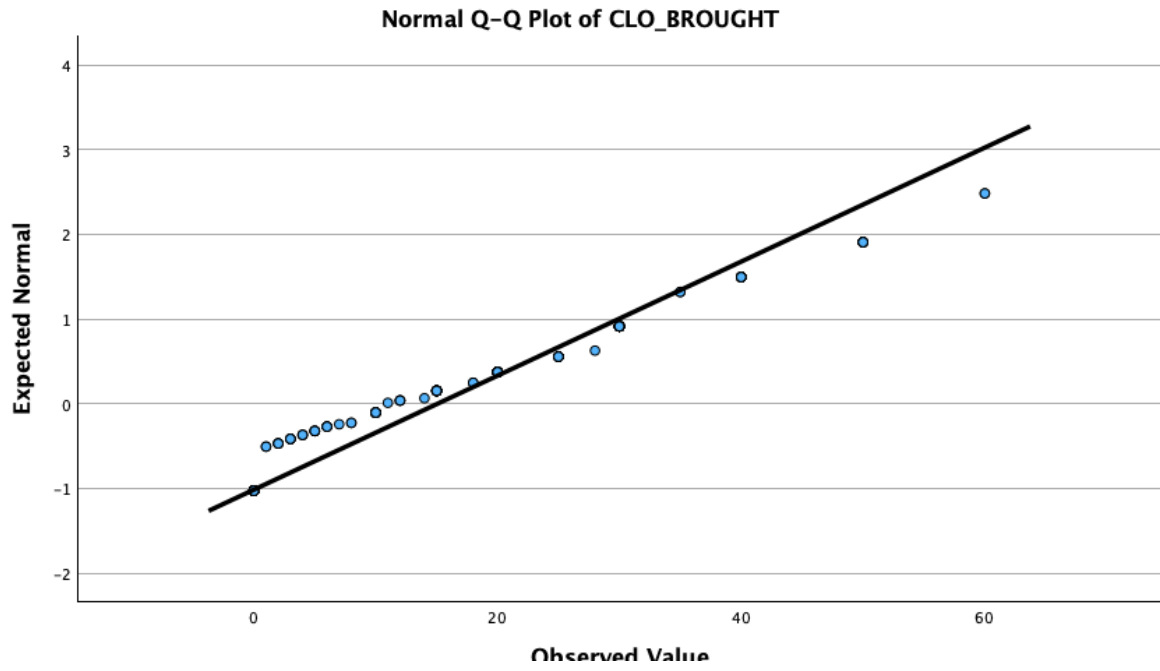


Normal Q-Q Plot of CONT_ADOPTION

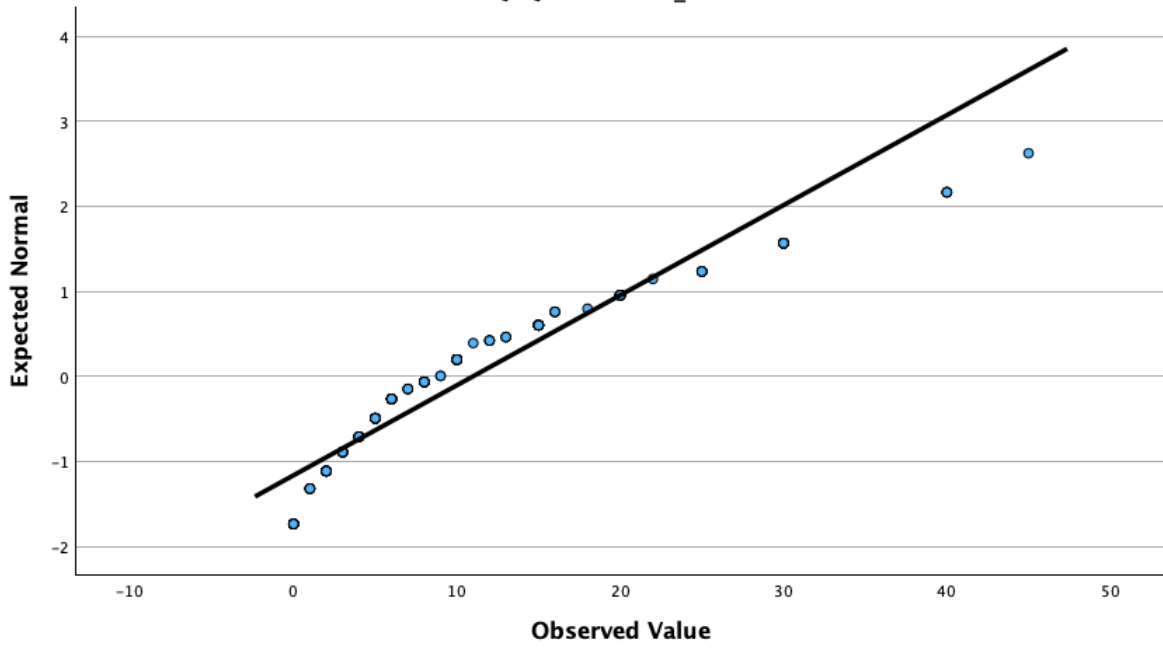


Detrended Normal Q-Q Plot of CONT_ADOPTION

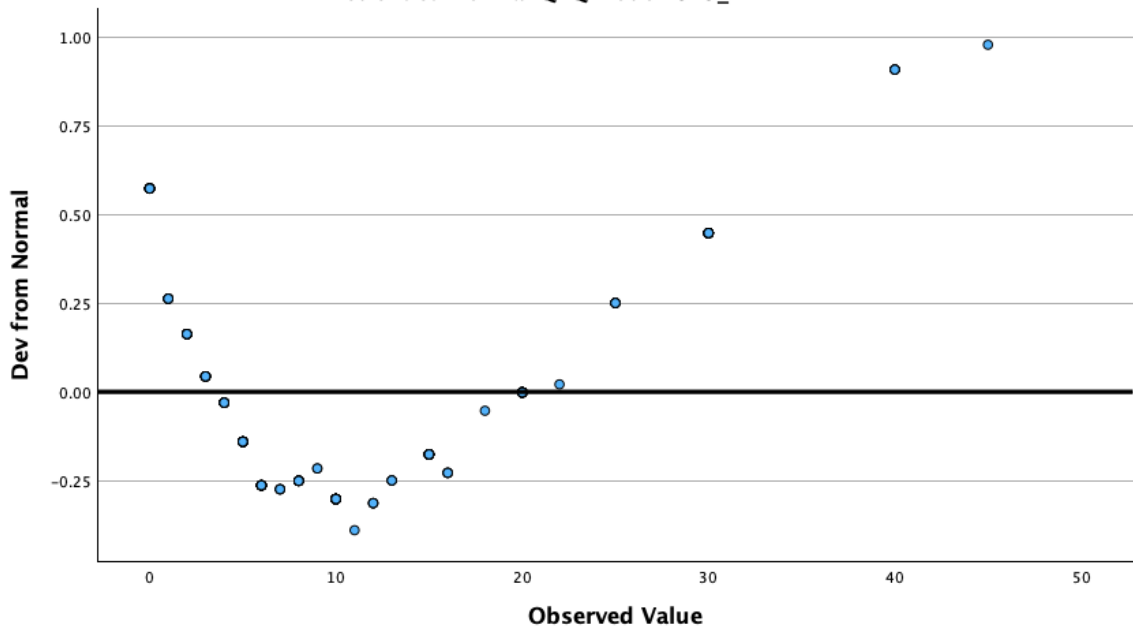




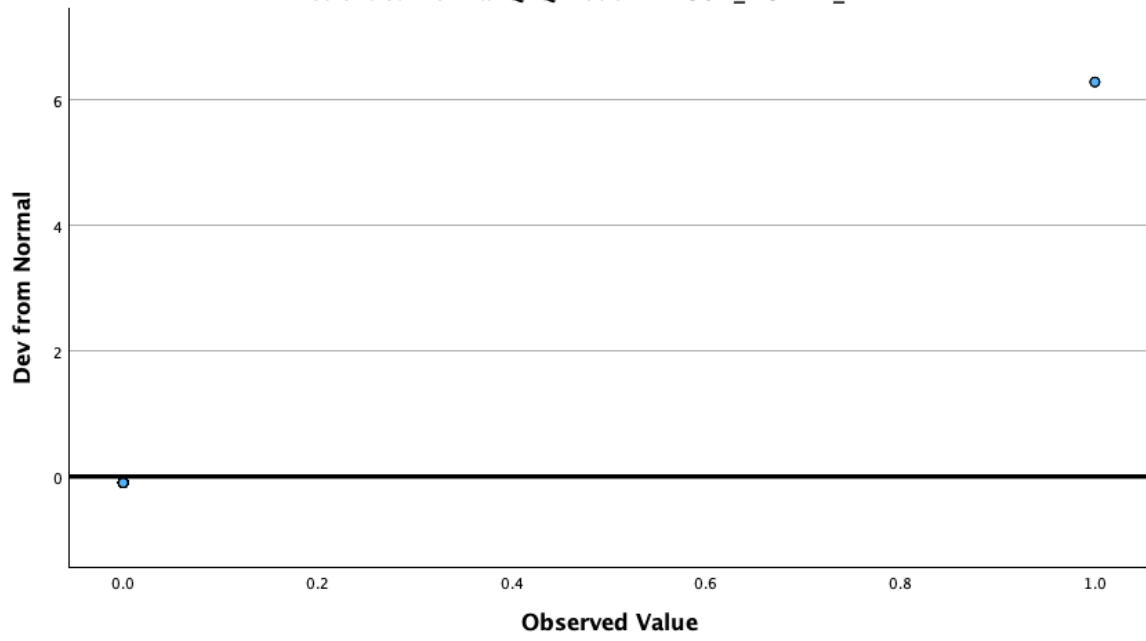
Normal Q-Q Plot of CLO_TAKEN



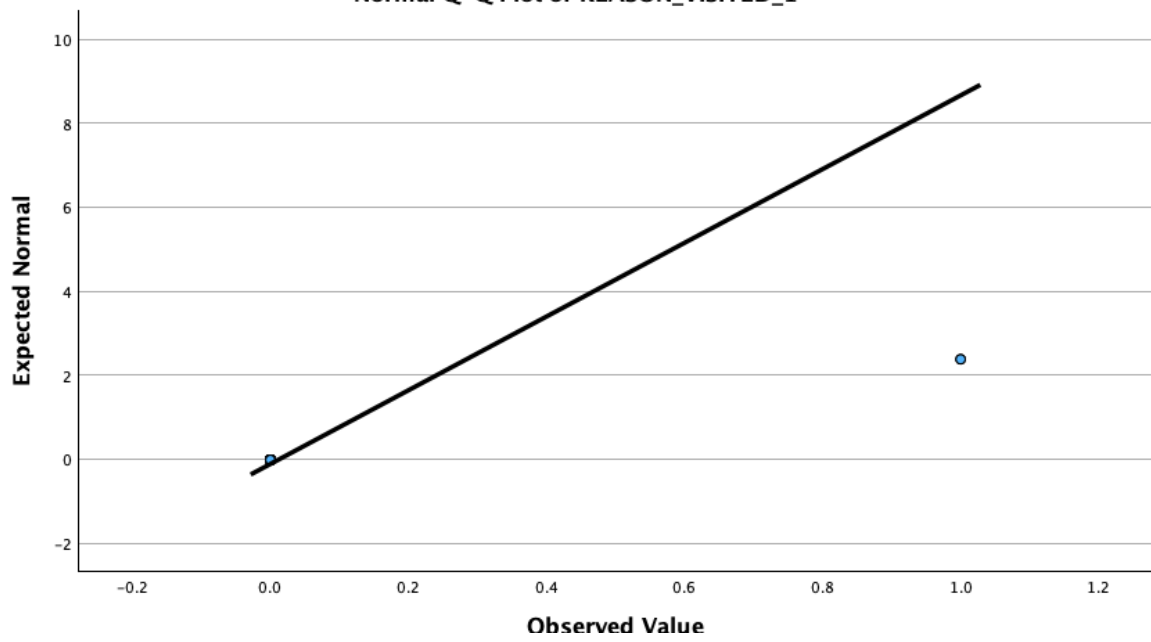
Detrended Normal Q-Q Plot of CLO_TAKEN

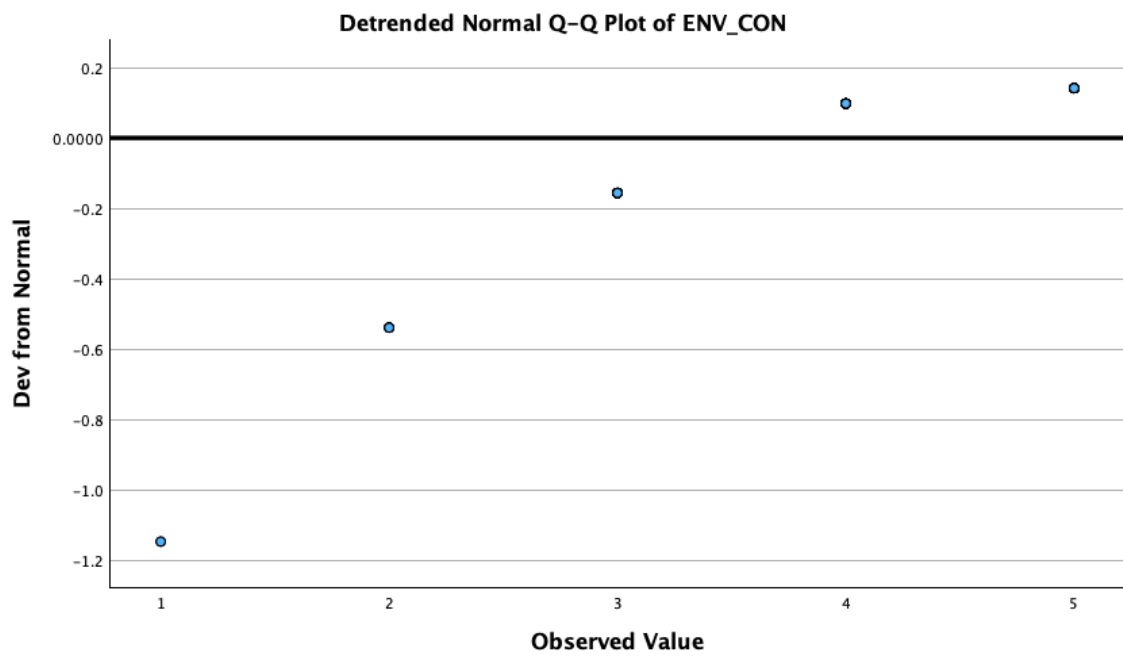
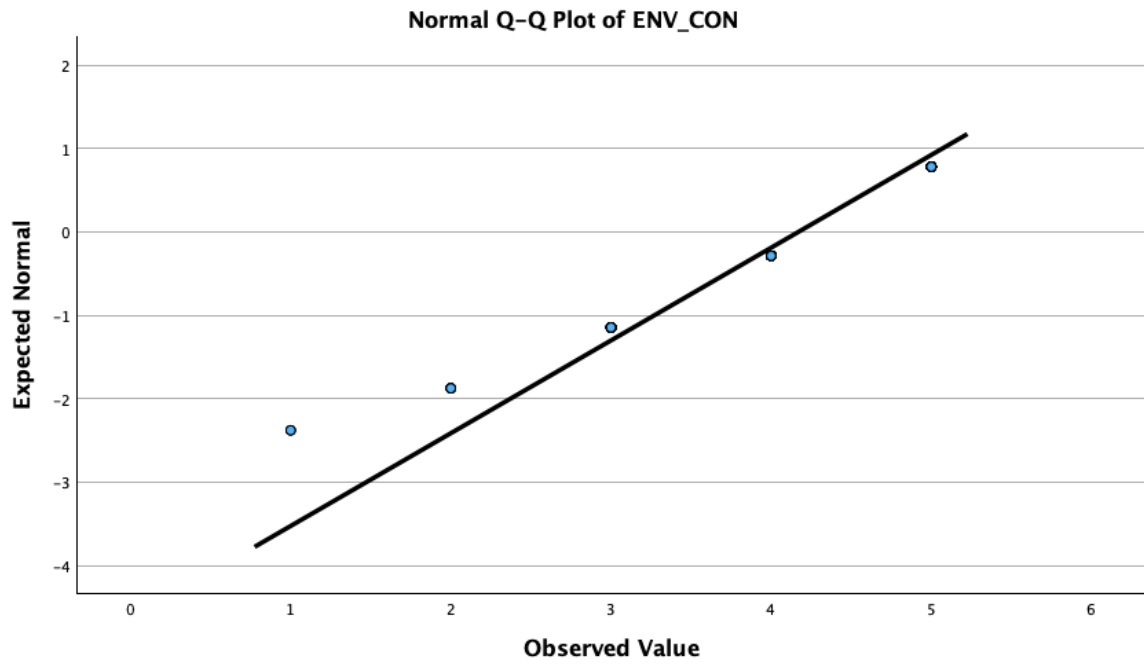


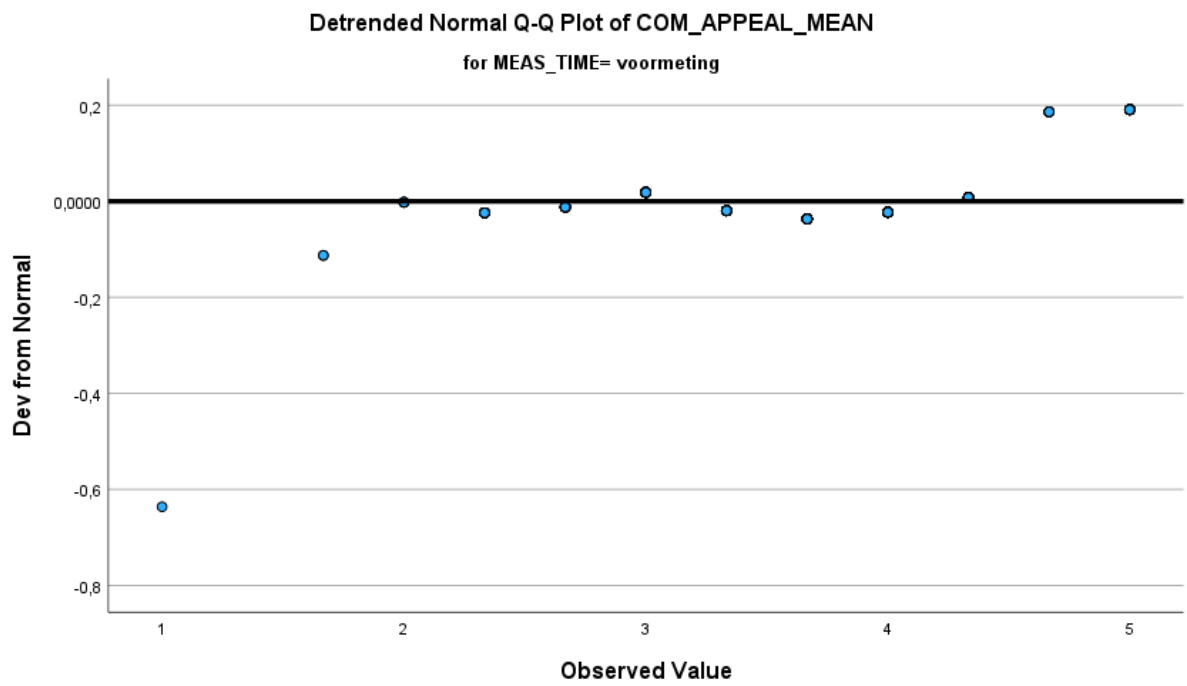
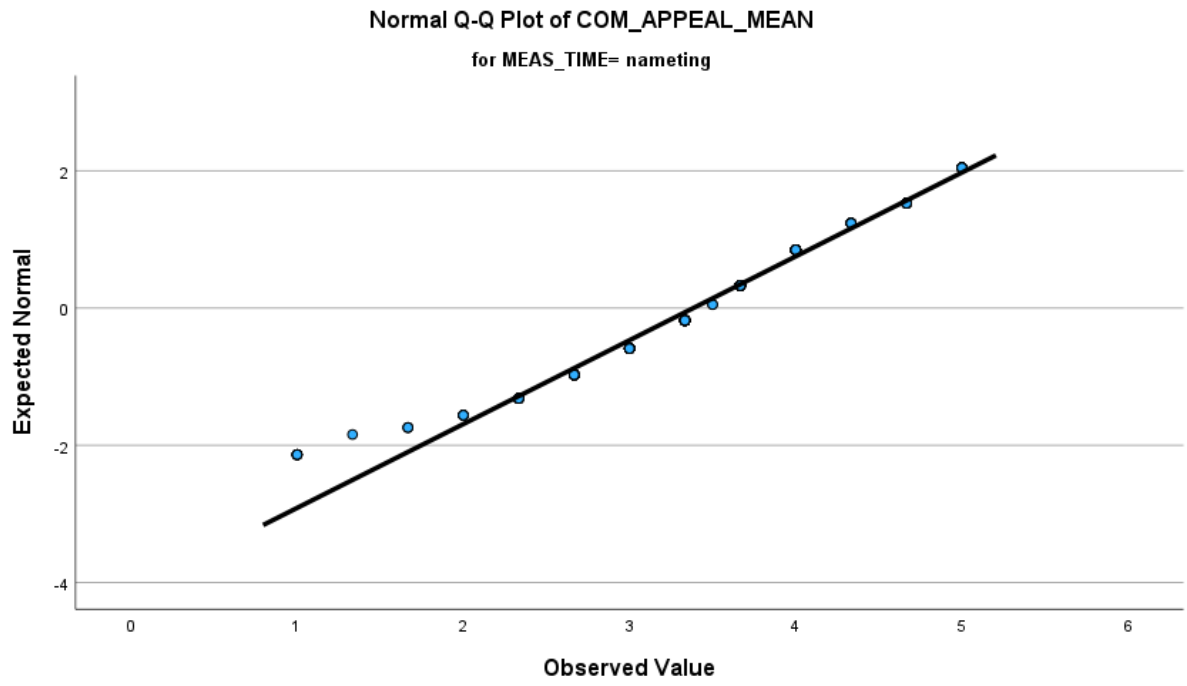
Detrended Normal Q-Q Plot of REASON_VISITED_1



Normal Q-Q Plot of REASON_VISITED_1

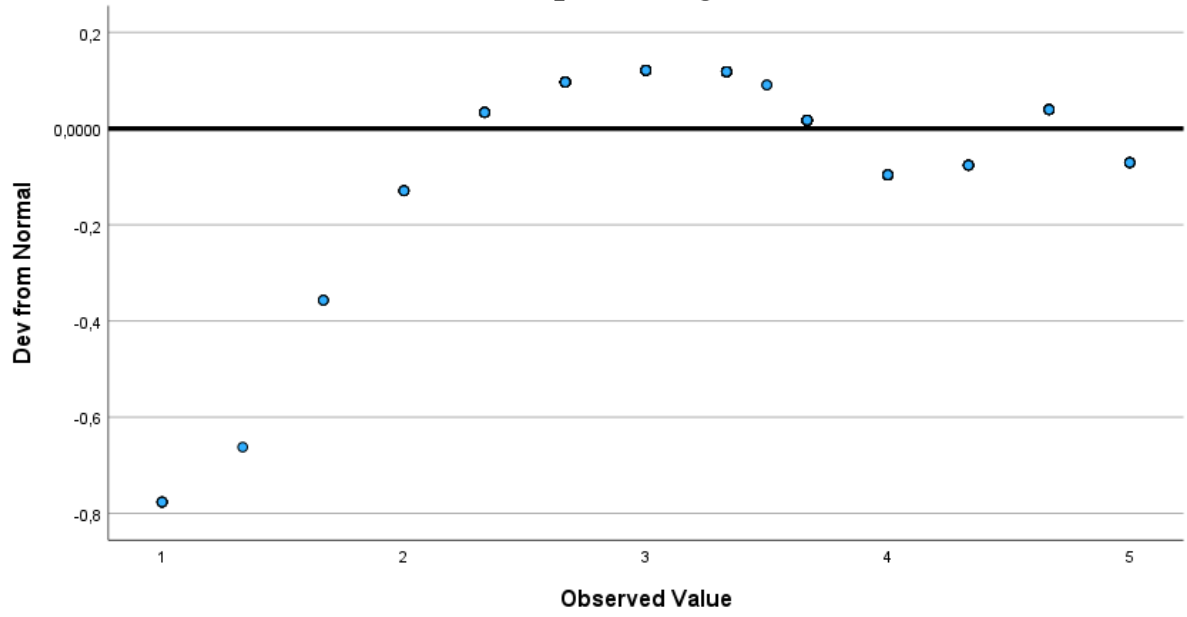






Detrended Normal Q-Q Plot of COM_APEAL_MEAN

for MEAS_TIME= nameting



5.6.2 Checking equal variance

Levene's Test of Equality of Error Variances ^{a,b}					
		Levene Statistic	df1	df2	Sig.
CLO_BROUGHT	Based on Mean	2.467	3	458	.062
	Based on Median	1.505	3	458	.212
	Based on Median and with adjusted df	1.505	3	430.236	.213
	Based on trimmed mean	2.174	3	458	.090
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.					
a. Dependent variable: CLO_BROUGHT					
b. Design: Intercept + LOC + MEAS_TIME + LOC * MEAS_TIME					

Levene's Test of Equality of Error Variances ^{a,b}					
		Levene Statistic	df1	df2	Sig.
CLO_TAKEN	Based on Mean	3.513	3	465	.015
	Based on Median	2.006	3	465	.112
	Based on Median and with adjusted df	2.006	3	440.833	.112
	Based on trimmed mean	3.075	3	465	.027
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.					
a. Dependent variable: CLO_TAKEN					
b. Design: Intercept + LOC + MEAS_TIME + LOC * MEAS_TIME					

Levene's Test of Equality of Error Variances ^{a,b}					
		Levene Statistic	df1	df2	Sig.
REASON_VISITED_1	Based on Mean	11.275	1	241	<.001
	Based on Median	2.663	1	241	.104
	Based on Median and with adjusted df	2.663	1	146.000	.105
	Based on trimmed mean	2.663	1	241	.104
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.					
a. Dependent variable: REASON_VISITED_1					
b. Design: Intercept + LOC + MEAS_TIME + LOC * MEAS_TIME					

Levene's Test of Equality of Error Variances ^{a,b}					
		Levene Statistic	df1	df2	Sig.
PWOM	Based on Mean	1.824	3	473	.142
	Based on Median	.598	3	473	.617
	Based on Median and with adjusted df	.598	3	447.657	.617
	Based on trimmed mean	1.133	3	473	.335
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.					
a. Dependent variable: PWOM					

b. Design: Intercept + LOC + MEAS_TIME + LOC * MEAS_TIME

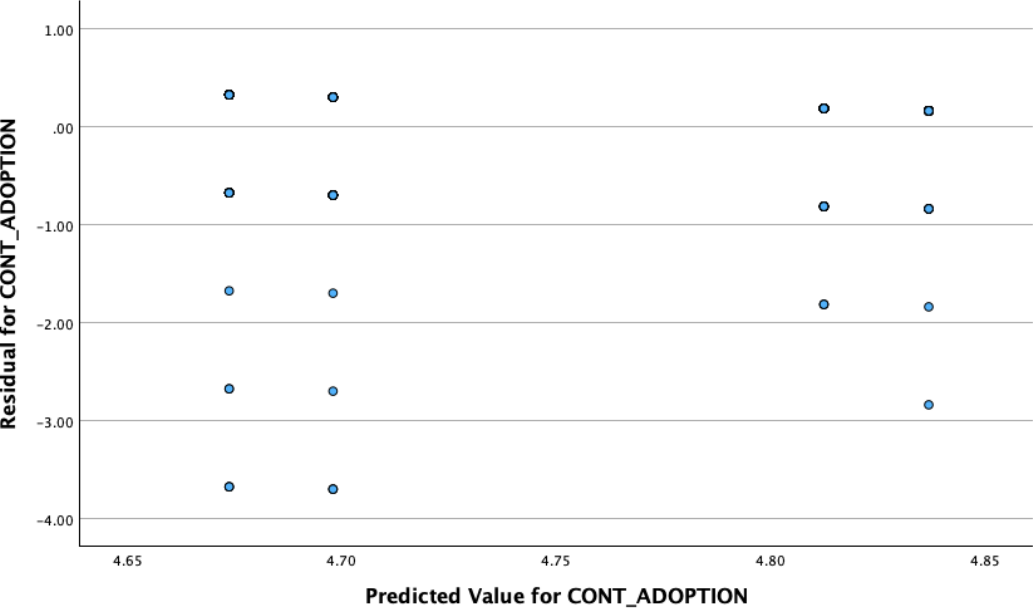
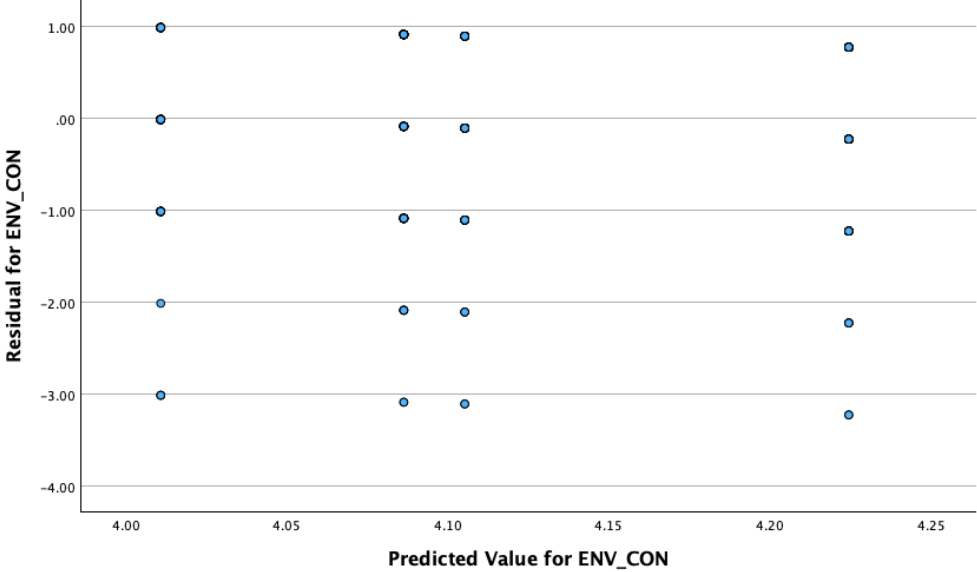
Levene's Test of Equality of Error Variances ^{a,b}					
		Levene Statistic	df1	df2	Sig.
CONT_ADOPTION	Based on Mean	5.802	3	474	<.001
	Based on Median	1.800	3	474	.146
	Based on Median and with adjusted df	1.800	3	413.546	.147
	Based on trimmed mean	3.919	3	474	.009
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.					
a. Dependent variable: CONT_ADOPTION					
b. Design: Intercept + LOC + MEAS_TIME + LOC * MEAS_TIME					

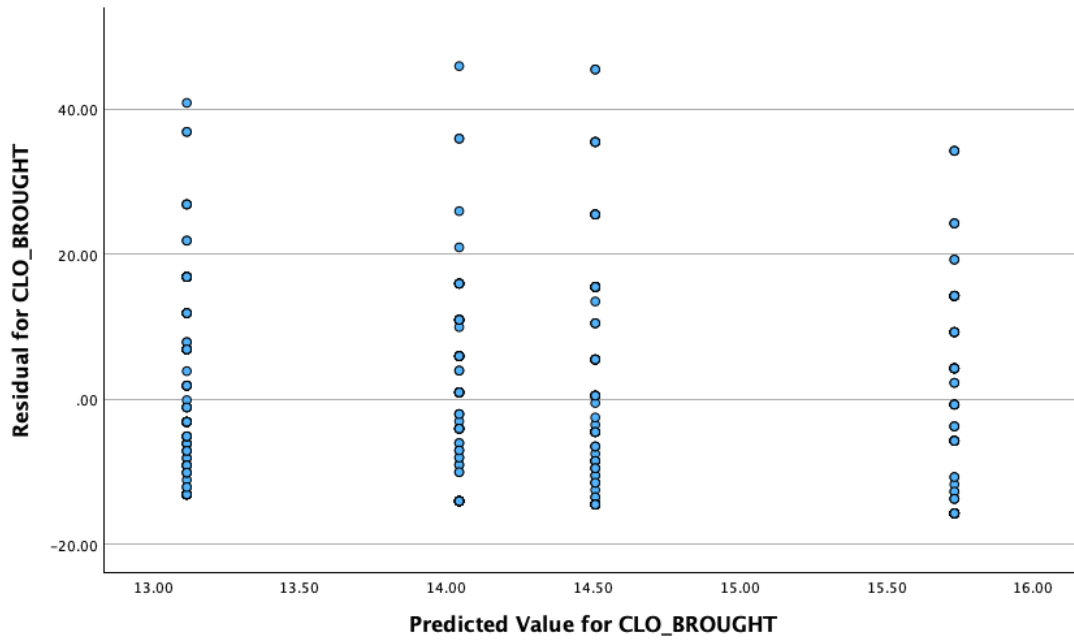
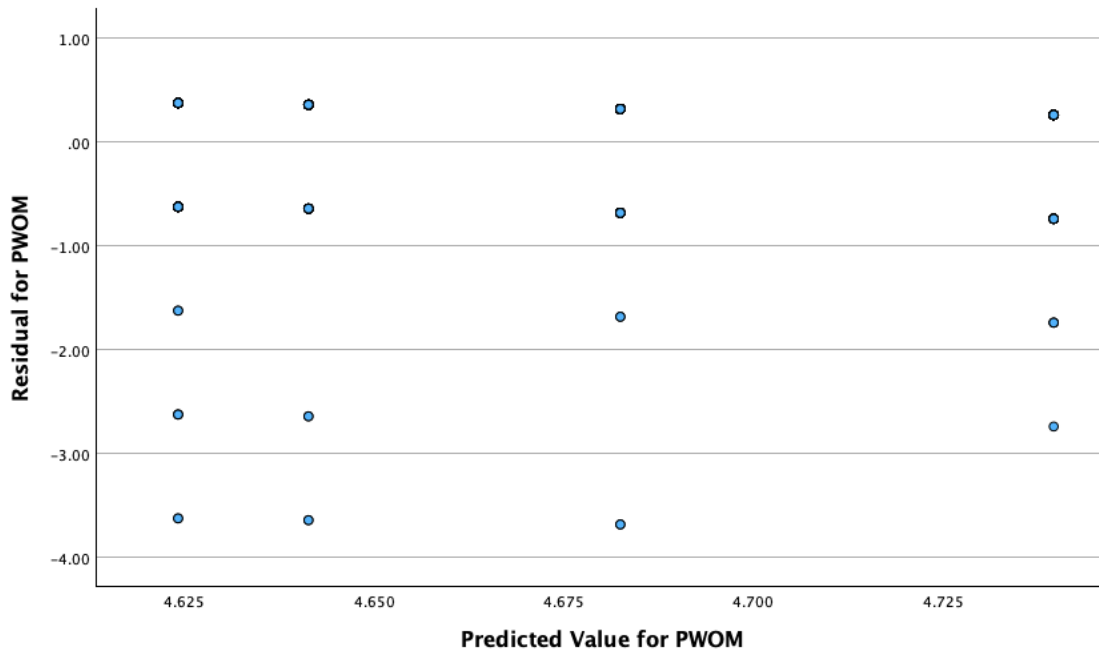
Levene's Test of Equality of Error Variances ^{a,b}					
		Levene Statistic	df1	df2	Sig.
ENV_CON	Based on Mean	1.689	3	469	.169
	Based on Median	1.493	3	469	.216
	Based on Median and with adjusted df	1.493	3	460.106	.216
	Based on trimmed mean	1.403	3	469	.241
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.					
a. Dependent variable: ENV_CON					
b. Design: Intercept + LOC + MEAS_TIME + LOC * MEAS_TIME					

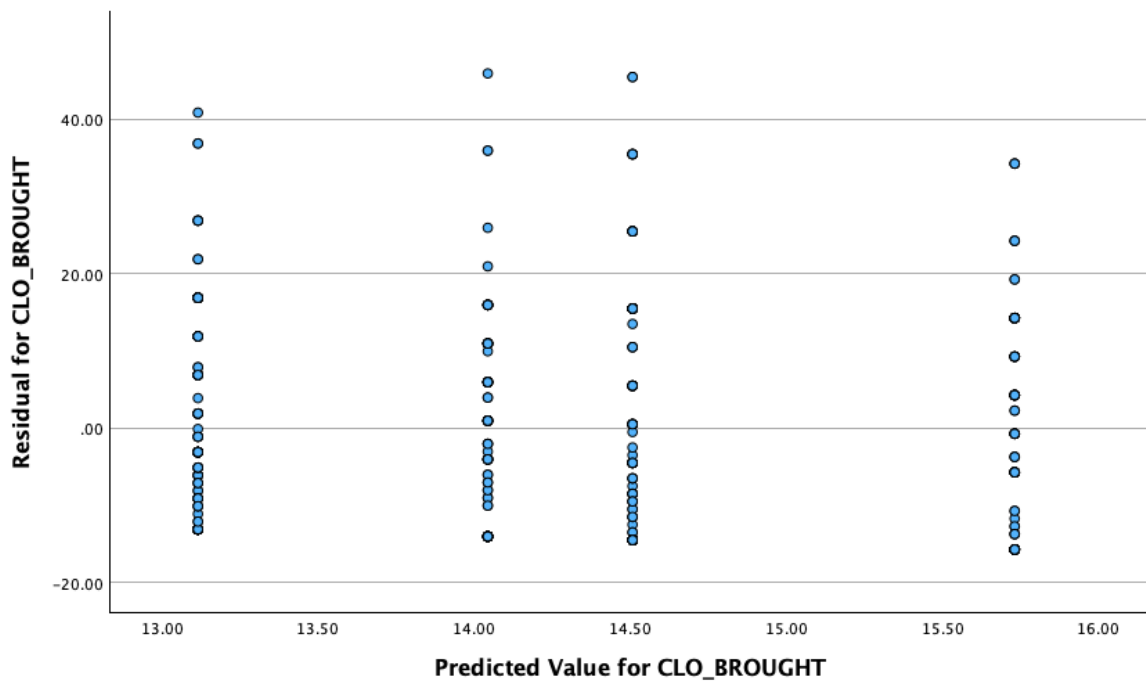
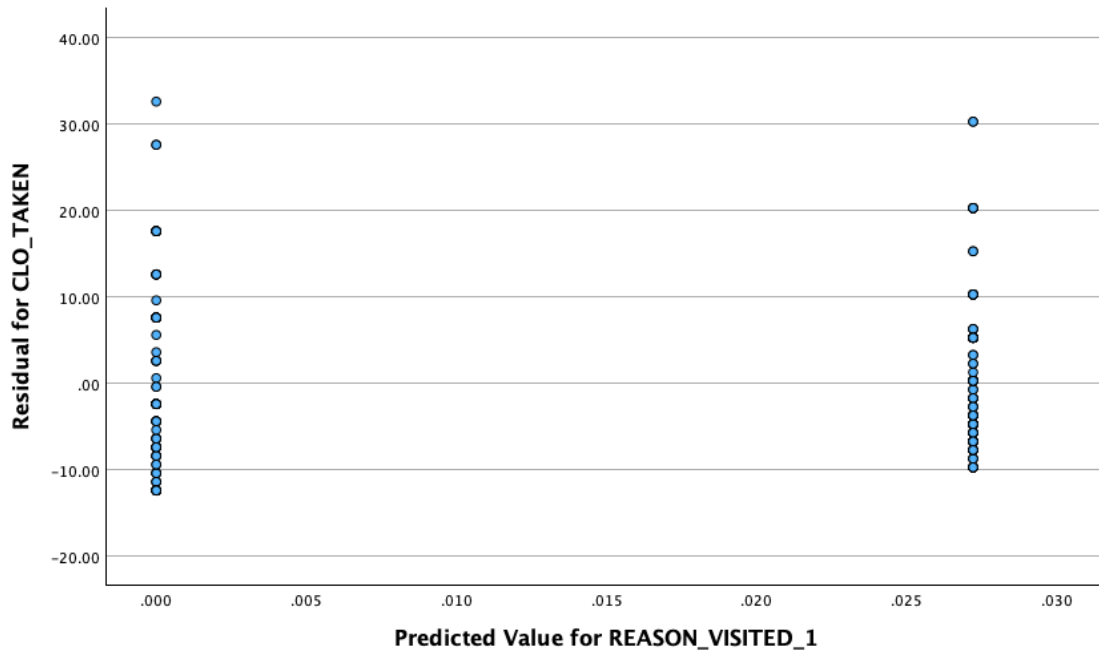
Levene's Test of Equality of Error Variances ^{a,b}					
		Levene Statistic	df1	df2	Sig.
COM_APPEAL_MEAN	Based on Mean	,410	3	473	,746
	Based on Median	,398	3	473	,754
	Based on Median and	,398	3	456,742	,754

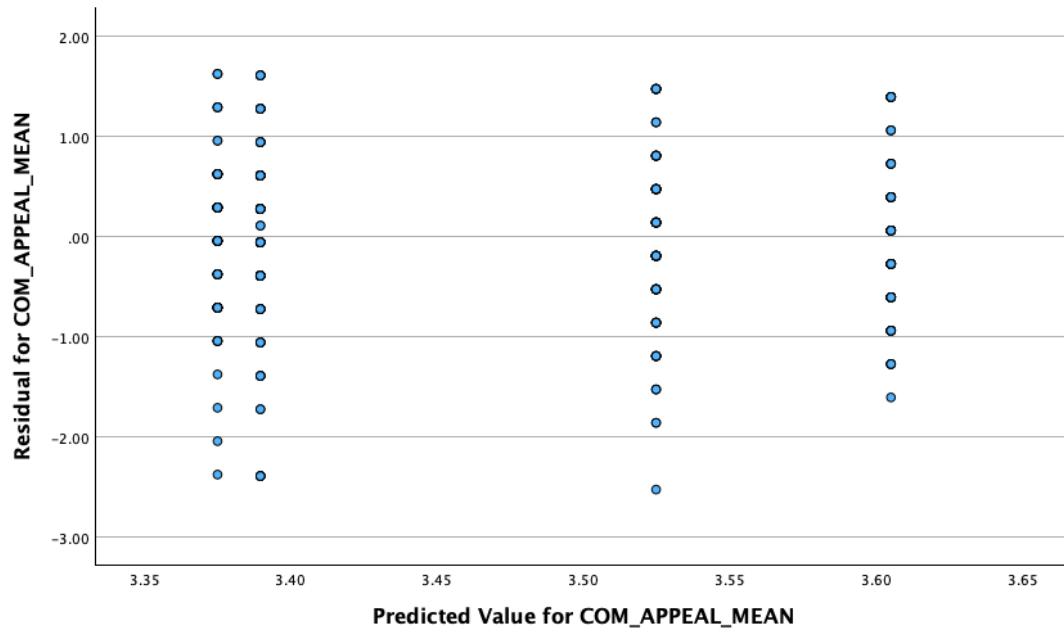
	with adjusted df				
	Based on trimmed mean	,414	3	473	,743
Tests the null hypothesis that the error variance of the dependent variable is equal across groups.					
a. Dependent variable: COM_APEAL_MEAN					
b. Design: Intercept + LOC + MEAS_TIME + LOC * MEAS_TIME					

5.6.3 Checking linearity









5.7 Two-way ANOVA for manipulation check

To test the effectiveness of the community appeal manipulation a two-way ANOVA was conducted, using the mean score of community appeal as statistical dependent variable (notice, overall, community appeal served as dependent variable, but when running the analysis it served as dependent variable). Before running ANOVA, all assumptions were checked (see Appendix 5.6). The assumption regarding homogeneity and equal variance, were violated. However, since other statistical test were not able to test an interaction effect properly, which is needed for assessing the effectiveness of the intervention, the ANOVA was still conducted (Field, 2005).

The output (Appendix 5.7) of ANOVA showed the main effect of location and measurement time and the interaction effect of location * time.

To conduct the analysis in SPSS; General linear model → univariate → dependent variable= community appeal mean score → fixed factor: location and time → click model (build terms → time and location to add and then custom terms (loc*time) add) → OK.

Between-Subjects Factors			
		Value Label	N
LOC	1	Nijmegen	289
	2	Elst	188
MEAS_TIME	1	Voormeting	233
	2	Nameting	244

Tests of Between-Subjects Effects					
Dependent Variable: COM_APPEAL_MEAN					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	3,923 ^a	3	1,308	2,031	,109
Intercept	5494,722	1	5494,722	8533,436	<,001
LOC	,123	1	,123	,190	,663
MEAS_TIME	3,797	1	3,797	5,897	,016

LOC * MEAS_TIME	,256	1	,256	,398	,528
Error	304,567	473	,644		
Total	6046,056	477			
Corrected Total	308,490	476			
a. R Squared = ,013 (Adjusted R Squared = ,006)					

The results of ANOVA presented a significant p-value (0.016) for time, which indicated that perceived community appeal changed over time, indicating that time did have an impact on community appeal. For Location a non-significant effect was found ($p=0,663$), indicating that the perceived community appeal did not differ per location (experimental versus control location). Additionally, the interaction effect (LOC * MEAS_TIME) was also non-significant ($p=0,528$).

Case Processing Summary							
		Cases					
		Valid		Missing		Total	
	LOC	N	Percent	N	Percent	N	Percent
COM_APPEAL_MEAN	Nijmegen	289	99,7%	1	0,3%	290	100,0%
	Elst	188	100,0%	0	0,0%	188	100,0%

Descriptives					
	LOC			Statistic	Std. Error
COM_APPEAL_MEAN	Nijmegen	Mean		3,4556	,04884
		95% Confidence Interval for Mean	Lower Bound	3,3595	
			Upper Bound	3,5517	
		5% Trimmed Mean		3,4827	
		Median		3,3333	
		Variance		,689	
		Std. Deviation		,83023	
		Minimum		1,00	

		Maximum	5,00	
		Range	4,00	
		Interquartile Range	1,00	
		Skewness	-,498	,143
		Kurtosis	,703	,286
	Elst	Mean	3,4876	,05590
		95% Lower Confidence Interval for Mean	3,3773	
		95% Upper Confidence Interval for Mean	3,5979	
		5% Trimmed Mean	3,4894	
		Median	3,3333	
		Variance	,587	
		Std. Deviation	,76648	
		Minimum	1,00	
		Maximum	5,00	
		Range	4,00	
		Interquartile Range	1,00	
		Skewness	-,009	,177
		Kurtosis	,204	,353

5.8 Chi-square test

To examine whether the community appeal communication intervention had a significant effect on store visits, in other words, whether the flyer intervention led to more customers, a Chi-square test of independence is conducted. By conducting a Chi-square test the number of customers due to the flyer is compared between the control and experimental locations, which allows an assessment about whether the flyer intervention had a significant effect on customer turnout.

The Chi-square test of independence showed a non-significant difference between the experimental and control location. Meaning that community appeal communication intervention was not effective. (Pearson Chi-square: 2,656 $p = .103$).

In SPSS → analyse → descriptives → crosstabs → Row: Location (Experimental location/ Nijmegen= 1 Control location/ Elst= 2 → Column: Reason_visted1 (flyer response) → statistics choose Chi-square → Cells Choose: expected, Row, column, Total % → OK

LOC * REASON_VISITED_1 Crosstabulation					
			REASON_VISITED_1		Total
			niet aangekruist	aangekruist	
LOC	Nijmegen	Count	143	4	147
		Expected Count	144,6	2,4	147,0
		% within LOC	97,3%	2,7%	100,0%
		% within REASON_VISITED_1	59,8%	100,0%	60,5%
		% of Total	58,8%	1,6%	60,5%
	Elst	Count	96	0	96
		Expected Count	94,4	1,6	96,0
		% within LOC	100,0%	0,0%	100,0%
		% within REASON_VISITED_1	40,2%	0,0%	39,5%
		% of Total	39,5%	0,0%	39,5%
Total	Count	239	4	243	
	Expected Count	239,0	4,0	243,0	
	% within LOC	98,4%	1,6%	100,0%	
	% within REASON_VISITED_1	100,0%	100,0%	100,0%	
	% of Total	98,4%	1,6%	100,0%	

Chi-square Tests					
	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2- sided)	Exact Sig. (1-sided)
Pearson Chi-square	2,656 ^a	1	,103		
Continuity Correction ^b	1,241	1	,265		

Likelihood Ratio	4,065	1	,044		
Fisher's Exact Test				,155	,132
Linear-by-Linear Association	2,645	1	,104		
N of Valid Cases	243				
a. 2 cells (50,0%) have expected count less than 5. The minimum expected count is 1,58.					
b. Computed only for a 2x2 table					