

Awareness, Attitude & Adoption of Sustainable Product-Service Systems: A mixed method study on the influence of Social Capital on young, Dutch consumers.

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Date: 30-07-2020

Word count: 12,377

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Abstract

Sustainable product-service systems (S.PSS) are an upcoming trend for businesses to step into participating in a circular economy. This innovation is getting more general acceptance by society. To empower the diffusion of S.PSS, it is interesting to understand the adoption of S.PSS on a social level. The social capital, which are all social contacts of an individual, plays an important role in decision making for an individual, and eventually in adopting new innovations. This research focusses on the influence of bonding (e.g. family and friends) and bridging (e.g. colleagues and neighbours) social capital on the individual's awareness, attitude, and adoption of S.PSS. A mixed method research design is applied, using a survey (n=292) to receive information around S.PSS from young Dutch customers, and 20 additional interviews to enrich the survey results. Results imply that the social capital has different influences on the individual's awareness, attitude and adoption of S.PSS. The adoption of S.PSS by the social capital of an individual relates to the adoption of S.PSS by the individual, especially that of their bonding social capital. The bridging social capital has influences on the adoption of S.PSS as well, but more in specific cases. Social capital helps the individual to become more aware about S.PSS, in this case the adoption of S.PSS by friends and colleagues are especially useful. The attitudes towards S.PSS are formed through sharing experiences and encouragement from friends and colleagues with whom they have shared attitudes regarding sustainability and non-ownership. Thus, the diffusion of S.PSS happens through a variation of bonding and bridging social capital, creating awareness, sharing attitudes and adopting S.PSS more easily. Interesting avenues for further research are generation gaps and the diffusion of S.PSS in cities.

Executive Summary

When launching a new S.PSS such as Gray Label's RNTD (a baby-clothing renting service), momentum can be created by engaging customers to the concept of *using* instead of *owning*. To empower the awareness, it is beneficial for the customer to already know others who can advise them to adopt as well. Sharing of experiences in S.PSS with social contacts (especially friends, family and colleagues) encourages the individual to use the specific S.PSS as well. This occurs when attitudes concerning sustainability and non-ownership are shared. The exchange of experiences and attitudes about S.PSS can be boosted through the business by using social media, as the customers get activated to start thinking about these concepts. This can be done actively with e.g. advertisements and engagement of influencers, but also indirectly through sharing of reviews. Emphasis may lie on the sustainability of the service (e.g. less waste), and the concept of non-ownership (i.e. *using* instead of *owning*), but also on convenience (e.g. less storage).

Further, the target group that fits Gray Label's RNTD best is their existing customer group, which are young, urban parents. This group is most likely to engage in RNTD, as the research shows that younger generations share more positive attitudes and are more aware about S.PSS. Also, the urban citizen has more incentive to use a S.PSS through convenience reasons, because of shortage in space. Last, young parents indicated to be more aware of their environmental impact, and therefore will adopt S.PSS quicker out of sustainability reasons.

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1. Introduction

As concerns regarding environmental change are rising, companies increasingly feel the urge to innovate sustainably. Especially over-consumption and a throwaway culture have led to a variety of environmental problems including waste, which ends up in land-fill and compromises aquatic life (Tukker and Tischner, 2006). Although there are several ways for innovating into a more sustainable business, one of the most widely supported models is the circular economy. The consumption model is formed as a loop, and has as ultimate goal to reduce waste and prevent resource depletion (Ellen MacArthur Foundation, 2013). Not only does it decrease the total environmental impact, it also provides promising economic opportunities for businesses (Planing, 2015). Implementing circular economy into a business is challenging and therefore business model innovation for sustainability is required, which emphasizes positive influences or reduction of negative impacts for the environment and society by changing the organizational structure, value network or propositions (Bocken et al., 2014: p. 44).

One way to realize a circular economy is by developing sustainable product-service systems (S.PSSs), which are seen as one of the most effective instruments for enhancing resource-efficiency (Tukker, 2015). S.PSS entails *“an offer model providing an integrated mix of products and services that are together able to fulfil a particular customer demand (to deliver a ‘unit of satisfaction’), based on innovative interactions between the stakeholders of the value production system (satisfaction system), where the economic and competitive interest of the providers continuously seeks environmentally and socio-ethically beneficial new solutions”* (Vezzoli et al., 2014: p. 48). There are several types of product-service systems (PSSs), and not all can be argued to be sustainable. In the use-oriented PSS, i.e. access-based consumption, products are offered as a service in the form of leasing, renting or sharing, and has a high potential on sustainability (Tukker, 2004). Business' orientation changes from a transaction to a relationship view, and ownership is shifted to the business (Moeller and Wittkovski, 2010). As businesses are now responsible to sustain customer-contact and provide quality products, it is in their interest to prolong the product's life-time. This leads to more sustained products as well as to more sustainable products (Mont, 2002).

When S.PSS becomes a bigger phenomenon among business models, the businesses are responsible to validate the innovation through society. In order for a business to innovate successfully, it is necessary to take into account the expectations of their stakeholders, such as consumer perspective (DiMaggio and Powell, 1983). For validating the innovation of access-based consumption, explicit marketing on sustainable benefits can be used to alter the perception of consumers. At this point, unfortunately, consumers in the western society are locked-in to the dominant materialism mentality which effect habits, disincentives, social norms and cultural expectations (Crane and Matten, 2016; DEFRA, 2005), leading to a late and slow transition to more sustainable practices such as access-

based consumption (Planing, 2015). Access-based consumption is now mostly chosen for its convenience and the ability to save money, and not out of environmental concerns (Edbring et al., 2015). Because owning a product is seen as a status symbol, it makes the institutional transition of norms and values to using instead of owning difficult; consumers are afraid of the disapproval of their social environment on using a service instead of buying a new product (Catulli et al., 2017). Most studies on this societal issue have a focus on the direct incentives and barriers that consumers indicate, such as economical obstacles, desire to own, or concern of hygiene (Edbring et al., 2015). However, latent incentives of consumers are lacking in research or is only speculated about, whereas more empirical research focussing on the acceptance process can support the designing of new circular economy business models (Planing, 2015). Moreover, latent incentives and barriers can be analysed through the existing norms and beliefs, which help to understand the drivers of change towards sustainable consumer behaviour.

To explore the role of norms and beliefs in sustainable consumer behaviour, the social capital of an adopter is taken into account (Simpson, 2005). Social capital concerns the aggregate of interactions an individual engages in or has access to, and which may provide benefits to the individual (Brunie, 2009). Moreover, the development of new preferences and adjustment of consumption behaviour can be influenced by the individual's social capital (McKenzie-Mohr, 1999), and depends on the perception of the behaviour through their social network (Simpson, 2005). It is especially for new forms of business models with S.PSS of interest to connect with new customers by using the experiences and reviews from the customers' social capital.

This research aims to create understanding of how the social capital of consumers influences their awareness, attitudes and adoption of S.PSS, and leads to the following research question: *What is the relation of the composition of the individual's social capital with the personal awareness, attitude, and eventual adoption of sustainable product service systems?* The research question will be answered by analysing the social capital of a panel of Dutch customers and their adoption of S.PSS, linking to the awareness, attitudes, and adoption of S.PSS by the customer. By exploring these relations, the research contributes in the understanding of the influence of social interactions to the overall acceptance of sustainable business innovation, in particular access-based consumption. Through the interactive change of behaviour from early and late adopters, eventually a cultural shift can take place to *using* instead of *owning* a product.

The next section elaborates on the concept of social capital and provides a theoretical framework that guides the research. How the framework is assessed is explained in the methodology. Additionally, the methodology contains a description and relevance of the internship via which this study is conducted. Next, the results are presented followed by its discussion. Finally, the findings are concluded and an answer to the research question is indicated.

2. Theoretical framework

The following chapter discusses existing literature on social capital and the diffusion theory. The next section elaborates on the influence of social capital on the behaviour of an individual, and the role it plays in creating awareness. What follows is the addition of attitudes and how they can be altered by social capital. Furthermore, diffusion theory explains the diffusion of behaviour through different types of S.PSS. Combining the theories creates a theoretical framework which explains how the social capital's adoption of different S.PSS influence the individual's awareness, attitude and adoption of S.PSS.

2.1 Social capital

Social capital is seen as a socially connected network of a group which is formed by communication, interaction, generally accepted attitudes, rules of behaviour and norms of reciprocity (Grootaert and van Bastelaer, 2002; Uphoff, 2000). Communication and social interaction are important factors for new behaviours to be accepted, as it helps to address social problems, facilitate collective action and produces economies of scale (Rudd, 2000). This bond endures in trust and norms, and enables group-members to pursue shared objectives more effectively than individually (Putnam, 1995). When individuals are actively involved in the development of a community and work together on community focused efforts, i.e. collective action, it creates new information sources and fosters trust and mutual understanding (Bridger and Luloff, 1999). Collective action makes the diffusion of new behaviour through society easier, and helps to make it more socially accepted.

Besides the function of social capital to enable collective action, it is also mobilized by an individual to obtain valued resources. The social capital of an individual makes it possible to distribute cultural and economic capital to receive access to favourable knowledge (Bourdieu, 1986). An individual's social capital is a creation of strong and weak ties, and clusters itself in social groups. The various groups can be divided in two forms: bonding and bridging social capital. *Bonding social capital* are homogeneous groups with an intimate social connectedness between ties (Putnam, 2000), and refers to a network with people who identify themselves in the same way, for example ethnic or religious groups, with a high density of relationships between members (Pelling and High, 2005). Examples for bonding social groups are family and friends. *Bridging social capital* is created by heterogeneous relationships with diverse and outward-looking ties (Putnam, 2000), and takes place between people with shared interests or goals, but with contrasting social identities (Pelling and High, 2005). Groups formed by colleagues, neighbours, and association members are identified as bridging social capital. It is interesting for an individual to be included in both forms of relationships, as it broadens a person's perspective and knowledge, and establishes a better diffusion of resources (Simpson, 2005).

This research focuses on understanding the influence that bonding and bridging social capital have on the change of norms towards *using* instead of *owning*, and the adoption of S.PSS by the individual. Agnitsch et al. (2006) argue that especially the combination of bonding and bridging ties help the individual to engage in collective action, in this case the trend to *using* instead of *owning*. Bridging and bonding social capital can both establish commitment by recommendations from one individual to another (McKenzie-Mohr, 1999). Bonding relations emphasizes trust and comfort, which gives an individual the incentive to change behaviour (Schuller, 2007). Bridging social capital does this by the creation of new ideas through other visions and norms of the social group (Schuller, 2007).

The attitudes from bonding and bridging social capital influence the individual's tendency to imitate behaviour (Adler and Kwon, 2000). These attitudes are part of interactions within the social capital, as it creates collaboration through shared meaning and goals (Nahapiet and Ghoshal, 1998). Common attitudes allow their actors to share ideas and experiences. Shared attitudes through social capital are either positive or negative, respectively resulting in facilitating or resisting behavioural change (Adler and Kwon, 2000). Because interaction differs between the bonding and bridging social capital, it can be argued that there is difference in conforming to their attitudes.

Further, the social capital's influence on the individual stretches also to their adoption of S.PSS. Because of collective action, an individual conforms with the generally accepted behaviours. The diffusion of adoption explains at which rate the complete acceptance of an innovation throughout society takes place, and differs for the sector it is implemented in (Rogers, 2003); some innovations can be successful in one sector and unsuccessful in another. Not only does the implemented period influence the successfulness, but also the convenience that the innovation offers to the specific sector, and how common the innovation in general is within society (Rogers, 2003). Rogers defines diffusion as "*the process in which an innovation, perceived as new, spreads via certain communication channels over time among the members of a social system*" (Rogers, 2004: p. 13). These communication channels are considered here as the (bonding and bridging) social capital of the individual, which motivate the person to accept the behaviour, internalize it with their attitudes and adopt the behaviour itself.

The way in which the social capital's adoption of S.PSS exerts influence on the individual covers the awareness, attitudes and adoption of S.PSS by the individual. How these influences appear is explained in the next paragraphs.

2.2 Awareness of S.PSS

An individual becomes more familiar with an innovation when the rate of diffusion is high, and the innovation is used by the society. To increase the speed of diffusion, every individual needs to become more aware of the existence of the innovation, in this case S.PSS. Further, it is argued that an increase

of an individual’s awareness stimulates the eventual adoption of S.PSS by the individual. The awareness is increased when the individual knows people who already use a form of S.PSS (McKenzie-Mohr, 2017). Thus, their social capital’s adoption of S.PSS helps the individual to become more aware of S.PSS in general.

2.3 Attitudes towards S.PSS

Once an innovation becomes more familiar to the individual, the individual will internalize the new behaviour as a habit. In this case it is the trend towards *using* instead of *owning*. When guidelines for the habit are developed, norms are altered or established. This is possible through extensive communication and the internalization of the norm by the social capital, making the adopted behaviour as a new standard (McKenzie-Mohr, 1999). A change of norms happens through the awareness of the innovation, which helps to form or alter attitudes concerning the subject (Axsen and Kurani, 2014). Positively changed attitudes lead to higher tendency for the individual to adopt S.PSS. Attitudes can change through the influence of their social capital, by taking over attitudes from them or creating awareness of the subject.

2.4 Adoption of S.PSS

For adopting a new innovation, the individual first needs to be aware that a new innovation exists, and have positive attitudes about it as well. Further, as the diffusion theory argues, behaviour diffuses through different actors, and integrates itself in the norms they comply (McKenzie-Mohr, 1999). Thus, the adoption of S.PSS is stimulated by the individual’s social capital who already has adopted S.PSS, through the trust between social groups and advice given to the individual. Figure 1 demonstrates how the social capital has influence on the individual’s awareness and attitudes towards S.PSS, and how this eventually leads to the adoption of S.PSS by the individual.

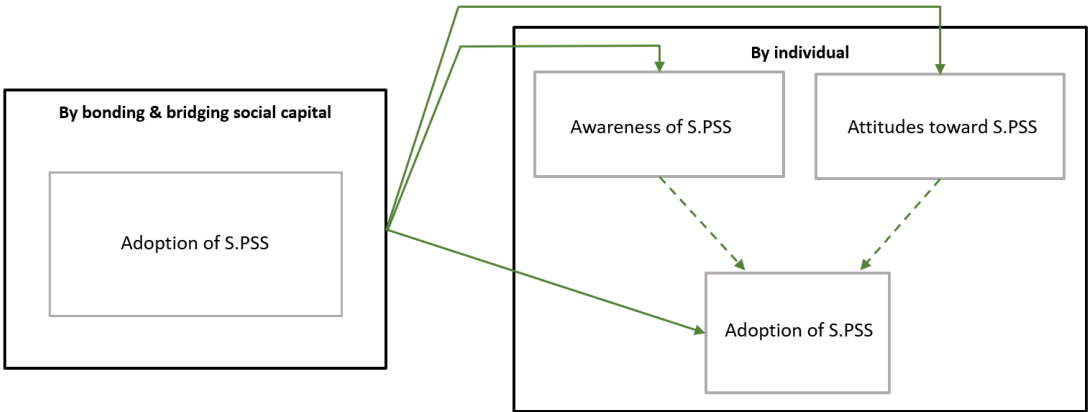


Figure 1: Theoretical framework

When the individual becomes more aware about S.PSS and creates more positive attitudes towards S.PSS, the person is more likely to alter its behaviour in adopting S.PSS. This all is influenced

by the adoption of S.PSS by their social capital. This research focusses primarily on the influence from social capital on the individual's awareness, attitudes and adoption of S.PSS. Previous literature argues that there are differences in the influence from bonding and bridging social capital (Putzel, 1997; Pelling, 1998; Pelling and High, 2005; Leonard and Onyx, 2003), but unclear is the eventual effects on the individual's adoption of S.PSS. Therefore, this research presents its hypothesis without a clear difference between the influences of bonding and bridging social capital, and focusses primarily on the probable influence of the social capital on the individual's awareness, attitude and adoption of S.PSS. To test the theoretical framework, three hypothesis are presented:

Hypothesis 1: An individual's awareness of S.PSS will be positively related to their social capital's adopted S.PSS.

Hypothesis 2: The individual's attitudes about S.PSS will be positively related to knowing its social capital's adoption of S.PSS.

Hypothesis 3: The adoption of S.PSS by the individual will be positively related to the adoption of S.PSS by their social capital.

3. Methodology

3.1 Research design

The research method is based on providing sufficient data in lines with the hypotheses. First, a survey shows multiple patterns for specific groups, and contributes to an exploratory approach. The survey analyses the direct relations between the individual's awareness, attitude, and adoption of S.PSS and the adoption of S.PSS by their social capital. It is argued that besides the adoption of S.PSS the contact with their social capital is also of interest. Because the social capital manifests itself through bonding and bridging groups, and it is not clear how these groups differ in influence, the research has also an extra explanatory element. By adding additional interviews, a broader understanding can be formulated about how the social capital influences the individual. Linking both methods together creates an overall idea on how the social capital has influence on the awareness, attitude, and adoption of S.PSS by the individual. Thus, the research is designed into a sequential exploratory and explanatory mixed method design and aims to receive sufficient data to test the hypotheses derived from the theoretical framework.

In this research, the social capital is divided into different social groups, which fall under respectively bonding or bridging relations. The independent variable that test the hypotheses is the adoption of S.PSS by these social groups, and the dependent variables are the individual's awareness, attitudes and adoption of S.PSS. For the adoption of S.PSS, the awareness and attitudes of the individual also become relevant to include as independent variables, as besides the adoption of S.PSS by their social capital, the individual's awareness and attitude on S.PSS influence the eventual adoption of S.PSS as well. Further control variables age, gender, education, and attitudes regarding pro-environmental worldview, sustainable consumption, and non-ownership are included in the survey analysis. The focus during the interviews is on the contact that the individual has with their social capital, and how advice and attitudes manifest through for example conversations.

3.2 Survey

3.2.1 Sampling strategy

The research internship takes place at Gray Label. Gray Label is an international sustainable children's clothing brand. Beside their ambition of a low environmental impact, they also have a high social responsibility. Customers choose their brand not only for the great design and high quality, but also for environmental and social motivations. Since 2019, Gray Label is creating a S.PSS called RNTD, which makes it possible for customers to subscribe to a leasing program for baby-clothing. The consumer pays a monthly fee and receives the right sized clothes for their baby, with easy swapping when the child has grown out of the old size. By using the customer network of Gray Label and targeted advertisement on social media, an extensive group of customers is approached to fill in the survey.

Questions consider not only the lease of baby-clothing but also other types of S.PSS. The customer panel is characterized by urban and young parents, who are more likely to be aware of environmental change (Mont et al., 2006). The environmental awareness makes a successful adoption of access-based consumption more likely to happen within these social groups. Because baby products and clothing are expensive and used for a short period, it has a high potential of success for innovating to access-based consumption (Mont et al., 2006).

The goal is to receive around 300 respondents to analyse the data effectively. The survey was online for 20 days, and advertised via Instagram. Additionally, survey invites are also distributed through the personal social network of the researcher. In total, 23,517 persons were reached through the advertisements, and 292 people have filled in the survey. The response rate is approximately 1.2, which is reasonable.

3.2.2 Operationalization

In this research, the social capital of an individual is divided into bonding and bridging groups. The selected groups are determined by previous research, which are: family and friends (bonding), and colleagues, neighbours, and association members (bridging) (Pelling and High, 2005). Through pilot interviews with some consumers it became clear that also social groups as volunteers from a community and other parents from the children’s school or day care were part of the social capital of the target group, and are therefore included. They were added as bridging social capital, because these groups are characterised as heterogeneous, outward-looking ties.

As the adoption of innovation diffuses in different rates through various sectors, it is sensible to include multiple types of S.PSS in the research. A set of different types of access-based consumption are picked throughout a wide range of sectors with alternatives to buying. This makes the comparison of decisions towards *using* instead of *owning* more assessable. The different types chosen for the research are: mobility lease, car sharing, streaming, equipment, baby products, and clothing. Table 1 provides explanations on the different forms of S.PSS, including examples which were also used during the survey to inform the respondents.

Table 1: Explanations of different forms of S.PSS

<i>S.PSS</i>	<i>Description</i>	<i>Example</i>
Mobility lease	The lease of a vehicle which is during the subscription owned by the consumers. After the subscription ends, the vehicle is returned to the business.	Private lease, Swapfiets
Car sharing	Limited and quick access to multiple vehicles. Is only incidentally used when needed and subscription is paid per time used.	Greenwheels, Connectcar

Streaming	Online streaming services giving access to a large database of e.g. movies and music.	Netflix, Spotify
Equipment	Rental of equipment at a construction market or using a city workshop. The equipment is still property of the business and the consumer pays for single use.	Equipment rental, Stadswerkplaats
Baby products	Subscription to the lease of baby products. Most of the time used for a short period until it is not needed anymore.	Bednest, Babyloop
Clothing	Leasing of particular clothes. The subscription consists out of a monthly fee and in return the consumer can wear the clothes. It can be owned or returned after usage.	Circos, Mudjeans

A large part of the survey consisted of closed questions with an answer scheme of a 5 point Likert-scale. The complete survey can be found in appendix 9.1. Valid data from the survey is essential, and therefore it is reassured that socially accepted answers are prevented. Therefore, the survey is ordered in a way that it is not directly clear for the participant what relations are explored.

First, questions focus on the individual's attitudes around sustainability and non-ownership. For this, their opinion is asked about several topics regarding their beliefs and social rules. To make it more measurable, reliable statements regarding sustainability and non-ownership from prior research are applied. A scale from New Environmental Paradigm is used to analyse the attitudes on pro-environmental worldview (Dunlap et al., 2000), and statements considering attitudes on non-ownership are retrieved from Moeller and Wittkovski (2010). Another question is added considering their activity in sustainable consumption (*How active do you consider yourself when it comes to sustainable consumption?*).

Next, questions concern the respondents contact with their social capital. It is established with which groups they have contact, and the frequency and intensity of the contact (*Which form of contact do you have with the following groups?*). Further, their perception on the social capital's attitudes on sustainability and non-ownership are questioned.

After explaining S.PSS and providing examples, it is asked which forms of S.PSS the respondents use themselves, and which they know their social capital have adopted. For both questions, the respondents answer closed questions with the previously mentioned forms of S.PSS. Additionally, the questions have an extra option for other S.PSS the respondents come up with. Finally, several questions about Gray Label's RNTD are included and the survey ends with general questions considering the control variables (e.g. gender and education).

3.2.3 Methods of data analysis

With the data from the survey, an analysis in statistics software SPSS is done on the relations between the dependent and independent variables. The relations are structured by the three dependent

variables mentioned earlier: the awareness of, attitudes about, and adoption of S.PSS. Appendix 9.2 shows an overview of the different variables used in the analysis. For the dependent variables *awareness* and *attitude* the data is ordinal, resulting in analysing the relations using ordinal regressions. The data makes it possible to look at the adopted S.PSS by the social groups separately, giving an understanding how each form of S.PSS adopted by every social group has a relation to the awareness and attitude towards S.PSS by the individual. Further, the different adopted S.PSS by the multiple social groups are summed up. This provides insights in the relation between the increase of total used S.PSS by a specific social group and the individual's awareness and attitude. Thus, both dependent variables awareness and attitude are analysed doing two regressions; one with the total sum of used S.PSS by the social groups, and the other with every adopted S.PSS separately. Both did control for the variables age, gender, education, and attitudes regarding pro-environmental worldview, sustainable consumption and non-ownership.

The dependent variable *adoption* is analysed differently, because the awareness and attitude of the individual are included as well. These two variables are taken into account, as it is possible that these have an influence on the eventual adoption of S.PSS. This results in multiple step-wise regressions examining the relation between the individual's adoption of S.PSS, the individual's awareness and attitudes towards S.PSS, and the adoption of S.PSS by their social capital. First, a baseline regression is run with only the controlling variables and the individual's awareness and attitude about S.PSS. In the second regression the social capital's adoption of S.PSS is included. By doing this, the influence of the awareness and attitudes of the individual are controlled for to the relation between the social capital's adoption and the individual's adoption. Also here, two types of step-wise regressions run for the adoption of S.PSS; the total sum of usage and every form of S.PSS separately. The first step-wise regression includes the total adoption of S.PSS by the individual, and the total adoption of S.PSS by every social group. This data is ordinal, making it a step-wise ordinal regression. Second, for every form of S.PSS a step-wise regression is done separately. Here, the adoption of a particular S.PSS by the individual is compared to the adoption of that S.PSS by their social capital. Because the data of the adoption of a specific S.PSS is binary (has adopted it or not), these are step-wise binary regressions.

3.3 Interviews

3.3.1 Sampling strategy

At the end of the survey, respondents are requested to participate in an interview. It is more insightful for the analysis when there is also interview data on people who have negative attitudes regarding S.PSS, but it is likely that these people are less willing to participate in an interview. Therefore, it is suggested that the interviews are also with individuals who are not enthusiastic about S.PSS and that

their input is also of great interest for the research. In total 113 respondents indicated willing to do an interview. Finally, from this list 20 participants were randomly selected and invited, table 2 shows information about the interviews. The interviews were conducted between the 8th and 24th of April and were all done online via Zoom.

Table 2: Interview participants

<i>Participant number</i>	<i>Characteristics (gender, age, kids)</i>	<i>Duration (minutes)</i>	<i>Date</i>
1	Female, 28-37, kids	24:38	16-04-2020
2	Female, 18-27, kids	25:15	17-04-2020
3	Female, 28-37, kids and child wish	20:38	08-04-2020
4	Female, 28-37, kids and child wish	37:32	21-04-2020
5	Female, 28-37, kids and child wish	27:25	21-04-2020
6	Female, 38-49, kids	34:43	24-04-2020
7	Female, 28-37, no kids but child wish	41:46	23-04-2020
8	Female, 28-37, no kids but child wish	47:28	24-04-2020
9	Female, 28-37, kids and child wish	25:38	21-04-2020
10	Female, 28-37, kids and child wish	35:52	17-04-2020
11	Female, 28-37, kids	28:36	20-04-2020
12	Female, 28-37, kids	28:46	24-04-2020
13	Female, 38-49, kids	27:31	22-04-2020
14	Female, 28-37, kids	26:33	08-04-2020
15	Female, 28-37, kids and child wish	22:05	21-04-2020
16	Female, 28-37, kids	16:06	20-04-2020
17	Female, 28-37, kids	31:37	17-04-2020
18	Female, 28-37, kids	25:03	15-04-2020
19	Female, 28-37, kids	15:09	15-04-2020
20	Female, 38-49, kids	34:10	15-04-2020

3.3.2 Operationalization

Semi-structured explorative interviews are done to receive more in-depth understanding on the dynamics between the variables. Moreover, the interviews are designed to find more insights in the findings of the survey, and are therefore partly based on the results of the survey. The interviews are a strong method for finding better interpretations and dynamics in relations between social capital.

Questions are prepared to guide the semi-structured interviews. These questions are found in appendix 9.3.

The interviews are used to enrich the analysis of the survey. The interviews concern the participant's attitudes on S.PSS, and their perception of the attitudes of their social capital. This helps to understand the relations between the attitudes of their social capital and that of the participant, and how they think that their social capital has an influence on their behaviour. Further, also the advice given and received from social capital is considered. The findings are used to confirm or disprove the relations found through the survey. Other topics on social capital, such as contact and trust are also questioned during interviews to understand other influences better. It is questionable whether participants are aware of the actual influence of their social capital. To overcome this, participants receive the interview structure beforehand to prepare themselves.

3.3.3 Methods of analysis

After conducting the interviews, collected data is coded in NVivo. The target of the coding is testing the relationships between the individual and their social capital, and their contact about S.PSS and sustainability. Also the awareness of the individual and their social capital, the attitudes towards S.PSS, sustainability and non-ownership and the adoption of S.PSS are selected. By asking the participants their perception on S.PSS and their social capital, it is possible to generate more understanding on the linkages in the theoretical framework. Further, advice is coded as well, giving more insights in how information is shared. The data from the interviews are used to provide more insight in the outcomes of the survey, explain certain results and illustrate unexpected relations. Furthermore, it provides additional outcomes that were not found or tested in the survey, such as shared attitudes.

During the analysis, it is acknowledged that the perception of an individual is used, and that information considering attitudes and adoption of the social capital are limited by the individual's knowledge. For this research it is not of great concern, because emphasis lies on the perception of the individual about the influence of their social capital on behavioural change.

4. Results

4.1 Descriptive statistics

The complete overview of the descriptive statistics tables can be found in appendix 9.4. The dependent variable awareness is scored a 2.90 on average ($SD = 3.00$) by the respondents ($n=292$) (see figure 2.1). Their attitude about S.PSS is averagely scored with a 4.20 which is a high mean since the maximum score is 5, and is also widely spread out ($SD = 4.00$) (see figure 2.2). The average adopted sum of S.PSS is 2.18, and has a respectively low deviation ($SD = 2.00$) (see figure 2.3). Figure 2.4 shows the different adopted S.PSS by the respondents. This figure reveals a generally accepted adoption of streaming services, and the least adopted form of S.PSS is in the clothing sector. Given the possibility to select seven different social groups, the respondents indicate on average that they have contact with 4.55 social groups ($SD = 1.18$). The adoption of S.PSS of the different social groups is shown in figure 3. Streaming has also a high adoption rate in all social groups. It is arguable that individuals assume that their social capital has adopted streaming S.PSS, without consciously knowing this. Further, mobility lease and car sharing (which both have a high visibility in usage) are also indicated to be highly adopted by social groups as friends, family, and colleagues. Respondents especially know from friends which forms of S.PSS they have adopted. Almost all respondents have general contact with friends and family (99.7%), followed with contact with their colleagues (86.0%), their neighbours (73.6%), other parents (58.6%), and a small number has contact with other association members (27.7%) and other volunteers (9.6%). A large amount of respondents are between 28 and 37 years (79.5%), and almost all are women (97.3%). Most respondents finished higher education; HBO or WO master educated (46.6% and 38.0%). The respondents score high on their pro-environmental worldview, since the maximum score is 30 and they score on average 24.76 ($SD = 2.46$). They also score high on sustainable consumption, 4.34 ($SD = 0.69$, max. = 5), and non-ownership, 10.22 ($SD = 1.73$, max. = 15).

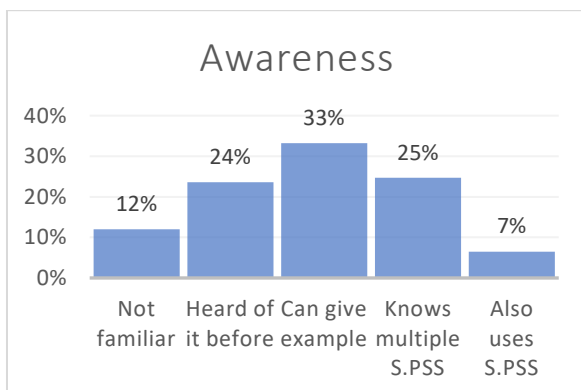


Figure 2.1: Individual's awareness concerning S.PSS

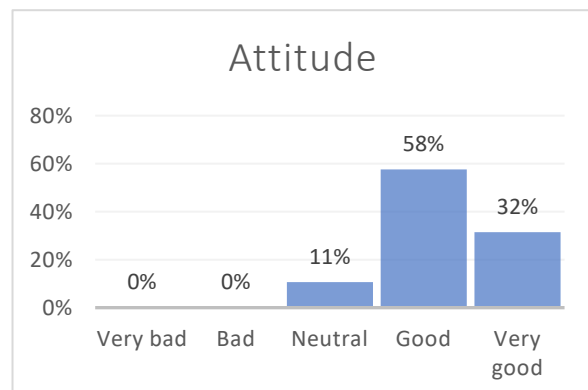


Figure 2.2: Individual's attitude towards S.PSS

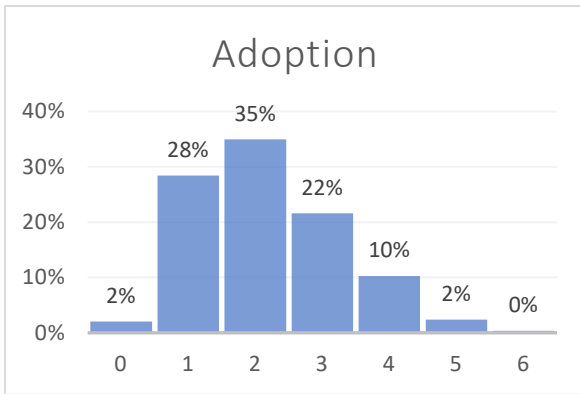


Figure 2.3: Individual's total sum of adopted S.PSS

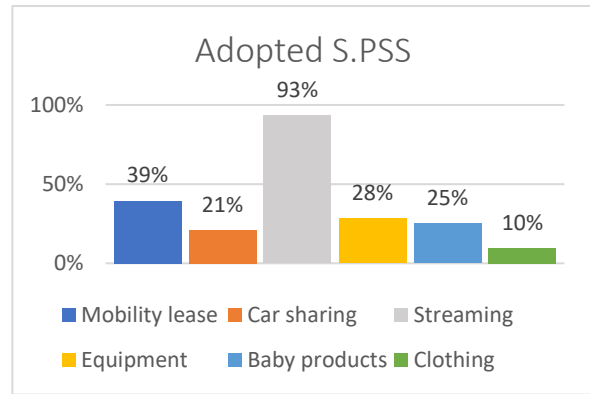


Figure 2.4: Adopted S.PSS by the individual

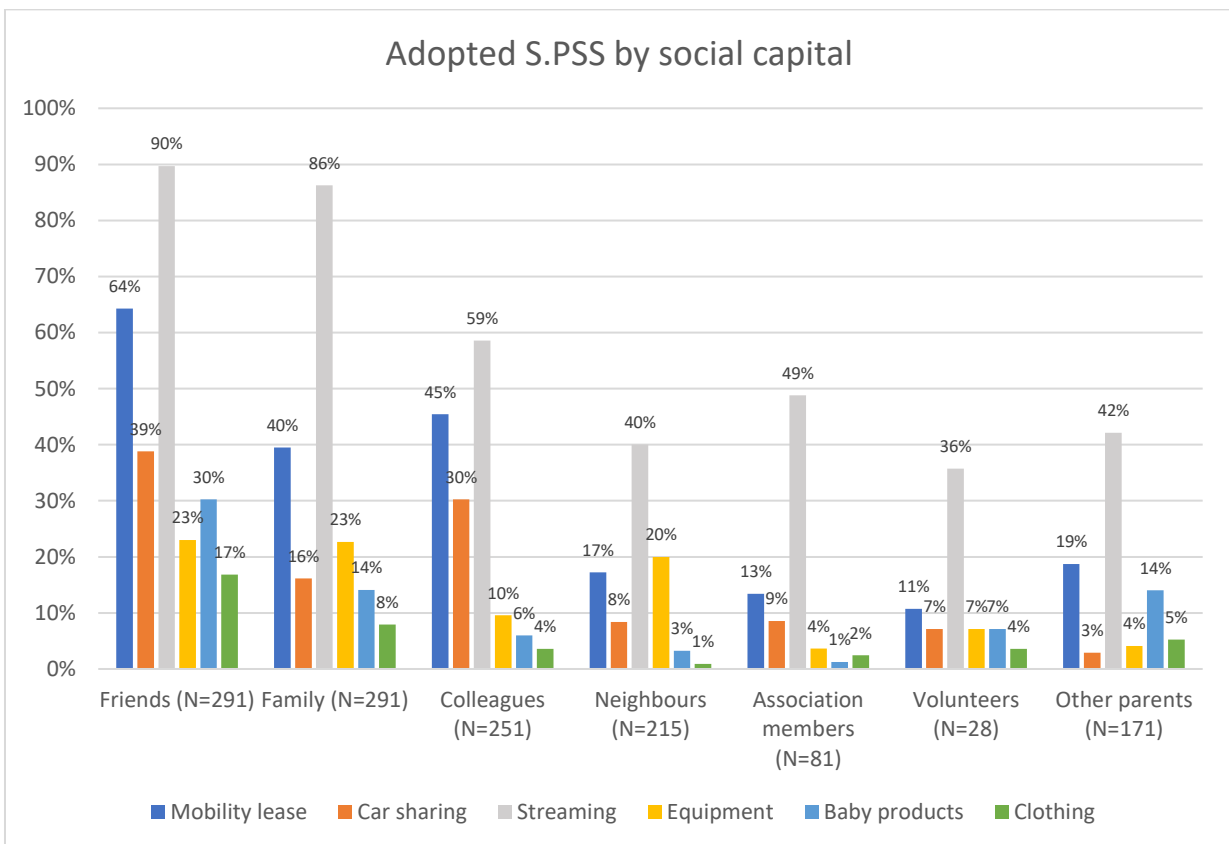


Figure 3: Adopted S.PSS by social capital

4.2 Awareness

Two regressions are done to analyse the relation between the adoption of S.PSS by the social capital and the awareness from the individual about S.PSS. For the first regression (see table 3.1) the adopted S.PSS by the social capital are summed up. Colleagues are the only social capital group that has a strong significant relation to the individual's awareness. This implies that knowing colleagues who have adopted more S.PSS has a positive relation to being more aware about S.PSS, also relative to other social capital groups. It is remarkable that this is the only social group that has a significant relation, but a tentative explanation for this would be that a topic like the usage of S.PSS is more interesting to discuss with colleagues as with other people, because it is quite a neutral topic. Further, the individual's

age is significantly negatively related to the awareness, implying that older respondents are less aware about S.PSS. This will be more elaborated on in the results from the interviews. Not surprisingly, the respondents are also more likely to be aware about S.PSS when their attitude regarding non-ownership is more positive. A reason for this is that you might be more open-minded towards new consumption opportunities that focus on less materialism. Interesting, non-ownership is significant and the pro-environmental worldview and sustainable consumption are not significant. This indicates that non-ownership has a stronger relation to the individual's awareness than their pro-environmental worldview or sustainable consumption. Reasons for this deviance are stressed out in the interview results.

Table 3.1: Social capital's sum of adopted S.PSS and the individual's awareness of S.PSS

<i>Parameter</i>	<i>B</i>
<i>Total S.PSS usage by: Friends</i>	0.039
<i>Total S.PSS usage by: Family</i>	0.198
<i>Total S.PSS usage by: Colleagues</i>	0.415***
<i>Total S.PSS usage by: Neighbours</i>	0.015
<i>Total S.PSS usage by: Association members</i>	0.375
<i>Total S.PSS usage by: Volunteers</i>	-0.561
<i>Total S.PSS usage by: Other parents</i>	0.226
<i>Gender = female</i>	0.781
<i>Education = WO master</i>	0.645
<i>Education = HBO</i>	0.323
<i>Education = WO bachelor</i>	0.248
<i>Education = MBO</i>	0.724
<i>Education = VWO</i>	0.557
<i>Education = HAVO</i>	-0.626
<i>Age</i>	-0.567*
<i>Pro-environmental worldview</i>	-0.062
<i>Sustainable consumption</i>	0.328
<i>Non-ownership</i>	0.157*

Note 1: *p<0.05, **p<0.01, ***p<0.001

Note 2: model fit p<0.001 and R² = 0.201

The second regression table also shows the relation between the social capital’s S.PSS adoption and the awareness of S.PSS by the individual, but now the results are split per S.PSS their social capital could adopt (see table 3.2). Four predictor variables have been proven to have a significant relation with the awareness of S.PSS, which are family adopting mobility lease, colleagues adopting car sharing, association members adopting streaming services, and other parents adopting baby products. These relations seem plausible, as conversations considering baby products would take place with other parents, and car sharing is more visible among colleagues. The same control variables are significant as in the previous regression; age is negatively related, and non-ownership positive.

Some of the identified statistical patterns are consistent with the interview results. With respect to the influence of other parents, interviewees say that they know multiple other parents, mostly friends with kids, who use S.PSS in baby products. Participants indicate also to know colleagues who use car sharing S.PSS. In the interviews it becomes clear that age indeed matters in how aware a person is about S.PSS. Interviewees raise this issue mostly to their social capital, where older generations know less about S.PSS. In words of interviewee 15:

“I am more likely to be the first in my family to come up with that [S.PSS]. They are not so concerned with it at all. They are much less concerned with sustainability and with user services.”

The concept of non-ownership returns often in the conducted interviews, and helps to understand the strength of non-ownership over sustainable consumption found in the regressions. Interviewees tend to be more aware of S.PSS when they live in the city, and have less space to store items that are used occasionally. They indicate that an urgency rises for them as they do not have enough storage space, and affects their attitudes about *using* instead of *owning*. Being less materialistic motives them to search more for alternatives of buying, such as S.PSS. Although the attitude of sustainable consumption is also an important driver for interviewees to know more about S.PSS, non-ownership is stronger related to the awareness of S.PSS because of the urgency that comes through less storage space.

Table 3.2: Social capital’s adopted S.PSS and the individual’s awareness with S.PSS

<i>Parameter</i>	<i>B</i>	<i>Parameter</i>	<i>B</i>
<u><i>Mobility Lease</i></u>		<u><i>Equipment</i></u>	
<i>Friends</i>	0.398	<i>Friends</i>	0.053
<i>Family</i>	0.642*	<i>Family</i>	0.061
<i>Colleagues</i>	0.433	<i>Colleagues</i>	0.356
<i>Neighbours</i>	0.522	<i>Neighbours</i>	-0.353

<i>Association members</i>	-0.377	<i>Association members</i>	1.200
<i>Volunteers</i>	-0.782	<i>Volunteers</i>	3.299
<i>Other parents</i>	-0.581	<i>Other parents</i>	-1.318
<hr/>		<hr/>	
<u><i>Car sharing</i></u>		<u><i>Baby products</i></u>	
<i>Friends</i>	0.184	<i>Friends</i>	-0.459
<i>Family</i>	0.457	<i>Family</i>	-0.332
<i>Colleagues</i>	0.803*	<i>Colleagues</i>	0.444
<i>Neighbours</i>	0.323	<i>Neighbours</i>	0.517
<i>Association members</i>	-0.432	<i>Association members</i>	19.648
<i>Volunteers</i>	0.197	<i>Volunteers</i>	-1.570
<i>Other parents</i>	2.285	<i>Other parents</i>	1.405**
<hr/>		<hr/>	
<u><i>Streaming</i></u>		<u><i>Clothing</i></u>	
<i>Friends</i>	-0.270	<i>Friends</i>	0.386
<i>Family</i>	0.841	<i>Family</i>	-0.653
<i>Colleagues</i>	-0.368	<i>Colleagues</i>	0.463
<i>Neighbours</i>	-0.191	<i>Neighbours</i>	-0.564
<i>Association members</i>	1.094*	<i>Association members</i>	1.253
<i>Volunteers</i>	-0.971	<i>Volunteers</i>	-18.438
<i>Other parents</i>	0.278	<i>Other parents</i>	0.014
<hr/>		<hr/>	
<i>Education = WO master</i>	0.524	<i>Gender = Female</i>	0.558
<i>Education = HBO</i>	0.102	<i>Age</i>	-0.645*
<i>Education = WO bachelor</i>	-0.068	<i>Pro-environmental worldview</i>	-0.159
<i>Education = MBO</i>	0.841	<i>Sustainable consumption</i>	0.344
<i>Education = VWO</i>	-0.805	<i>Non-ownership</i>	0.152*
<i>Education = HAVO</i>	-1.422		

Note 1: *p<0.05, **p<0.01, ***p<0.001

Note 2: model fit p<0.001 and R² = 0.337

The interviewees are distributed in the amount of awareness on S.PSS; some were very aware of all kinds of forms of S.PSS, and others only knew one or two examples. The interviewees with a high awareness talk mostly with their friends or colleagues about sustainability and S.PSS. For most of them debates with their friends and colleagues about how to do better encourage them to reflect on their consumption behaviour. Experiences are shared and best practises make it easier for the participant

to know what is out there. Although, when there is just a small amount of the social capital that have adopted S.PSS, the debates on sustainability and non-ownership also help them to try better and notice more S.PSS on social media and advertisements. Interviewee 17 gives an example of her relation with friends/colleagues and the contact she has with them about sustainability:

“I think it is mainly the friends who I see frequently, that I talk about it [S.PSS] a lot. Like, how can we do better, and mostly how can we be more sustainable.”

The people who are moderately aware about different S.PSS possibilities debate less about this with others. They still know several social groups who have adopted S.PSS, but when looking more in-depth to their contact, it shows that these conversations are more about sustainability in general instead of debating about trying to do better in concern of S.PSS. In words of interviewee 4:

“It is more like, you talk with friends about this who are also active in this [sustainability]. But at the moment that they are not, I also have friends who are not interested in this, than you eventually talk less about it.”

Also here the conversations are mostly with friends and colleagues. They do talk with family about this topic, but in this case it is more advisory to their family instead of receiving new information from them as well. Contact with neighbours is not much but they see some neighbours adopting a form of S.PSS, which confirms for them that these S.PSS are easy to adopt.

Interviewees who have low awareness of S.PSS talk very little with their social capital about S.PSS, but do talk about sustainability in general. Most of the time they talk about this with friends or neighbours. The interviews show that most of the participants have social capital who are not interested in it either. Conversations about sustainability are more general and discussions about this do almost never take place. Where participants with more awareness on S.PSS have regular contact with their colleagues about these topics, the participants with low awareness never mention in the interviews that they have conversations with their colleagues about sustainability or related topics. Interviewee 11 demonstrates her struggle when talking about sustainability and S.PSS with people nearby and close friends:

“I still have some friends in Amsterdam, because I live in Arnhem for a few years now. I do notice that the conversations I have with people here in Arnhem are quite superficial. So you might advise each other about something [but not more than that]. But it [S.PSS] has not yet been discussed in this way, no. [...] And with friends conversations are often about a certain profession that you practice or an assignment, or that you are talking about your children. Usually you just do not have time for

some topics anymore. Other things come first, and then such topics [S.PSS] just have to come up in a conversation.”

4.3 Attitude

The regressions for *attitude* are structured in the same way as with *awareness*, first a regression with the sum of adopted S.PSS by the social capital and second a regression with every adopted S.PSS separately. The first regression (see table 4.1) shows a significant positive relation with the sum of adopted S.PSS by other parents. This relation is explained more extensively in the next paragraph. Further, the regression shows a significant negative relation to volunteers, implying that knowing volunteers who have adopted more S.PSS has a negative relation to the individual’s attitude regarding S.PSS. This negative relation is difficult to explain, as also in the interviews nothing is mentioned about contact with volunteers. It is probable to assume that this is a spurious result and that other, not included variables distinct this group of individuals from the others and create this significant relation. For example, it might be possible that people who know volunteers are more active in volunteering themselves and have created a strong network where properties are shared, creating less urgency to use a S.PSS. Another explanation is that this group is an outlier, because the group of volunteers is very small and it is possible that it is coincidence that all respondents that are less positive about S.PSS know volunteers adopting S.PSS. Further, a not surprisingly outcome in the regression is a significant, positive relation to the attitude about S.PSS with sustainable consumption and non-ownership. This relation is elaborated later in the interview section.

The positive relation to the attitude and the adoption of other parents is explained through the interviews. Although the interviewees mostly do not define a social group specifically *other parents*, they do distinguish friends with children from other friends without children. The participants themselves admit to become more active in sustainability after getting pregnant, which they indicate to be the same for their friends. Pregnancy made multiple interviewees think more about what they leave behind for the next generation and getting active in consuming more responsibly. Other parents are doing the same and the interviewees enjoy debating with these friends about more sustainable consumption, such as sharing toys. Therefore, it is likely that best practices considering sustainable consumption, in this case S.PSS, are shared between other parents. Further, knowing other parents who use more forms of S.PSS increases the positive attitude about S.PSS. In words of interviewee 12:

“I also notice that I became more conscious of sustainability around my pregnancy. I am quite aware that I am bringing a new generation into the world who also has to live in that world again with quite a few restrictions. [...] And I do notice that I indeed talk with friends who have children about things that you need for a very short time and then put away again.”

Table 4.1: Social capital's sum of adopted S.PSS and the individual's attitude about S.PSS

<i>Parameter</i>	<i>B</i>
<i>Total S.PSS usage by: Friends</i>	0.060
<i>Total S.PSS usage by: Family</i>	0.076
<i>Total S.PSS usage by: Colleagues</i>	0.141
<i>Total S.PSS usage by: Neighbours</i>	-0.062
<i>Total S.PSS usage by: Association members</i>	0.097
<i>Total S.PSS usage by: Volunteers</i>	-1.028**
<i>Total S.PSS usage by: Other parents</i>	0.448**
<i>Gender = female</i>	-1.036
<i>Education = WO master</i>	0.293
<i>Education - HBO</i>	0.502
<i>Education = WO bachelor</i>	1.295
<i>Education = MBO</i>	1.575
<i>Education = VWO</i>	0.622
<i>Education = HAVO</i>	-1.165
<i>Age</i>	0.550
<i>Pro-environmental worldview</i>	0.308
<i>Sustainable consumption</i>	0.513**
<i>Non-ownership</i>	0.199**

Note 1: *p<0.05, **p<0.01, ***p<0.001

Note 2: model fit p<0.001 and R² = 0.208

The second regression shows the relation between the individual's attitude regarding S.PSS and the adoption of different S.PSS by their social capital (see table 4.2). The results show few significant relations between the dependent and independent variables. Where the total usage of S.PSS by other parents and volunteers had a significant relation to the attitude of the individual about S.PSS, this relation is not significant anymore in the second regression. This means that there is no specific S.PSS adopted by other parents and volunteers that shows a significant relation with the attitude about S.PSS, but is only visible when the S.PSS are summed up. In the second regression, the only significant relation is that of family who have adopted clothing S.PSS. Surprisingly, this relation is

negative and it is difficult to understand why, as the assumption is that knowing people who have adopted S.PSS would stimulate others to become more positive about S.PSS. The interviews shed light on this issue. Several participants know a S.PSS for clothing, and also know social capital, especially friends, who use these. The experiences from these friends are generally the same and not convincingly positive. The foremost reason is that the offer of clothing from these businesses are not extensive enough, and combined with a high price, making it less attractive to use. For some sectors the appearance of the product is less important (e.g. equipment or car sharing), for clothing it does play an important role. Although the regression shows a negative relation of adopting clothing S.PSS by family, it is arguable that this is for the same reason as the interviewees indicated.

Both regressions explore very limited the relations between social capital and the individual's attitude about S.PSS. What is more interesting is the relation between the individual's attitude regarding non-ownership and sustainable consumption, and the attitude regarding S.PSS. In both regressions the sustainable consumption has a significant positive relation to the attitude about S.PSS, and in the first regression also non-ownership is significantly positive related. Surprisingly, in both regressions the respondent's pro-environmental worldview is not significant. The interviews help to understand better how these attitudes of the individual are influenced by their social capital.

Table 4.2: Social capital's adopted S.PSS and the individual's attitude about S.PSS

<i>Parameter</i>	<i>B</i>	<i>Parameter</i>	<i>B</i>
<u><i>Mobility lease</i></u>		<u><i>Equipment</i></u>	
<i>Friends</i>	-0.286	<i>Friends</i>	0.144
<i>Family</i>	0.195	<i>Family</i>	0.476
<i>Colleagues</i>	0.173	<i>Colleagues</i>	-0.754
<i>Neighbours</i>	0.986	<i>Neighbours</i>	-0.305
<i>Association members</i>	1.011	<i>Association members</i>	21.827
<i>Volunteers</i>	-1.343	<i>Volunteers</i>	24.353
<i>Other parents</i>	0.504	<i>Other parents</i>	-0.382
<u><i>Car sharing</i></u>		<u><i>Baby products</i></u>	
<i>Friends</i>	0.372	<i>Friends</i>	0.516
<i>Family</i>	-0.138	<i>Family</i>	0.712
<i>Colleagues</i>	0.630	<i>Colleagues</i>	-0.673
<i>Neighbours</i>	-0.446	<i>Neighbours</i>	-0.527
<i>Association members</i>	0.756	<i>Association members</i>	15.828
<i>Volunteers</i>	-1.370	<i>Volunteers</i>	-21.593

<i>Other parents</i>	2.914	<i>Other parents</i>	0.169
<u><i>Streaming</i></u>		<u><i>Clothing</i></u>	
<i>Friends</i>	-0.770	<i>Friends</i>	0.128
<i>Family</i>	-0.305	<i>Family</i>	-1.351*
<i>Colleagues</i>	0.356	<i>Colleagues</i>	0.477
<i>Neighbours</i>	-0.366	<i>Neighbours</i>	-0.341
<i>Association members</i>	-0.594	<i>Association members</i>	-0.182
<i>Volunteers</i>	-1.913	<i>Volunteers</i>	17.055
<i>Other parents</i>	0.311	<i>Other parents</i>	1.736
<i>Education = WO master</i>	0.856	<i>Gender: Female</i>	-1.118
<i>Education = HBO</i>	0.825	<i>Age</i>	0.428
<i>Education = WO bachelor</i>	2.022	<i>Pro-environmental worldview</i>	0.170
<i>Education = MBO</i>	1.657	<i>Sustainable consumption</i>	0.603**
<i>Education = VWO</i>	0.810	<i>Non-ownership</i>	0.146
<i>Education = HAVO</i>	-0.804		

Note 1: *p<0.05, **p<0.01, ***p<0.001

Note 2: model fit p<0.001 and R² = 0.335

Interesting is that interviewees often share the same attitudes with a specific part of their social capital, and less with others. Most of the times the attitudes are shared with friends, and sometimes with colleagues, family, or neighbours. With friends they do not only share thoughts but also best practices, as they encourage each other to try to do better. Often they point out that it is a selected group of friends, not all, that they have a strong relation with and share multiple attitudes. Most common are conversations regarding topics as sustainability and responsible consumption. They talk about what they do themselves, share best practices and experiences, and challenge each other on what they can do better. In words of interviewee 6:

“We also set up a whole exchange system for baby clothes between friends, some garments are already used by the fourth child. And that works very well. Also other friends of the group are active, they are more responsible in what they eat. It makes you think much more about these things.”

When people have a strong opinion about sustainability or non-ownership, they mention that others (often friends) share the same attitudes. This interaction especially boosts the shared attitudes on sustainability and non-ownership; participants with a strong attitude towards sustainability notices that their friends start to personate these attitudes as well. And vice versa, as participants

acknowledge that their attitudes change due to a strong positive attitude from their friends. Attitudes about convenience are also shared with their social capital, several participants indicate that they, and their friends, find S.PSS mainly practical. Interviewee 6 gives a clear distinction in her friends, as some use S.PSS out of sustainability reasons and others for its convenience:

“One [group of friends] is more out of sustainability, that they are convinced it is better for the world to not own these things anymore. While the other [group of friends] looks more from a practical point of view, and also do not care about possession. They maybe do not have the same starting point, but eventually ownership is for both not important anymore.”

Further, people who are less positive about sustainability or S.PSS experience positive attitudes from social capital, which are often friends. They make the person slightly positive and foremost curious about the topic.

Positive attitudes are also shared with colleagues. This happens mostly when sustainability is an integrated concept in the business, making the topic more accessible to use for private conversations during breaks. In these conversations best practices are shared between colleagues. Although some say they have good debates about this topic with colleagues, generally it is said that the conversations are a bit more reserved than with friends.

Shared attitudes about sustainability and S.PSS are less common with family. Although it happens, most participants argue that more often their parents are not that familiar with S.PSS, and also do not like the idea of *using* instead of *owning*. In words of interviewee 8:

“For them [her parents] owning means wealth. I prefer to own as little as possible, but they really just prefer to buy everything. My dad is very anxious that something would go wrong when leasing, while me and my brother are far more positive about it.”

Participants argue they have conversations with their family about such topics, and they have the feeling that family members are interested and curious in how it works. Conversations about this topic are more advisory or explanatory, rather than sharing experiences and attitudes. More often attitudes are shared with siblings, as they also use S.PSS or try to be more sustainable in consumption. Nevertheless, in-depth conversations and debates are happening less often with siblings, than with friends and colleagues.

The topic is handled differently with neighbours. Some have good contact with their neighbours, others do not have any contact at all. The participants with good contact say that such topics also come up in conversations, mostly in the context of sharing and non-ownership. Besides sharing equipment or other products, sometimes ideas and attitudes are shared. It is less about

discussing each other's behaviour, but more about sharing of best practices and creating a more social neighbourhood.

Another topic that has been addressed in the interviews concerns social media. Several interviewees indicate to become more aware about S.PSS through persons and companies they follow on social media (e.g. Instagram). These persons are mostly influencers, and followers tend to have a feeling that they know them personally, even though they are strangers. This feeling is created because the influencers share their interests, which are most of time the same for their followers, and also share the same attitudes on multiple topics. Interviewees admit to be influenced by the behaviour and attitude of the influencer, and might alter their attitudes in favour of that of the influencers.

4.4 Adoption

Multiple step-wise regressions are done to examine the relation between the adoption of S.PSS by the individual and the adoption of PSS by their social capital. The first two-fold of regressions includes the total usage of S.PSS by the individual and their social capital, and the individual's awareness and attitude about S.PSS (see table 5.1). The awareness with S.PSS has in the baseline model a weak but significant positive relation to the sum of adopted S.PSS by the individual. Typically, this relation is not significant in the full model, indicating that the total adopted S.PSS by the social capital predict the adoption sum of the individual better than the individual's awareness and attitude. In the full model, knowing friends, family and neighbours that have adopted more S.PSS have a positive relation to the total sum of adopted S.PSS by the individual. Specifically, knowing friends that have adopted more S.PSS has the strongest relation to the adoption of S.PSS by the individual, followed by neighbours and finally family.

Table 5.1: Social capital's sum of adopted S.PSS and the individual's sum of adopted S.PSS

	<i>B baseline model</i>	<i>B full model</i>
<i>Awareness</i>	0.255*	0.169
<i>Attitude</i>	0.326	0.285
<i>Total S.PSS usage by: Friends</i>		0.661***
<i>Total S.PSS usage by: Family</i>		0.329**
<i>Total S.PSS usage by: Colleagues</i>		-0.077
<i>Total S.PSS usage by: Neighbours</i>		0.428**
<i>Total S.PSS usage by: Association members</i>		-0.105
<i>Total S.PSS usage by: Volunteers</i>		-0.028
<i>Total S.PSS usage by: Other parents</i>		-0.248
<i>Gender</i>	0.275	0.280

<i>Education = WO master</i>	0.447	-0.620
<i>Education = HBO</i>	0.097	-0.671
<i>Education = WO bachelor</i>	0.219	-0.394
<i>Education = MBO</i>	0.344	-0.100
<i>Education = VWO</i>	-0.579	-0.603
<i>Education = HAVO</i>	-0.076	-0.811
<i>Age</i>	0.044	0.078
<i>Pro-environmental worldview</i>	0.554*	0.453
<i>Sustainable consumption</i>	-0.123	-0.148
<i>Non-ownership</i>	0.128	0.098

Note 1: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note 2: Baseline model fit $p < 0.05$ and $R^2 = 0.094$, full model fit $p < 0.001$ and $R^2 = 0.381$

To understand the relations between adoptions of S.PSS by the individual and social capital in-depth, the second part is a combination of six step-wise regressions which analyse the adoption of different S.PSS separately. An overview of these regressions is presented in tables 5.2 and 5.3. Also, a baseline model regression is done with the individual's attitude and awareness of S.PSS and control variables included, and besides that a full model including the respectively adopted S.PSS by the social capital enclosed.

Awareness is only in three forms of S.PSS significantly related to the adoption of these S.PSS; mobility lease, car sharing, and streaming. Only in the adoption of streaming is the awareness also in the full model still significant. Further, *attitude* has only a significant positive relation to the adoption of baby products S.PSS, and this only applies for the baseline model. This means that awareness and attitude predict the adoption of S.PSS to a smaller extent than the adoption of S.PSS by their social capital. An explanation for this came up during an interview where the participant indicates to be in the same stage of life as her friends and receives therefore sufficient information about S.PSS to use for baby products. Thus, even when having a positive attitude and being familiar with the concept of S.PSS, it is more important to have social capital that uses a specific kind of S.PSS that is of interest for the person and receives in this way information about it. In words of interviewee 2:

“At that point I was just pregnant, so I did not even know that these covers for strollers existed. Then these friends went on holiday and I casually asked how they keep their stroller undamaged in an airplane. They explained to me that you can rent covers for your stroller. So at first I heard about this concept from them, and after that I went looking by myself on the internet what the options were.”

Shown in the regressions is that friends have almost in every regression a significant positive relation to the adoption of the certain S.PSS, with the exception of streaming. Also family has a significant positive relation to almost every S.PSS, except car sharing. Interesting is knowing both friends and family who have adopted more of a certain S.PSS is positively related to the adoption of that S.PSS by the individual. Through interviews this relation is confirmed, as most interviewees indicate a deep and trustworthy relation with their friends and family, which increase the value of certain behaviour when the topics comes up. Older family members are most of the time less active in S.PSS, but in contrary their siblings are more active and with them experiences are shared.

Looking at the other groups of social capital, the significant relations are various for the different S.PSS. Interesting are knowing neighbours who have adopted equipment S.PSS, colleagues who have adopted baby products S.PSS, and other parents who have adopted clothing S.PSS. These results suggest that people are more likely to have conversations with these social capital about such products, or that it is more visible that these social capital use these kinds of S.PSS, what also eventually leads to the adoption of these S.PSS by the individual or aforementioned social capital. Beside renting equipment from stores it is also possible to share equipment with neighbours through online platforms. The interviews confirm the use of these platforms between neighbours, creating instantly a social connection between neighbours who use these S.PSS as well. Next, it is common to talk about your children with colleagues during breaks. When multiple colleagues have babies, experiences with baby product S.PSS can be shared, making it more likely that the use of these S.PSS increases among colleagues. Finally, the positive relation between other parents and the use of S.PSS in clothing, is understood through the interviews. Most participants indicate that other parents with whom they have contact with are also friends. As earlier mentioned in chapter 4.3 attitude, it is possible that the use of certain S.PSS are more likely to be shared between friends. Another explanation is that respondents think of baby clothes as S.PSS for clothing, and therefore are these topics more likely to be shared between young parents.

Looking at the control variables, it is interesting to see that sustainable consumption is significant at multiple S.PSS. For mobility lease this is even negatively related, which suggests that being more active in sustainable consumption leads to less use of mobility lease S.PSS. An explanation for this could be that mobility lease S.PSS is less related to sustainability than others, and is more a convenience driven access-based consumption (explained earlier in chapter 4.3 attitude). For baby products, the sustainable consumption is significant positive related to the adoption of baby products. What is found in interviews is that young parents become more aware about their ecological footprint when becoming pregnant. Therefore, using a product-service system for baby products is more likely done out of sustainable considerations. In words of interviewee 10:

“When my oldest son was born we got a lot of ‘green’ hormones. After that [birth] we are much more active for the environment.”

Finally, the attitude of non-ownership is also significant positively related to multiple adopted S.PSS; being less materialistic makes it more likely for the respondents to adopt a S.PSS in equipment, baby products and clothing. The interviews confirm this, as the attitude of non-ownership has been found often as argument to use a S.PSS (see chapters 4.2 awareness and 4.3 attitude).

The regression only gives an indication of the relation between the adoption of S.PSS by the individual and social capital. In understanding the influences between them, the interviews explore how advice is given by and to the participant. It becomes clear that advice is given in both directions, as social capital gives advice to use a specific S.PSS and the individual gives advice to their social capital. Nevertheless, this is not instantly a reason for the participant to use the specific S.PSS, often it is an accumulation of different factors that eventually makes the participant adopt. This includes the familiarity with the concept through social capital, advertisements, and social media. Participants indicate that it helps to know people who already use the form of S.PSS, and for some it is even a requirement before adopting a new S.PSS by themselves. In words of interviewee 13:

“I notice that word of mouth really works best for me, because I can directly hear that person’s opinion and feedback. And from there I can think, that is interesting, I want that too. When I see an advertisement I may become interested, but I am not the person who would start using it when I do not know anyone who does not use it already. I am not the first person to get aboard.”

During the interviews it became clear that it is not always the case that the participant uses the same S.PSS as their social capital. The foremost reason is timing, where the participant is not ready to use that particular S.PSS. Some indicate examples such as that they already own a good bike or car which they often use, they do not have children yet, they do not need new clothes, or they barely use equipment themselves. In general, at that point the participants are interested in these S.PSS and also know different people who have adopted them already, but they do not have a current urge to adopt themselves. In contrast, several indicate that it helps to know someone who already uses it, because it is a gentle reminder for them to look in it when the opportunity arises. Surprisingly, participants suggest they would search on the internet for more information about a S.PSS rather than asking their social capital. Sometimes they would ask their social capital when they already discussed S.PSS with them at a previous occasion, but when this has not happened yet they would not ask around if someone already uses.

Table 5.2: Social capital's adopted S.PSS and the individual's adopted S.PSS in mobility lease, car sharing and streaming

	<i>Mobility lease</i>		<i>Car sharing</i>		<i>Streaming</i>	
	$R^2 = 0.095$	$R^2 = 0.235$	$R^2 = 0.180$	$R^2 = 0.362$	$R^2 = 0.248$	$R^2 = 0.487$
	<i>B baseline</i>	<i>B full model</i>	<i>B baseline</i>	<i>B full model</i>	<i>B baseline</i>	<i>B full model</i>
<i>Awareness</i>	0.250*	0.073	0.489**	0.303	0.822**	0.881*
<i>Attitude</i>	0.142	0.130	0.288	0.149	-0.260	0.008
<i>Friends</i>		1.048**		1.668***		1.074
<i>Family</i>		0.715*		0.492		2.117**
<i>Colleagues</i>		0.533		0.709		0.383
<i>Neighbours</i>		0.221		0.677		2.912*
<i>Association members</i>		0.080		-0.421		-1.014
<i>Volunteers</i>		0.041		-22.146		-1.189
<i>Other parents</i>		0.192		2.438		-2.015
<i>Gender</i>	2.385*	1.926	-20.013	-19.632	-0.562	0.361
<i>Education = WO master</i>	0.297	-0.404	20.576	19.963	-18.790	-17.577
<i>Education = HBO</i>	0.399	-0.158	19.616	19.098	-19.981	-19.362
<i>Education = WO bachelor</i>	0.869	0.348	20.075	19.157	-19.758	-19.523
<i>Education = MBO</i>	-0.509	-0.907	19.747	20.351	-21.664	-20.796
<i>Education = VWO</i>	0.231	0.021	21.133	21.654	0.538	-0.126
<i>Education = HAVO</i>	0.051	-0.731	20.835	20.402	0.704	-0.487
<i>Age</i>	-0.146	-0.160	0.100	-0.055	-0.546	-0.495
<i>Pro-environmental worldview</i>	-0.217	-0.101	0.801	0.763	0.153	0.585
<i>Sustainable consumption</i>	-0.371	-0.477*	0.116	0.105	-0.065	-0.249
<i>Non-ownership</i>	0.007	-0.009	-0.047	-0.034	-0.010	0.003

Note 1: *p<0.05, **p<0.01, ***p<0.001

Note 2: Mobility lease baseline p>0.05, all other model fit p<0.05

Table 5.3: Social capital's adopted S.PSS and the individual's adopted S.PSS in equipment, baby products and clothing

	<i>Equipment</i>		<i>Baby products</i>		<i>Clothing</i>	
	$R^2 = 0.107$	$R^2 = 0.624$	$R^2 = 0.102$	$R^2 = 0.522$	$R^2 = 0.176$	$R^2 = 0.541$
	<i>B baseline</i>	<i>B full model</i>	<i>B baseline</i>	<i>B baseline</i>	<i>B baseline</i>	<i>B full model</i>
<i>Awareness</i>	-0.150	-0.329	-0.043	-0.066	0.083	0.032
<i>Attitude</i>	0.082	-0.106	0.500*	0.353	0.474	0.947
<i>Friends</i>		2.525***		2.388***		2.514***
<i>Family</i>		2.198***		1.823***		1.482***
<i>Colleagues</i>		1.338		2.591**		1.866
<i>Neighbours</i>		1.643**		1.104		-0.945*
<i>Association members</i>		22.728		-26.801		4.543
<i>Volunteers</i>		-1.746		23.516		30.183
<i>Other parents</i>		-1.719		0.405		3.399**
<i>Gender</i>	-20.402	-21.325	0.541	1.783	-18.608	-18.210
<i>Education = WO master</i>	-1.551	-1.397	20.826	19.141	19.936	18.152
<i>Education = HBO</i>	-1.404	-1.171	20.441	18.951	20.399	18.948
<i>Education = WO bachelor</i>	-2.024	-2.453	20.681	20.197	20.495	18.439
<i>Education = MBO</i>	-0.936	-0.398	21.182	20.237	21.597	20.681
<i>Education = VWO</i>	-22.237	-20.921	0.470	0.319	0.538	-1.160
<i>Education = HAVO</i>	-22.108	-21.195	20.276	19.494	1.615	2.418
<i>Age</i>	0.473	1.626***	-0.116	-0.112	-0.862	-0.868
<i>Pro-environmental worldview</i>	0.194	0.165	0.835*	1.004*	0.937	0.082
<i>Sustainable consumption</i>	-0.061	-0.306	-0.203	0.179	0.331	0.630
<i>Non-ownership</i>	0.166	0.268**	0.178*	0.247*	0.361*	0.494*

Note 1: *p<0.05, **p<0.01, ***p<0.001

Note 2: Baby products baseline model fit p>0.05, all other model fit p<0.05

5. Discussion

When looking at the results at a more general level, the awareness, attitude, and adoption are differently influenced by the social capital. The following paragraphs provide more explanation about these influences, and figure 4 shows the significant relations between social groups and individuals from the data analysis of the survey.

	Friends					Family					Colleagues					Neighbours					Association members					Volunteers					Other parents				
Adoption																																			
Attitude																																			
Awareness																																			
	Sum	Mobility/ lease	Car sharing	Streaming	Equipment	Baby products	Clothing	Sum	Mobility/ lease	Car sharing	Streaming	Equipment	Baby products	Clothing	Sum	Mobility/ lease	Car sharing	Streaming	Equipment	Baby products	Clothing	Sum	Mobility/ lease	Car sharing	Streaming	Equipment	Baby products	Clothing	Sum	Mobility/ lease	Car sharing	Streaming	Equipment	Baby products	Clothing

Figure 4: Summary significant relations of social groups and individual's awareness, attitude, and adoption

The survey gives mixed results about the relation of the social capital's adopted S.PSS and the individual's awareness. There are positive relations found between the adoption of some forms of S.PSS by some social groups and the individual's awareness on S.PSS, e.g. colleagues adopting S.PSS for car sharing and other parents adopting S.PSS for baby products. During the interviews it becomes clear that this relation is more comprehensive; people gather information about S.PSS from all different sources. Regarding social capital, they especially talk with *friends* and *colleagues* about this topic. The participants indicate that these groups are more active in S.PSS than other groups. It is more likely that a conversation about sustainability and S.PSS takes place with friends and colleagues, including sharing of information about best practices and experiences, which creates more awareness about S.PSS. This encourages them to find more information about these forms of S.PSS. The relation is two-sided, meaning that the individual gains more awareness through the social capital's use of S.PSS, but also that the chance is higher to notice usage of S.PSS by a social group when being already more aware.

For the individual's attitudes, the survey provides little results to understand exactly how the attitude relates to the adoption of S.PSS by different social groups. There are almost no significant relations between the individual's attitude towards S.PSS and the adoption of S.PSS by their social

capital. The interviews help to understand better how the individual's attitudes towards S.PSS are shaped and influenced by their social capital. The attitudes towards S.PSS are divided between *convenience* and *sustainability*, as sustainability is subdivided in environmental and non-ownership. Most participants share their attitudes (both convenience and sustainability) with *friends* and *colleagues*. In smaller numbers with *family*, as their attitudes regarding sustainability are more often shared between siblings and less with parents. Sharing the experiences from own experiences and indirectly from others, help the individual to create more positive attitudes regarding S.PSS. Thus, it is not precisely their social capital's *adoption* of S.PSS that stimulates the individual, but rather the *experiences* shared from their social capital.

The individual's adoption of S.PSS is strongly related to the adoption of S.PSS by their social capital. Some social groups are more often significantly related than others. It becomes clear that there is a high similarity between the adoption of S.PSS by the individual and its *friends* and *family*. Thus, the likelihood of adopting a particular S.PSS increases when friends and/or family already adopted that S.PSS. This implies that the individual foremost complies with the behaviour of its bonding social capital. When looking at the bridging social capital, imitation of behaviour depends much stronger on the type of S.PSS that is adopted, some forms of S.PSS are more discussed or visible in some social groups in comparison to others. On a lower level, also the individual's awareness and attitude play a role in the eventual adoption of S.PSS. In the interviews it becomes clear that the adoption of S.PSS by their family is mostly done by their siblings, and not by other family members such as parents. They indicate a disagreement to the attitudes with their parents, but share attitudes about S.PSS with their siblings. Also, new ideas concerning S.PSS are shared with siblings.

Putting it all together, it is clear that the composition of social capital does have a positive influence on the individual's awareness, attitudes and adoption of S.PSS. Especially friends, family and colleagues are seen as important groups for the individual's transition towards the use of S.PSS. Also other groups have an influence, but this is quite lower. The main reason for the big impact friends and colleagues have are the shared attitudes regarding S.PSS, sustainability and non-ownership. Therefore, these topics are more often discussed in conversations with them, rather than with people who do not share the same attitudes. Also, when an individual is not very familiar with the concept but wants to know more, they are more likely to talk with friends and colleagues about it. The reason for this is that they more often have already mentioned this topic in a previous conversation. Even though an individual is not familiar with S.PSS, it is helpful to know others who are.

In this research, friends were identified as bonding, and colleagues as bridging social capital. The main difference lies in having more intimate social connectedness with bonding and diverse, outward-looking ties for bridging social groups (Putnam, 2000). Respondents indicate to have

especially contact about S.PSS and sustainability with either friends or colleagues, and not both. Although they are from other forms of social capital, it becomes clear that being part of (at least) one social group that is active in sustainability and S.PSS stimulates and encourages the person enough to conform with their behaviour and become more active. Because the individuals already identifies themselves with the norms and values of the group, it is easier to conform with new behaviours. Shared attitudes lead to more trust between people, and although the group is possibly heterogeneous (bridging social capital), these social groups stimulate behaviour that harmonizes with the shared attitudes.

As it could be argued that the intimate social connectedness between relatives would also lead to sharing of attitudes, this is not completely true. Individuals seek less conformation with their family (especially parents) with regards to S.PSS, and do not need the approval from them to use S.PSS. The foremost reason for this is that parents are not that advanced in the usage of S.PSS in comparison to their children. Nevertheless, these topics are still interesting to discuss with family and are part of some conversations. Where the emphasis of this topic during conversations with friends and colleagues lies at encouragement and sharing of experiences, the conversations with family are more stressed to giving advice and convincing to usage. The respondents aim to change the opinion of their parents and alter norms of *using* instead of *owning*, and try to conform them with their (and their sibling's) attitudes. This is mostly possible because they see it as a safe environment where they can express and discuss their differences. This demonstrates also the difference between family and the other *bridging* social groups (e.g. neighbours or other volunteers). Where family is a bonding social capital, a safe environment takes place more natural. With bridging social capital this is less usual, and therefore such discussions are less common to happen spontaneously.

Besides the influence that social groups have on the individual, also other factors play an important role in the change of behaviour. An example is the use of social media. It can be argued that nowadays the social capital is expanded to online connections with influencers you personally do not know. Through their posts on particular topics, an individual identifies himself to an influencer. In this way, the influencer feels less as a stranger and more as a role model. The respondents are more likely to accept something when they can relate to the influencer. Then, when an influencer comes up with using something new, e.g. a new form of S.PSS, their followers will reflect this new behaviour to their own, and possibly internalize it as well. Thus, following influencers where the individuals identify themselves with and who also promotes S.PSS, stimulates the individual's awareness, attitudes, and adoption of S.PSS.

Further, age plays a significant role as well; older people tend to be less aware, have more doubts and negative attitudes, and are less likely to adopt S.PSS, than younger people. Besides the

individual's age, it is also an indicator in how fast a person is inclined to conform with someone else's attitudes. This means that a person is more likely to find something credible when they can identify themselves with their social contact. When looking at S.PSS and comparable innovations, age is indicated to be a significant factor. Especially younger generations indicate to be more active in sustainability. Further, they notice that elderly are more materialistic and are less likely to *use* instead of *own*. This all added together makes it less attractive for a young individual to start discussions about these topics with elderly instead with peers.

The difference of living in a city or in a village is another factor that impacts the individual in being more aware about S.PSS. Several urban participants in the interviews indicate to be more aware about all possible S.PSS compared to their social capital that lives in villages. In the city, these S.PSS are more visible and accessible. Their attitude is also more positive, because they feel the urge to *use* instead of *own*. Where most individuals living in villages have more space to store products they do not use often, urban residents do not have that space and see more possibilities of using a S.PSS. This also creates more opportunity in adopting S.PSS for them, instead of villagers.

Finally, there are also individual differentiations that affect the awareness, attitudes and adoption of S.PSS. The survey as well as the interviews signal that strong attitudes regarding sustainability and non-ownership stimulate the individual's awareness, attitude and adoption of S.PSS. When people do not have strong attitudes towards sustainability and non-ownership, people are more careful in bringing up the topic in conversations. Therefore, they share their thoughts mostly with people who they trust and know they share attitudes with. When people already have stronger attitudes, they tend to discuss it more with other people who do not share the same attitude. This results in more awareness for the people who were less aware, and creating even stronger attitudes about S.PSS by the person with strong attitudes. Especially young parents tend to have a stronger attitude regarding sustainability, as they realize what they would leave behind for the next generation.

6. Conclusion

6.1 Summary

S.PSS is an upcoming trend for businesses to become more circular, and the innovation is getting more general accepted through society. The social capital plays an important role in decision making of an individual, and in eventually adopting new innovations. This research focusses on the influence of bonding and bridging social capital on the individual's awareness, attitude, and adoption of S.PSS, finding answers on the research question: *What is the relation of the composition of the individual's social capital with the personal awareness, attitude, and eventual adoption of sustainable product service systems?* Through a mixed method research design information is gathered about young Dutch consumer and their social capital. A survey that tests the adoption of S.PSS by the individual and social capital was filled in by 292 respondents. From them, 20 respondents participated in interviews that enriched the survey results.

Results imply that the adoption of S.PSS by the individual's social capital has an influence on the adoption of S.PSS by the individual. Especially the adoption of S.PSS by the bonding social capital (i.e. friends and family) is strongly related to the individual's adoption of S.PSS. The bridging social capital has influences on the adoption of S.PSS as well, but in more specific cases (e.g. equipment, baby products and clothing S.PSS). Looking deeper into the contact that the respondents had with their social capital, it becomes clear that family has influence but in smaller amount than their friends. The reason for this is that they are more likely to share attitudes with siblings, and less likely with their parents. Conversations with friends and siblings are more of sharing experiences and encouragement, where conversations with parents mostly emphasize convincing of usage. Further, the social capital helps the individual to become more aware about S.PSS, especially the adoption of S.PSS by friends and colleagues. The attitudes towards S.PSS are formed through sharing experiences and encouragement from social capital with whom they have shared attitudes regarding sustainability and non-ownership. Also here, these topics are mostly discussed with friends and colleagues, with whom they share attitudes regarding sustainability and non-ownership. Thus, the diffusion of S.PSS happens through a variation of bonding and bridging social capital, creating awareness, sharing attitudes and adopting more easily S.PSS.

6.2 Theoretical implications

The social capital has in general terms an influence on the individual's awareness, attitude, and adoption of S.PSS. Especially the eventual adoption of S.PSS is influenced by the adoption of S.PSS by their social capital, and conversations with their social capital about S.PSS helps them to be more aware and have more positive attitudes towards S.PSS. Here, a combination is found in different influences of bonding and bridging social groups. These findings confirm the argument of Agnitsch et al. (2006)

that especially the combination of bonding and bridging social capital encourages an individual to engage in collective action. Nevertheless, the differences of influence between bonding and bridging social capital were less visible than expected. Although bonding social groups did emphasize trust and comfort, as Schuller (2007) argued, the creation of new ideas through other visions from bridging social groups were less visible. New innovations were less discussed with bridging social capital, and therefore it was difficult to see clear differences in the approach to the topic. Nevertheless, the contact about S.PSS with colleagues was nearly the same as that with friends, especially when attitudes were shared through the social group. Further, the interviews indicate that sharing of attitudes are not done with a complete social group, but often with a part of the group (e.g. only siblings and not parents, or some of their friends and not all). The diffusion of attitudes and adoption of S.PSS happens mostly with bonding social capital (family and friends), but is also possible with bridging social capital (in this case especially colleagues). This implies that it is still very interesting to understand the nuances in influence and relations between an individual and their social capital, but from social groups in general and not differentiating it into bonding and bridging social groups. Thus, it can be argued that in this early stage of an innovation, the foremost criteria for a successful diffusion of adopted S.PSS is via shared attitudes with social capital, regardless of being bonding or bridging social groups.

6.3 Practical implications

When a business brings a new S.PSS on the market, it is critical to create momentum. An important factor is engaging customers in *using* instead of *owning*. To empower this, it is helpful when people already know the concept (create awareness) and know others who already use it. It may help for a company to encourage people in starting conversations about key concepts, such as non-ownership and sustainability. Also sharing of experiences in S.PSS with their close social contacts (e.g. friends, family and colleagues) can help, as these groups have been proven to be most influential. Adoption happens more rapid when these social groups already talk about these concepts. Nevertheless, it is possible that the concept of S.PSS is completely new to people, as it is an upcoming business innovation. In this case, they may not yet have conversations about this with their social capital. Then, attention could be created by using social media, i.e. influencers, who promote the use of new S.PSS. These people are seen as role model, and thus create awareness and probably the change of attitudes towards *using* instead of *owning*.

What has come out of the research concerning attitudes, is that people tend to adopt S.PSS out of sustainability and convenience reasons. Often, respondents tended to embrace both attitudes, but had stronger positive attitudes in regards to sustainability. Thus, when S.PSS is created out of sustainability considerations, it is most important to emphasize sustainability first. However, focus in advertisements should not only lie on sustainability, but also on convenience. Within the focus of

sustainability, it is good to also mention non-ownership, which stimulates more discussion in the area of *using* instead of *owning*.

Further, the target group that fits best Gray Label's RNTD is their existing customer group, which are young, urban parents. This group is most likely to engage in RNTD, as the research shows that younger generations share more positive attitudes and are more aware about S.PSS. Also, the urban citizen has more incentive to use a S.PSS through convenience reasons, because of shortage in space. Last, young parents indicated to be more aware of their environmental impact, and therefore will adopt S.PSS quicker out of sustainability reasons.

6.4 Future research

What has been addressed multiple times as a significant factor in the survey and in the interviews, is age. Being younger increases the odds of being more aware, having more positive attitudes, and adopt more S.PSS in contrast to elderly. In the interviews, often family members are used as example, and sometimes older colleagues or neighbours are also used. This result shows an interesting field to study, and advises research to look more in-depth to the relation of age and the societal change of *using* instead of *owning*.

In the interviews several participants indicate a difference in awareness, attitude and adoption between residents of villages and cities, as villagers are less aware, less positive and are less inclined to adopt S.PSS than people living in the city. The foremost reason for this is the available storage space in villages in comparison when living in a city, there is simply more place to store things that are occasionally used. People in cities are less attached to their belongings and are therefore more inclined to use a service instead of buying. Interesting for following studies is comparing the spread of S.PSS in cities compared to villages.

6.5 Limitations

In this study, it was decided to focus on a clear target group, namely young parents. It is noteworthy that this target group is not a resemblance of the whole society, and only gives an indication of the social capital's influence on the awareness, attitudes, and adoption of S.PSS of young adults.

The survey contains questions about the social capital, which are divided in different social groups. These groups are heterogeneous, as interviewees indicate to know people with different attitudes within one social group. It could be argued that the respondent has filled in the survey thinking of possibly some persons per social group. This is not very problematic, as the person would focus their answers on only these people, creating them as the specific social group. Further, it is possible that the respondent does not know the total of used S.PSS by every group. This is especially the case for S.PSS that are not directly visible, or when the person never has had conversations about this topic. Respondents are biased in their observations, because they are guided by what they already

know. Thus, it is possible that there is an overlap between the individual's awareness of S.PSS and the social capital's adopted S.PSS. Because this study emphasizes on the perceived behaviour, it is not necessary to know the actual adopted behaviour by the social capital. Although being a limitation, it is possible that especially the consciously perceived behaviours impact the respondent's own awareness, attitudes and adoptions of S.PSS.

7. Acknowledgements

I would like to thank Gray Label, in particular M. Vos, for the opportunity to follow an internship at their office, receiving feedback during the research, and all assistance with reaching out to respondents through their customer network and social media. Thanks also to the Utrecht University, faculty Geosciences, and special thanks to my supervisor dr. M.J. Janssen and second reader dr. K. van den Broek for all guidance and critical and constructive feedback. I am grateful to all respondents participating in the survey and interviews. I also like to show appreciation to L. Hofland for all learning opportunities and collaboration on the development of RNTD. Last, I would like to thank K. de Langen, I. van der Voort, and W.G. van Woerkom for providing feedback on my thesis, and the support from my family and friends during my master.

8. Reference List

- Adler, P., & Kwon, S. W. (2000). Social Capital: The Good, the Bad, and the Ugly. In: Lesser, E.L., *Knowledge and Social Capital: Foundations and Applications*, Butterworth Heinemann: 89-115.
- Agnitsch, K., Flora, J., & Ryan, V. (2006). Bonding and Bridging Social Capital: The Interactive Effects on Community Action, *Community Development*, 37(1): 36-51.
- Axsen, J., & Kurani, K. S. (2014). Social Influence and Proenvironmental Behaviour: the Reflexive Layers of Influence Framework, *Environment and Planning B: Planning and Design*, 41(5): 847-862.
- Bocken, N. M. P., Short, S. W., Rana, P., & Evans, S. (2014). A Literature and Practice Review to Develop Sustainable Business Model Archetypes, *Journal of Cleaner Production*, 65: 42-56.
- Bourdieu, P. (1986). *The Forms of Capital*. In: Richardson, J., *Handbook of Theory and Research for the Sociology of Education*, Westport, CT: Greenwood: 241-258.
- Bridger, J. C., & Luloff, A. E. (1999), Toward an Interactional Approach to Sustainable Development, *Journal of Rural studies*, 15: 377-387.
- Brunie, A. (2009), Meaningful distinctions within a concept: Relational, collective, and generalized social capital, *Social Science Research*, 38(2): 251-265.
- Catulli, M., Cook, M., & Potter, S. (2017). Consuming Use Orientated Product Service Systems: A Consumer Culture Theory Perspective, *Journal of Cleaner Production*, 141: 1186-1193.
- Crane, A., & Matten, D. (2016). *Business Ethics, Managing Corporate Citizenship and Sustainability in the Age of Globalization* (4th ed.), Oxford University Press: Oxford, UK.
- DEFRA Department for Environment, Food and Rural Affairs (2005). *Changing Behaviour Through Policy Making*, The Stationery Office, London.
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*: 147-160.
- Dunlap, R. E., Liere, K. D. van, Mertig, A. G., & Jones, R. E. (2000), Measuring Endorsement of the New Ecological Paradigm: A Revised NEP Scale, *Journal of Social Issues*, 56(3): 425-442.
- Edbring, E. G., Lehner, M., & Mont, O. (2015). Exploring Consumer Attitudes to Alternative Models of Consumption: Motivations and Barriers, *Journal of Cleaner Production*, 123(5): 5-15.
- Ellen MacArthur Foundation (2013). *Towards the Circular Economy 1: Economic and Business Rationale for an Accelerated Transition*, Ellen MacArthur Foundation: Cowes, UK.

- Grootaert, C., & Bastelaer, T. van (2002). *Understanding and Measuring Social Capital: A Multi-Disciplinary Tool for Practitioners* (Eds.), The World Bank.
- Leonard, R., & Onyx, J. (2003). Networking Through Loose and Strong Ties: An Australian Qualitative Study, *International Journal of Voluntary and Nonprofit Organizations*, 14(2): 189-203.
- McKenzie-Mohr, D., & Smith, W. (1999). *Fostering Sustainable Behaviour: An Introduction to Community-Based Social Marketing* (1st Ed.), New Society Publishers.
- McKenzie-Mohr, D. (2017). *Fostering Sustainable Behaviour: An introduction to Community-Based Social Marketing* (3rd Ed.), New Society Publishers.
- Moeller, S., & Wittkowski, K. (2010). The Burdens of Ownership: Reasons for Preferring Renting, *Managing Service Quality*, 20(2): 176-191.
- Mont, O. K. (2002). Clarifying the Concept of Product-Service System, *Journal of Cleaner Production*, 10: 237-245.
- Mont, O. K., Dalhammar, C., & Jacobsson, N. (2006). A New Business Model for Baby Prams Based on Leasing and Product Remanufacturing, *Journal of Cleaner Production*, 14(17): 1509-1518.
- Nahapiet, J., & Ghoshal, S. (1998). Social Capital, Intellectual Capital, and the Organizational Advantage, *Academy of Management Review*, 23(2): 242-266.
- Pelling, M. (1998). Participation, Social Capital and Vulnerability to Urban Flooding in Guyana, *Journal of International Development*, 10: 469-486.
- Pelling, M., & High, C. (2005), Understanding Adaption: What can Social Capital Offer Assessments of Adaptive Capacity? *Global Environmental Change*, 15: 308-319.
- Planing, P. (2015). Business Model Innovation in a Circular Economy Reasons for Non-Acceptance of Circular Business Models, *Open Journal of Business Model Innovation*, 1(11).
- Putnam, R. D. (1995). Tuning In, Tuning Out: The Strange Disappearance of Social Capital in America, *Political Science and Politics*, 28(4): 664-683.
- Putnam, R. D. (2000). *Bowling Alone: The Collapse and Revival of American Community*, Simon and Schuster.
- Putzel, J. (1997). Accounting for the 'Dark Side' of Social Capital: Reading Robert Putnam on Democracy, *Journal of International Development*, 9(7): 251-261.
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.), New York: Free Press.

- Rogers, E. M. (2004). A Prospective and Retrospective Look at the Diffusion Model, *Journal of Health Communication*, 9(1): 13-19.
- Rudd, M. A. (2000), Live Long and Prosper: Collective Action, Social Capital and Social Vision, *Ecological Economics*, 34(1): 131-144.
- Schuller, T. (2007). Reflections on the Use of Social Capital, *Review of Social Economy*, 65(1): 11-28.
- Simpson, L. (2005), Community Informatics and Sustainability: Why Social Capital Matters, *The Journal of Community Informatics*, 1(2): 102-119.
- Tukker, A. (2004). Eight Types of Product-Service System: Eight Ways to Sustainability? Experiences from Suspronet, *Business Strategy and the Environment*, 13: 246-260.
- Tukker, A. (2015). Product Services for a Resource-Efficient and Circular Economy – A Review, *Journal of Cleaner Production*, 97: 76-91.
- Tukker, A., & Tischner, U. (2006). *New Business for Old Europe: Product-Service Development, Competitiveness and Sustainability*, Greenleaf Publishing, Sheffield, UK.
- Uphoff, N. (2000). Understanding Social Capital: Learning from the Analysis and Experience of Participation, In: Dasgupta, P., & Serageldin, I., *Social Capital: a multifaceted perspective*, The World Bank, Washington DC, 215-249.
- Vezzoli, C., Kohtala, C., Srinivasan, A., Diehl, J. C., Fusakul, S. M., Xin, L., & Sateesh, D. (2014). *Product-Service System Design for Sustainability*, Greenleaf Publishing, Sheffield, UK.

9. Appendices

9.1 Survey

Start van blok: Inleiding

[Intro] Welkom

Fijn dat je mee wilt doen met deze enquête. In de enquête stellen we je vragen over jouw meningen over duurzaamheid en consumptie. Ook vragen we je gegevens, maar die zullen discreet en enkel voor het onderzoek gebruikt worden. We hebben het meest aan jouw eerlijkst mogelijke antwoord. We vragen ongeveer 10-15 minuten van je tijd om de enquête in te vullen. Als eerste stellen we je een paar korte vragen om je te leren kennen.

[Age] Wat is je leeftijd?

- <18
- 18-27
- 28-37
- 38-49
- 50>

[Children] Heb je kinderen of een kindwens?

- Ja, kinderen
- Ja, kinderen en kindwens
- Ja, een kindwens
- Nee, geen kinderen of kindwens

Start van blok: Attitude sustainability - ind.

[I_Sustain] Vanaf nu starten we de enquête inhoudelijk. Hoe passen de volgende stellingen bij jouw overtuiging?

	Helemaal niet mee eens	Niet mee eens	Neutraal	Mee eens	Helemaal mee eens
Planten en dieren hebben dezelfde rechten om te bestaan als mensen.	[]	[]	[]	[]	[]
Mensen mogen de natuur veranderen als dat de maatschappij ten goede komt.	[]	[]	[]	[]	[]
De mens heeft een grote impact op klimaatsverandering.	[]	[]	[]	[]	[]
De natuur is sterk genoeg om de impact van de mens te baas te zijn.	[]	[]	[]	[]	[]
De mens moet zijn verantwoordelijkheid nemen en voor de natuur zorgen.	[]	[]	[]	[]	[]
De natuur is kwetsbaar en makkelijk te verstoren.	[]	[]	[]	[]	[]

[I_Consump] Hoe actief beschouw je jezelf als het gaat om duurzame consumptie?

- Ik ben er bewust niet mee bezig
- Ik ben er onbewust niet mee bezig
- Ik ben er alleen mee bezig als het uitkomt
- Ik ben er op een paar terreinen bewust mee bezig
- Ik ben er mee bezig, en op veel verschillende gebieden
- Ik ben er altijd mee bezig
- Weet ik niet

Start van blok: Attitude ownership - ind.

[Info] Hoe sta je tegenover het hebben, gebruiken en bewaren van gekochte spullen?

[I_Own_1] Ik vind het belangrijk dat alle spullen die ik gebruik van mij zijn.

- Helemaal mee eens
- Mee eens
- Neutraal
- Mee oneens
- Helemaal niet mee eens

[I_Own_2] Ik bewaar zo min mogelijk spullen die ik niet meer gebruik.

- Helemaal mee eens
- Mee eens
- Neutraal
- Mee oneens
- Helemaal niet mee eens

[I_Own_3] Ik vertel het graag aan anderen als ik nieuwe spullen heb.

- Helemaal mee eens
- Mee eens
- Neutraal
- Mee oneens
- Helemaal niet mee eens

Start van blok: Contact met SC

[Info] De volgende vragen gaan over welke groepen van sociale contacten een rol spelen in jouw dagelijks leven.

Let op:

Collega's van werk, maar hier gaat het over niet-werk-gerelateerde onderwerpen.

Vereenigingsleden die je kent vanwege de sport of andere hobby die je met ze deelt.

Vrijwilligers die je kent door een organisatie zoals kerk of buurthuis waar je actief bent.

Andere **ouders** die je kent van de school of kinderdagverblijf van je kind(eren).

[SC_Groups] Met welke groepen heb je wel eens contact?

- Vrienden
- Familie
- Collega's

- Buren
- Verenigingsleden
- Vrijwilligers
- Andere ouders

Start van blok: Contact met SC Loop & Merge

[SC_Contact_Freq] Hoe frequent heb je normaal gesproken contact (in persoon, telefonisch of op een andere manier) met $\${Im://Field/1}$?

- Dagelijks
- Minstens 1x per week, maar niet dagelijks
- Minstens 1x per maand, maar niet wekelijks
- Minder dan 1x per maand
- Zelden of nooit

[SC_Contact_Depth] Hoe diep gaat het contact dat je hebt met $\${Im://Field/1}$?

- Oppervlakkige communicatie
- Delen van of vragen om informatie
- Delen van meningen en ideeën
- Delen van emoties
- Je hart luchten

[SC_Truth] Hoe snel zou je iets aannemen van $\${Im://Field/1}$ als waarheid?

- Nooit
- Zelden
- Regelmatig
- Vaak
- Altijd

[SC_Sustain] Hoe actief zijn $\${Im://Field/1}$ als het gaat om duurzaamheid?

- Actiever dan ik
- Net zo actief als ik
- Minder actief dan ik
- Weet ik niet

[SC_Sustain_Freq] Hoe vaak heb je het met $\${Im://Field/1}$ over duurzaamheid?

- Niet
- Weinig
- Af en toe
- Regelmatig
- Veel

[SC_Own_1] Ik merk dat het normaal is bij $\${Im://Field/1}$ om spullen weg te geven of te verkopen als ze niet meer gebruikt worden.

- Helemaal mee eens
- Mee eens
- Neutraal
- Niet mee eens

- Helemaal niet mee eens

[SC_Own_2] Ik merk dat $\$(Im://Field/1)$ graag laten zien welke spullen ze hebben.

- Helemaal mee eens
- Mee eens
- Neutraal
- Niet mee eens
- Helemaal niet mee eens

Start van blok: PSS

[Info] Gebruiksservice in plaats van kopen

Bedrijven kiezen er steeds vaker voor om hun producten ter gebruik aan te bieden, in plaats van ze te verkopen (vaak ook aangeduid als 'product as a service'). Met deze gebruiksservice stelt het bedrijf een goed onderhouden product beschikbaar voor een bepaalde periode, terwijl de klant voor het gebruik ervan in deze periode betaalt. Voorbeelden van producten die met deze service worden aangeboden zijn: kleding, auto's en gereedschap.

[I_Service_aware] Hoe bekend ben je met het concept van 'gebruiksservices' in plaats van kopen?

- Ik ken het helemaal niet
- Ik heb er wel eens van gehoord
- Ik kan wel een voorbeeld bedenken
- Ik ken bij meerdere producten een gebruiksservice
- Ik maak daarnaast ook gebruik van verschillende vormen van gebruiksservice

[I_Service_op] Het concept dat je producten gebruikt zonder ze te hoeven kopen, vind ik:

- Zeer goed
- Goed
- Neutraal
- Slecht
- Zeer slecht

[I_Service] In welke productcategorieën gebruik je wel eens een vorm van gebruiksservice? **Let op, klik erop voor meer informatie en voorbeelden.**

- **Mobiliteit** vb. Private Lease, Swapfiets
[Private lease: Private leasen is een vorm van auto leasen, waarbij je als particulier een auto leaset voor privé gebruik voor een vast bedrag in de maand. Swapfiets: Voor een vast bedrag per maand krijg je een Swapfiets en zorgt het bedrijf dat je Swapfiets het altijd doet.]
- **Deelauto's** vb. Greenwheels, Connectcar
[Greenwheels: Dit zijn auto's van NS die op vaste punten in het land staan. Met de app kan je een moment reserveren om gebruik te maken van een van de auto's. Met OV-chipkaart heb je toegang tot de auto, die je vervolgens voor een korte periode gebruikt. Connectcar: De auto's van Connectcar staan in verschillende steden geparkeerd, en kunnen voor gebruik gereserveerd worden. Met je telefoon heb je toegang tot de auto, die je vervolgens voor een periode kan gebruiken.]
- **Streaming** vb. Netflix, Spotify
[Netflix: Dit is een maandelijks abonnement waarbij je toegang hebt tot een database van films en series. Spotify: Dit is een maandelijks abonnement waarbij je toegang hebt tot een database van muziek en podcast.]
- **Gereedschap** vb. Gereedschap huren, Stadswerkplaats

[Gereedschap huren bij de bouwmarkt: Hierbij kan je als particulier klein en groot gereedschap huren bij een bouwmarkt voor een paar dagen. Dit is gereedschap dat je voor bijvoorbeeld een verbouwing wilt gebruiken, maar niet direct wilt aanschaffen. Stadswerkplaats: Dit is een openbare werkplaats voor onder andere houtbewerking. Je betaalt per dagdeel, en is inclusief het gebruik van machines en biedt mogelijkheid tot cursussen. Hier kan je bijvoorbeeld gebruik van maken als je zelf niet ruimte hebt om te klussen.]

- **Baby-artikelen** vb. Bednest, Babyloop

[Bednest: Dit is een abonnement op het gebruik van een wieg voor 7 maanden. Na de 7 maanden stuur je de wieg weer retour naar het bedrijf. Babyloop: Hierbij kan je babyspullen zoals wiegjes, autostoelen en boxen leasen. Wanneer je klaar bent met het gebruik stuur je de spullen weer retour.]

- **Kleding** vb. Circos, Mud Jeans

[Circos: Dit is een abonnement voor baby-, kinder-, en zwangerschapskleding. Wanneer jij of je kind de kleding niet meer past kan je het voor een nieuwe maat ruilen. Mud Jeans: Een jaarabonnement op een spijkerbroek. Na een jaar de broek gedragen te hebben kan je hem omruilen. Als de broek stuk is kan je gebruik maken van de repair service.]

- **Anders:** _____

[SC_Service] Van welke volgende sociale contacten weet je dat ze wel eens een vorm van gebruiksservice gebruiken? **Let op**, klik erop voor meer informatie en voorbeelden.

	Vrienden	Familie	Collega's	Buren	Verenigingsleden	Vrijwilligers	Andere ouders	Geen
Mobiliteit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deelauto's	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Streaming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gereedschap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Baby-artikelen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kleding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anders:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Vrienden	Familie	Collega's	Buren	Verenigingsleden	Vrijwilligers	Andere ouders	Geen
Mobiliteit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Deelauto's	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Streaming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gereedschap	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Baby-artikelen	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kleding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Anders:

[]

[]

[]

[]

[]

[]

[]

[]

[SC_Advice] Heb je wel eens advies gekregen van de volgende groepen om een van de onderstaande vormen van gebruiksservice te gaan gebruiken?

[SC_Adoption] Van welke gebruiksservices ben je dankzij deze stimulans uit je sociale omgeving gebruik gaan maken?

- Mobiliteit
- Deelauto's
- Streaming
- Gereedschap
- Baby artikelen
- Kleding
- [\\${SC_Advice/ChoiceTextEntryValue/7}](#)

Start van blok: Gray Label

[Info] Het volgende onderdeel richt zich op het merk Gray Label.

[GL_Connect] Hoe ken je Gray Label?

- Ik ken het merk niet
- Via een bekende
- Een onbekende die ik erover hoorde praten
- Het internet
- Een winkel
- Social media
- De media of reclame
- Anders: _____

[GL_Buy] Hoe vaak heb je kleding van Gray Label gekocht?

- Nooit
- Een keer
- Een paar keer
- Regelmatig
- Veel
- Alle kleding koop ik bij Gray Label

[GL_Reason] Met welke redenen koop je bij Gray Label? *Je kan meerdere antwoorden invullen.*

- De kwaliteit van de kleding
- Het design
- Merkbeleving
- De service
- De prijs
- Duurzaamheid
- Anders: _____

[GL_Reason_Order] Welke redenen zijn voor jou het belangrijkste? Zet ze op volgorde, met bovenste als belangrijkste.

- De kwaliteit van de kleding
- Het design
- Merkbeleving
- De service
- De prijs
- Duurzaamheid
- `#{GL_Reason/ChoiceTextEntryValue/7}`

[GL_Sharing] Ik heb mijn positieve ervaringen met Gray Label wel eens gedeeld met anderen.

- Ja
- Nee

[GL_Sharing_Exp] Wat fijn! Welke ervaring deel je dan voornamelijk?

- De kwaliteit van de kleding
- Het design
- Merkbeleving
- De service
- De prijs
- Duurzaamheid
- Anders: _____

[GL_Openfield] Wat is je reden hiervoor? Jouw feedback en/of suggesties zijn heel waardevol voor ons.

Einde blok: Gray Label

Start van blok: Onbekend met Gray Label

[Info] Over Gray Label

Emily Gray richtte in 2011 Gray Label op, een organisch kledingmerk voor kinderen van 0 tot 12 jaar. Met materialen als 100% organisch, GOTS gecertificeerd katoen en minimalistische, tijdloze ontwerpen wil ze bijdragen aan een kalme, duurzame levensstijl in een drukke wereld die overladen is met felle kleuren en prints. Sinds het begin neemt Gray Label een bijzondere plek in binnen de kinderwereld. Enerzijds wordt het merk gezien als pionierend op het gebied van duurzaam produceren, anderzijds heeft het een uitgesproken mening over producten voor kinderen: hoe meer ruimte voor de beleving van het kind, hoe beter.

[nGL_Buy] Ik koop (kinder)kleding met dezelfde visie als Gray Label, maar dan van andere merken.

- Helemaal mee eens
- Mee eens
- Neutraal
- Mee oneens
- Helemaal niet mee eens

[nGL_Vision] De visie van Gray Label spreekt mij aan.

- Helemaal mee eens
- Mee eens
- Neutraal
- Mee oneens
- Helemaal niet mee eens

[nGL_Reason] Wat bepaalt voor jou de keuze voor een kledingmerk of winkel? Je kan meerdere antwoorden invullen.

- De kwaliteit van de kleding
- Het design
- Merkbeleving
- De service
- De prijs
- Duurzaamheid
- Anders: _____

[nGL_Reason_Order] En welke reden is voor jou het belangrijkste? Verander de volgorde met op 1 de belangrijkste reden.

- Kwaliteit van de kleding
- Het design
- Merkbeleving
- De service
- De prijs
- Duurzaamheid
- `§{nGL_Reason/ChoiceTextEntryValue/7}`

Einde blok: Onbekend met Gray Label

Start van blok: Let's Lease

[Info] Gray Label's Lease Service

Gray Label ontwikkeld zich voortdurend op het gebied van duurzaamheid. Zo zullen in 2020 diverse stijlen uit de Miniature collectie ook in lease-vorm aangeboden worden. Met deze service draagt Gray Label bij aan een meer circulaire mode-industrie en maakt ze het duurzaam omgaan met kleding voor ouders toegankelijker,

makkelijker en bovendien financieel interessanter. Voor de komende vragen willen we je vragen om je in te beelden dat je in verwachting bent of net een kindje hebt gekregen.

[GL_Service] Wat zou jou nu overhalen om gebruik te maken van deze lease service

	Helemaal mee eens	Eens	Neutraal	Oneens	Helemaal niet mee eens
Het is goedkoper dan kopen	[]	[]	[]	[]	[]
Het geeft meer voldoening dan kopen	[]	[]	[]	[]	[]
Dat ik niet meer alles hoeft te bewaren	[]	[]	[]	[]	[]
Het draagt bij aan mijn overtuigingen omtrent duurzaamheid	[]	[]	[]	[]	[]
Mijn vorige ervaringen met leasen zijn positief	[]	[]	[]	[]	[]
Het is de toekomst	[]	[]	[]	[]	[]
Het is makkelijker dan kopen	[]	[]	[]	[]	[]
Het is gemakkelijk om voor een korte tijd uit te proberen	[]	[]	[]	[]	[]
De ervaringen van kennissen zijn positief	[]	[]	[]	[]	[]

[[GL_Service_Order] Wat speelt voor jou de belangrijkste rol om gebruik te maken van deze lease service? Met op 1 meest belangrijk en 3 minst belangrijk.

- Gemak
- Duurzaamheid
- Kosten besparing

Einde blok: Let's Lease

Start van blok: Algemene vragen

[Info] Je bent er bijna! Nog een paar laatste vragen over jou.

[Gender] Hoe identificeer je jezelf?

- Man
- Vrouw
- Anders _____
- Zeg ik liever niet

[Residence] In welke plaats woon je?

[Education] Wat is je hoogst behaalde opleiding?

- VMBO
- HAVO
- VWO
- MBO
- HBO
- WO Bachelor
- WO Master

[Household] Hoe ziet je huishouden eruit?

- Alleen ik
- Alleen een partner
- Partner en 1 kind
- Partner en 2 kinderen
- Partner en 3 of meer kinderen
- Eénouder en 1 kind
- Eénouder en 2 kinderen
- Eénouder en 3 of meer kinderen

[Earner] Hoeveel verdieners heb je in je huishouden?

- Eénverdiener
- Tweeverdieners

[Income] Wat is het inkomen van je hele huishouden?

- Onder modaal
- Modaal (ongeveer €4700 per maand)
- Boven modaal

[Comments] Dit was het, bedankt voor het invullen! Heb je nog overige opmerkingen over de enquête?

[Interview] Mogen we contact met je opnemen voor een diepgaander interview over dit onderwerp? Ook als de lease-service je niet enthousiast maakt, is het voor ons interessant om te horen wat je gedachten erover zijn.

- Ja, dat is goed. Mijn e-mailadres is: _____
- Nee, liever niet

[Newsletter] En als laatste: Wil je op de hoogte blijven over Gray Label?

- Ja, leuk! Mijn e-mailadres is: _____
- Nee, dat hoeft niet

9.2 Variables

Table 6.1: Dependent variables

Variable	Question	Score
I_sustainMean	Pro-environmental worldview	0 = low pro-environmental worldview
		5 = high pro-environmental worldview
I_consump	How actively do you consider yourself when it comes to sustainable consumption?	1 = I am deliberately not active
		2 = I am unconsciously not active
		3 = I am only active when it's convenient
		4 = I am active on a few areas
		5 = I am active, and in several areas
		6 = I am always active with it
I_OwnMean	Attachment to ownership	1.67 = ownership
		5 = non-ownership
I_Service_aware	How familiar are you with the concept of product-service systems rather than buying?	1 = I also use various forms of product-service systems
		2 = I have heard of it before
		3 = I am able to mention an example
		4 = I am not familiar with it
		5 = I know multiple product service systems
I_Service_op	I think the concept that you use products without having to buy them is:	1 = very bad
		2 = bad
		3 = neutral
		4 = good
		5 = very good
Sum IService	Amount of adopted PSS	0 = none
		6 = all

Table 6.2: Independent variables

Variable	Question	Score
[Fr]_Sustain	How active are [friends] when it comes to sustainability?	0 = more active than me
		1 = less active than me
		2 = as active as I am
[Fr]_Sustain_Freq	How often do you talk about sustainability with [friends]?	0 = never
		1 = sometimes
		2 = occasionally
		3 = regularly

		4 = a lot
[Fr]_Own_mean	Attachment to ownership	2 = ownership
		5 = non-ownership
Serv.[Fr]_Sum	Sum of adopted PSS	0 = none
		6 = all

Table 6.3: Control variables

Variable	Question	Score
[Fr]_Contact_Freq	How often do you normally have contact (in person, by telephone or in any other way) with [friends]?	0 = rarely or never
		1 = less than once a month
		2 = at least once a month, but not weekly
		3 = at least once a week, but not daily
		4 = daily
[Fr]_contact_depth	How deep does the contact you have with [friends]	0 = superficial communication
		1 = sharing of or asking for information
		2 = share opinions and ideas
		3 = share emotions
		4 = speak my mind
[Fr]_truth	How quickly would you accept something from [friends] as truth?	0 = never
		1 = rarely
		2 = regularly
		3 = often
		4 = always

9.3 Interview questions

Dutch

- Wat is je mening over gebruiksservices? *Waarom?*
- Praat je wel eens met mensen over een gebruiksservice? *Wie en over welke?*
- Kan je je contact met deze mensen beschrijven? *Hoe praat je erover?*
- Hoe is jouw idee dat je omgeving denkt over gebruiksservices? *Waarom?*

- Als deze mensen een gebruiksservice gaan gebruiken voor een product dat voor jou nieuw is, hoeveel interesse zou je dan hebben om dit ook te gaan gebruiken? *Waar hangt dat vanaf?*
- Zou dit invloed hebben op jouw mening over gebruiksservices? *Op welke manier?*
- En als ze met het idee komen van een nieuwe gebruiksservice voor jou, zou dat ervoor zorgen dat je die gebruiksservice gaat gebruiken? *Waar hangt het vanaf?*

- Zijn er ook gebruiksservices waar je geïnteresseerd in bent, maar die je nog niet gebruikt?
- Op welke manier verzamel je informatie over deze services?
- In hoeverre speelt het voor jou mee dat je al van andere gebruiksservices gebruik maakt om te kiezen voor een gebruiksservice?
- Wanneer zou het voor jou genoeg informatie zijn om je over te halen om een service te gaan gebruiken?

English

- What is your opinion about use services? *Why?*
- Do you sometimes talk with people about user services? *To who and in which way?*
- What are your thoughts in how your surrounded environment thinks about user services? *Why?*
- Can you describe your contact with them?

- If the people around you are going to use a user service for a product that is new to you, how much interest would you have in using it yourself? *What does that depend on?*
- Do you think that this would influence your opinion about user services? *In what way?*
- And if they come up with the idea of a new user service for you, would that make you start using that user service? *What does that depend on?*

- Are there also user services that you're interested in, but not yet use?
- In what way do you search for information about these services?
- How important is already using a certain user service for using a new form of user service to you?
- When would it be sufficient information for you to persuade you to start using a service?

9.4 Descriptive statistics

Table 7.1: Descriptive statistics

	<i>M</i>	<i>Median</i>	<i>SD</i>	<i>SE</i>
<i>Awareness</i>	2.90	0.065	3.00	1.10
<i>Attitude</i>	4.20	0.037	4.00	0.63
<i>Adoption</i>	2.18	0.065	2.00	1.11

Table 7.2: Control variables

	<i>N</i>	<i>Percent</i>
<u><i>Age</i></u>		
<i>18-27</i>	27	9.2
<i>28-37</i>	232	79.5
<i>38-49</i>	33	11.3
<u><i>Gender</i></u>		
<i>Women</i>	284	97.3
<i>Men</i>	8	2.7
<u><i>Education</i></u>		
<i>WO master</i>	111	38.0
<i>HBO</i>	136	46.6
<i>WO bachelor</i>	15	5.1
<i>MBO</i>	19	6.5
<i>VWO</i>	3	1.0
<i>HAVO</i>	5	1.7
<i>VMBO</i>	3	1.0

Table 7.3: Frequencies social capital

	<i>N</i>	<i>Percent</i>
<i>Friends</i>	291	99.7
<i>Family</i>	291	99.7
<i>Colleagues</i>	251	86.0
<i>Neighbours</i>	215	73.6
<i>Association members</i>	81	27.7
<i>Volunteers</i>	28	9.6
<i>Other parents</i>	171	58.6

Table 7.4: Attitudes on sustainability and ownership

	<i>M</i>	<i>Median</i>	<i>SD</i>	<i>SE</i>
<i>Pro-environmental worldview</i>	24.76	25.00	2.46	0.14
<i>Sustainable consumption</i>	4.34	4.00	0.69	0.04
<i>Non-ownership</i>	10.22	10.00	1.73	0.10

Table 7.5: Pearson correlations

	Awareness	Attitude	Sum adoption	Mobility lease	Car sharing	Streaming	Equipment	Baby products	Clothing
<i>Mobility friends</i>	,237***	,048	,219***	,297***	,122	,150*	-,002	,087	-,023
<i>Mobility family</i>	,206***	,009	,121*	,254***	,103	,099	-,026	-,028	-,072
<i>Mobility colleagues</i>	,206***	,067	,084	,217***	,072	,126*	-,053	-,041	-,070
<i>Mobility neighbours</i>	,118*	,140*	,123*	,093	,108	,017	,034	,065	,016
<i>Mobility association members</i>	,051	,051	-,032	,061	-,057	-,094	,035	-,073	-,003
<i>Mobility volunteers</i>	-,022	-,033	-,078	-,013	-,052	-,111	,011	-,059	-,033
<i>Mobility other parents</i>	,032	,167**	,022	,076	,035	-,041	,071	-,076	-,040
<i>Car sharing friends</i>	,148*	,125*	,288***	,180**	,353***	,067	,029	,142*	,028
<i>Car sharing family</i>	,124*	,067	,155**	,143*	,188**	,078	-,069	,135*	-,048
<i>Car sharing colleagues</i>	,224***	,107	,135*	,081	,271***	,125*	-,132*	,090	-,008
<i>Car sharing neighbours</i>	,165**	,099	,202***	,085	,219***	,068	-,004	,115*	,110
<i>Car sharing association members</i>	,055	,057	,015	,103	,030	-,049	,001	-,090	,025
<i>Car sharing volunteers</i>	,007	-,027	-,088	-,067	-,043	-,146*	,040	-,048	-,027
<i>Car sharing other parents</i>	,108	,126*	,002	-,052	,127*	-,072	-,025	-,015	,047
<i>Streaming friends</i>	,120*	-,066	,106	,141*	,068	,315***	,020	-,083	-,114
<i>Streaming family</i>	,160**	-,043	,119*	,084	,038	,413***	-,008	-,040	-,036
<i>Streaming colleagues</i>	,165**	,025	-,054	-,041	,072	,155**	-,088	-,091	-,049
<i>Streaming neighbours</i>	,154**	,007	,118*	,064	,112	,140*	-,007	,043	-,057
<i>Streaming association members</i>	,163**	-,033	-,029	,066	-,009	,024	,014	-,115*	-,062
<i>Streaming volunteers</i>	,051	-,031	-,014	,002	-,004	-,027	,048	-,065	,003
<i>Streaming other parents</i>	,167**	,094	-,022	,027	-,001	,054	-,008	-,055	-,051
<i>Equipment friends</i>	,086	,084	,381***	,027	,080	,045	,541***	,193***	,154**
<i>Equipment family</i>	-,011	,035	,199***	-,067	-,096	-,057	,549***	,104	,074
<i>Equipment colleagues</i>	,106	,003	,120*	,040	-,031	,028	,254***	,058	-,055
<i>Equipment neighbours</i>	-,059	,020	,211***	,061	-,071	-,086	,402***	,095	,127*
<i>Equipment association members</i>	,102	,130*	,075	,057	-,052	,027	,162**	,020	-,033
<i>Equipment volunteers</i>	,083	,039	,061	,018	,059	,022	,040	,048	-,027
<i>Equipment other parents</i>	,014	,092	-,026	-,081	,030	,041	,100	-,090	-,051
<i>Baby products friends</i>	,005	,133*	,411***	,036	,177**	-,008	,132*	,517***	,318***
<i>Baby products family</i>	,027	,090	,245***	,017	,083	-,093	,095	,404***	,136***
<i>Baby products colleagues</i>	,176**	,024	,200***	,066	,109	,061	,060	,224***	,030
<i>Baby products neighbours</i>	,156**	,092	,156**	,011	,030	-,049	,050	,220***	,177**
<i>Baby products association members</i>	,112	,075	,043	-,047	,114	,015	-,037	-,034	,180**
<i>Baby products volunteers</i>	-,030	-,093	,099	,018	-,043	-,146*	,132**	,144**	,114
<i>Baby products other parents</i>	,186***	,063	,041	,014	,000	,028	-,106	,086	,157**
<i>Clothing friends</i>	,057	,031	,373***	-,006	,243***	,007	,144*	,312***	,414***

<i>Clothing family</i>	-,031	-,074	,204***	-,028	,100	-,077	,126*	,184**	,293***
<i>Clothing colleagues</i>	,088	,037	,203***	,100	,152**	,047	,063	,034	,211***
<i>Clothing neighbours</i>	-,030	-,027	,024	-,067	-,043	,022	,040	,048	,114
<i>Clothing association members</i>	,083	-,027	,024	,018	-,043	,022	-,052	,048	,114
<i>Clothing volunteers</i>	-,101	-,112	,043	-,047	-,030	-,222***	,093	,102	,180**
<i>Clothing other parents</i>	,016	,132*	,096	-,103	,006	-,033	,019	,172**	,278***
<i>Sum friends</i>	,188***	,114	,508***	,198***	,303***	,145*	,239***	,345***	,221***
<i>Sum family</i>	,171**	,034	,328***	,152**	,128*	,124*	,220***	,220***	,079
<i>Sum colleagues</i>	,305***	,088	,155**	,137*	,194***	,186***	-,028	,038	-,028
<i>Sum neighbours</i>	,160**	,099	,260***	,104	,123*	,053	,171**	,150*	,093
<i>Sum association members</i>	,160**	,036	-,003	,090	-,019	-,019	,035	-,104	-,003
<i>Sum volunteers</i>	,017	-,062	-,005	-,017	-,028	-,145*	,093	,000	,036
<i>Sum other parents</i>	,170**	,183**	,024	,002	,037	,011	,006	-,011	,061
<i>Age</i>	-,099	,130*	-,001	-,021	,014	-,049	,089	,009	-,092
<i>Pro-environmental worldview</i>	-,001	,077	,135*	-,074	,118*	,042	,045	,129*	,131*
<i>Sustainable consumption</i>	,126*	,224***	,042	-,119*	,093	,008	,035	,006	,112
<i>Non-ownership</i>	,085	,184**	,159**	-,003	,053	,025	,133*	,125*	,128*
<i>Gender</i>	-,004	-,154**	-,027	,165**	-,086	-,041	-,106	,000	-,055
<i>Education</i>	,145*	,029	,077	,027	,111	,120*	,013	,059	-,034

Note: * $p < 0,05$ ** $p < 0,01$ *** $p < 0,001$