

How Social Support Can Influence Pro-Social Neighbourly Acts, Across Ages

A study on the effect of perceived social support on pro-social behaviour
towards neighbours, moderated by age



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Foreword

After a challenging but very rewarding 5 months of working on my master's thesis, I would like to thank everyone who has supported me during this time. First of all, I would like to express gratitude to my thesis supervisor Joey Tang for his guidance and his very helpful insights. I would also like to thank my two internship supervisors at the municipality of Berkelland. Quinten Dikschei, who has made me feel welcome at the beginning and kick-started my research with me, and Jolijn Asschert, who has provided me with the resources I needed as well as with great supervision as I completed my internship with her. Special thanks go to my partner, friends, and family for their constant support and encouragement throughout this writing process.

Abstract

As the Netherlands increasingly emphasizes citizen participation, it becomes more crucial to study pro-social behaviour. By specifically focusing on what stimulates pro-social behaviour towards neighbours, these insights can be utilized to make sure residents can rely on each other more and the burden of municipalities can be reduced to an extent. This study explores the link between perceived social support and pro-social behaviour towards neighbours, moderated by age. The theoretical underpinnings draw from Social Capital Theory and Socioemotional Selectivity Theory. Using data from the LISS Panel (2017), the results reveal a positive effect of the main relationship. However, the effect varies across age groups. Specifically, socially supported young individuals exhibit a decline in pro-social behaviour towards neighbours, while socially supported older individuals show an increase. Policy recommendations include strengthening social support networks for older individuals and raising awareness among younger cohorts about the value of social support to enhance their pro-social behaviour when socially supported.

Ethical statement

This study was approved by the Ethical Review Board of the Faculty of Social and Behavioural Sciences of Utrecht University. This approval is filed under number 24-1891.

Introduction

Pro-social behaviour is a form of informal help (Ramaekers et al., 2021), which is of even greater importance in Dutch society nowadays as government policies increasingly rely on citizen participation (Sociaal en Cultureel Planbureau, 2022). Pro-social behaviour can be defined as the behaviours we engage in that are intended to benefit others. These are acts such as sharing with, comforting, and helping others (Eisenberg, Eggum-Wilkens, & Spinrad, 2015). From previous literature, it has become clear that pro-social behaviour leads to happiness benefits, for both the receiver and the giver (Hui et al., 2020; Chancellor et al., 2018; Aknin et al., 2013). Not only can it be emotionally rewarding, but it also has a positive impact on society. Pro-social behaviour can for example reinforce social cohesion. The act of helping someone reflects a positive interaction between the involved individuals, which in turn adds to the social cohesion (Zischka, 2018). This is of great importance in a neighbourhood context.

In the last 10 years, weekly contact between neighbours in all age groups in the Netherlands has decreased. The youngest age group, 15 to 34 year olds, is least likely to contact their neighbours, at 41 percent (Centraal Bureau voor de Statistiek, 2023). Furthermore, over 20.000 reports were made to neighbourhood mediation organisations in 2022. A quarter of these reports involved complex problems, an increase of over 10% compared to the previous year (*Kwetsbare Mensen Vaak in Beeld Bij Burenruzies*, 2023). These numbers raise concerns about the atmosphere of Dutch neighbourhoods nowadays, and also indirectly imply that there is a lack of pro-social behaviour between neighbours. In addition, it is also worrying from a (crime) prevention policy point of view. When neighbours have positive relationships with each other and tend to be more pro-social, particular issues such as domestic violence and suicidal thoughts of citizens can be brought to light earlier. For example, by checking up on a neighbour every now and then, you can discover that someone is dealing with one of these issues and you can decide to intervene. Loneliness of elderly might be one of the most significant points, as more than half of over-75s in the Netherlands feel lonely (*Eenzaamheid*, 2020). The number of people dying in loneliness is significantly increasing as well. In the past couple of years, there have been many instances where bodies have been found by the police that went unnoticed for days, weeks, or even years in their own homes (NOS, 2023; Het Parool, 2023; Omroep Brabant, 2024). Each time, this is followed up by a call from authorities to look out for each other more. Thus, when citizens do not feel the need to keep contact and provide pro-social acts towards their neighbours, these issues can go unnoticed and in turn have

problematic or even fatal consequences. For these reasons it is important to understand how pro-social behaviour towards neighbours can be stimulated, particularly in a country that puts big emphasis on citizen participation.

1.1 Perceived social support

Social capital has been proven to positively impact pro-social behaviour (Mata & Pendakur, 2014; Glanville et al., 2016; Viapude et al., 2016). While there are many different ways to view social capital, the focus in this study will be on perceived social support. Previous literature has proven the effect of perceived social support on pro-social behaviour. High levels of perceived social support positively influence individuals' pro-social behaviour (Li et al., 2019). In addition, perceived social support even seems to be more reliable than objective social support in the case of predicting pro-social behaviour (You et al., 2022). A study by Evans & Smokowski (2015) has also highlighted the importance of positive social relationships in increasing pro-social bystander behaviour. Although some literature can be found on the effect of social support on pro-social behaviour, there is a lack of this regarding pro-social behaviour specifically towards neighbours. Only one Canadian study by Mata & Pendakur (2013) can be found on the positive impact of social capital on helping neighbours, however this is not taking social support into account. In this current study the relationship between perceived social support and pro-social behaviour towards neighbours will be examined, with the intention to learn whether the results will correspond to previous literature that has used a broader concept of pro-social behaviour. This relationship will be explained through the social capital theory. The following research question will be answered: *To what extent does perceived social support influence pro-social behaviour towards neighbours?*

1.2 Age

Previous literature has shown that pro-social behaviour seems to increase with age (Sze et al., 2012; Matsumoto et al., 2016; Kettner en Waichman, 2016). Older adults are willing to put more effort into help than young adults (Bailey et al., 2018). For example, Bailey et al (2018) have observed that older adults are more generous with money, being more likely to offer someone money after an empathy induction (even when taking income differences into account). They are also more likely to volunteer than young adults (Mayr & Freund, 2020). In this current study, it will be explained why this age difference exists by considering the role of perceived social support.

According to the socioemotional selectivity theory, when people get older, their motivational orientation starts to head into a direction of prioritising emotion, meaning, and living in the present (Okun & Schultz, 2013). Because of this, receiving and giving social support becomes more important for older individuals, as they prefer emotionally close social partners (Fung et al., 2008). Because this shift in priorities causes older individuals to place greater value on social support, it is expected that age enhances the main relationship between perceived social support and pro-social behaviour towards neighbours. On the other hand, as young people do not place as much importance on social support, the main relationship is expected to be weaker for them. This difference in how social support is valued between young and old individuals helps account for their varying levels of pro-social behaviour towards neighbours.

In this current study, age is expected to have a moderating effect, leading to the second research question: *To what extent is the relationship between perceived social support and pro-social behaviour towards neighbours stronger for older people compared to younger people?*

The first aim of this study is to explore whether receiving social support can make someone more pro-social towards their neighbours. Instead of measuring pro-social behaviour as a general concept, which has been done before, the question of whether socially supported individuals are also likely to provide help specifically to their neighbours will be answered. The second aim of this study is to examine whether the main relationship between perceived social support and pro-social behaviour is positively moderated by age. To form answers to the research questions, data from the LISS Panel (2017) will be used. This dataset includes 2833 respondents. Based on the results of this current study, policy recommendations will be given to stimulate pro-social behaviour towards neighbours, and to reduce the burden of municipalities and authorities dealing with neighbourhood related issues mentioned in the beginning. The following question will be asked: *How can residents be stimulated by their municipality to be more pro-social towards their neighbours?*

Theoretical framework

2.1 Social Capital Theory

In this chapter, the social capital theory will be used to explain the effect of perceived social support on pro-social behaviour towards neighbours. There have been, and still are, many different perspectives and definitions regarding social capital. In this current paper, mainly Putnam's definition of social capital will be used to explain the effect of social capital on pro-social behaviour towards neighbours, along with more modern perspectives when diving deeper into the concept. Putnam defines social capital in the following way: 'features of social organizations, such as networks, norms and trust that facilitate action and cooperation for mutual benefit' (Putnam, 1993, p. 35). He focuses on three components of social capital: social networks, social trust, and social norms. In this paper, however, the focus will be on social networks, specifically on social support gained from within these networks. Social capital is a quality that can be of help in interpersonal cooperation (Claridge, 2018), which corresponds perfectly to the social capital theory. According to the social capital theory, social relationships are resources that can help build and accumulate human capital (Machalek & Martin, 2015). In other words, social relationships create benefits for individuals as they provide resources that can be used to achieve desired outcomes (Bizzi, 2015). When applying this to pro-social behaviour, it can be said that someone's social capital contains benefits that help stimulate their pro-social behaviour, which is a part of someone's personality and can even be considered a skill. This makes it a form of human capital.

Elements of social capital relevant to social support will further on be discussed in more detail to understand the underlying mechanisms of the social capital theory, and eventually the effect of perceived social support on pro-social behaviour towards neighbours. As pro-social behaviour will be measured in the next chapter based on the extent to which an individual provides help to other people, only previous literature that focuses on forms of help will be used as examples in this chapter. After this, the socioemotional selectivity theory will be used to explain the moderating effect of age on the link between perceived social support and pro-social behaviour towards neighbours.

2.1.1 Function of Social Capital: Bonding

There are three functions of social capital: bonding, bridging, and linking. Bonding concerns connections *within* a group, bridging concerns connections *between* groups, and linking extends the concept of bridging by adding the element of *power differences* into it (Claridge, 2018). As will become obvious in the next paragraphs, this paper focuses on connections within a social network, not between social networks. Bonding social capital refers to relationships within a community or group characterised by high levels of similarity in demographic characteristics, attitudes, and accessible information and resources (Claridge, 2018). Examples of these relationships can be with family, friends, or neighbours. According to the social capital theory, these ‘bonding’ connections can provide resources that contain benefits, in this case in relation to pro-social behaviour. In the following paragraph it will be discussed what this means in a social network context.

2.1.2 Structural Social Capital & Perceived Social Support

Structural social capital is a form of social capital that relates to the characteristics of the social system and of the networks of relationships as a whole (Nahapiet & Ghoshal, 1998). Unlike the relational and cognitive forms of social capital, structural social capital refers to a presence of a network of access to people and resources (Andrews, 2010). An individual knows people whom they can draw benefits from such as information and assistance. It is in this case important to consider the number of ties someone has, with whom, or how strong these ties are, typically in a context of a group, community, or organisation (Taylor, 2007; Davenport & Daellenbach, 2011). In the case of social support, the strength of an individual’s ties is most relevant.

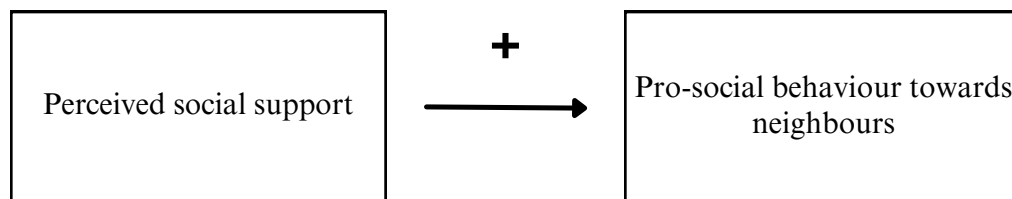
Perceived social support can be defined as “the exchange of verbal and non-verbal messages conveying emotion, information, or referral, to help reduce one's uncertainty or stress” (Walther & Boyd, 2002, p. 154). Social support from friends, family and peers leads to an increased possibility of pro-social behaviour (Guzman et al., 2012; Fu et al., 2022; Guo, 2017). A study by Fu et al (2022) states that when individuals grow up in a positive growth environment, they are more likely to develop pro-social behaviour. Good and intimate interpersonal connections can create a strong sense of belonging and promote altruistic behaviour (Guzman et al., 2012). The opposite has also been proven, as a lack of supportive relationships, and therefore social support, has been linked to a decrease in pro-social behaviour (Twenge et al., 2007). Through the lens of social capital theory, this means that an individual

can derive benefits from receiving social support and become more pro-social because of it. Even though providing pro-social acts in itself benefits other people, being the pro-social individual means containing positive traits or benefits such as generosity, politeness, and being compassionate (Zhao et al., 2016). An explanation for this is that an individual's social support network can make them fathom that they want to treat others as positively as their social support network treats them, so they learn from them. Receiving and being surrounded by a lot of social support can also naturally make someone more pro-social. According to Cirelli et al (2014) interpersonal experiences can serve as a catalyst for the occurrence of pro-social behaviour.

Understanding these elements of social capital helps provide an explanation as to why perceived social support can have an effect on pro-social behaviour. Based on the social capital theory and previous literature, having higher levels of perceived social support is expected to lead to more pro-social behaviour. Therefore, it is expected to positively influence pro-social behaviour towards neighbours. The following hypothesis and path model can be derived:

H1: Perceived social support has a positive effect on pro-social behaviour towards neighbours

Figure 1. Path model: Hypothesis 1



2.2 Socioemotional Selectivity Theory

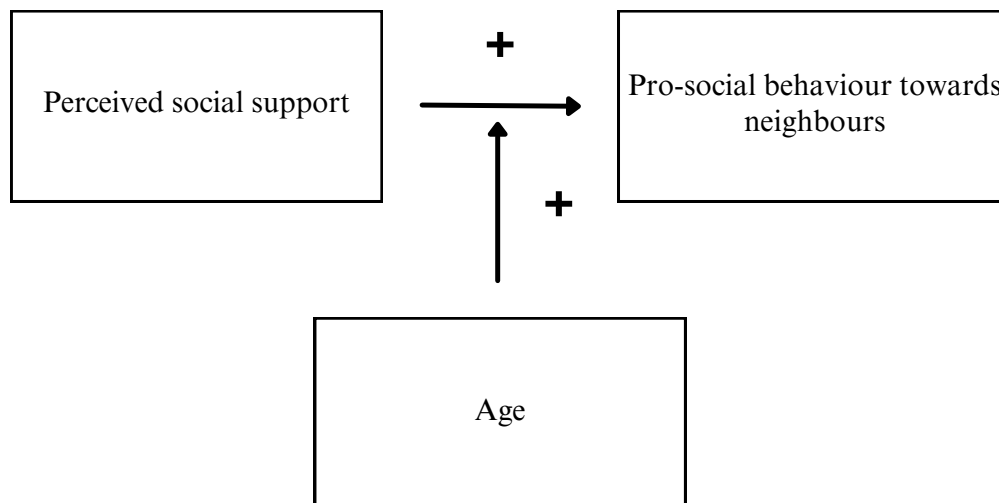
To explain the role of age in the link between perceived social support and pro-social behaviour, the socioemotional selectivity theory will be used. This life-span theory by Carstensen (1991) states that personal goals and behaviours change with age. In younger ages, one perceives time as expansive and is more likely to strive for educational and occupational goals. Later, as an individual's time becomes more limited when they get older, their motivational orientation starts to shift to a prioritisation of emotion, meaning and living in the present (Okun & Schultz, 2013). Thus, professional goals decrease across adulthood, as older people have less opportunities awaiting them and less time to obtain and benefit from knowledge-based related goals (Carstensen et al., 2003). Lang & Carstensen (2002) and Penningroth & Scott (2012) have shown that people with limited future time perspective prioritized generosity and emotion regulation, while young people focused on social acceptance and autonomy. This difference in priorities between age groups is expected to have a moderating effect on the main relationship in this study. As older individuals put a stronger emphasis on emotion and meaning, they start investing more in the quality of social relationships (Carstensen et al., 2003). For this reason, it is expected that feeling social support from others is more meaningful to them and this in turn enhances the link between perceived social support and pro-social behaviour. Emotionally close social partners are preferred by older people because they are more likely to provide predictable emotional experiences that facilitate feelings of social connectedness (Carstensen & Reynolds; 2023, Gross, & Fung, 1997; Fung et al., 2008). As individuals approach endings, and their time becomes more limited, they start to pay more attention to the emotional quality of their social relationships. Older individuals also engage more in strategic attempts to optimise the emotional aspects of their important social relationships (Carstensen et al., 1999).

Previous literature can explain further why this emphasis on the value of social support can make older individuals more pro-social. Individuals who value positive interpersonal relationships and close connections within their network tend to experience a strong sense of inclusion, leading to pro-social behaviour (Twenge et al., 2007). Mayr & Freund (2020) argue that contributing to the well-being of others can be a way for older people to experience meaning and connection with the world. This also explains why donating to charities is experienced as emotionally gratifying by older adults and less by young adults (Bjälkebring et al., 2016). As mentioned before, good and personal interpersonal connections can create a strong sense of belonging and promote altruistic or prosocial behaviour (Guzman et al., 2012).

Based on the socioemotional selectivity theory and previous literature, it is expected that the link between perceived social support and pro-social behaviour towards neighbours is stronger for older age groups than for younger age groups. Thus, age is expected to enhance the relation between perceived social support and pro-social behaviour towards neighbours. The following hypothesis and path model can be derived:

H2: *The relation between perceived social support and pro-social behaviour towards neighbours is positively moderated by age*

Figure 2. Path model: Hypothesis 2



Methods

3.1 Data

To answer the research questions of this current study, data from the LISS panel was used. The LISS panel (Longitudinal Internet Studies for the Social Sciences) is a Dutch public data archive that is intended for scientific, policy and socially relevant research. It contains a panel of 5,000 households and approximately 7,500 Dutch individuals of 16 years and older, which were drawn from the population register by Statistics Netherlands (Centraal Bureau voor de Statistiek) via a true probability sample of households. This makes it representative of the Dutch population. Only people in the sample who were personally invited can participate in the questionnaires. They were approached by a letter, followed by a telephone call and/or house visit. About 80% of the panel members actually participates in the surveys, but this can vary from 50%-80% depending on the questionnaire and month (*LISS Panel, 2023*).

Every month, the LISS panel members get sent an online questionnaire in Dutch and receive a monetary incentive for each one they complete. Households that could otherwise not participate are provided with a computer and internet connection for the purpose of the panel. This way the quality of the composition and representativeness of the panel can be guaranteed.

The LISS Core Study is a part of the LISS panel which is an annually repeated longitudinal study meant to follow life changes in the life course of the participants. Multiple of these core studies (and some single wave studies) will be combined and used in this current study. This is however not with the intention to observe life changes but to include all variables that are needed for this study, as the LISS panel does not provide one singular dataset with these variables. The following datasets will be used: ‘Social Integration and Leisure Wave 10’, ‘Family Survey Dutch Population 2017: Network Questions’, and ‘Background Variables December 2017’. These three studies contain the variables needed to test the hypotheses in this current study. Because all the studies that have been used took place in 2017 and were conducted on the same participants, they can be merged together. However, because the single wave studies are relatively smaller than the two core studies, this means that there will be a group of respondents from the core studies that are not included in the analysis. Only the respondents that have provided information to all variables necessary for this study will be taken into account, the others have been deleted via *listwise deletion*. This results in an N of 2833.

3.3 Operationalization of variables

3.3.1 Outcome Variable

Pro-social behaviour towards neighbours

The concept of pro-social behaviour will be understood in this study by focusing on the aspect of helping others. This was measured by the question “*Please indicate how often you helped people in your neighbourhood in the past 12 months*”. Possible answers for this question were (1) every day, (2) once or several times per week, (3) once or a few times per month, (4) less than once per month, (5) never, and (6) not applicable. Answer (6) was coded into *system missing*. The rest of the answers were recoded into the opposite direction, so “never” is now the lowest number (1) and “every day” is now the highest number (5). This is ordinal but will be used as an interval scale.

3.3.2 Explanatory Variables

Perceived social support

Perceived social support will be measured by the question: “*To what extent do the following statements apply to you, based on how you are feeling at present?*”. This is followed up by six different statements; “*I have a sense of emptiness around me*”, “*There are enough people I can count on in case of a misfortune*”, “*I know a lot of people that I can fully rely on*”, “*There are enough people to whom I feel closely connected*”, “*I miss having people around me*”, and “*I often feel deserted*”. Possible answers to these questions were (1) yes, (2) more or less, and (3) no. Some of these statements were recoded into the opposite direction, this was done in a way that the higher the score is the more social support they feel. The answers to these statements were added up and computed into one variable and are now represented as a scale. The reliability analysis revealed a Cronbach's Alpha of .832, which is a reliable scale according to the rules of thumb of De Heus (1995).

Age

The moderating factor in this study, age, was measured by providing the respondents with a section named “*Age in CBS (Centraal Bureau voor de Statistiek) categories*”. The respondents could then choose from the following age categories: (1) 14 years and younger, (2) 15-24 years, (3) 25-34 years, (4) 35-44 years, (5) 45-54 years, (6) 55-64 years, and (7) 65 years and older. Some of these categories were recoded and computed together, which resulted in three age categories. Categories (1) and (2) were recoded together, categories (3), (4) and

(5) were recoded together, and categories (6) and (7) were recoded together. This way there are young (<14-24), middle-aged (25-54), and old age (55+) dummy variables.

3.3.3 Covariates

Income

A large-scale study by Macchia & Whillans (2022) has shown that high income individuals are more likely to donate, volunteer and engage in prosocial behaviour than low-income individuals. Income was measured by providing the respondents with a section called “*Personal net monthly income in categories*”. This was followed up by a list of income categories the respondents could choose from, namely: (0) no income, (1) EUR 500 or less, (2) EUR 501 to EUR 1000, (3) EUR 1001 to EUR 1500, (4) EUR 1501 to 2000, (5) EUR 2001 to 2500, (6) EUR 2501 to EUR 3000, (7) EUR 3001 to EUR 3500, (8) EUR 3501 to 4000, (9) 4001 to EUR 4500, (10) EUR 4501 to EUR 5000, (11) EUR 5001 to EUR 7500, (12) more than EUR 7500, (13) I don’t know, and (14) I prefer not to say. Answers (13) and (14) were coded as *system missing*. As the number of respondents for some categories was extremely small, these categories were also recoded and computed together which resulted in three income categories. Categories (0) till (5) were recoded together, categories (6) till (10) were recoded together, and categories (11) and (12) were recoded together. This way there are low, average, and high-income dummy variables.

Gender

Previous literature shows that women are more generous and more prosocial than men (Eckel & Grossman, 2008). Gender was measured by providing the respondents with a section called “*Gender self-identification*”. This was followed up by the genders the respondents could choose from, namely: (0) male, and (1) female. These were recoded into dummy variables.

Education

Higher educated individuals are more likely to volunteer and donate, which are forms of prosocial behaviour (Son & Wilson, 2012; Bekkers, 2004). Education was measured by providing the respondents with a section called “*Highest level of education with diploma*”. This was followed up by a list of different levels of education (according to the Dutch education system) the respondents could choose from, namely: (1) primary school, (2) vmbo (intermediate secondary education, US: junior high school), (3) havo/vwo (higher secondary education/preparatory university education, US: senior high school), (4) mbo (intermediate

vocational education, US: junior college), (5) hbo (higher vocational education, US: college), (6) wo (university), (7) other, (8) not (yet) completed any education, and (9) not yet started any education. Answers (7), (8), and (9) were coded as *system missing*, since they are not relevant. This variable is also ordinal but will be used as an interval scale.

3.4 Analysis method

To start off, the assumptions of a normal distribution and linearity were examined. For the dependent variable, pro-social behaviour towards neighbours, a normal distribution can be seen (See Appendix, Figure 1). For the assumption of linearity, only linearity tests between perceived social support and pro-social behaviour towards neighbours and education and pro-social behaviour towards neighbours was examined. The rest of the predicting variables were dummy variables, which do not need to be examined for linearity. When looking at the linearity for perceived social support, it can be seen there is a somewhat linear plot with only one outlier. (See Appendix, Figure 2). When looking at the linearity for education, a clear linear plot can be seen (See Appendix, Figure 3).

In the next chapter, the hypotheses will be tested by multiple linear regression analyses. Model 1 examines the main effect of perceived social support on pro-social behaviour towards neighbours. Model 2 examines the same as Model 1 but also includes the covariates. The final model, Model 3, examines the moderating effect of age on the relationship between perceived social support and pro-social behaviour towards neighbours, including the covariates.

Results

4.1 Descriptive statistics

In Table 1, the descriptive statistics of this study are presented. It is notable that most respondents are of middle or old age, leaving the category of young age relatively small with only 7.77%. As for income, most respondents have a low income with 82.42%. The gender category is somewhat equal for both categories, with only slightly more women participating. Pro-social behaviour towards neighbours and education both have a mean that is very average. Perceived social support, however, consists of a mean that is very close to the maximum of the scale. This means that perceived social support is high for most of the respondents. Lastly, no extreme standard deviations are observed.

Table 1. Descriptive statistics

	%	Minimum	Maximum	Mean	Std. Deviation
Pro-social behaviour towards neighbours		1	5	2.14	.91
<i>Age</i>					
Young age	7.77%				
Middle age	51.25%				
Old age	40.98%				
Perceived social support		1	3	2.67	.43

Income

Low income	82.42%
Average income (ref)	16.77%
High income	0.81%

Gender

Female (ref)	54.96%
Male	45.04%

Education	1	6	4.08	1.38
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Source: Longitudinal Internet Studies for the Social Sciences (2017). N = 2833

4.2 Linear regression analyses

4.2.1 Main effect

First, Model 1 has tested whether perceived social support has an effect on pro-social behaviour towards neighbours. A linear regression analysis was conducted with the independent variable 'perceived social support' and the dependent variable 'pro-social behaviour towards neighbours'. The analysis showed a positive, significant effect of perceived social support on pro-social behaviour towards neighbours. This implies that the more an individual feels socially supported, the more pro-socially they behave towards their neighbours. However, this effect is fairly weak ($b = .120$, $p = .003$). Model 1 was able to explain 5.6% of the total variation of pro-social behaviour towards neighbours ($R^2 = .056$).

Next, Model 2 was tested. The same linear regression was conducted but with the three covariates added: income, gender, and education. For income and gender, dummy variables

were used with middle income and female as the reference categories. The independent variable perceived social support still shows a positive effect and has slightly increased in coefficient, as well as in significance ($b=.138$, $p=.001$). However, almost all the covariates showed no significant effect, which were low income ($b=.069$, $p=.158$), high income ($b=.043$, $p=.825$), and male ($b=.026$, $p=.463$). Education showed a negative, significant effect on pro-social behaviour towards neighbours ($b=-.028$, $p=.032$). This means that the higher an individual's education is, the less pro-social they are towards their neighbours, but this effect is very weak. Model 2 was able to explain 8% of the total variation of pro-social behaviour towards neighbours ($R^2= .080$). Perceived social support still shows the highest effect on pro-social behaviour, although this is also still not very strong.

Hypothesis 1 can carefully be retained, as the regression analyses show a positive relationship between perceived social support and pro-social behaviour towards neighbours.

4.2.2 Moderating effect

In Model 3, the expected moderating effect of age on the relationship between perceived social support and pro-social behaviour will be tested. A linear regression analysis was conducted with the independent variable 'perceived social support', the dependent variable 'pro-social behaviour towards neighbours', the moderator 'age', two interaction variables, and the same three covariates. The variable for age consists of three dummy variables: young age, middle age, and old age. Middle age was used as the reference category. In addition, two interaction variables were conducted to be able to observe the moderating effect. The dummy variable young age was multiplied with the variable perceived social support and conducted into a new variable, the same was done with the dummy variable for old age. First of all, the main effect of perceived social support on pro-social behaviour towards neighbours now shows the highest effect of all three models ($b=.161$, $p=.003$), which applies to middle-aged individuals. When looking at the other age variables, it can be seen that both the dummy variable for old age ($b=.241$, $p=.294$) and the interaction variable for old age ($b= -.016$, $p= .853$) are not significant. This means that the effect of old age on pro-social behaviour towards neighbours is the same as the effect of the reference category, middle age. However, the dummy variable for young age ($b=.869$, $p=.030$) and the interaction variable for young age ($b=-.317$, $p=.032$) are both significant. The effect of young age on pro-social behaviour towards neighbours is positive and strong. This means that young individuals are more pro-social towards their neighbours than middle-aged and older aged individuals. However, when taking perceived social support back into account, this changes. When the main effect between perceived social support and pro-

social behaviour towards neighbours is moderated by age, it can be seen that this relation is negative for the young age group. Meaning that young individuals are less pro-social towards their neighbours when feeling socially supported. This interaction effect is however still rather weak. Furthermore, all the covariates, which were low income ($b=.092$, $p=.061$), high income ($b=.048$, $p=.805$), male ($b=.024$, $p=.497$) and education ($b=-.011$, $p=.400$) were not significant. It is notable that the effect of education on pro-social behaviour towards neighbours became insignificant when age was included in the model. Model 3 was able to explain 13.5% of the total variation of pro-social behaviour towards neighbours ($R^2=.137$).

Hypothesis 2 must be rejected. The relationship between perceived social support and pro-social behaviour towards neighbours is not stronger for old individuals, but the same as it is for middle-aged individuals. Furthermore, the moderation effect is not positive across all age groups, as it has shown a negative effect for the youngest age group. Reasons for this will be discussed in the next chapter.

The table below presents the results of all three regression models measuring the effects on pro-social behaviour towards neighbours.

Table 2. Linear regression analyses for pro-social behaviour towards neighbours

	Model 1	Model 2	Model 3
	b	b	b
Constant	1.824*** (.108)	1.820*** (.133)	1.591*** (.165)
Perceived social support ^a	.120** (.040)	.138*** (.040)	.161** (.054)
<i>Age</i>			
Young			.869* (.401)
Young x Social support			-.317*

			(.147)
Old		.241	(.229)
Old x Social support		-.016	(.085)
<i>Income</i>			
Low income ^b	.069	(.049)	.092 (.049)
High income ^b	.043	(.193)	.048 (.192)
<i>Gender</i>			
Male ^c	.026	(.035)	.024 (.035)
Education	-.028*	(.013)	-.011 (.013)

Source: Longitudinal Internet Studies for the Social Sciences (2017). N = 2833

1) ***: $p < .001$ **: $p < .01$ *: $p < .05$

2) Reference^a = Middle age

Reference^b = Average income

Reference^c = Female

Discussion and conclusion

This study aimed at understanding the effect of perceived social support on pro-social behaviour towards neighbours. In addition, age was expected to have a positive moderating effect on this relationship.

Perceived social support was expected to positively influence pro-social behaviour towards neighbours, and this was confirmed in the results. This effect was not very strong, but still a significant finding. It showed that the more an individual feels socially supported, the more they tend to help their neighbours. This finding is consistent with the predictions of the social capital theory, which implies that social relationships and the resources derived from them play a crucial role in fostering pro-social behaviour, as these relationships can create benefits to achieve desired outcomes (Bizzi, 2015). As emphasised by the concept of structural social capital, the strength of someone's social ties can be particularly of importance in relation to pro-social behaviour (Taylor, 2007; Davenport & Daellenbach, 2011). The first result of this current study is in line with previous studies that have shown that being in a positive socially supportive environment can affect an individual's altruistic and pro-social behaviour (Guzman et al., 2012; Fu et al., 2022; Guo, 2017). This finding is significant as it extends the existing literature on perceived social support and pro-social behaviour by focusing specifically on neighbours, rather than on pro-social behaviour in a broader, more general sense.

Further on, this study assessed to what extent age influences the relationship between perceived social support and pro-social behaviour towards neighbours. The findings for this were conflicting. To start off, the moderation effect for older individuals did not show a significant effect and could be interpreted as having the same positive effect as middle-aged individuals. This means that there was no difference between these two age groups even though it was theorised that there would be according to the socioemotional selectivity theory. The socioemotional selectivity theory stated that people have different priorities in life as they age. Younger people strive for educational and occupational goals, while older people's motivational orientation shifts to a prioritisation of emotion and meaning (Okun & Schultz, 2013). And lastly, middle-aged people are somewhere in between these different priorities. Because older individuals place more value on their social support systems, among other things, it was expected that the main relationship would be the strongest for them. This was however not the case. An explanation for this could be that the age range for middle-aged individuals in this study is quite big, namely 25-54 years old. This includes individuals from

early adulthood as well as individuals from late adulthood, which could possibly have balanced each other out a bit. In a study by Carstensen et al (1999), which is co-written by the founder of the socioemotional selectivity theory, they have focused on smaller sized age groups to distinguish the differences in emotional material. The age groups up to the point of 45 years old showed almost no difference in levels of emotional material, but for the age groups that came after this the levels increased significantly (Carstensen et al., 1999). This can mean that the age range that was used in this current study for middle-aged individuals is not split up accordingly enough, causing individuals with low levels of emotional material as well as individuals with high levels of emotional material to be a part of the same variable.

Furthermore, the results in this study also showed that the main relationship is negatively moderated for young individuals. This shows that based on whether perceived social support is included or not, the results on pro-social behaviour towards neighbours are very different for the youngest individuals in comparison to the older ones. The question now is why young individuals show a negative moderation effect instead of a positive one. The underlying mechanisms from the socioemotional selectivity theory can still be used to provide a potential explanation for these conflicting effects. While older individuals have smaller social networks concentrated with people who can provide them love and validation, younger individuals have larger and more diverse social networks (Carstensen et al., 1999). Social connections are one of the strongest predictors of educational and occupational successes (Holt-Lunstad, 2018), which is of great importance in someone's younger years. Since younger people are more focused on their own development in their formative years, one of the things that they are focussing on is expanding their social network. A way to achieve this is to connect with your neighbourhood and be quick to offer help to neighbours when needed. Helping someone out will naturally result in some form of a social relationship with that person. So, when young individuals already happen to have a stable or big social network, which can provide them social support, they do not have to work on building connections (as much) anymore. This may result in them not helping their neighbours, because it now has less benefits to them. Future research will however have to explore this finding further.

Lastly, the covariate education showed a negative effect on pro-social behaviour towards neighbours at first, but became insignificant when age was added to the model. The higher education someone is, the less pro-social they become towards their neighbours, which is the opposite of what was expected. An explanation for this can be that higher educated people tend to have more demanding careers than lower educated people. This can require them to frequently relocate, as they have to travel more often and further for their work (Schilder &

Buitelaar, 2021). Higher educated people also tend to be more willing to move to another city for a better job opportunity and do this more often than lower educated people (Venhorst, 2012). This lifestyle can limit their contact with neighbours, as they are often not at home or do not see the point in creating a bond with neighbours as they are only living there temporarily. However, as said before, the effect of education on pro-social behaviour towards neighbours became insignificant in the final model. It is likely that age and education are highly correlated because education level typically varies with age. Age has outweighed the effect of education and was shown to be a stronger predictor.

5.1 Conclusion

In conclusion, this current study has shown that perceived social support does positively influence pro-social behaviour towards neighbours, but there were more surprising findings to be discussed. It has shown that there is no difference in pro-social behaviour towards neighbours between socially supported middle-aged individuals and older individuals. It has also shown that the main relationship is positively moderated for middle-aged and old individuals, but negatively for young individuals. Young people are at first more likely to provide help to their neighbours, but when socially supported this effect declines. Further research could explore factors that provide explanations as to why having high levels of social support makes young people less pro-social towards their neighbours.

5.2 Limitations

One of the limitations of this study was the assessment of pro-social behaviour towards neighbours with only the concept of whether respondents have provided help to their neighbours in the last 12 months. In reality, pro-social behaviour contains more aspects, such as sharing with, comforting and complimenting others (Eisenberg, Eggum-Wilkens, & Spinrad, 2015; Zhao & Epley, 2021). This means that the construct validity in this study has not been achieved as well as it could have been. Furthermore, the survey question has not provided any examples of pro-social acts to the respondents. It would have been more beneficial to include examples so that the respondents can get a better understanding of what is meant with “helping a neighbour” and can also recognize pro-social acts that they have provided before in the list of examples.

Another potential limitation of this study is the exclusive focus on pro-social behaviour towards neighbours without comparing it to pro-social behaviour directed towards other groups, such as family members, friends, or strangers. By only examining the effect of

perceived social support on pro-social behaviour towards neighbours it has become clear that it is also a positive effect, just like in previous literature. However, the study may miss broader insights into whether the positive effects of perceived social support vary depending on the recipient of the pro-social behaviour. Future research could benefit from including a comparative analysis of different recipient groups to better understand how perceived social support influences pro-social behaviour across various social contexts.

The last limitation, as already said, is the wide age range of the middle-aged group of respondents. This age range might have affected the results, as it was not split accurately enough to match the theoretical mechanisms of the socioemotional selectivity theory.

Policy recommendations

The findings of this study suggest several policy suggestions to address the policy-related research question: “*How can residents be stimulated by their municipality to be more pro-social towards their neighbours?*”.

The primary finding of this study has shown that feeling socially supported has the opposite effect for the youngest age group in comparison to the older age groups. Perceived social support stimulates individuals who are 25 years and older to be more pro-social towards their neighbours, but it demotivates the youngest age group of 24 years and younger. Since social support is effective for middle-aged and older individuals, this raises the question of how municipal authorities can use this result to make sure residents look out for their neighbours more. This implies a few policy recommendations. Municipalities should focus on establishing and enhancing social support networks for older adults. By developing programs that are aimed at increasing social support for older adults, this will potentially positively affect their pro-social behaviour and stimulate them to provide more help for their neighbours. Examples of what municipalities can implement are community centres or social clubs with activities. Previous studies have proven the effectiveness of community centres, as they have resulted in positive changes of the social well-being and social participation of those using it regularly (Jones et al., 2013; Hosokawa et al., 2018). By establishing local community centres specifically meant for older age groups, they can come together and connect. Municipalities should organise regular community events (e.g. game nights, hobby groups, etc.) to increase social interactions among these older residents. As we are talking about ages 25-55+ here, it is logical to divide this range in two and to relate certain events to certain age groups. Along with

community centres, resource centres can be set up as well. Here, the oldest age group can access information about social activities, local services, etc., such as the ones being organised at the community centres. Furthermore, it is also of importance to make sure these centres are accessible and easy to attend for adults who need mobility assistance. To ensure that transportation is not a problem at all, shuttle services could even be provided.

Currently, in the Netherlands, community centres are established upon residents' requests and subject to certain conditions (Subsidiebureau Nederland, 2023). Municipalities should be proactively offered grants specifically for community projects to encourage their development without relying on resident initiatives. By integrating (more) community support objectives into broader municipal planning and development strategies, it will be ensured that the importance of social cohesion is considered. Additionally to community centres, municipalities can implement some smaller-scale initiatives to enhance social support for adults, such as; volunteer buddy programs (pairing up volunteers who can provide companionship and support with older adults), community festivals and fairs, shared interest groups (e.g. a book club), community clean up-days, and neighbourhood watch programs.

As seen in the results of this study, young individuals become less pro-social towards their neighbours when feeling socially supported. Therefore, another policy recommendation would be to enhance the value of social support among young individuals and to increase their pro-social behaviour through these interventions. Next to higher levels of pro-social behaviour, perceived social support has many more scientifically proven benefits such as better physical and emotional health (Ozbay et al., 2007). By implementing educational initiatives that focus on the importance and the benefits of having a good social support network, young individuals can be stimulated to value it more. This can for example be done by integrating it in a broader mental health or wellness school curricula. Half of the adolescents in the Netherlands have indicated that there is no attention for social or emotional skills in school, or that they do not know whether their school pays attention to it. However, almost all of them want it to be a part of the curriculum (*Geef Meer Aandacht Aan Mentale Gezondheid op School*, 2023). This shows that implementing these educational initiatives will be highly accepted and even supported by young individuals, it has just not (broadly) been done yet.

Appendices

Figure 1. Normal distribution: Pro-social behaviour towards neighbours

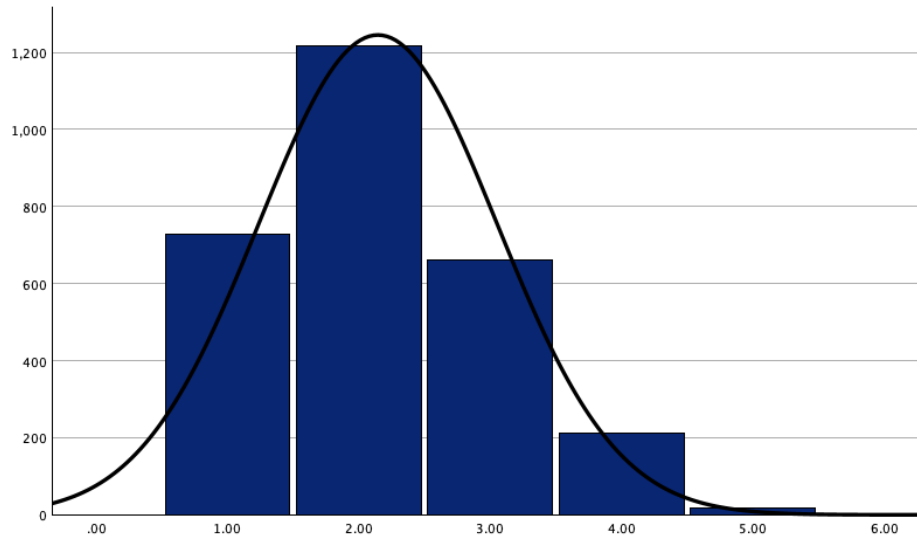
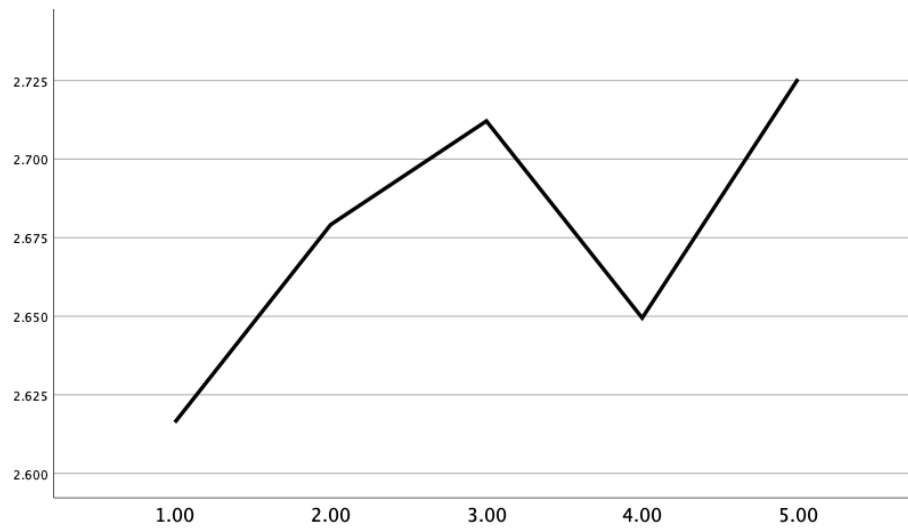


Table 1. Linearity tests

	F	Sig.
<i>Perceived social support</i>		
Linearity	9.014	.003
Deviation from Linearity	3.506	.015
<i>Education</i>		
Linearity	4.862	.028
Deviation from Linearity	4.678	.003

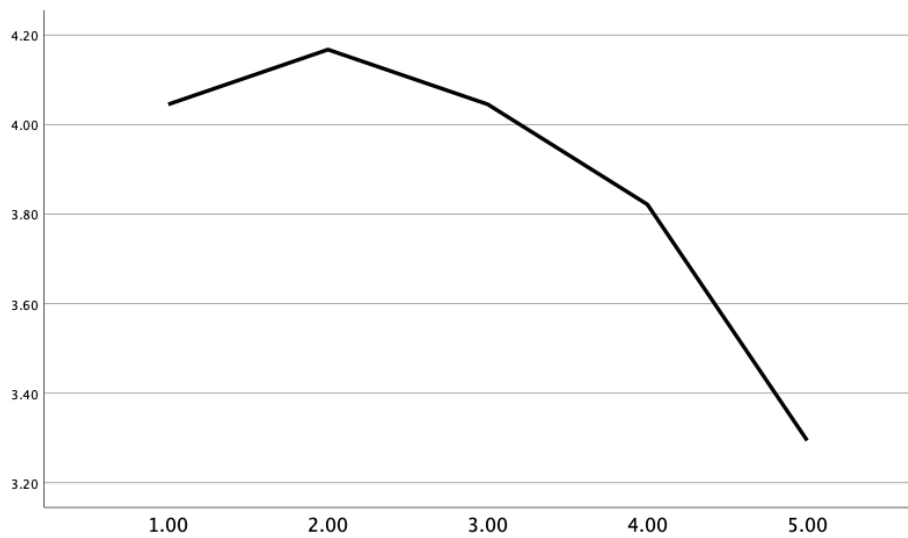
Source: *Longitudinal Internet Studies for the Social Sciences (2017)*. $N = 2833$

Figure 2. Linearity plot: perceived social support



Source: *Longitudinal Internet Studies for the Social Sciences (2017)*. $N = 2833$

Figure 3. Linearity plot: education



Source: *Longitudinal Internet Studies for the Social Sciences (2017)*. $N = 2833$

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