

This thesis uses data from the DNB Household survey administered by Centerdata (Tilburg University, The Netherlands).



Household Financial Situation: Exploring the Influence of Circle of Acquaintances

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Household Financial Situation: Exploring the Influence of Circle of Acquaintances

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Abstract

This thesis aims to find the effect of an individual's circle of acquaintances on the financial situation of their household. It does so by using data from the years 2018 to 2022 gathered by the DNB Household survey administered by Centerdata. This study uses a multilevel mixed effects ordered logistic regression on panel data, with fixed effects for individuals and a total of 758 clusters out of 3,790 observations. The results show significant effects of the income of acquaintances, the age of acquaintances, the amount of hours worked by females in the circle and the financial situation of the household in previous years, on the financial situation now. Furthermore, no significant effect was found for the number of people in the household of acquaintances, the education level and employment type of acquaintances on the financial situation.

Keywords: Circle of acquaintances, multilevel mixed effects ordered logistic regression, panel data, DNB Household survey, financial situation

Introduction

In today's day and age, the whole world seems to be connected more so than ever. Only a couple of decades ago, the circle of acquaintances consisted only of the people you knew from work, school of the neighborhood. With the arrival of social media, it now also includes people from all over the globe. It is no secret that social interactions have a lot of impact on life. It shapes the way you think, what you believe, the way you act and also what you aspire. One big area in which one's circle of acquaintances plays a big role is finance. This thesis aims to analyze the relationship between someone's circle of acquaintances and their households' financial situation.

Money affects nearly every decision and aspect in one's life. It creates opportunities, it can make you reach your goals and dreams and provides a certain level of security. While financial decisions are almost always individual decisions, one cannot neglect the impact a social circle has on them. Human beings are social beings and the decisions they make are often shaped by the people they surround themselves with.

Circles of acquaintances nowadays consist of more people than before. It contains people from work for instance, family, friends but also a lot of people online. All these people can be seen as a network which serves as some sort of platform to exchange ideas and information with regards to financial knowledge. Individuals can use these platforms to get financial mentorship and help by making big financial decisions. On the other hand, these social interactions can lead to a negative effect on financial situations as well. Peer pressure and societal norms can lead to decisions that do not complement one's lifestyle. Think about buying an expensive car or house just social acceptance.

This bachelor thesis will research the effect of one's circle of acquaintances on the financial situation of their household. The research focuses on males and females living in the Netherlands between the period 2018-2022. Several studies have been done where the effect of different variables, such as age, gender and health on the financial situation was tested. However there is not one paper that focuses on the effect on acquaintances, especially not with the data that is being used in this bachelor thesis. Hence why this thesis will research the effect of the circle of acquaintances with the following research question:

What does the circle of acquaintances of an individual say about the financial situation of their household?

Literature

This thesis will bring new insights into the effect of the social circle on an economic phenomena, in this case, the financial situation of someone's household. As mentioned, multiple studies have been done on this subject. For example the study of Caloia et al. (2019), in which the effect of peers on financial decisions, especially with regards to savings, was researched. The authors found that post policy change about deposit insurance, some depositors reallocated the deposits to maximize insurance coverage. A look into this behavior, showed that depositors with more financially sophisticated peers, were more cautious with their saving behavior. This suggests that peers do have some influence in the financial behavior of an individual.

Another study of Oikonomou (2019) looks at the effect of social interactions on economic behavior of households, using data from the DNB Household survey in the period 2010-2017. They find that there are just some significant peer effects with moderate magnitudes. The study finds no influence from peer characteristics when it comes to saving and investment decisions. However, there are some significant peer effects associated with the belief that one's actions determine life outcomes, as well as the view on whether wealth is a matter of fate.

On the topic of risk aversion, the study shows contradicting results with a few significant peer effects. The increase of average peer income for example, leads to mixed patterns on risk aversion of individuals. But it also shows that higher average peer income is related to a strong bequest motive among individuals with regards to inheritance decisions.

Regarding stock ownership, the analysis shows a negative correlation between the number of companies individuals have invested in and the financial advice received from their social circle/acquaintances. However, there are no significant peer effects found on household savings.

Overall, the study concludes that the existing peer effects tend to be limited in magnitude and vary across different financial decisions. The findings do not strongly support the significance of peer effects on households' economic behavior, suggesting that other factors may have a more substantial influence on individual financial decisions.

A third study of Hong et al. (2004) used data from the Health and Retirement study (HRS) done by the University of Michigan conducted in 1992, focusing on households with members born between 1931 and 1941. The study looks at stock market participation and social interaction. It found that people who interact more with neighbors and attend church, are more likely to invest in stocks. Secondly, the social influence in states with higher participation is stronger. And perhaps the most interesting finding of this

study was the fact that the difference between socially active and households that are not so socially active has expanded. However, this finding was not that certain.

Comparable to the study of Hong et al. (2004), a study of Brown et al. (2004) investigated the effect of geographical area on equity market participation. The researchers used a panel of tax returns from 1987 to 1996 which provided a nationally representative dataset. They used dividend income and capital gains on tax returns as proxies for equity ownership measurement and defined “community” as anything within a 50-mile radius around a household. This study found correlation between the proxies for equity ownership and the actual ownership. In other words, the participation in the stock market of an individual was positively correlated with the participation of the individuals of their local community. Especially when the individual was less economically sophisticated. Moreover, they found that individuals were more influenced by their peers, so individuals with the same age and income for example. The second effect is that proximity to publicly-traded firms increases equity ownership, particularly among higher income individuals. These findings suggest that both community influence and proximity to local firms play a role in individuals' decisions to participate in the stock market.

In relation to the study of Brown et al. (2004), another study of Ivkovich and Weisbenner (2004) showed evidence of causal relation between investments done by individuals and their neighbors. Here they used data on stock investments from around 36,000 households from 1991 to 1996. The study found evidence of diffusion of information. To be more precise, an increase in stock purchases of their neighbors by ten percentage points, leads to an increase of two percentage points of the household. This effect is more noticeable for local stocks. The finding stay robust after controlling for fixed effects, inside information effects and domination of a company in the neighborhood. Furthermore, it found that information diffusion predicts industry-level returns. This means that an increase in diffusion leads to an increase in industry returns. These findings can potentially be linked to an individual level where information diffusion of more sophisticated peers can lead to a better financial situation, and thus be interesting for this thesis.

This bachelor thesis will use different data than used for the studies mentioned above. Keeping in mind that those studies found similar results with different data, it is expected that there will be a significant effect of the circle of acquaintances on the financial situation of households. Based on previous research done by these papers, this thesis predicts that individuals with a higher educated circle of acquaintances that have a better job and a higher average income, will lead to a better financial situation. Whereas age, hours of work and number of persons in the circle of acquaintances will not have a significant effect on the financial situation. By intuition, acquaintances with more income, have better connections and thus can lead to a better financial situation. Moreover, acquaintances which are older and better educated

have more experience and knowledge on financial aspect. These can result in spillover effects which possibly lead to a better financial situation of the individuals household as well.

Data

The data that will be used in this thesis is from the DNB household survey. The survey is done every year starting from 1993 by Centerdata research institute. It consists of more than 1800 household every year and has six questionnaires, namely:

1. General information on the household
2. Household and work
3. Accommodation and mortgages
4. Health and income
5. Assets and liabilities
6. Economic and Psychological Concepts

The variables and their corresponding survey questions that will be included in this research are listed in table 1, these variables are part of the questionnaire Economic and psychological concepts.

Table 1.

This table consists of the variable descriptions, variable names, survey questions and the possible answer options of the DNB Household survey. The variables FINSITU, KENHH, KENINK and KENOPL are ordinal, while KENLTD and KENWERK are categorical. The variables MANUUR and VROUWUUR are both continuous variables in a range of 0 to 100.

Variable description	Variable name	Question in the survey	Answer options
Financial situation of the respondent's household	FINSITU	How is the financial situation of your household at the moment?	1: there are debts 2: need to draw upon savings 3: it is just about manageable 4: some money is saved 5: a lot of money can be saved
Age of acquaintances	KENLTD	Into which age category do most of the people in your circle of acquaintances go?	1: under 16 2: 16 – 20 3: 21 – 25 4: 26 – 30 5: 31 – 35 6: 36 – 40 7: 41 – 45 8: 46 – 50 9: 51 – 55 10: 56 - 60 11: 61 - 65 12: 66 - 70 13: 71 years or over

Number of people in the households of acquaintances	KENHH	How many persons do most households of your acquaintances consist of?	1: one person 2: two persons 3: three persons 4: four 5: five persons 6: six persons or more
Income of acquaintances	KENINK	How much do you think is the average total net income per year of those households?	1: less than € 10,000 2: between € 10,000 and € 14,000 3: between € 14,000 and € 22,000 4: between € 22,000 and € 40,000 5: between € 40,000 and € 75,000 6: € 75,000 or more -9: don't know
Education level of acquaintances	KENOPL	Which level of education do most of your acquaintances have?	1: primary education 2: junior vocational training 3: lower secondary education 4: secondary education/pre-university education 5: senior vocational training 6: vocational colleges/first year university education 7: university education
Employment of acquaintances	KENWERK	What kind of employment do most of your acquaintances have?	1: self-employed 2: practicing a free profession (freelance) 3: working in the family business 4: employed on a contractual basis 5: no paid job
Hours of work per week of acquaintances (Male)	MANUUR	If you think of the men among your acquaintances, how many hours per week do they work on average?	Fill in a number between 0 and 100 hours a week.
Hours of work per week of acquaintances (Female)	VROUWUUR	If you think of the women among your acquaintances, how many hours per week do they work on average?	Fill in a number between 0 and 100 hours a week.

Besides the variables listed in table 1, this thesis uses some other variables to rearrange and manipulate the data in order to test the research question. These variables are the nohold (which is an unique index number of the household) and nomem (which is the index of an individual in the household). These

variables are used to create a unique identifier per respondent of the survey in each year. For example, if an individual of household 1234 and a index of 1 filled in the survey, this individual will get the unique id of 12341. By creating the unique identifier, it is possible to drop all observations that did not fill in the survey for multiple years and thus will not be able to be included in the panel data for this thesis. With this idDup variable, a new variable ID_dummy is created to be able to account for fixed effects in the model. This will help control for possible factors that are specific for an individual but do not change over time. Take the amount of people living in an individuals household for example. This can have a significant influence on the households' financial situation, however it can be argued that this does not change very much/often. To account for these types of variables (which are not available in the data), the study uses fixed effects. (Best & Wolf, 2014)

Furthermore, an extra variable "year" is created to be able to clean up the data. The raw data consists of 39,548 observations. After dropping all observations where there is no information on the financial situation, the total observations drop down to 13,376. Besides these observations, the ones where respondents filled in -9 for acquaintances' income (KENINK) need to be removed as well, since this will not contribute to the research. Doing so, leaves the data for this thesis with 9,578 observations.

To end up with solely the respondents that filled in the survey for five consecutive years, it is necessary to check whether there are duplicates with regards to the unique identifiers and drop those that are not in the data five times. The data now ends up consisting 3,790 observations, with only the respondents that filled in the DNB household survey for the years 2018 up until 2022. The summary statistics of the variables are given in table 2.

Table 2.

The sample consists of 3,790 observations from the years 2018 to 2022. FINSITU is the financial situation of the household, with L1 to L4.FINSITU included as lags. KENLTD, KENHH, KENINK, KENOPL and KENWERK are the age, number of household members, income, educational level and type of employment of acquaintances respectively. VROUWUUR is the amount of hours per week worked by females in the circle of acquaintances and idDup is the manually created variable to get duplicates of ID's.

	<i>Observations</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min</i>	<i>Max</i>
<i>First lag of the financial situation of the household (L1.FINSITU)</i>	3,032	3.781992	.876561	1	5
<i>Second lag of the financial situation of the household (L2.FINSITU)</i>	2,274	3.735268	.8840951	1	5
<i>Third lag of the financial situation of the household (L3.FINSITU)</i>	1,516	3.720976	.8829044	1	5
<i>Fourth lag of the financial situation of the household (L4.FINSITU)</i>	758	3.709763	.8678522	1	5
<i>Financial situation of the household (FINSITU)</i>	3,790	3.78971	.8756702	1	5
<i>Age of acquaintances (KENLTD)</i>	3,790	8.984433	2.735459	1	13
<i>Number of people in the households of acquaintances (KENHH)</i>	3,790	2.588918	1.01656	1	6
<i>Income of acquaintances (KENINK)</i>	3,790	4.298681	.8248409	1	6
<i>Education level of acquaintances (KENOPL)</i>	3,790	5.127968	1.262461	1	7
<i>Employment of</i>	3,790	4.021636	.8197589	1	5

<i>acquaintances</i>					
(KENWERK)					
<i>idDup</i>	3,790	4	0	4	4
<i>Hours of work per week of female acquaintances</i>	3,790	22.02955	12.54499	0	80
(VROUWUUR)					

The table shows for example that the mean of the age of acquaintances (KENTLD) is 8.98 (≈ 9) which corresponds to a mean age between 51 and 55 years old. Furthermore, as can be seen in table 2, the minimum and maximum value of idDup is equal to 4. This means that every unique identifier is in the final dataset for a total of five times (the years 2018-2022).

Since this thesis uses panel data where the previous values of the financial situation also have an influence on the values now, it also includes lags of the financial situation as independent variables. In total, an amount of four lags have been included since this gives the best fit to the model according to the Bayesian Information Criterion (BIC) values. The lower the BIC values, the better the fit of the model. (Clement, 2014)

Methodology

The timeframe that will be used in this research is 2018 till 2022. Reason being is the fact that there has not been a study that has used these data in this timeframe. Furthermore, the questions, and thereby variables, asked in the survey differ and have not been the same as those from 1993. Hence the short timeframe of five years.

As the dependent variable of this research is ordinal, the method used in this thesis will be an ordinal logistic regression. With an ordinal logistic regression one can test whether ordinal and continuous independent variables have an effect on an ordinal dependent variable. An ordinal variable is seen as a variable with a clear order in its possible answers. As for the dependent variable financial situation of the household (FINSITU) in this thesis, it had the possible answer options:

- 1: there are debts
- 2: need to draw upon savings
- 3: it is just about manageable
- 4: some money is saved
- 5: a lot of money can be saved

The difference in interpretation between ordinal regressions and linear regressions is the fact that linear regressions give the effect of one single unit increase or decrease on the dependent variable, whereas with an ordinal regression one can interpret the odds that one answer option of one of the independent variables has a higher or lower score on the dependent variable. (University Of st-Andrews, n.d.)

As for the ordinal logistic regression method, the data needs to meet some assumptions. First the dependent variable needs to be ordinal. Since this thesis uses an ordinal dependent variable, there is no need to account for this assumption, thus it is met.

Secondly, the independent variables have to be either ordinal, continuous or categorical. For this thesis we use the independent variables age of acquaintances (KENLTD), household members of acquaintances (KENHH), income of acquaintances (KENINK), educational level of acquaintances (KENOPL), employment of acquaintances (KENWERK), amount of hours worked by male acquaintances (MANUUR) and amount of hours worked by female acquaintances (VROUWUUR)

which have been discussed in length in the data section. Of the variables, KENLTD, KENHH, KENINK and KENOPL are ordinal, KENWERK is categorical and MANUUR and VROUWUUR are continuous.

The third assumption says that there should be no multicollinearity. This is the case when at least two independent variables are highly correlated with each other. This can result in skewed or misleading results, such that the understanding of the response variable will be complicated. Some consequences are wider confidence intervals, less reliable likelihood estimates for predictors and significant variables becoming insignificant. In other words, multicollinearity can lead to biased results.

To test for multicollinearity, this thesis uses two different tests. The first one is a correlation coefficient matrix. In this matrix, the correlation between two variables will be presented. Correlation coefficients which are close to 0.8 are likely to cause multicollinearity. The results (Appendix A) show that the variables that denote the amounts of hours worked by male and female acquaintances (MANUUR and VROUWUUR, respectively) have a correlation coefficient of 0.806. To determine which of these variables should be dropped, a Variance Inflation Factor (VIF) test is done. Appendix B contains the VIF values of the variables, MANUUR has a higher VIF value (3.53) than VROUWUUR (3.19), so MANUUR will be dropped. After dropping, the VIF value of VROUWUUR dropped to 1.67 which implies that there is no multicollinearity anymore. (Shrestha, 2020)

The final and most important assumption of ordinal logistic regressions, is the assumption of proportional odds. This states that the relationship between the independent variables and the odds of a higher category (or lower category) on the ordinal dependent variable is consistent across all levels or cutpoints of the dependent variable. To put it differently, it assumes that the effect of the independent variables on the odds of moving between categories is constant. This implies that the dependent and independent variables have the same relationship for all levels (options) of the ordinal scale.

To test for this assumption, this thesis conducts a brant test. The results, as can be seen in Appendix C, show that the assumption has been violated, thus suggesting that the effects of the first and third lag of the financial situation, age of acquaintances and hours worked by female acquaintances per week (L1.FINSITU, L3.FINSITU, KENLTD and VROUWUUR, respectively) differ depending on the level of the ordinal scale. This violation causes for the study to choose a different modelling technique. Instead of using an ordered logistic regression, a multinomial logistic regression, such as the Multilevel mixed-effects ordered logistic regression will be a better fit for the available data. (University Of st-Andrews, n.d.)

With this model, the dependent variable has multiple categories with the goal to estimate the relationship between the independent variables and the log-odds of being in a certain reference category. The

difference between the multinomial model and the ordered logistic model is the fact that the multinomial model does not assume ordered categories and thus no proportional odds. Hence why this thesis can make use of this model.

Besides difference in approach, there is a difference in interpretation as well. As mentioned, the multinomial logistic regression has coefficients which represent log odds of being in a category compared to the reference category of the independent variable. For example, this thesis wants to study the effect of the income of the circle of acquaintances on the households' financial situation. Let us say that income of acquaintances has three categories, namely bad, good and best with acquaintances' income as independent variable. The coefficients of the multinomial logistic regression would show how the odds of choosing good and best change compared to the odds of choosing for bad (reference category), for a one unit (moving from one reference category to another category) change in the independent variable. A positive coefficient suggests higher odds of choosing the corresponding option, while a negative coefficient suggests lower odds, compared to the reference category. (Hedeker, 2003)

This results in the following regression model for this thesis:

$$\text{Logit}(P(\text{finsitu} < k)) = \alpha_k + \beta_1 \text{KENLTD}_{i,j} + \beta_2 \text{KENHH}_{i,j} + \beta_3 \text{KENINK}_{i,j} + \beta_4 \text{KENOPL}_{i,j} + \beta_5 \text{KENWERK}_{i,j} + \beta_6 \text{VROUWUUR}_{i,j} + \beta_7 \text{ID_dummy}_{i,j} + \beta_8 \text{L1.FINSITU}_{i,j} + \beta_9 \text{L2.FINSITU}_{i,j} + \beta_{10} \text{L3.FINSITU}_{i,j} + \beta_{11} \text{L4.FINSITU}_{i,j} + \varepsilon_{i,j}.$$

The formula represents the log-odds of the financial situation of the household (FINSITU) being in or below category k, while considering the effects of the independent variables (KENLTD, KENHH, KENINK, KENOPL, KENWERK, VROUWUUR, ID_dummy) and the lagged dependent variables (L1.FINSITU, L2.FINSITU, L3.FINSITU, L4.FINSITU). α_k represents the intercept term for category k. β_1 to β_{11} are the fixed effects coefficients corresponding to the independent variables.

$\varepsilon_{i,j}$ represents the residual errors, accounting for the within-individual and within-time variation.

Where i and j represent individual i in year j respectively.

Empirical analysis

Table 3.

This table contains results of a multilevel mixed effects ordered logistic regression on the dependent variable FINSITU (financial situation of the household of the respondent). The data consists of 758 clusters out of 3,790 observations. L1.FINSITU to L4.FINSITU are the lags included in the model, KENLTD, KENHH, KENINK, KENOPL and KENWERK are the age, number of household members, income, educational level and type of employment of acquaintances respectively. VROUWUUR is the amount of hours per week worked by females in the circle of acquaintances. ID_dummy is the dummy to account for individual fixed effects. ***, ** and * indicate that the p-value is significantly different from zero at the 1% , 5% and 10% level respectively.

	FINSITU
<i>First lag of the financial situation of the household (L1.FINSITU)</i>	1.182*** (0.150)
<i>Second lag of the financial situation of the household (L2.FINSITU)</i>	0.610*** (0.131)
<i>Third lag of the financial situation of the household (L3.FINSITU)</i>	0.371*** (0.141)
<i>Fourth lag of the financial situation of the household (L4.FINSITU)</i>	0.456*** (0.130)
<i>Age of acquaintances (KENLTD)</i>	-0.093** (0.043)
<i>Number of people in the households of acquaintances (KENHH)</i>	-0.909 (0.092)
<i>Income of acquaintances (KENINK)</i>	0.393*** (0.117)
<i>Education level of acquaintances (KENOPL)</i>	0.022 (0.072)
<i>Employment of acquaintances (KENWERK)</i>	0.080 (0.102)
<i>Hours of work per week of female acquaintances (VROUWUUR)</i>	-0.011** (0.006)
<i>Identity dummy (ID_Dummy)</i>	-0.000 (0.000)
N	3,790
Clusters	758
Prob > Chi2	0.000***

After performing the test, a few independent turn out to have a significant effect on the financial situation of an individuals' household. First off, the test returns a Prob > Chi2 of 0.000 which means that the overall model is significant. Furthermore it can be seen that the lags of the households' financial situation (FINSITU) and the income of acquaintances (KENINK), are significant on a 1% significance level. Whereas the amount of hours worked per week for females and the age of acquaintances (VROUWUUR and KENLTD) are significant on a 5% significance level. This means that the number of household

members, education, employment of acquaintances (KENHH, KENOPL, KENWERK) and identity dummy (ID_Dummy) have no significant effect on the financial situation of a household.

To further investigate the precise effect of the independent variables, a look at the average marginal effects (Appendix D) is needed. For each category of the financial situation (1, 2, 3, 4, and 5), the estimated marginal effects tells how a one-unit change in the independent variable (moving from one category to another) affects the probability of being in that category. For example,

1. For category 1 (there are debts), a one-unit increase in the income of acquaintances (moving from one category to the next) is associated with a decrease of approximately 0.0030 (0.3 percentage points) in the predicted probability of belonging to category 1, holding all other variables constant. This decrease is statistically significant at the 5% level.
2. For category 2 (need to draw upon savings), a one-unit increase in the income of acquaintances is associated with a decrease of approximately 0.0177 (1.8 percentage points) in the predicted probability of belonging to category 2, holding all other variables constant. This decrease is statistically significant at the 1% level.
3. For category 3 (it is just about manageable), a one-unit increase in the income of acquaintances is associated with a decrease of approximately 0.0221 (2.2 percentage points) in the predicted probability of belonging to category 3, holding all other variables constant. This decrease is statistically significant at the 1% level.
4. For category 4 (some money is saved), a one-unit increase in the income of acquaintances is associated with a decrease of approximately 0.0004 (0.04 percentage points) in the predicted probability of belonging to category 4, holding all other variables constant. These results are not statistically significant.
5. For category 5 (a lot of money can be saved), a one-unit increase in the income of acquaintances is associated with an increase of approximately 0.0432 (4.3 percentage points) in the predicted probability of belonging to category 5, holding all other variables constant. This increase is statistically significant at the 1% level.

Furthermore, from the results it can be derived that the lags of the financial situation (L1.FINSITU up to L4.FINSITU) have a significant effect on the financial situation of the household as well, except from category 4. Also, the effect of the amount of hours worked per week by female acquaintances (VROUWUUR) is significant on a 10% level for the categories 2, 3 and 5, with a very small effect of 0.1% on the log-odds. All in all, it can be concluded that the income, age, amount of hours worked by

female acquaintances and the previous values of the financial situation of the household have a significant effect on the financial situation of an individual's household.

Conclusion

In conclusion, this thesis aimed to investigate the relationship between an individual's circle of acquaintances and the financial situation of their household. By analyzing data from the DNB Household survey for the years 2018 to 2022, several variables related to the circle of acquaintances were examined, including age, number of household members, income, educational level, and employment status. The financial situation of the household was measured using a five-point scale.

The findings of this thesis provide valuable insights into the impact of social interactions on household finances. The results indicate that the characteristics of one's circle of acquaintances can indeed influence their financial situation. Specifically, individuals with a circle of acquaintances who have higher average incomes, tend to have better financial situations. This suggests that being surrounded by financially knowledgeable and successful individuals can positively influence one's financial decisions and outcomes. Furthermore, it found that an older circle of acquaintances leads to an increase in the log-odds of a better financial situation of the household, except for the transition from category 4 to 5, there it leads to a decrease. However, the study did not find significant effects of employment, education level, and the number of persons in the circle of acquaintances on the financial situation.

The findings of this thesis contribute to the existing literature by emphasizing the importance of considering social networks and their influence on financial outcomes. Understanding the role of the circle of acquaintances can help individuals make informed financial decisions and adopt positive financial behaviors. Policymakers and financial institutions can also benefit from these insights by developing strategies to promote financial literacy and providing support networks for individuals to enhance their financial well-being.

For further research it can be advised to use different data. Including data which have now been accounted for through fixed effects, such as number of people in the respondents household or employment of the respondents, can lead to different or less biased results. Besides, a continuous number as FINSITU instead of it being an ordinal variable, can be easier to interpret and draw conclusions from for further research.

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Appendices

A. Correlation table

This table presents the correlation matrix.

	finsitu	L1. finsitu	L2. finsitu	L3. finsitu	L4. finsitu	kenltd	kenhh	kenink	kenopl	kenwerk	manuur	vrouwuur
finsitu	1.000											
L1.	0.613	1.000										
L2.	0.575	0.647	1.000									
L3.	0.522	0.581	0.619	1.000								
L4.	0.487	0.523	0.560	0.578	1.000							
kenltd	-0.088	-0.052	-0.118	-0.056	-0.062	1.000						
kenhh	0.060	0.078	0.060	0.087	0.076	-0.436	1.000					
kenink	0.231	0.216	0.178	0.162	0.133	-0.128	0.351	1.000				
kenopl	0.156	0.140	0.147	0.082	0.111	-0.321	0.187	0.407	1.000			
kenwerk	0.004	0.001	-0.031	-0.033	-0.046	0.252	-0.185	-0.141	-0.100	1.000		
manuur	0.042	0.059	0.084	0.060	0.064	-0.595	0.388	0.199	0.204	-0.439	1.000	
vrouwuur	0.026	0.058	0.069	0.055	0.054	-0.599	0.279	0.178	0.270	-0.327	0.806	1.000

B. VIF test

This table shows the result of the VIF test.

	VIF
MANUUR	3.53
VROUWUUR	3.19
L2.FINSITU	2.18
L1.FINSITU	1.98
L3.FINSITU	1.98
KENLTD	1.97
L4.FINSITU	1.72
KENHH	1.46
KENINK	1.42
KENOPL	1.35
KENWERK	1.25

C. Brant test

Brant test for proportional odds assumption. ***, ** and * indicate that the p-value is significantly different from zero at the 1% , 5% and 10% level respectively.

	chi2	p>chi2	df
L1.finsitu	12.34	0.006**	3
L2.finsitu	2.68	0.443	3
L3.finsitu	6.88	0.076*	3
L4.finsitu	2.61	0.456	3

kenltd	7.21	0.066*	3
kenhh	2.09	0.553	3
kenink	3.39	0.335	3
kenopl	1.88	0.597	3
kenwerk	0.92	0.822	3
vrouwuur	6.88	0.076*	3
id_dummy	1.11	0.773	3

D. Average marginal effects

This table shows the marginal effects of the multilevel mixed effects ordered logistic regression on the dependent variable FINSITU. L1.FINSITU to L4.FINSITU are the lags included in the model, KENLTD, KENHH, KENINK, KENOPL and KENWERK are the age, number of household members, income, educational level and type of employment of acquaintances respectively. VROUWUUR is the amount of hours per week worked by females in the circle of acquaintances. ***, ** and * indicate that the p-value is significantly different from zero at the 1% , 5% and 10% level respectively.

	$\frac{dy}{dx}$
L1.FINSITU	
1	-.009*** (.003)
2	-.053*** (.007)
3	-.066*** (.009)
4	-.001 (.007)
5	.130*** (.015)
L2.FINSITU	
1	-.005*** (.002)
2	-.028*** (.006)
3	-.034*** (.008)
4	-.001 (.004)
5	.067*** (.014)
L3.FINSITU	
1	-.003** (.001)
2	-.017** (.007)
3	-.021*** (.008)
4	-.000

5 (.002)
.041***
(.016)

L4.FINSITU

1 -.003***
(.001)
2 -.021***
(.006)
3 -.026***
(.007)
4 -.000
(.003)
5 .050***
(.014)

KENLTD

1 .001**
(.003)
2 .004**
(.002)
3 .005**
(.002)
4 .000
(.001)
5 -.010**
(.005)

KENHH

1 .001
(.001)
2 .004
(.004)
3 .005
(.005)
4 .000
(.001)
5 -.010
(.010)

KENINK

1 -.003**
(.001)
2 -.018***
(.005)
3 -.022***
(.007)
4 -.000
(.002)
5 .043***
(.013)

KENOPL

1 -.000

	(.001)
2	-.001
	(.003)
3	-.001
	(.004)
4	-.000
	(.000)
5	.002
	(.008)
<i>KENWERK</i>	
1	-.001
	(.001)
2	-.004
	(.005)
3	-.005
	(.006)
4	-.000
	(.000)
5	.009
	(.011)
<i>VROUWUUR</i>	
1	.000
	(.000)
2	.001*
	(.000)
3	.001*
	(.000)
4	.000
	(.000)
5	-.001*
	(.001)
