



Degrees of Debt
**The relationship between formal educational attainment,
debt and debt relief amongst Austrians, a sequential
mixed-methods analysis**

Authors:

Andrijevic Marina
Bärnthaler Richard
Dausendschön Alina
Lewitus Evan
Panhuber Lisa

Course:

Quantitative and Qualitative Methods II

January 21st, 2016

Table of Contents

ABSTRACT	3
INTRODUCTION	3
STATE OF THE ART AND THEORETICAL FRAMEWORK	4
EMPIRICAL DESIGN	6
QUANTITATIVE ANALYSIS	7
TO SUMMARIZE THE RESULTS OF ALL REGRESSION MODELS	10
QUALITATIVE ANALYSIS	11
THE RESULTS OF THE QUALITATIVE ANALYSIS	12
DISCUSSION OF MIXING QUANTITATIVE AND QUALITATIVE RESULTS	16
CONCLUSION	16
REFERENCES	17

Abstract

The influence of education on debt is a phenomenon that is often neglected and inadequately addressed in research. This paper illustrates how educational attainment affects debt profiles. The predominant part of the existing research on the relation between educational attainment and debt is mainly concerned either with the accumulation of student debt due to educational attainment or with rough conclusions on the relation of educational attainment and the amount of debt. This paper seeks to give a more concrete picture through the consideration of debt profiles as multi-faceted concept that includes several characteristics of debt, beyond total amount: the number of loans for housing or apartments, the housing debt to disposable income ratio, the type of credit, financial pressure, the ability to deal with unexpected costs, and delay of payments. The authors use a sequential mixed-methods approach. Concerning the quantitative research, a logistic regression analysis detects the main relations between the type and amount of formal education, and certain characteristics of an individual's debt profile. Qualitative evidence is garnered through expert interviews; it reveals why individuals with different levels of education acquire the specific debt profiles that they do, and how individuals with different levels of education handle their debt. The paper concludes that whilst quantitative analysis only allows for indirect and ambiguous results indicating a relation between higher debt and formal educational attainment, the insights gained through qualitative interviews demonstrate the relevance of education concerning debt: on social environment and networks, and abilities to understand financial deals.

Introduction

In this paper, we look at the relationship between formal educational attainment, debt profile and debt relief through a mixed-methods analysis. We try to answer two main questions: First, how does the level of education influence the handling of debt and credits in Austria? Second, what are the triggers and root causes that make people less successful in managing their income and expenses?

Little research on the connections between education, debt profile and debt relief in Austria or any Central and Eastern European (CEE) country is currently available or being conducted. Most knowledge on this subject comes from the United States and the United Kingdom, and is rarely the central focus of such studies: formal education serves as one demographic factor amongst many. Data from the European Union's 2012 Statistics on Income and Living Conditions (EU-SILC), and the Austrian National Bank's analysis of 2003 EU-SILC data in their report "Characteristics of Household Debt in Austria", enabled research in this area to be conducted. Research on financial literacy, while also based primarily in the United States, was also used as an appropriate, although indirect, basis for this research project. While differences between US, UK and Austrian systems of debt, financialization and debt repayment are present, we believe they will not pose any significant distortions that would deeply affect our comparisons nor the external validity of our findings.

To understand the logic of consumer behavior in taking out and handling debt, we start from the idea of *consumer rationality*. Insights from behavioral economics point out that many psychological factors need to be taken into account when analyzing economic decisions. In their paper about household financial management, Hilgert et al. (2003) show how behavioral economics offers a framework for studying behaviors that seem inconsistent or irrational:

e.g., consumers who hold money in a savings account earning interest at 2 percent while carrying balances on credit cards and paying 18 percent interest.

To find trends and relationships between education, debt profile and debt relief, as well as the potential explanations behind them, we use both quantitative and qualitative methods in a sequential mixed-methods procedure. The 2012 EU-SILC survey serves as our quantitative data, and semi-structured interviews of three experts working at three different Austrian debt counseling agencies serves as our qualitative data. The results from the quantitative analysis were used to construct the interview guideline used for all interviews. This ensured the internal validity of our research.

We will start by looking at current literature on education and its connections to debt and debt relief, focusing primarily on the notion of financial literacy as well as its causes and effects. The overall research design will then be laid out. As our process of data collection was sequential mixed methods, we will first analyze the quantitative and then the qualitative method and results. We will discuss each methods' results in light of the current literature and data; and then discuss what the two methods can tell us together and how they enlighten current research and can influence future research.

State of the Art and Theoretical Framework

As there are no studies concerning the direct link between heads' of households (HOH), educational attainment and debt profiles, we must approach the phenomena through indirect routes. We turn to factors that influence and are influenced by educational attainment that in turn affect financial behavior: financial literacy and debt literacy. Then we look at how those factors are shown to affect different aspects of debt; and their relationship to educational attainment.

Debt literacy is a specific type of financial literacy, and more directly relevant to our research. It is measured by questions testing knowledge of fundamental concepts related to debt and by self-assessed financial knowledge. (Lusardi and Tufano, 2009) Financial experiences are the participants' reported experiences with traditional borrowing, alternative borrowing, and investing activities. Over-indebtedness is a self-reported measure. Lusardi and Tufano (2009) conducted a study in the United States that found that debt literacy is low: only about one-third of the population seems to comprehend interest compounding or the workings of credit cards. Even after controlling for demographics, they found a strong relationship between debt literacy and both financial experiences and debt loads. Specifically, individuals with lower levels of debt literacy tend to transact in high-cost manners, incurring higher fees and using high-cost borrowing.

Financial literacy is more broadly researched and understood, and will therefore be discussed in more depth. It is defined as, "people's ability to process economic information and make informed decisions about financial planning, wealth accumulation, debt, and pensions" (Lusardi and Mitchell, 2013, p.6). To determine financial literacy, questions are asked concerning: "(i) *numeracy and capacity to do calculations related to interest rates*, such as compound interest; (ii) *understanding of inflation*; and (iii) *understanding of risk diversification*" (ibid, p. 10). Answers are then analyzed independently, as well as weighted and indexed into a financial literacy 'score'. While not all of those aspects relate directly to debt, we can both assume and show in the evidence that greater information and thus

understanding of financial tools and economic mechanisms will, under the rational actor theory, lead to better decisions concerning potential debt.

Most individuals cannot perform simple economic calculations and lack knowledge of basic financial concepts, such as the working of interest compounding, the difference between nominal and real values, and the basics of risk diversification. Knowledge of more complex concepts, such as the difference between bonds and stocks, the working of mutual funds and basic asset pricing is even scarcer. Financial illiteracy is widespread among the general population and particularly acute among specific demographic groups, such as women, African Americans, Hispanics, and those with low educational attainment. (Lusardi, 2008)

In their overview of financial literacy, Lusardi and Mitchell laid out the 'state of the art' for relationships between education and financial literacy (2013). Thus far, it points to significant correlations between higher educational attainment and greater financial literacy. Other factors involved in determining both financial literacy and educational attainment include variables that i) affect HOH willingness or ability to attain more education, and ii) are affected by HOH educational attainment. The former includes: parents' educational attainment (Heineck and Riphahn, 2009; Ermisch and Francesconi, 2001), risk aversion (Belzil and Leonardi, 2013; Dohmen et al., 2010), and family income and wealth (Ermisch and Francesconi, 2001). The latter includes income, as well as patience and discount rates (Harrison et al., 2002).

The factors common to both phenomena are cognitive ability and the cognitive ability of peers (Cole and Shastry, 2008; McArdle et al., 2009), but only the former is significantly evidenced. To make clear the possible indirect route that education and the education of HOH's parents can have on debt profiles, we put forth the following example: HOH's parents were highly educated, affecting HOH's cognitive ability, their cognitive ability affects their financial literacy as well as their ability to attain higher education which also affects their financial literacy, affecting their ability to make rational borrowing and debt-handling decisions.

In the next part of the equation, financial literacy is shown to have significant effects on credit portfolios, mortgage types and arrears. Disney and Gathergood (2012, p.20) show that "households with household heads who perform poorly on the financial literacy questions hold a greater fraction of high cost credit in their portfolios and thereby have higher portfolio-weighted average APRs." While Cox et al. (2011) show that the less financially literate and more risk averse choose traditional mortgages over the possibly more profitable or situationally appropriate 'alternative mortgage products'. Financial illiteracy can also lead to overconfidence and 'over-optimism' in economic decision-making skills, which was shown to correlate with a greater amount of mortgage arrears (Dawson and Henley, 2012).

Financial literacy, its causes and forms, do not lie just in the individual or the national spheres, but are also determined by larger macro-economic trends. New international research demonstrates that, "financial illiteracy is widespread when financial markets are well developed as in Germany, the Netherlands, Sweden, Japan, Italy, New Zealand, and the United States, or when they are changing rapidly as in Russia." (Lusardi and Mitchell 2011, abstract) Furthermore, within these countries the elderly, women, ethnic minorities and rural dwellers are less financially literate; while the highly educated are more literate, albeit the connection is not direct. (Lusardi and Mitchell, 2011)

Another aspect of financial behavior is risk taking. Grable defines financial risk tolerance as the “maximum amount of uncertainty that someone is willing to accept when making a financial decision” (2000, p.65). His research tried to examine how different demographic, socioeconomic, and attitudinal characteristics determine people’s attitude towards taking financial risk in “everyday money matter”. The findings imply that individuals who are male, young, married, have a higher income and higher education are more risk tolerant than their counterparts (i.e. female, older, etc.) (ibid, p.625).

Despite much research, it is still not settled whether education is a good proxy for financial literacy. But several authors conclude that, “those without a college education are much less likely to be knowledgeable about basic financial literacy concepts, as reported in several U.S. surveys and across countries. Moreover, numeracy is especially poor for those with low educational attainment” (Lusardi and Mitchell, 2013, p.20). However, other research shows that when controlling for various internal and external factors, formal educational effects become insignificant and/or ambiguous (Lusardi and Mitchell, 2011). When education and financial literacy are included in multivariate regression models, both tend to be statistically significant, indicating that financial literacy has an effect beyond education. Financial literacy is also higher among those who are working, and in some countries among the self-employed, compared to those who do not work. This difference may in part result from financial education programs offered in the workplace (as in the United States); it could also be the effect of learning from colleagues or skills acquired on the job (ibid).

Empirical Design

A sequential mixed-methods analysis was chosen as the most useful for answering our research question, and thus understanding the relationship between educational attainment, debt profile and debt relief. Neither method by itself could yield a complete answer to our research question. Without the quantitative data and analysis, useful interview questions and probes could not be developed. In addition, without the interview data and subsequent thematic mapping under a framework analysis, the quantitative relationships and strengths of such could not be explained within institutional-economic contexts.

We began with analyzing the EU-SILC data using logistic regressions in SPSS to test our hypothesis, find variable relationships as well as their strength. The contribution to the model was measured by R^2 , which measures the fit between the dependent and the independent variable. Due to the nature of our variables - many are nominal, and do not fit statistical assumptions of normality, linearity or homogeneity - logistic regression was found to be the most useful quantitative tool for analysis. Because few of the variables were continuous, we had to assess probabilities: e.g., that a person with a certain level of formal education was a member of a certain modeled category (e.g. has trouble paying back loans, has a consumption loan).

To explore the meaning of such relationships, uncover potential directions of causation, find new perspectives from which to view the data, as well as uncover possible gaps or contradictions between survey and expert information, the semi-structured expert interview was taken as our method of qualitative data collection. A guideline was developed to keep the interview topics consistent with each other, and with the quantitatively analyzed variables and relationships, or lack thereof. As our understanding of the variables and relationships was limited strictly to the data and previous literature, we kept the format semi-structured to allow experts to explore uncovered issues and perspectives. The interviews were then subjected to a framework analysis.

Framework analysis was chosen as the most appropriate qualitative tool to format and understand our qualitative data. While other tools, such as discourse analysis, would provide useful insights into the language and narrative of each expert, framework analysis allowed for each piece of qualitative data to be understood within common themes; thus more consistently and uniformly reflected against the quantitative data and current literature. Furthermore, the consistency of topics, ensured by using a single reference-guideline and a semi-structured interview format, easily enabled the establishment of common themes, which underpins the process of framework analysis.

Quantitative Analysis

For the quantitative analysis, we looked into an extensive data set provided by the EU. The 2012 EU-SILC is a survey on statistics regarding income, poverty and living situations across the different member countries. For our purpose, it includes questions on housing credits, consumption credits, material hardship but also general information about the demographics of the persons interviewed. There are three different datasets, one includes the answers of the interviewees regarding the situation of their household, one contains responses regarding the personal sphere and was conducted on an individual level for each household member and one gives insights into the situation of children in the household also on an individual level.

All of the individual and household data was aggregated to the household level for reasons of consistency and data limitations. Thus, it was necessary to reduce varying characteristics within households to a single factor, which is representative for the household unit. Different degrees of educational attainment among household members had to be conflated to a single denominator. This paper assumes that decisions within a household (e.g. financial decisions) are highly influenced by the person with the highest educational attainment. Consequently, a respective 'household's educational attainment' is assumed to equal the highest educational attainment of an individual within this respective household.

This simplification is backed by many research findings; they illustrate that higher educational attainment leads to a stronger influence on joint decisions (see for example Carlsson et al., 2009), more decision (see for example Blood and Wolfe, 1960), and higher levels of decision power (see for example Lührmann and Maurer, 2007) within a household. The same simplification is necessary for the 'household age'. In order to be consistent with the former research findings we assume the age of an individual with the highest educational attainment within a respective household to be representative for the 'household age'. We refrained from using more independent variables as the process of using just the characteristic of the household member with the highest education is very likely to oversimplify the household behavior as such and we suspect that the results might not reflect the dynamics within a household.

As the aim of the research was to look at how people with different educational backgrounds handle their debt, the questions regarding credits were of particular interest to us. Respondents were asked to report if they are currently paying back any loans for housing, how many loans and the amount of repayment per month. They also had to report if they are having difficulties paying back these loans, if they feel pressure of paying back loans, which type of loans they took on, and more generally, if they are struggling to cover unexpected expenses. Additionally, we calculated the ratio of debts to disposable household income as a further indicator of financial burden.

We identified eight indicators asked in the questionnaire that could help us answer our research question. The indicators 1-6 cover general characteristics of a debt profile; and our goal was to see if a difference in education also leads to a difference in these characteristics of a household's debt profile. The last two indicators are more focused on the problems that can arise with debt. Our hypothesis was that households who are not able to finance unexpected costs have a limited financial leeway, which could also lead to repayment problems as soon as they are urged to take on debt. In order to simplify and adjust the questionnaire to our needs, we had to sum up some questions to create a new indicator or we grouped some of the answer possibilities together. The final dependent variables used for the regression analysis are:

1. Do you have a real estate loan? (no/yes)
2. Which type of loan are you using to cover your real estate investment? (Bauspardarlehen, Landesdarlehen, Bank- oder sonstiger Kredit)
3. What is the total sum of your real estate loans? (in €)
4. Housing debt/total disposable income ratio. (in %)
5. Do you have a consumption loan? (no/yes)
6. Have you been in delay of payment with your credit repayment obligations in the past 12 months? (no/yes)
7. Do you feel financial pressure when it comes to service your debt? (no/yes)
8. Are you able to finance unexpected costs? (no/yes)

In order to estimate the likelihood that a certain demographic characteristic, in our case education, influences the debt of a household, logit models were used. In most of the cases, the dependent variable was binary (yes or no), enabling the use of binary logistic regressions. For the continuous variables, namely the amount of loans in € and the percentage of the debt to income ratio, linear regression was used. For the nominal variable regarding the type of the loan (three possible answers) multinomial logistic regression was used (Rodríguez, 2007).

Originally, the possible answers for our independent variable (level of education) were split into various forms of schooling. For the purpose of this inquiry, these categories were aggregated in order to achieve an ordinal scale from lowest to highest level of education. The categories: *Lehre* and *Meisterausbildung* were combined, so were the categories *Krankenpflegeschule* and *Andere Berufsbildende Mittlere Schule* and the categories *AHS* and *Berufsbildende Höhere Schule*. Finally, we also did not differentiate between different university degrees. This aggregation resulted in the following six categories:

- 0= no schooling
- 1= mandatory schooling
- 2= apprenticeship (including those with *Meisterprüfung*)
- 3= middle school (*Krankenpflegeschule* or *andere berufsbildende mittlere Schule*)
- 4= high school (*AHS* + *berufsbildende höhere Schule*)
- 5= university

Additional control variables were age, age squared (as we wanted to control for the effect of age when it has a non-linear relationship with the independent variable) and household income.

In logistic regression, a tentative solution is chosen at the beginning and revised slightly in each step to see if the likelihood increases. The process is repeated until the increase in the likelihood function from one step to the next is negligible (DeMaris, 1992).

In this study we created five binary logistic regression models based on four predictors, education (ordinal), income, age and age squared (continuous). As an example, we look at the model that estimates how the predictor variables influence the likelihood of having a real estate loan or not. For the two possible response levels (no=0, yes=1), the maximum likelihood regression model is:

$$P(Y=1) = [1 + \exp(X_i b)]^{-1}$$

where Y_i is the state of case i , X_i is a vector of the predictor variables for case i , and b is a vector of coefficients to be estimated. The term on the right side of the equation is the logit transformation, that is, the logarithm of the odds. The predicted values Y , which are the probabilities of having a real estate loan, will lie between 0 and 1 over the ranges of the X 's (Ohlmacher & Davis, 2003).

The corresponding binary logistic regression equation can be written:

$$P(\text{real estate loan}) = 1 / [1 + \exp[-(\beta_0 + \beta_1 \text{education} + \beta_2 \text{income} + \beta_3 \text{age} + \beta_4 \text{age}^2)]]$$

The result of the regression was analyzed according to a number of criteria. First, we looked if the Block Omnibus Test is significant; this supports our hypothesis that the predictor independent variables contribute to the model. Second, we looked if the standard error of the variables is larger than two. This would indicate problems of multicollinearity among the independent variables and would require us to run the model a few times with varying compositions of independent variables. Third, we checked if the probability of the variables is lower than the level of significance of 0.05. Finally, we looked at the sign of the value of the coefficient. A negative sign implies that a one unit increase of that variable decreased the odds of the survey respondents having a real estate loan, a positive sign implies an increase. In order to check the results we also used cross-tabulation and scatterplots to have an isolated look at the relation between education and debt. A final look at the Nagelkerke pseudo R^2 value shows how much of the variability of the variables can be explained by the model and is thus an indicator if the model fits the data. Backhaus et al. (2003) suggest that a model with a value lower than 0.2 is acceptable, 0.4 is good and above 0.5 is very good. The same applies to the multinomial logistic model. For the linear regression models, we first looked at the respective scatterplot graph to identify patterns and check the F-Test. After running the linear regression, we check the F-Test to see if the relationship between the variables is significant. A look at the standardized coefficient reveals the type of the relation, positive or negative, and which of the independent variables has a higher impact on the dependent variable.

Before summarizing the results, it should be noted that the results of these models should be interpreted with caution for two reasons. First, the income of a person can change abruptly. A sudden drop in income due to unemployment or illness can lead to a deterioration of the financial situation of a person, which is not considered in these calculations. Second, the EU SILC questionnaire only provides data on the amount of housing debt, data on consumption debt or debt taken on to start a business are not included. This was detrimental for our analysis as these loans are considered the main cause of financial trouble for individuals. The items that were inquired were loans for cars, household appliances and other, undefined loans. For such loans, interviewees were asked only whether they do or do not have them; the amount, number and duration of such loans was not inquired. Repayment duties for credit card bills or informal loans were also not included in the questionnaire.

To summarize the results of all regression models

In this section, we want to give a short summary of our results. Representative for all eight models explained in the Annex 1, we present detailed results of Model 1 and Model 8 in the following tables and a summary of all models afterwards.

Model 1: The correlation between the independent variables and the prevalence of real estate loans in the sample group shows a clear picture. The result of the binary regression analysis suggests that both a rise in income and education increase the likelihood of having a housing loan. The low Nagelkerke R Square test (.153) however, poses some limitation to the validity of the model. Furthermore, the result of the crosstab of education and real estate loan are highly significant (Chi-Square Test .000; Pearson R Test .000), implying a positive correlation between education and the likelihood to have a real estate loan.

The coefficients of the binary logistic regression of the probability to have a real estate loan:

Variable	Coefficient	Standard Error	Significance
Education	,062	,026	,016
Age	,134	,013	,000
Age Square	-,002	,000	,000
Income	,000	,000	,000
Constant	-3,920	,278	,000

Model 8: The Block Omnibus Test for Model 8 is significant and there is no indication of multicollinearity among the independent variables. The probabilities for the variables education and income are lower than the level of significance of 0.05. The positive sign for both implies that a rise in income and a rise in the level of education increase the likelihood that a household is able to cover unexpected costs. The results for age are not significant, indicating that this variable has no direct impact on the independent variable. A look at the crosstab also revealed a significant relationship between the education variable and the ability to cover unexpected costs.

The results of Model No. 8: binary logistic regression - cover unexpected costs (pressure: no/yes)

Variable	Coefficient	Standard Error	Significance
Education	,394	,030	,000
Age	,017	,011	,132
Age Square	,000	,000	,242
Income	,041	,002	,000
Constant	-2,213	,266	,000

In summary, we got significant results for the independent variables education and income for the questions 1, 3, 5, 6, 7 and 8. This would imply that income and education do have an effect on a household's debt profile. The models suggest that an increase in education or an increase in income increases the ability to repay loans and cover unexpected costs; it lowers the perceived pressure of debt burden. Furthermore, it increases both the probability to have a real estate and the sum of the housing loan and the probability to have a consumption loan.

However, there was no relationship detectable between type of credit and level of education or income (question 2). The probability of the chi-square statistic was in both cases higher than the level of significance (0.05). A look at the scatterplot for question 4, the relationship between debt/income ratio and level of education, did not suggest a relationship between the two variables. However, the F Test shows that the correlation between the two variables is statistically significant. This result was very surprising for us. In addition, the result of the linear regression model showed that the significance of education and income is below the threshold of 0.05.

Yet, this was not the only surprise we faced when analyzing the data. For instance, we could not explain the very low number of people reporting that they are late with paying back their debt (97 out of 6000). This and other irregularities might be the result of deficiencies in the data collection process or response biases of the interviewees.

Finally, we have to report the limitations of our results. When considering the goodness-of-fit metric R^2 most of the regression models we set up did not fit the data to an appropriate degree. The pseudo R^2 values we derived were in most cases below the threshold of 0.2. The only model that does fulfill this criteria is model 8. In conclusion we have to state that the data set provided did not match our research question perfectly, which reduces the validity of our results. Due to the low goodness-of-fit results we conclude that our hypothesis of a strong relationship between education and the various characteristics of the debt profile is not supported, despite the significant results on six out of the eight parts of the debt profile. This final conclusion suggests that there must be other factors, which we were not able to include in our model, that have a significant impact on the debt profile and debt management of a person. In order to find out more about these missing variables we turned to experts in the field for qualitative data.

The detailed results of the regression models can be found in Annex 1.

Qualitative Analysis

Since the insights which the quantitative analysis of the 2012 EU SILC data could yield are limited, three semi-structured expert interviews were conducted. The selected experts are experienced professionals in the field of debt counseling and financial consumer protection who have worked at *Schuldnerberatung Wien*, *ASB Schuldnerberatungen* and *Arbeiterkammer Wien* for several years. While the prior two possess expert knowledge regarding people who seek aid because they cannot handle their debt anymore, the latter is particularly knowledgeable about the contractual interaction between their clients and banks. Yet, it should be noted that these experts, while providing some deep insights into certain people's handling of debt, cannot give a representative overview of the Austrian society. The clients of each institution have specific demographic characteristics, which is why it is not advisable to generalise to the whole population. That said, the expert interviews did generate rich information regarding their group of clients that helped us answer our research question.

After drafting an interview guide (see Annex 2), the three interviews, which lasted approximately 30 to 40 minutes each, were conducted by three different interviewers in the first week of December (for the partial transcripts see Annex 3). Although the guide gave some structure to the interview in order to assure that all relevant topics were covered in each interview, it was not followed absolutely. This partial leniency was allowed to give the experts the freedom to set their own focus on their fields of expertise.

The interviews were recorded, supplemented by field notes, and subsequently summarized. As the analysis remains largely at the manifest level and does not go into too much interpretation, only selected parts of the interviews were transcribed.

In the first phase of the analysis, each of the interviewers conducted a framework analysis of their respective expert interview in order to identify the main themes for every expert. This helped to thematize all relevant aspects without being influenced by the outcomes of the other interviews. Only in the second phase did the three interviewers come together and identify common themes of the experts. While there was considerable thematic overlap between the interviews, there were also discrepancies. Annex 5 summarizes the outcome of the framework analysis.

The interviews were conducted in German, the native language of the experts and the interviewers. The partial transcripts are in German, but the framework analysis (see Annex 5) as well as the quotes used in the “results of the qualitative analysis” section below were translated into English.

The results of the qualitative analysis

In the following, the three experts’ lines of argumentation are analyzed separately (see Annex 4) before comparing and contrasting the themes across the three cases (see Annex 5). This design was chosen in order not to lose each interview’s context and the coherence of the arguments, while still being able to make references across the cases, identify common themes and highlight differences.

Ferdinand Herndler

Mag. (FH) Ferdinand Herndler is CEO of the ‘Schuldnerhilfe’ in Upper Austria. He is a certified social worker and supervisor and has a degree in social sciences. For over two decades, he has been working with indebted people and has thus acquired great experience in the field. Mr. Herndler gave us information about the context and social environment of his clients but also about the legal framework in Austria. He partly confirmed the results of our quantitative analysis by arguing that the relationship between educational level and type of debt, quantity of loans and amount of loans is not decisive and from his experience does not play an important role. However, what he deems crucial when it comes to managing debt, are the social environment, social values and reasonable foresight. These areas are also more likely to differ between people with higher and lower education:

Some people, quite the ones with higher education, normally do not contact the Schuldnerberatung, as they have different approaches to solutions, this means they know lawyers, tax consultants. But what is even more important, the people with higher education make use of expert knowledge much faster. Our clients, mostly people with lower education, also have solution approaches but they are not always that constructive. If people have higher education they value expert knowledge more, see that it makes sense and talk to them earlier. (ll. 1-7)

Moreover, he points out that it is not only the clients who should be blamed for the increases in private bankruptcy cases. The dominant mindset of our high consumption society “is material belonging.” (ll. 10-11) The methods used by companies to increase their sales also play a role:

We also have to make the lenders and businesses more accountable. Twenty years ago there was not that an amount of possibilities to buy products in installments. (ll. 15-17)

Overall, Herndler argues that although education is an important factor, the root cause of many cases lies in the mindset of the people and thus in the values of our society. The fast pace of consumption and the deficiencies when it comes to anticipating the future consequences of our actions today bring many people into trouble.

Some people think only in the short-term but enter middle-term contracts and this does not fit together. If I enter middle-term contracts I have to think on the middle-term. If I only think on the short-term I will struggle. (ll. 26-29)

Therefore, the *Schuldnerhilfe* in Upper Austria has a strong focus on prevention activities and tries to enhance the financial literacy of the young. They cooperate with schools to create appealing school materials for teachers to use in various subjects and they offer courses and workshops themselves. People should be encouraged to talk about money, to understand the dynamics of interest payments and understand the rules of the game and finally they should also “question themselves do I really need this product and do I want this product.” (ll. 36-37)

Benedikta Rupprecht

Benedikta Rupprecht works as a legal counsel for members of the workers’ chamber (Arbeiterkammer Wien). She is a lawyer with a focus on loan contracts, which is why she advises her clients, who are all members of the workers’ chamber, in matters related to credit contracts; yet, she also worked at Schuldnerberatung under Alexander Maly’s guidance from 2003 to 2007. While her work gives her only limited insight into people’s ability to pay back, it does enable her to judge how her clients approach the contractual side to credits. In Rupprecht’s view, education plays a role in people’s planning horizons. More educated clients tend to ask for advice regarding specific clauses of preliminary agreements in advance:

It is those that are more on their toes and where I get the impression on the phone when the client contacts me or from the way people communicate with me that they are probably more educated. Those who ask in advance are rather academics (ll. 60-63).

Moreover, she stresses that the soft skills of the more educated play a role in their dealing with banks and ultimately handling of credits. Not only do they possess the necessary language skills to understand the often highly technical texts, which are often problematic for immigrants, but they are also more confident when communicating with bankers.

It is one of the factors that it is easier (to deal with banks) with a higher degree. And surely in the communication with the bank. One might appear more self-confident when defining the contractual position and when there is anything unclear with the advisor, to (...) negotiate or to negotiate the interest when overdrawing the account (ll. 39-44).

Rupprecht also mentions the importance of the social environment, heavily stressing the role of the circle of friends with “lawyers or anyone who can jump to their side” (ll.15-16) to give advice or help financially. Additionally, she argues that people with higher education have less difficulty understanding how a credit is calculated. Those who call to ask for an

explanation of their bank statement are “typically those who probably do not have a commercial profession or have not gone through any vocational training at all” (ll. 4-6). However, she warns about generalizing; in her view, education is certainly not the only determining factor of how people handle credit or debt, which is why the individual situation must always be taken into account.

Alexander Maly

Alexander Maly, a certified social worker by education, has worked at *Schuldnerberatung*, which has offered help to indebted private persons since the 1980s. Since 2006, he has acted as the operational chief executive. He published numerous professional articles and books. Moreover, Mr. Maly is a member of the ministerial working group "Insolvency Law" and a lecturer at the university of applied science for social work in Vienna. According to Maly there is a clear link between education and debt. However, in his view it is not just about formal education. He rather takes a very normative stance with regards to this topic by arguing:

If a general manager needs a new, big car every year, he is also uneducated in this context" (ll 39-41).

Furthermore, he stresses that it is not just about the person itself, but also about the social environment in which this individual is embedded. The lack of social relations, which could absorb smaller financial losses, leads to an accumulation of debt - small debts increase substantially over time. In fact, debts usually double all five years and in the context of smaller claims they even triple within this period.

Mistakes that people make - such as the poor handling of money - cannot be smoothed out by their environment. Every young person makes a financial mistake at some point. Most of them are lucky, because their mistakes are corrected by their environment. (...) The people that we are advising are facing an environment, which is as destitute as them. Therefore, they are not able to smooth out these mistakes. Consequently, mistakes that have been made by 20 years-old individuals protract and manifold into the future. (ll. 2-10)

Finally, Maly stresses the effect that education has on personal values. Higher educated individuals are not just less susceptible to advertisements, but have also fundamentally different values than people with lower education. It is crucial, however, to stress that he not only considers the formal aspect of education in this context, but also informal education.

Education enables people to resist the temptations of advertisement. You could even turn this argument around and create new status symbols: For example, the status symbol of not having a TV. An uneducated person could not abide that. For them a TV is the window on the world. I have many different windows on the world; I don't need television for that. (ll. 28-31)

All three experts argue that the social environment is decisive for the problem-solving capabilities of people in debt, yet for somewhat differing reasons. Herndler and Rupprecht, on the one hand, highlight that while friends and family of the lower-educated may be willing to help, their support is often less effective than that of social contacts possessing relevant expert knowledge and financial capabilities. Hence, the higher educated often have access to better

advice via their social networks. Maly, and to a lesser degree Rupprecht, focus more on the larger financial resources at the hand of friends and family of the more educated.

An argument which is much more prevalent among the two debt counselors is business' tendency to lure people into getting loans. The frequent offer of installment purchases, they argue, is a rather new way of businesses to create increasing desire for material possessions, which is especially prevalent among people with lower education who cannot identify the hidden hosts. Rupprecht adds that contract and account information is oftentimes non-transparent and difficult to grasp for people with little financial knowledge or migrants from other countries with different financial systems. Only 17 percent of Austrians feel confident to manage their financial lives (Klafl, 2015).

Additionally, the two debt counselors argue that material possessions are considered a way of belonging in today's society, people with low education even more receptive. Hence, they claim that the increasing pace of the product life cycle puts special pressure on people with lower incomes. Furthermore, a peculiar habit has emerged: People have learned to go to banks in case of financial problems. However, the banks' only approach is refinancing, including selling additional products such as insurances.

The three experts ascribe certain characteristics to people with higher education which enable them to better deal with loans and debt: They are more receptive to expert knowledge, act faster to limit damage, keep track of their payment obligations and aware of the consequences of loans. While Rupprecht places great emphasis on their greater confidence when dealing with banks, better language skills and a longer planning horizon, the other two experts also claim that highly educated people tend to have non-material status symbols (e.g. the status symbol of not having a car or TV) and thus, different values. Additionally, the latter argue that more educated people are in a better position to resist advertisement.

The different possibilities for solutions identified by the experts can be split into two approach categories: On the one hand, Maly and Rupprecht argue that prevention (e.g. financial education) is necessary, but not sufficient. Instead, they focus on the responsibility of the regulator (i.e. the state) and, as a consequence, of financial institutions and business. Herndler, on the other hand, stresses the necessity of changing people's mindsets, stating that "we need more learning for life" (Herndler, 18:13), including a critical reflection on consumption patterns and lifestyle choices.

The three experts converged on the point that formal education is by far not the only important factor in people's handling of debt, but that the social environment is a highly salient factor. Still, they all argued that formal education equips individuals with better capabilities to grasp connections and consequences of debt.

While the expert interviews could yield highly relevant insights into why some people have more difficulty in dealing with debt and credit, their limitations must be kept in mind. The experts are from the specific fields of debt and legal counseling, meaning that they are experienced with their client base only. This means that they cannot give an overview of how the total Austrian population handles their loans. Nevertheless, the expert interviews still provided us with some valuable information about how the education of that part of the population with seeks professional help impacts their handling of credit.

Discussion of mixing quantitative and qualitative results

The benefit of using a mixed-methods analysis is to gain a greater understanding of the phenomenon than would two separate analyses. Here we will discuss how the qualitative and quantitative results correlate with and enlighten each other, as well as the current literature.

To see how our results line up with other research findings, we will explore if the qualitative results match with the current literature. Our results show that formal education does not have a singular or clear effect on debt profiles, confirming the aforementioned findings. However, education can have effects on value systems and financial understanding. The expert interviews revealed that there is often a greater weight given to materialistic values among the lower educated, thus making them more likely to take on burdensome consumer debt. Those with lower education also rarely have access to individuals with high levels of financial literacy and/or connections, often leaving them to choose between the most exploitative or costly options offered by banks and firms.

There are however, some discrepancies between the literature and insights from one of the interviews concerning education's influence on levels of materialism. However, this relationship is subject to debate. Richins and Dawson (1992) showed that there is no significant relationship between materialism and income, gender, age, education, or marital status. Respondents who scored in the top quarter of their materialism scale were categorized as having high levels of materialism, and respondents who scored in the bottom quarter of the scale were categorized as having low levels of materialism.

Do the qualitative results match the quantitative data and results? The 2012 EU-SILC data used in this study, and the Austrian National Bank paper (Beer and Schürz, 2007) based on 2003 EU-SILC data, showed that only a fraction of a percent of all people in debt had ever been late on a debt repayment. However, the experts at the various debt counseling organizations revealed that a much greater percentage of people have difficulties repaying their debts. It is thus possible and likely that many survey-takers did not provide accurate information concerning their repayments. Thus, a possible falsehood or distortion of knowledge within EU-SILC data was revealed through new qualitative data collection.

Lastly, what do the quantitative and qualitative results tell us together? Formal education itself has an indirect effect on individuals' debt profiles and debt relief abilities. However, when it comes to a household's ability to handle debt, a higher educational level may translate into greater social access to experts, more receptivity to expert knowledge, as well as better language skills and financial confidence. These factors influence the household's 'financial literacy' and ability to find and more fully utilize debt and (re-)financialization options offered by banks. Similarly, education may influence households' ability to evaluate bank offers that are motivated by profit and a desire to increase levels of spending and debt, and not what is necessarily most feasible for the household.

Conclusion

If we want to improve the indebtedness and debt-coping mechanisms within society and across groups, focusing on formal education alone - whilst being a significant variable - will not by itself be satisfactory. The qualitative results contradict and fill in many gaps in the EU-SILC data, as well as the Austrian National Bank's "Characteristics of household debt in

Austria” which also relied only on EU SILC data. But together they give us a more holistic picture of education, debt profiles and debt relief than either would have by itself.

From the quantitative analysis, we did find significant correlations between the debt profile and the education level. Even if we isolate education from income. The age variable in most cases does not have a significant effect on the debt. However, the value of the quantitative results is limited as the data did not perfectly match the Research Question and we had to aggregate the data of the individuals to the household level, which of course made us lose information on the way. Thus, we should interpret the results with caution.

The interviews with the experts supported some of our findings in the quantitative analysis, but went further in to the root causes. They argued that education does play a role, yet they pointed out a number of other factors that were not included in the 2012 EU SILC data and thus not included in our quantitative analysis which also influence the handling of debt and especially the ability to manage debt successfully. Next to education and income, the social environment, the values, the experiences and the family background play an important role. The qualitative data collection was also subject to several limitations: The experts were from very specific fields with a specific clientele - primarily the high risk group that is already in significant trouble with debt repayments. Thus, conclusions can not be fully drawn to the Austrian population as a whole.

To gain a fuller understanding of a population’s debt situation by household, factors such as social environment; values; macroeconomic trends (Lusardi and Mitchell, 2011); and knowledge about various (re)financing instruments are necessary to incorporate. We recommend continuing to use both qualitative and quantitative data and analysis, as it provided us with new and important insights. More research is needed in this area, as it will be helpful to alleviate the negative consequences upon society that comes with highly indebted households.

References

- Backhaus, K., Erichson, B., Plinke, W., Weiber, R., 2003. *Multivariate Analysemethoden: Eine anwendungsorientierte Einführung*, 10. Aufl., Berlin/Heidelberg/New York 2003.
- Breyfogle, FW (1999).
- Beer, C., Schürz, M., 2007. Characteristics of Household Debt in Austria. *Monetary Policy & the Economy*.
- Belzil, C., Leonardi, M., 2013. Risk Aversion and Schooling Decisions. *Annals of Economics and Statistics* 35–70.
- Blood Jr, R.O., Wolfe, D.M., 1960. *Husbands and wives: The dynamics of married living*.
- Carlsson, F., Martinsson, P., Qin, P., Sutter, M., 2009. Household Decision Making and the Influence of Spouses’ Income, Education, and Communist Party Membership: A Field Experiment in Rural China (SSRN Scholarly Paper No. ID 1395246). Social Science Research Network, Rochester, NY.
- Cole, S.A., Shastry, G.K., 2008. *If You are So Smart, why Aren’t You Rich?: The Effects of Education, Financial Literacy and Cognitive Ability on Financial Market Participation*. Harvard Business School.

- Cox, R., Brounen, D., Neuteboom, P., 2014. Financial Literacy, Risk Aversion and Choice of Mortgage Type by Households. *J Real Estate Finan Econ* 50, 74–112. doi:10.1007/s11146-013-9453-9
- Dawson, C., Henley, A., 2012. Something will turn up? Financial over-optimism and mortgage arrears. *Economics Letters* 117, 49–52. doi:10.1016/j.econlet.2012.04.063
- Demaris, A., 1992. *Logit modeling: practical applications*. Series: quantitative applications in the social sciences, No. 106. Sage Publications, Thousand Oaks, California, USA.
- Disney, R., Gathergood, J., 2012. Financial literacy and consumer credit use (Discussion Paper No. 12/01). University of Nottingham, Centre for Finance, Credit and Macroeconomics (CFCM).
- Dohmen, T.J., Falk, A., Huffman, D., Sunde, U., 2010. Are Risk Aversion and Impatience Related to Cognitive Ability? (SSRN Scholarly Paper No. ID 1146778). Social Science Research Network, Rochester, NY.
- Ermisch, J., Francesconi, M., 2001. Family matters: Impacts of family background on educational attainments. *Economica* 137–156.
- Grable, J.E., 2000. Financial risk tolerance and additional factors that affect risk taking in everyday money matters. *Journal of Business and Psychology* 14, 625–630.
- Harrison, G.W., Lau, M.I., Williams, M.B., 2002. Estimating individual discount rates in Denmark: A field experiment. *American economic review* 1606–1617.
- Heineck, G., Riphahn, R.T., 2009. Intergenerational transmission of educational attainment in Germany—The last five decades. *Jahrbücher für Nationalökonomie und Statistik* 36–60.
- Hilgert, M.A., Hogarth, J.M., Beverly, S.G., 2003. Household financial management: The connection between knowledge and behavior. *Fed. Res. Bull.* 89, 309.
- Klafl, C., 2015. Österreichern mangelt es an Finanzwissen. *Kurier*.
- Lührmann, M., Maurer, J., 2008. Who wears the trousers? A semiparametric analysis of decision power in couples [WWW Document]. MEA Discussion Papers. URL <https://ub-madoc.bib.uni-mannheim.de/2080> (accessed 11.23.15).
- Lusardi, A., 2008. Financial Literacy: An Essential Tool for Informed Consumer Choice? (Working Paper No. 14084). National Bureau of Economic Research.
- Lusardi, A., Mitchell, O.S., 2013. The Economic Importance of Financial Literacy: Theory and Evidence (Working Paper No. 18952). National Bureau of Economic Research.
- Lusardi, A., Mitchell, O.S., 2011. Financial literacy around the world: an overview. *Journal of Pension Economics and Finance* 10, 497–508. doi:10.1017/S1474747211000448
- Lusardi, A., Mitchell, O.S., 2007. Financial Literacy and Retirement Planning: New Evidence from the Rand American Life Panel (SSRN Scholarly Paper No. ID 1095869). Social Science Research Network, Rochester, NY.
- Lusardi, A., Tufano, P., 2009. Debt Literacy, Financial Experiences, and Overindebtedness (Working Paper No. 14808). National Bureau of Economic Research.
- McArdle, J.J., Smith, J.P., Willis, R., 2009. Cognition and Economic Outcomes in the Health and Retirement Survey (Working Paper No. 15266). National Bureau of Economic Research.
- Ohlmacher, G.C., Davis, J.C., 2003. Using multiple logistic regression and GIS technology to predict landslide hazard in northeast Kansas, USA. *Engineering Geology* 69, 331–343. doi:10.1016/S0013-7952(03)00069-3

- Richins, M.L., Dawson, S., 1992. A consumer values orientation for materialism and its measurement: Scale development and validation. *Journal of consumer research* 19, 303.
- Rodríguez, G., 2007. Lecture Notes [WWW Document]. Generalized Linear Models. URL <http://data.princeton.edu/wws509/notes/> (accessed 1.18.16).