Financial wealth and housing happiness

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ABSTRACT

This paper offers insights into the relationship between net income, assets, or overall financial wealth, with housing happiness. To this end, information from the 2018 WoON questionnaire (N = 67,523), sourced from the Dutch Ministry of Internal Affairs, is analyzed using regression techniques. Controlling for demographic and housing characteristics such as ownership, age, urbanity, type of residence, financial wealth, and net income are found to positively associate with housing happiness. Furthermore, a positive asset balance, as opposed to being in debt, impacts housing happiness positively as well. This study's findings call for future research to examine the influence of financials on housing happiness in countries with different income characteristics This research can be implemented by policymakers in new-to-build neighborhoods and renovations.

Keywords: housing satisfaction, housing happiness, income, assets, financial wealth.

Contents

1. INTRODUCTION

1.1. Motivation

Happiness is something people appear to see as the ultimate goal in life. That this topic is popular nowadays can be seen from the many self-help books about happiness that reach the shelves in bookstores. 'Happy Life 365' by Kelly Weekers, 'Logics of Happiness' by Mo Gawdat, and even 'Happiness for Children' by Bormans are only some examples. But, it is not a subject that gained interest overnight. Sigmund Freud (1930) already stated "people strive after happiness; they want to become happy and remain so". Next to that, Abraham Maslow's (1943) theoretical work highlighted a ladder of needs to reach self-actualization. The higher one climbs up the ladder, the more satisfied a person can be in its life[1]. Housing is situated in the first two layers of the pyramid, and since Maslow states that the highest level of self-actualization can only be accomplished when initial layers are fulfilled, housing would appear to be a broadly relevant subject of research.

Humans have an evolutionary need for stability, community, and neighborhood (CNBC, 2020). Housing can contribute to that, as our immediate environment is of critical importance in current and future-well being (Harker, 2006; Kemeny, 2001). Next to that, Coates et al. (2015) find that good quality, appropriate and affordable housing can facilitate access to employment and recreational facilities whilst enabling individuals to live a healthy and dignified lifestyle and to do so in safety. Furthermore, Baiden et al. (2010) and Rohe and Stegman (1994) show that respondents who rated their homes in better condition, reported higher levels of self-esteem, life satisfaction, and quality of life. Therefore, housing happiness leads to many advantages. In particular, this research focuses on housing happiness, and how financial wealth is an influencer of housing happiness. Housing happiness is defined as the satisfaction that is experienced in and around the house.

Other studies thoroughly write about housing characteristics and the influence of those characteristics on housing happiness. In previous research, it is found that important determinants for being satisfied with the house are space, structural quality, neighborhood satisfaction, tangible and architectural issues, modern dwelling standards and features, familiarity, sense of community, and perceived safety (Hanna and Lindamood, 1979; Hanna and Lindamood, 1981; Harris, 1976; Jirovec et al., 1984; Kleeman et al., 2022; Morris et al., 1976; Rogers and Nikkel, 1979; Stoeckeler, 1980; Teck-Hong, 2012; Yockey, 1976). These characteristics will be used to test today's accuracy to formulate and construct the idea of housing happiness.

However, whereas extensive research has been done about housing characteristics that influence housing happiness, little research elaborated on the relationship between financial wealth and housing

[1] Humans need to fulfill every set of needs before being able to climb up the ladder. The first level contains organic and physical needs as being able to breathe, eat, drink, and sleep and accessibility to shelter. The second level is about security. This consists of a feeling of security in life, such as housing, work security and relationships. The third level describes love and belonging as friendship, intimacy, and a sense of connection. The fourth level describes esteem with respect, self-esteem, status, recognition, strength and freedom being the explanatory concepts. The fifth level is self-actualization, as the desire to become the most that one can be.

happiness. Financial wealth is defined as the aggregate of net income and total assets of the respondent. This is interesting since budget is important for policymakers and individual households in the housing market. et al. That there might be a relationship between financial wealth and housing happiness, is found by two European studies by Diaz-Serrano (2006) and the Happiness Research Institute (2019). Diaz-Serrano studied twelve EU countries from 1994-2001 and found that income positively influences housing satisfaction among homeowners. The Happiness Research Institute found similar results, for both homeowners and renters, with research in ten countries in Europe. No national studies have been conducted yet, and the Happiness Research Institute only had 1,100 Dutch respondents. Therefore, more thorough research of the Netherlands appears necessary, to generate countrywide results that can be used in national policies.

1.2 Aim of this study

The research aim of this study is to find out how financial wealth affects housing happiness, where housing happiness is defined as the satisfaction that is experienced regarding the different features of the property, both inside and around the house, as well as the associated neighborhood in the Netherlands. The central research question is:

To what extent is there an effect of income and assets on housing happiness?

To answer the main research question, it will be divided into three sub-research questions. One focuses on income, one focuses on assets and the third one focuses on a combination of the two. This will be done to find out separate effects, and to be able to find if synergies exist between income and assets. The three sub-research questions are the following:

RQ1: To what extent does the monthly net income influence housing happiness?

RQ2: To what extent do assets influence housing happiness?

RQ3: To what extent does overall financial welfare influence housing happiness?

Research can be conducted for more recent years with a focus on a specific country. Next to that, income and assets together as financial welfare have not been the subject of research before. Therefore, this research focuses on the relationship between income, assets, financial wealth, and housing happiness in the Netherlands. In this research paper, the data from the WoON survey 2018 is examined. These data are collected by the Dutch Ministry of Internal Affairs, in cooperation with the CBS (Ministry of Internal Affairs, 2019a). In addition, the tax authorities supplemented data regarding income and subsidies. The WoON 2018 survey is analyzed in several (governmental) studies and analyses (ABF Research, 2021;

Companen, 2019; Ministry of Internal Affairs, 2019b; Netherlands Environmental Assessment Agency, 2021; Ruimte en Wonen, 2019).

The method that will be used is multiple linear regression. Both the dependent variable, housing happiness, and the independent variables, net income, assets, and financial wealth, can be treated as continuous (Anas et, al., 2023; Moore et al., 2006; Turvey, 2013). Therefore, multiple linear regression is used to test the hypotheses by measuring the value of a continuous dependent variable, based on the value of the continuous independent variable.

The study area of this research is a sample of the population in the Netherlands in 2018. The country has been growing for many years now and had 17.23 million inhabitants in 2018. The Netherlands is a quite happy country compared to other countries in the European Union. It comes in fifth on the list of happiest countries, and also has a higher average income (CBS, 2020). A sample of the Dutch population has answered a housing questionnaire, in which questions are asked about, among others, housing satisfaction, housing characteristics, and financial welfare.

To answer the research questions, the remainder of this paper is structured as follows. Section 2 will discuss relevant literature. Section 3 describes the methodology. The methodology section contains information on the selected method, which is regression analysis. A regression will be performed since the dependent variable is continuous. Section 4 elaborates on the results, section 5 contains a discussion, to put results into perspective and section 6 forms a conclusion.

This research consists of an analysis of how financial measures can influence housing satisfaction. There is not much research yet that links financial measures directly to housing satisfaction. This case study on the Netherlands provides a base for further research in more countries.

2. THEORY BACKGROUND & HYPOTHESES

In this chapter, a theoretical background is described. In the following sections, existing literature on the influence of income, assets, age, and ownership on housing happiness is given and elaborated on. This chapter then concludes with the hypotheses.

2.1 Financial wealth and housing happiness

All households act in the housing market by their degree of material, cognitive, and social resources (Brown and Gray, 2016). Therefore, a household's level of assets is an important determinant of possibilities in the housing market. Assets are defined as the stock of tangible resources held by households at a certain point in time, including a home, a business, savings, stocks, bonds, and other resources of monetary value (Huang et al., 2016). Next to assets, housing consumption decisions depend on a household's socio-economic status as household income (Coates et al., 2015). This states that a household's expenditures depend on the environment one lives in. Income can be defined as the net monthly disposable income that an individual gains from work and subsidies. Financial wealth is defined as the sum of assets and income of an individual. With higher financial wealth, one has a wider range of possibilities and choices in housing consumption decisions. In short, financial wealth influences financial decisions and possibilities on the housing market.

The following case studies show that financial wealth influences housing happiness. First, a case study on Kano, one of the largest cities in Nigeria finds a positive significant relationship between household income and housing satisfaction (Abdu et al., 2014). Second, there is a directly proportional relationship between monthly income and housing satisfaction of the elderly in Madrid, the capital of Spain (Perez et al., 2001). Third, a study from a government subsidized housing project for low-income residents in Obum, Nigeria, finds that two-thirds are unsatisfied with the provided housing because of the economic environment in the areas (Ibem et al., 2019).

In addition, neighborhoods mostly consist of families with similar characteristics, for example, social rent, private rent, or ownership. Social tenants receive governmental support for rent since a household's income is below a certain level. These 'social houses' are built in the same neighborhoods, which leads to spatial segregation (Cozzolino, 2020). Therefore, which type of neighborhood a family settles in, is influenced by financial wealth. Galster (2010) has summarized these findings as follows: "a neighborhood affects an individual via social-interactive mechanisms, environmental, geographical and institutional effects". This effect can be uplifting or downgrading. For example in England, one-third of social rented sector tenants live in the ten percent most deprived neighborhoods in England (ODPM, 2003). Socio-spatial segregation is judged to reduce the possibility of the deprived getting out of their deprived position and the lower-income have a harder time finding the type of house they want (Verhage, 2005; Zhang et al., 2018). A case study in the United States finds that low-income families do not have a strong preference to stay in low-opportunity areas. When given a voucher, participants of the test received an amount to invest in housing where moving was not mandatory, 53 percent chose to

move to higher opportunity areas (Bergman et al., 2019). In conclusion, the better the financial resources, the higher the chances on a neighborhood that a family feels satisfied.

2.2 Ownership and housing happiness

Many governments encourage homeownership as it has a positive effect on the individual and society (Elsinga and Hoekstra, 2005). Homeownership is an indicator for wealth. Therefore, whether an individual owns, or privately or socially rents a home, must be considered. For the majority of the population, housing is a family's largest single asset, whereas social rented sector tenants mostly have no financial assets at all (Cheshire and Sheppard, 2004; Smith, 2005). The fact that owner occupation leads to wealth occupation has been subject of research for many years now, and conclusions have not changed since (Apgar and Di, 2005; MoHLG, 1953). In China, for example, homeownership accounts for nearly 80 percent of housing wealth (Xie and Jin, 2015). Housing wealth increases rapidly when a house is bought as opposed to renting. For example, Rohe and Stegman (1994) found that in the United Staes, low-income homeowners experience a significant rapid increase in life satisfaction when a home is bought. Additionally, the reverse is also true. The transition from owning to renting exerts a negative effect on residential satisfaction (Barcus, 2004; Lu, 2002). In general, homeowners are found to be more satisfied with their homes than renters (Cheng et al., 2016; Elsinga and Hoekstra, 2005; Hu, 2013; Huang et al., 2016; Rent and Rent, 1978). In short, home ownership is an important determinant for wealth and an indirect determinant for housing happiness.

2.3 Age and housing happiness

Previous studies found a positive relationship between demographics and housing happiness (Amole, 2009; James, 2008). Age is one of these determinants. In earlier days, Lu (1999) also found age as a determinant of neighborhood satisfaction, with older residents reporting higher levels of satisfaction. In a case study from Abuja, Nigeria it is found that housing satisfaction was higher in the age groups above 61 (Waziri et al., 2014). Next to that, neighborhood satisfaction increases as age increases in America (Chapman and Lombard, 2006). Hence, research from Mohit et al. (2009) finds that, among others, age is negatively correlated with residential satisfaction in low-cost rental units in Malaysia. In Accra, Ghana, equal results are found (Baiden et al., 2010). Since no research is found on the relationship between age and housing happiness in the Netherlands, it is interesting to find out if the correlation is positive or negative. Furthermore, age is associated with financial wealth and homeownership. To prevent endogeneity issues, age has to be included in the model.

2.4 Urbanity

According to the bid rent theory, the further a plot of land is located from the central business district, the lower the price of that plot of land (Evans, 2004). This theory states that urban areas have higher land prices than rural areas. Following up on this research, 81 percent of house price increases between 1950 and 2012, could be explained by rising land prices (Collins et al., 2017). As land prices are a large component of housing prices, housing in urban areas is more expensive per square meter than in rural areas. Therefore, a higher income is needed in urban areas to maintain the same objective characteristics

of a house, or less housing services can be bought for the same amount of money, which can influence housing happiness.

Regarding subjective characteristics, previous research is less straightforward. From German research, it appears that people want to live in big cities, with many opportunities. This shows that housing happiness can be higher in higher urban areas (Zenker et al., 2013). On the other hand side, people appreciate low pollution, parks, and open spaces, and the tranquility of a place (Zenker et al., 2013), which proves that rural areas can positively influence housing happiness. These are contradictory findings, since cities mostly provide opportunities and liveliness, but also higher pollution, less open spaces, and tranquility. Therefore, the degree of urbanity can influence housing happiness through objective, and subjective factors.

2.5 Type of residence

There are many different types of houses and every home is unique. However, the type of house plays a role in the housing happiness a resident experiences. Rent and Rent (1978) found that living in a single rather than a multiple-family unit, had a positive significant relation to housing happiness. Some distance to neighbors and more privacy are experienced more positively than crowdedness. Next to that, residents of detached homes are also significantly more satisfied with the overall comfort and costs of the home than residents of apartments, even though when the costs of a detached home are higher (Gruber et al., 1985). More recent literature concludes with similar findings. Income even plays a role. A higher income is related to a lower appreciation of a semi-detached house or terraced house and to a higher appreciation of an owner-occupied house (Jansen, 2013). In short, the type of residency influences housing happiness, and the influence increases together with income.

2.6 Hypotheses

The associations of income and assets on life satisfaction has been extensively researched. However, the associations of income and assets on housing happiness is a subject that will benefit from further empirical analysis. Thereafter, following prior research and adding on housing happiness, the following hypotheses have been constructed:

I. Net income has a positive association on housing happiness

The first hypothesis follows from the works of Coates et al. (2015), who find that household income influences housing consumption decisions, Thoits and Hannan (1979), who find that an increased income can lead to more stress instead of housing happiness, Frey and Stutzer (2002), who state that higher incomes show little correlation with well-being, and Rohe and Stegman (1994), who find that low-income homeowners experience a rapid increase in housing happiness when a home is bought. Therefore, no clear line can be drawn from the literature. This research is expected to agree with Coates, as the assumptions have the most similarities.

II. The amount of assets has a positive association on housing happiness

The second hypothesis follows from the work of Brown and Gray (2016), Huang et al. (2016), Diener et al. (1985), Smith and Razzell (1975), Smith (2005), and Xie and Jin (2015). It is assumed that higher assets impact housing happiness, but that the higher the assets, the lower the impact on housing happiness.

III. Financial welfare has a positive association on housing happiness

Financial welfare is defined as the overall wealth of an individual, gained from finances. Thus income and assets together. Galster (2010) finds that financial wealth influences the neighborhood where one ends up in. Next to that, Zhang et al. (2018) find that this social-spatial segregation withdraws the deprived to get out of the deprived position. Finally, Verhage (2005) finds that with lower financial welfare, it is more difficult to find a desirable home.

3. METHODS & DATA

3.1 WoON survey-based measure of housing happiness

In this research paper, the data from the WoON survey 2018 is examined. This data is collected by the Dutch Ministry of Internal Affairs, in cooperation with the CBS (Ministry of Internal Affairs, 2019a). In addition, the tax authorities supplemented data, for example regarding income and subsidies. The WoON survey has as its goal to collect statistical information about the living situation of the Dutch population and the desires and needs of the population regarding housing. There is special attention to the composition of households, housing, and housing environment, living costs, housing desires, and needs and relocations. The WoON research is conducted since 2006. Inhabitants from 18 years and older are questioned from households, potential households, and living quarters. A minimum of 60 thousand respondents is required. In the WoON survey of 2018, 67,523 thousand observations were collected, and 922 variables were created. Each observation represents one respondent answering several questions (i.e. variables). The WoON 2018 survey is analyzed in several (governmental) studies and analyses (ABF Research, 2021; Companen, 2019; Ministry of Internal Affairs, 2019b; Netherlands Environmental Assessment Agency, 2021; Ruimte en Wonen, 2019). To get access to the WoON survey results, a request had to be submitted at the Data Archiving and Networked Services (DANS) with student ID. Then, data could be downloaded and is stored by the student at the Rijksuniversiteit Groningen personal student drive. The data is then inserted to Stata and used for analysis.

In the WoON database, two full chapters are asked about the happiness of the house and environment one lives in. Chapter 12 focuses on the happiness of the home one lives in, this consists of ten questions. These questions are focused on draught, mold, sufficient layout and size, maintenance, atmosphere, and satisfaction. Chapter 13 consists of questions about happiness in the current living environment, and consists of 36 questions. Here, only the questions that ask about a valuation are used, which are 17. Examples of questions are maintenance of neighborhood buildings, attachment to the neighborhood, interactions with neighbors, satisfaction with population composition, perceptions of safety, and closeness of shops, schools, and amenities like a doctor and hospital. All asked questions can be found in Appendix 1. The goal of using these questions is to express one's feelings, perceptions, and experiences regarding the home and the home environment. To compute the dependent variable, the Handbook on Constructing Composite Indicators (Nardo et al., 2008)[2] is used. A computed dependent variable is created by applying a formula or mathematical function to one or more independent variables. The computed dependent variable is used to examine the relationship between the independent variables and the dependent variable. Computed dependent variables can be useful in this situation, since the

[2] The Handbook on Constructing Composite Indicators uses a model with ten steps in the construction of indicators. The ten steps are applied to the variables from chapter 12 and 13 from the WoON questionnaire.

dependent variable is difficult to measure directly[3]. The Cronbach's alphas are accounted for[4]. Then, ratios[5] are created where zero stands for 'least happy in the home' and a ten is 'most happy in the home'. To define the symmetricalness and fatness of the tails of the distribution, skewness and kurtosis are calculated (Brooks and Tsolacos, 2010).

TABLE 1: Descriptive statistics discrete variables

Ownership	Freq.	Percent	Cum.
1 (social rent)	14,834	26.81	26.81
2 (private rent)	4,264	7.71	34.52
3 (ownership)	36,231	65.48	100.00
Total	55,329	100.00	
Age	Freq.	Percent	Cum.
1 (17-24)	1,375	2.49	2.49
2 (25-34)	7,310	13.21	15.70
3 (35-44)	8,027	14.51	30.20
4 (45-54)	10,573	19.11	49.31
5 (55-64)	11,056	19.98	69.30
6 (65-74)	9,962	18.01	87.30
7 (75+)	7,026	12.70	100.00
Total	55,329	100.00	
Type of house	Freq.	Percent	Cum.
1 (flat, apartment)	15,515	28.04	28.04
2 (terraced house)	23,662	42.77	70.81
3 (semi-detached house)	7,971	14.41	85.21
4 (detached house)	8,181	14.79	100.00
Total	55,329	100.00	
Urbanity	Freq.	Percent	Cum.
1 (rural)	10,869	19.64	19.64
2 (medium urban)	27,446	49.61	69.25
3 (urban)	17,014	30.75	100.00
Total	55,329	100.00	

3.2 Data selection statements and descriptive statistics

Before analysis can be conducted, several variables are cleaned up or transformed. Data cleaning refers to the process of removing incorrect, corrupted, incorrectly formatted, duplicate, incomplete data or data that add no value to the explanation within a dataset. After the cleaning process, 55,329 responses are taken into analysis, together with the independent variables net income, assets, and financial welfare.

[3] The advantages of using a computed dependent variable include a more comprehensive understanding of the relationship between variables, better control of potential confounding variables, and the ability to develop predictive models. Limitations of computing a dependent variable are oversimplification of complex relationships between variables and the computed variable may not account for all the relevant factors and therefore have limited scope or can lead to confounding.

[4] To test the internal consistency of the chapters, Cronbach's alpha is measured. The Cronbach's alpha of chapter 12 is between 0.6 and 0.7, therefore medium reliable. The Cronbach's alpha of chapter 13 is between 0.84 and 0.86, therefore highly reliable. The tables are shown in appendix 2. These results show that the characteristics of the home, are less related than the characteristics of the home environment.

[5] The used variables from chapter 12 and 13 are recoded, where every variable can earn points between zero and one. The more positive a respondent perceives a certain aspect about one's home, the closer to one. All points will be added up and divided by the number of questions the respondent has answered. This will create a ratio between zero and ten. Two questions from chapter 13 are not answered by all respondents. These are: 'are you satisfied about the distance to a primary school', and 'are you satisfied about the distance to daycare'. Therefore, these questions are not calculated with for respondents who did not answer these questions. All questions that are used in the ratio calculations, can be found in appendix 1.

Net income[6] is the net disposable income per individual. Assets[7] are the total assets of a household, which are computed from total possessions minus total debt. The financial welfare variable is based on the standardized income and the assets of an individual. The financial welfare is calculated as the sum of the cumulative part of the total income and the sum of the cumulative part of the assets. Next to that, all individuals are ranked from lowest to highest and divided into equally spread groups from zero to 100 (Ministry of Internal Affairs, 2019a). All respondents where a welfare percentage cannot be established, are deleted. This leads to 175 respondents being deleted from the dataset. Furthermore, the control variables are ownership[8], age[9], life satisfaction[10], type of house[11], and urbanity[12].

Now, the descriptive statistics of the dependent, control, and independent variables are given. Table 1 shows the descriptive statistics of the discrete variables. Then, the descriptive statistics of the continuous variables are given in table 2. Furthermore, correlation matrixes are given. In table 3, the correlation matrix of the dependent and control variables is shown. Moderate high correlations are found between financial welfare and ownership. This is explained since ownership leads to higher wealth, and vice versa. Financial wealth is also moderately high correlated with net income and assets since financial wealth is the sum of both variables. In table 3, the correlation matrix of the dependent variables is given. The dependent variables are highly correlated with each other, as the dependent variables are all partially constructed from the overall housing happiness variable.

[6] Net income: the variable 'bestinkh_r' is described as the net income of the respondent. First, all responses with an income below zero are removed, together with missing responses. This leads to 79 respondents being removed. The median income of the Netherlands in 2018 was 34.500 euros and among the WoON survey, it was 37,650 euros. To keep the zero-euro income families, the data is winsorized at the 99th percentile. Net income is used as the log of net income in analysis.

[7] Assets: the variable 'vermogh_r' is based on the amount of wealth one owns. It is based on savings, mortgages and other loans. To make the regression outcomes better interpretable, all variables are divided by 100.000. Then, the data is winsorized at the first and 99th percentile. Missing variables are deleted.

[8] Ownership: 8.162 respondents are deleted from the dataset since the question was not answered. 548 respondents do not own or rent a home and are therefore deleted. 1.735 respondents live with more families on one address, which can influence income and welfare numbers, thus are deleted from the dataset, together with 254 sub renters. Next to that, a variable is created to divide the social renters from the private renters and afterwards, this is combined with the ownership variable. The division is based on the amount of rent that divides social from private renters (€710.68 in 2018). Now, a new variable is created 'socparthuurkoop' (1=social renter, 2=private renter, 3=owner of the home).

[9] Age: The age (leeftijd) is divided in seven groups: {1= 17-24, 2= 25-34, 3= 35-44, 4= 45-54, 5= 55-64, 6= 65-74 and 7= 75+}. In the descriptives section, frequencies and percentages are shown. The median age group is number five, from 55 to 64 years old.

[10] Life satisfaction: in the WoON questionnaire is asked about 'how satisfied are you with your life'? Respondents were asked to give a number between 1 and 10, where 1 stands for lowest life satisfaction, and 10 for highest.

[11] Type of house: 'srtwon' has eight categories, of which four are kept. The categories 'farm, house with store, office or business space, house with shared amenities, other type of house' are deleted since there were respectively 569, 422, 96, and 330 observations. The groups that are taken into analysis are {1=flat/ apartment, 2=terraced house, 3=semi-detached house, 4=detached house}.

[12] Urbanity: 'OAD' (environment address density) is defined as the number of addresses per squared kilometer. Less than 1000 addresses per squared kilometer, is defined as rural. Between 1000 and 1500 is defined as medium urban, and more than 1500 addresses per squared kilometer is defined as urban (CBS, 2022a).

TABLE 2: Descriptive statistics continuous variables

Variables	Obs	Mean	Median	Std. Dev.	Min	Max	Skew.	Kurt.
Housing happiness	55,329	7.6	7.7	1.1	1.1	10	-.8	4.3
Net income (log)	55,329	42,329	37,650	23,242	11	132,925	1.2	5.2
Assets (/100,000)	55,329	154,000	53,817	261,000	-125,561	1,559,125	2.9	13.7
Financial wealth ranking	55,329	55.8	57	27.2	0	100	-.2	1.9
Urbanity	55,329	1,358	1,164	546.6	541.7	2783.7	1.1	3.8
Life satisfaction	55,329	7.8	8	1.0	1	10	-1.2	8.111

TABLE 3: Correlation matrix independent and control variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Housing happiness	1.000								
(2) Net income (log)	0.256*	1.000							
(3) Assets (/100,000)	0.241*	0.292*	1.000						
(4) Financial wealth ranking	0.359*	0.722*	0.586*	1.000					
(5) Ownership	0.394*	0.546*	0.338*	0.641*	1.000				
(6) Age	0.194*	-0.123*	0.234*	0.074*	-0.039*	1.000			
(7) Life satisfaction	0.340*	0.210*	0.109*	0.203*	0.182*	-0.018*	1.000		
(8) Urbanity	-0.092*	-0.008	-0.007	-0.005	-0.080*	-0.035*	-0.009*	1.000	
(9) Type of residence	0.290*	0.388*	0.362*	0.433*	0.458*	0.087*	0.132*	-0.338*	1.000

**** p<0.01, ** p<0.05, * p<0.1*

3.5 Methodology

A regression model is used to research the relationship between income, welfare, and assets on housing happiness. The general regression model (model 1) to estimate housing happiness for respondent *i* (*i*=1,…,n) is:

$$Housing\ Happiness_i = a + \beta_i \mathrm{X_i} + \varepsilon \qquad (1)$$

Where *a* is the constant, X_i the vector of characteristics that may predict housing happiness, β_i the slope of variable X_i, and ε denotes the error term. This leads to regression model 2.

$$Housing\ Happiness_i = \alpha + \beta_0 Financial\ Measurement_x + \beta_1 Ownership_i + \beta_2 Age_i + \beta_3 TypeHouse_i + \beta_4 Urbanity_i + \varepsilon_i \qquad (2)$$

In model 2, $Financial\ Measurement_x$ *x* is a vector of three variables of interest {1; log of net income, 2; assets, 3; financial wealth}. The financial measurements will first be tested separately to control for indirect effects. Subscript *i* stands for the *i*th observed household; $Housing\ Happiness_i$ is measured, on a ten-point scale ranging from 0 (very unsatisfied) to 10 (very satisfied). To model the relationship between a discrite and continuous independent variable, multiple linear regression is used. The main use of regression analysis is to predict and test hypotheses. This research is focused on finding associations between the dependent and independent variables.. Both the dependent variable, housing happiness, and the independent variables, net income, assets, and financial wealth, can be treated as continuous (Anas et, al., 2023; Moore et al., 2006; Turvey, 2013). Therefore, regression is used to predict the value of a continuous dependent variable, based on the value of the continuous independent variable. A coefficient is inserted and to control for random variation, an error term is inserted. Also, each independent variable has a slope coefficient β_i. This means that with significant results, the $Financial\ Measurement_x$ has a β_i effect on $Housing\ Happiness_i$. Multicollinearity is assessed for[13].

[13] Multicollinearity can occur when many independent variables are used. Multicollinearity means that independent variables correlate with each other (Brooks and Tsolacos, 2010). A high correlation of independent variables means a biased estimation of the regression. Therefore, multicollinearity will be checked. The results can be found in appendix 3.

4. RESULTS

In this chapter, the results of the in section 3 described methodology, will be presented. First, a visualization of data is given. Second, the main results of the regression are shown and third, extra checks on independent and control variables are performed.

4.1 Visualization of data

First, housing happiness is shown in figure 1. As stated in section 3, the median of housing happiness is 8. 68 percent of all observations fall between 7 and 9, which shows that two-thirds of respondents are quite happy. The lowest score is 1.3 and 423 respondents score lower than four on housing happiness. 55 respondents score a ten. In figure 1 can be seen that the housing happiness distribution is spread over the full range.

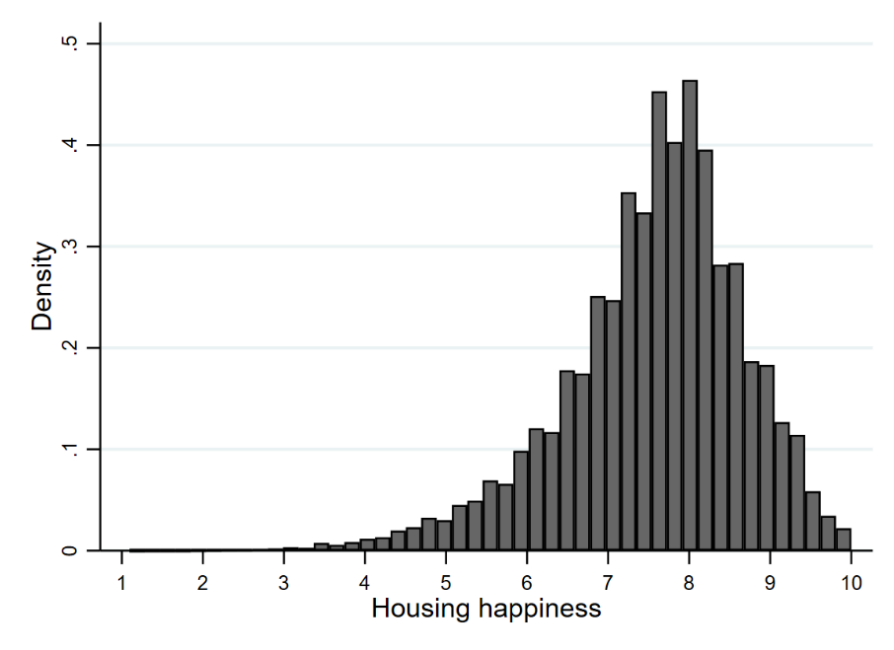

Figure 1 Division of housing happiness

Then, housing happiness is transformed into a scatter plot, with net income on the vertical axis. This can be seen in figure 2. A trend line is drawn through the data points and shows a positive regression line. From a first impression of the scatter plot, it can be stated that housing happiness increases together with income. Next to that, as housing happiness is centered around eight out of ten, density is highest here. Net income shows the highest density around 25,000 euros. This can be seen in figure 3. Next to that, there are barely any observations in a combination of income above the mean and a housing happiness score lower than four (Appendix 4 figure a). In contrast, a housing happiness score of nine or higher can be found among all income groups (Appendix 4 figure b). As a first conclusion, lower-income respondents seem to exhibit a higher dispersion in housing happiness, compared to higher income respondents.

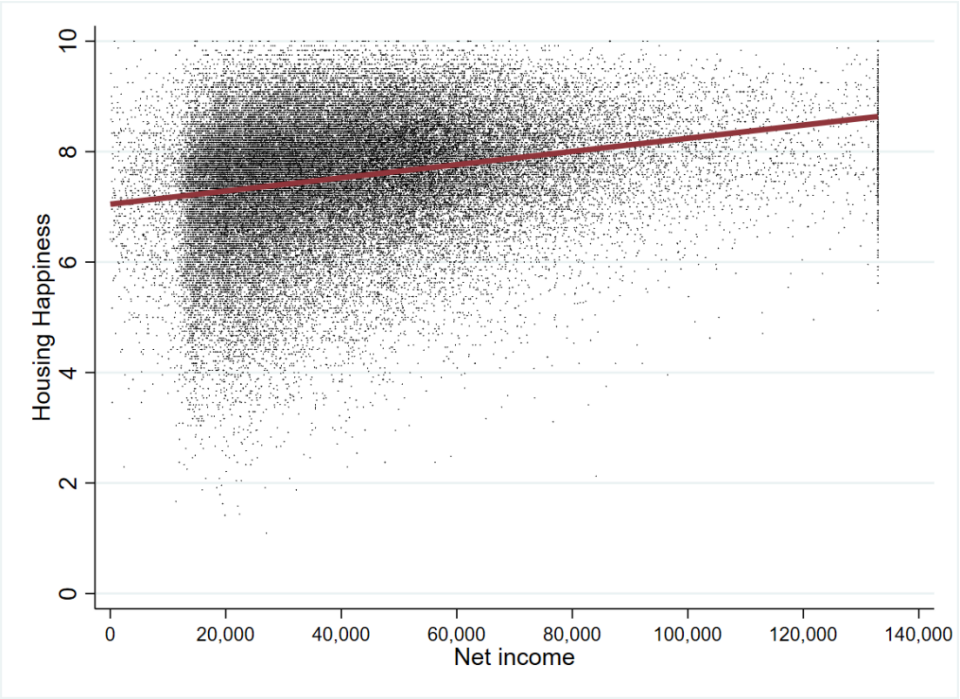

Figure 2 Scatterplot with a trend line on housing happiness and net income

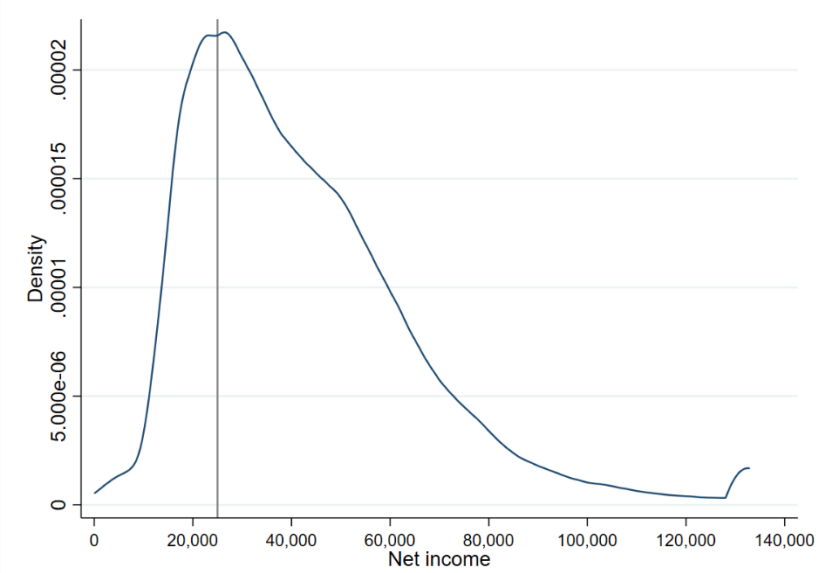

Figure 3 Density graph of net income. A reference line is drawn for an income of €25,000

4.2 Main results for the regression models

For the analysis, STATA was used, and OLS assumptions are checked for[14]. The results of the first model, are shown in table 4. Before the models can be interpreted, the fit of the models must be evaluated. The R-squared is quite similar and around 22 percent meaning that around one-fifth of the variance for the dependent variable can be explained by the independent variables in the regression model. First, the results of models (1) to (3) will be discussed. These models find that net income, assets, and financial wealth show positive significant influence on housing happiness when measured separately. The highest measured effect is net income. Next to that, all three models show a negative significant effect on urbanity. This means that a higher level of urbanity has a negative impact on the relation between financial measures and housing happiness. All three models show terraced houses, semi-detached houses, and detached houses as a positively significant contribution to housing happiness, compared to the reference category flats/ apartments. Private rent and ownership, opposite to social rent, deliver a positive significant contribution to housing happiness as well. Ownership shows a high coefficient which means that an owned home has a strong influence on housing happiness. For age, the older the respondent, the higher the chance of significance and the higher the coefficient.

Then, the independent variables are included together in a single model (4), together with the control variables. Net income and financial wealth are still positively significant, but lower. Assets show no significant effect. As financial wealth is higher correlated with net income than assets, it can be explained that financial wealth is still positive. The correlation matrix is given in table 3. The control variables urbanity, type of house, ownership, and age show overall similar effects. In model (5), interactions have been added to assets with urbanity since the amount of assets determines the type of house that can be bought, and urbanity can play a role in real estate worth and availability of housing (Collins et al., 2017; Evans, 2004; Zenker et al., 2013). Urbanity and assets interacted show no result. Furthermore, the outcomes only show minor differences to model four.

4.3 Robustness checks on assets and action

To test the impact of the possession of positive assets, against negative assets, regression analysis is conducted with assets as a dummy variable[15]. Literature finds that debt can negatively influence the perspective one has on its life, and therefore can influence housing happiness perceptions (Greenberg and Mogilner, 2021; Will and Renz, 2022; Yunchao et al., 2020). Results can be found in table 5. Model

[14] OLS is used as an estimation technique, and therefore the assumptions for OLS need to be checked (Brooks and Tsolacos, 2010). The first assumption is that the average value of the errors is zero. Since the model has a constant term, this assumption is not violated. The second assumption is that the variance of the errors is constant. If not, the errors are heteroscedastic. In this dataset, the normality of the errors is tested by the Breush-Pagan/Cook-Weisberg test. It appears that the errors are heteroscedastic and thus need to be corrected for. Therefore, the robust standard errors are generated together with the linear regression. The third assumption states that the covariances between the error terms over time are zero. Since this dataset has no lagged values, the assumption can be ignored. Next to that, for the fourth assumption, the regressors may not be correlated with the error term. After the regression has been run, the normality of residuals has been graphically checked. The fifth assumption states that the disturbances must be normally distributed. The data is slightly right skewed.

[15] The dummy for assets is created with a 0 defined for all negative assets and a 1 defined for all positive assets.

(7) shows that the assets as dummy show a positive significant relationship and thus agree with the literature. To have assets leads to higher experienced housing happiness, compared to being in debt. In model (10) and (11) is a Chow-test performed with households in debt (10) against households with no debt (11), these models show similar results with model (7). Net income also shows a higher positive significant effect whilst financial wealth stays similar.

It is conceivable that people that are happy in general, experience higher life satisfaction and that it correlates with financial measures. Literature finds mostly similar ideas on the relationship between housing happiness on life satisfaction. Life satisfaction is defined as to which degree one is satisfied with its life. For example, Watson (1930) finds that good health, high job morale, a happy home, and good relationships with other people, are conducive to happiness. Thus, one of the determinants of happiness is a happy home. In wealthy nations, the relationship is stronger than in less wealthy nations (Oishi et al., 2009). The type of house also plays a role. The most satisfied group lives in detached houses that are owned (Duffy, 2004). Next to that, it is found that housing-related variables like satisfaction with the home environment and satisfaction with the outdoor environment, explain a substantial portion of the variance in life satisfaction of elderly in Germany (Oswald et al., 2003). A case study on Korean residents in the United States acknowledges the results. Housing satisfaction is the most significant mediator for quality of life (Lee and Park, 2015). Hence, no literature is found on the relationship between life satisfaction on housing happiness. It can be reasoned that a satisfied, happy, optimistic person, is easier satisfied with a home than an unhappy, pessimist person. Optimists appear to look brighter at one's present situation than pessimists (Busseri et al., 2009). Next to that, life satisfaction shows positive effects on major life events (Luhmann et al., 2012). Therefore, there is a possibility that life satisfaction also influences housing satisfaction.

Next to that, financial wealth can have an impact on life satisfaction. Thus, analysis has been performed on life satisfaction as a continuous variable and dummy in model (8) and (9)[16]. Both models show positive significant effects, meaning that one who values life higher, also finds more satisfaction in and around the home. That the relationship between life satisfaction and housing happiness can be both ways is also found in theory (Busseri et al., 2009; Lee and Park, 2015; Oswald et al., 2003; Watson, 1930). It appears to influence the model, net income becomes negatively significant in both models. The R-squared of both models six and seven is higher, 27.4 and 29.1 percent respectively. Therefore, life satisfaction creates a higher statistical explanatory power, but lowers the practical implications since it means that the higher the income, the lower the housing happiness. This is not in line with the original regression, robustness checks and literature.

Diener et al. (1985) find that wealthier people are happier than poorer people, but the effects are small. In wealthier nations, the effects are even smaller (Diener et al., 1999). An increased level of

[16] The median of life satisfaction is an 8 out of 10. A dummy variable is created where a life satisfaction of 7 and lower is defined as 0, and life satisfaction of 8 and higher is defined as 1.

income can even lead to more stress (Thoits and Hannan, 1979). In conclusion, life satisfaction from income is an inverted U-shape. Since income and life satisfaction are somewhat related, and life satisfaction possibly influences housing happiness, to understand the relationship between financial wealth and housing happiness, life satisfaction will be accounted for.

TABLE 4: Multiple regression results on housing happiness

	(1)	(2)	(3)	(4)	(5)
Net income	.171***			.039***	.038***
	(.01)			(.012)	(.012)
Assets		.003***		-	-.003
		(.001)			(.003)
Financial			.006***	.005***	.005***
wealth			(0)	(0)	(0)
Urbanity					
Medium	-.025**	-.015	-.035***	-.036***	-.042***
urban	(.011)	(.011)	(.011)	(.011)	(.012)
Urban	-.08***	-.057***	-.099***	-.101***	-.108***
	(.013)	(.013)	(.013)	(.013)	(.014)
Urbanity interacted with assets					
Medium					.003
urban					(.003)
Urban					.005
					(.003)
Type of house[17]					
Terraced	.03**	.06***	.052***	.045***	.045***
house	(.012)	(.012)	(.012)	(.012)	(.012)
Semi-	.234***	.279***	.239***	.232***	.232***
detached house	(.015)	(.015)	(.015)	(.015)	(.015)
Detached	.258***	.312***	.233***	.226***	.227***
house	(.016)	(.016)	(.016)	(.016)	(.016)
Type of ownership[18]					
Private rent	.275***	.332***	.239***	.235***	.235***
	(.02)	(.02)	(.02)	(.02)	(.02)
Ownership	.812***	.901***	.708***	.705***	.705***
	(.013)	(.012)	(.015)	(.015)	(.015)
Age[19]					
2 (25-34)	-.028	.04	-.003	-.014	-.014
	(.034)	(.033)	(.033)	(.033)	(.033)
3 (35-44)	.001	.085**	.054	.038	.038
	(.034)	(.033)	(.033)	(.033)	(.033)
4 (45-54)	.107***	.191***	.129***	.116***	.116***
	(.033)	(.032)	(.032)	(.033)	(.033)
5 (55-64)	.305***	.367***	.287***	.28***	.28***
	(.033)	(.032)	(.032)	(.032)	(.033)
6 (65-74)	.5***	.539***	.475***	.472***	.472***
	(.033)	(.032)	(.032)	(.032)	(.032)
7 (75+)	.656***	.675***	.626***	.626***	.626***
	(.033)	(.032)	(.032)	(.032)	(.032)
constant	4.945***	6.561***	6.497***	6.133***	6.296***
	(.1)	(.034)	(.034)	(.113)	(.115)
Observations	55,329	55,329	55,329	55,329	55,329
R-squared	.218	.214	.223	.223	.223

Robust standard errors are in parentheses
**** p<.01, ** p<.05, * p<.1*

[17] Reference category: flat/apartment
[18] Reference category: social rent
[19] Reference category: age 17-24

TABLE 5: Results of the checks on assets and life satisfaction

	(6) Model (4)	(7) Assets as dummy	(8) Life satisfaction	(9)	(10) In debt	(11) Not in debt
Net income	.039***	.047***	-.019*	-.032***	-.089***	.064***
	(.012)	(.012)	(.011)	(.011)	(.031)	(.013)
Assets						
Assets constant	-		-	-		
Assets dummy		.093***				
		(.013)				
Financial wealth	.005***	.005***	.005***	.004***	.008***	.004***
	(0)	(0)	(0)	(0)	(.001)	(0)
Urbanity						
Medium urban	-.036***	-.036***	-.03***	-.029***	-.004	-.04***
	(.011)	(.011)	(.011)	(.01)	(.031)	(.012)
Urban	-.101***	-.101***	-.101***	-.104***	-.071**	-.103***
	(.013)	(.013)	(.013)	(.012)	(.036)	(.014)
Type of house[20]						
Terraced house	.044***	.043***	.029**	.026**	.169***	.019
	(.012)	(.012)	(.012)	(.012)	(.032)	(.013)
Semi-detached house	.231***	.229***	.204***	.202***	.436***	.196***
	(.015)	(.015)	(.015)	(.015)	(.044)	(.016)
Detached house	.226***	.225***	.199***	.186***	.487***	.193***
	(.016)	(.016)	(.015)	(.015)	(.049)	(.017)
Type of ownership[21]					.169***	.019
Private rent	.237***	.241***	.215***	.208***	.375***	.203***
	(.02)	(.02)	(.02)	(.02)	(.046)	(.023)
Ownership	.706***	.709***	.666***	.663***	.788***	.693***
	(.015)	(.015)	(.014)	(.014)	(.035)	(.016)
Age[22]						
2 (25-34)	-.013	-.012	.022	.028	-.17***	.05
	(.033)	(.033)	(.032)	(.032)	(.061)	(.04)
3 (35-44)	.038	.035	.1***	.121***	-.15**	.098**
	(.033)	(.033)	(.032)	(.032)	(.063)	(.04)
4 (45-54)	.116***	.104***	.2***	.226***	-.072	.161***
	(.033)	(.033)	(.032)	(.032)	(.064)	(.039)
5 (55-64)	.28***	.264***	.356***	.377***	.119*	.321***
	(.032)	(.033)	(.031)	(.031)	(.066)	(.038)
6 (65-74)	.471***	.451***	.51***	.521***	.326***	.508***
	(.032)	(.032)	(.031)	(.031)	(.073)	(.038)
7 (75+)	.625***	.601***	.676***	.684***	.626***	.651***
	(.032)	(.033)	(.031)	(.031)	(.093)	(.038)
Life satisfaction						
Life satisfaction dummy			.568***			
			(.01)			
Life satisfaction constant				.3***		
				(.005)		
constant	6.093***	5.957***	6.323***	4.507***		
	(.113)	(.115)	(.108)	(.11)		
Observations	55,329	55,329	55,329	55,329	8,886	46,443
R-squared	.223	.224	.274	.291	.207	.213

Robust standard errors are in parentheses *Model 4 is again included for comparability.*
**** p<.01, ** p<.05, * p<.1*

[20] Reference category: flat/apartment
[21] Reference category: social rent
[22] Reference category: age 17-24

4.4 Exploration of control variables

To enrich previous results, additional analysis is performed to explore the impact of control variables. The exploration of control variables is done to check if the main results persist. Therefore, the model is re-estimated per type of ownership, type of residence, urbanity, and age. In appendix 3, an exploration of control variables is shown. Table A.1 shows explorations on ownership, type of residence, and urbanity. Here, urbanity is transformed into a categorical variable. Table A.2 shows explorations on age. First, the results of the exploration of ownership will be discussed. What can be noticed is that the effect of net income on housing happiness is negative for the rent categories, and positive for the ownership category. Thus renters experience a negative income effect. For private renters, the same conclusion holds for assets. Financial wealth only shows slight differences.

Second, the exploration of type of residence shows minor significant differences in net income and financial wealth. Third, urbanity will be discussed. The significant outcome here is financial wealth in all three urbanity categories. There is a negligible positive significant line discovered. It can be concluded that urbanity shows a small effect on the relation between financial wealth and housing happiness.

Then, age can be found in appendix 3, table A.2. Net income shows a negative significant effect for age categories 17-24 and 25-34, and a positive significant effect for age categories 65-74 and 75+. This means that the younger age categories value housing happiness lower when income is higher, and that the older age categories value housing happiness higher when income is higher. Assets show negligible results as four out of seven are not significant. For financial wealth, all results are positively significant but different over the age groups. This can be seen in figure 4. In age groups 25-34 and 35-44 financial wealth has the highest influence on housing happiness.

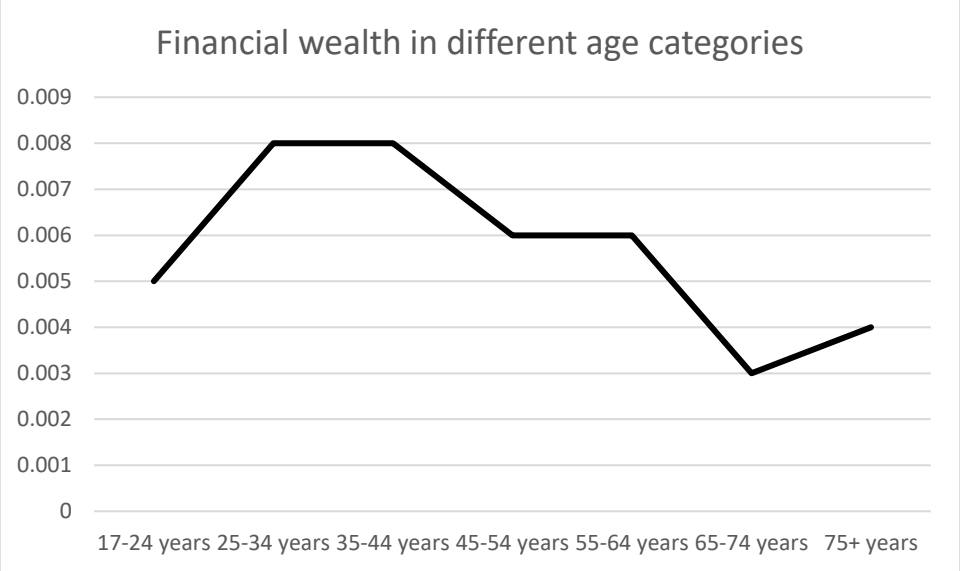

Figure 4 Financial wealth in different age categories

5. DISCUSSION

5.1 Purpose of research, summary of findings, limitations and implications

The purpose of this research is to explore the impact financial wealth has on the satisfaction that is experienced regarding the different features of the property, both inside and around the house, as well as the associated neighborhood. Now, the theory from chapter two will be compared with the results of the regression analysis. For income and financial wealth, a positive significant result is found. Thus, income and financial wealth do lead to higher housing happiness in the Netherlands. The higher the net income and financial wealth percentage, the higher the housing happiness. Thus, the first and third hypotheses cannot be rejected. Assets are positively significant in the single model, but not significant in the combined models, as net income and assets are correlated. The second hypothesis can be rejected. For the Netherlands, the results mean that people with higher income or financial welfare, experience a higher degree of housing happiness. Next to that, people who live in a detached, owned home and are higher in age, experience the highest housing happiness. Thus, higher financial welfare associates with housing happiness, which is in line with evidence in Abdu et al. (2014), Bergman et al. (2019), Coates et al. (2015), and Perez et al. (2001).

Now, the results of some remarkable control variables will be discussed with the literature. The control variable with highest significant result, is homeownership. This is interesting since in Dutch society buying a home is in many cases financially more interesting than renting (Nu.nl, 2022) Regression results show that homeowners are significantly more satisfied with their homes than social and private tenants, and ownership is stated in literature to influence financial wealth and therefore housing happiness, and homeowners are found to be more satisfied with their homes than renters (Apgar and Di, 2005; Barcus, 2004; Cheng et al., 2016; Elsinga and Hoekstra, 2005; Hu, 2013; Huang et al., 2016; Lu, 2002; MoHLG, 1953; Rent and Rent, 1978). Therefore, this research and literature agree. For the type of residence, all house types show positive significant results compared to apartments and flats. Next to that, the more spacious the house, the higher the positive significant effect. As apartments and flats are the type of housing with the overall least space and privacy, literature finds similar results. More space and privacy lead to higher housing satisfaction (Gruber, 1985; Jansen, 2013; Rent and Rent, 1978).

Furthermore, life satisfaction, is inserted in model 6 and 7 as a dependent variable. The results are striking. By including life satisfaction, the model is influenced in a way that other variables lose explanatory power, net income shows a significant negative effect and assets show no effect. Literature finds that higher life satisfaction leads to higher housing satisfaction, but the reversed effect is reasoned too, as life satisfaction influences life event decisions (Busseri et al., 2009; Lee and Park, 2015; Luhmann et al., 2012) Oswald et al., 2003; Watson, 1930). Next to that, an inverted U-shape describes the effect on income and housing satisfaction best (Diener et al., 1985; Diener et al. 1999; Thoits and Hannan, 1979).In short, more research is needed to determine the relationship between life satisfaction and housing happiness in the Netherlands. In the context of the influence of life satisfaction, future research can focus on filtering the effects of life satisfaction on housing happiness.

It is important to note that these findings are based on a questionnaire that is answered by respondents at a certain point in time. How one feels about certain topics, can change over time. . Therefore, this research can be extended with data over different years. Then, a trend over a period of time can be computed. Next to that, the data used for this research is from 2018. The WoON survey is conducted every three years, but 2021 was amid COVID-19. Since people spent more than average time in their homes, it could influence the results. Therefore, the COVID-19 impact, and increased pressure on the housing market, are not included in the results. Also, life satisfaction can play a larger role than expressed in this thesis. Research on the relationship between housing happiness and life satisfaction can be subject of future research.

5.2 Recommendations for further research

This research is a first look at the effects of financial resources on a national level. To make comparisons, it can be extended to countries with different income characteristics. Further research on financial wealth and housing happiness can make a distinction between relative and absolute income. Caporale et al. (2008) find that there is a significant relationship between income and happiness, but that reference income weakens this relationship. It is interesting to find out if the relationship between housing happiness is similar. The findings on income, assets, and financial wealth are somewhat contradictory with other previous studies (Diener, 1985; Frey and Stutzer, 2002; Ibem et al., 2019; Thoits and Hannan, 1979). Literature states that financial wealth is a supportive measure to exit a deprived situation and find a neighborhood and type of house that fits with the desires of the family, but the effects are small and temporary. Hence, literature also states that above a certain amount of wealth, housing happiness will remain the same or decline. This research has not tested whether the incremental impact of financial wealth on housing happiness changes as the financial wealth of an individual changes over time. Therefore, this could be an important next step.

Next to that, further research can focus on the impact of diversified neighborhoods on housing happiness, as Cozzolino (2020) suggests. It is found that diversification can positively impact deprivation. Therefore, it is interesting to investigate if housing happiness for lower financial wealth families can be positively impacted. Next to that, more thoughtful research can be conducted on urbanity since previous literature and regression outcomes do not comply. For age, it can be interesting to find out what the difference in ageing is between multiple income groups. Next to that, the regression outcomes show no fully statistically significant results and therefore need more analysis. As it comes to the type of residence, again, it can be interesting to find out the difference between multiple income groups. Income and home ownership also show an interesting relationship. The exploration section in chapter four finds that renters experience a negative income effect on housing happiness. An explanation can be that homeownership influences socioeconomic status (Zavisca and Gerber, 2018). It is conceivable that home ownership brings a certain status, which is more important when income is higher. Therefore, higher income groups that live in rental homes, can negatively impact housing happiness. Thus, a recommendation for further research. For life satisfaction, it appears that housing

happiness influences life satisfaction and vice versa. More research is needed to investigate this relationship.

Further research can focus on the difference between relative and absolute income, the impacts of neighborhood diversification, the influence of ageing in different income groups, and the influence of housing type in different income groups. Thus, this research is a first start in evaluating the effects of financial measures on housing happiness.

6. CONCLUSION

This paper explores the effect of monetary resources on the satisfaction that is experienced regarding different features of the property, both inside and around the house, as well as the associated neighborhood. The results are obtained by measuring the relation between net income, assets, and financial wealth on housing happiness. A regression analysis is performed on a Dutch sample from respondents of the WoON 2018 survey, carried out by the Ministry of Internal Affairs in the Netherlands. Housing happiness is conducted using a composite score, where 27 questions from the survey are combined. The findings indicate that net income and financial wealth positively significant influence housing happiness, after controlling for relevant factors. This means that higher net incomes and financial wealth, show a higher housing happiness rate. In short, the individual above 75 years finds the highest relation with housing happiness. Also, a detached home has highest outcomes. Lastly, owned homes have the highest relation with housing happiness. This research can be implemented by policymakers for policies in new-to-build neighborhoods and renovations, to take into account which income and wealth groups have which association with housing happiness, and to interact on that. The findings of this paper are a first endeavor into the effects on a national level and can be extended to countries with different income characteristics.

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APPENDIX 1 – WoON Questionnaire Housing Satisfaction

Here, the chapters 12 and 13 from the WoON research 2018 are shown. These are the questions that are used to form the housing happiness ratio, as explained in chapter 3.

Blok 12: Tevredenheid Huidige Woning

TWoning (12.1)

We zouden graag willen weten wat u zelf van uw woning vindt.

Hoe tevreden bent u met uw huidige woning?

1. Zeer tevreden 2. Tevreden 3. Niet tevreden, maar ook niet ontevreden 4. Ontevreden 5. Zeer ontevreden

Tocht (12.2)

Heeft u last van tocht in uw woning?

1. Ja 2. Nee

Schimmel (12.3)

Heeft u last van vocht of schimmel in uw woning?

1. Ja 2. Nee

Warm (12.4)

Lukt het om de woning aangenaam warm te krijgen?

1. Ja 2. Nee

Tindelin_a (12.5)

Kunt u voor de volgende uitspraken over uw woning aangeven in hoeverre u het hier mee eens of oneens bent?

De indeling van deze woning is geschikt?

1. Helemaal mee eens 2. Mee eens 3. Niet mee eens en niet mee oneens 4. Mee oneens 5. Helemaal mee oneens

Tindelin_b (12.6)

De woning is te klein?

1. Helemaal mee eens 2. Mee eens 3. Niet mee eens en niet mee oneens 4. Mee oneens 5. Helemaal mee oneens

Tindelin_c (12.7)

De woning is te groot?

1. Helemaal mee eens 2. Mee eens 3. Niet mee eens en niet mee oneens 4. Mee oneens 5. Helemaal mee oneens

Tindelin_d (12.8)

De woning is slecht onderhouden?

1. Helemaal mee eens 2. Mee eens 3. Niet mee eens en niet mee oneens 4. Mee oneens 5. Helemaal mee oneens

Tindelin_e (12.9)

De woning ademt een goede sfeer?

1. Helemaal mee eens 2. Mee eens 3. Niet mee eens en niet mee oneens 4. Mee oneens 5. Helemaal mee oneens

Tindelin_f (12.10)

Ik heb onvoldoende buitenruimte, zoals terras of tuin, bij mijn woning?

1. Helemaal mee eens 2. Mee eens 3. Niet mee eens en niet mee oneens 4. Mee oneens 5. Helemaal mee oneens

Blok 13: Tevredenheid Huidige Woonomgeving

TWoonOmg (13.1)

De volgende vragen gaan over de omgeving en de buurt waarin u woont.

Hoe tevreden bent u met uw huidige woonomgeving?

1. Zeer tevreden 2. Tevreden 3. Niet tevreden, maar ook niet ontevreden 4. Ontevreden 5. Zeer ontevreden

TevrBuurt_a (13.2)

Hieronder staat een aantal uitspraken over uw buurt.

Kunt u telkens aangeven of u het hiermee eens of oneens bent?

De bebouwing in deze buurt is aantrekkelijk.

1. Helemaal mee eens 2. Mee eens 3. Niet mee eens en niet mee oneens 4. Mee oneens 5. Helemaal mee oneens

TevrBuurt_b (13.3)

De woningen in deze buurt zijn goed onderhouden.

1. Helemaal mee eens 2. Mee eens 3. Niet mee eens en niet mee oneens 4. Mee oneens 5. Helemaal mee oneens

TevrBuurt_c (13.4)

Het is vervelend om in deze buurt te wonen.

1. Helemaal mee eens 2. Mee eens 3. Niet mee eens en niet mee oneens 4. Mee oneens 5. Helemaal mee oneens

TevrBuurt_d (13.5)

Als het mogelijk is, ga ik uit deze buurt verhuizen.

1. Helemaal mee eens 2. Mee eens 3. Niet mee eens en niet mee oneens 4. Mee oneens 5. Helemaal mee oneens

TevrBuurt_e (13.6)

Ik ben gehecht aan deze buurt.

1. Helemaal mee eens 2. Mee eens 3. Niet mee eens en niet mee oneens 4. Mee oneens 5. Helemaal mee oneens

TevrBuurt_f (13.7)

Ik voel mij thuis in deze buurt.

1. Helemaal mee eens 2. Mee eens 3. Niet mee eens en niet mee oneens 4. Mee oneens 5. Helemaal mee oneens

TevrBuurt _g (13.8)

Steeds meer buurtgenoten verhuizen ergens anders naar toe.

1. Helemaal mee eens 2. Mee eens 3. Niet mee eens en niet mee oneens 4. Mee oneens 5. Helemaal mee oneens

ConBuur_d (13.12)

In deze buurt gaat men op een prettige manier met elkaar om.

1. Helemaal mee eens 2. Mee eens 3. Niet mee eens en niet mee oneens 4. Mee oneens 5. Helemaal mee oneens

ConBuur_g (13.15)

Ik ben tevreden met de bevolkingssamenstelling in deze buurt.

1. Helemaal mee eens 2. Mee eens 3. Niet mee eens en niet mee oneens 4. Mee oneens 5. Helemaal mee oneens

ConBuur_h (13.16)

Ik ben bang in deze buurt om lastiggevallen of beroofd te worden.

1. Helemaal mee eens 2. Mee eens 3. Niet mee eens en niet mee oneens 4. Mee oneens 5. Helemaal mee oneens

TevrWink (13.30)

Hoe tevreden of ontevreden bent u met de winkels voor dagelijkse boodschappen in uw buurt? Zijn er geen winkels in uw buurt? Geef dan hier uw mening over.

1. Zeer tevreden 2. Tevreden 3. Niet tevreden, maar ook niet ontevreden 4. Ontevreden 5. Zeer ontevreden

TevrBasis (13.31)

Hoe tevreden of ontevreden bent u met de basisscholen in uw buurt?

Zijn er geen basisscholen in uw buurt? Geef dan hier uw mening over.

1. Zeer tevreden 2. Tevreden 3. Niet tevreden, maar ook niet ontevreden 4. Ontevreden 5. Zeer ontevreden 6. Weet niet / niet van toepassing

TevrCreche (13.32)

Hoe tevreden of ontevreden bent u met de kinderdagverblijven, crèches en/of peuterspeelzalen in uw buurt? Zijn deze er niet in uw buurt? Geef dan hier uw mening over.

1. Zeer tevreden 2. Tevreden 3. Niet tevreden, maar ook niet ontevreden 4. Ontevreden 5. Zeer ontevreden 6. Weet niet / niet van toepassing

BereikHuis (13.33)

Hoe goed of slecht kunt u vanaf uw huis:

De huisartsenpraktijk bereiken?

1. Voor mij zeer goed bereikbaar 2. Goed bereikbaar 3. Niet goed en niet slecht bereikbaar 4. Slecht bereikbaar 5. Voor mij zeer slecht bereikbaar

BereikZiek (13.34)

Het dichtstbijzijnde ziekenhuis bereiken?

1. Voor mij zeer goed bereikbaar 2. Goed bereikbaar 3. Niet goed en niet slecht bereikbaar 4. Slecht bereikbaar 5. Voor mij zeer slecht bereikbaar

TevrStr (13.35)

Hoe tevreden bent u met de regio waarin u woont?

1. Zeer tevreden 2. Tevreden 3. Niet tevreden, maar ook niet ontevreden 4. Ontevreden 5. Zeer ontevreden

APPENDIX 2 – Cronbach's Alpha and VIF

Cronbach's alpha:

Chapter 12	Obs.	Alpha
twoning	55,329	0.6015
tocht	55,329	0.6268
schimmel	55,329	0.6324
warm	55,329	0.6353
tindelin	55,329	0.6270
tteklein	55,329	0.6292
ttegroot	55,329	0.6825
tonderho	55,329	0.5976
sfeer	55,329	0.6314
onvbuit	55,329	0.6999
Average Alpha		0.6619

Chapter 13	Obs.	Alpha
twoonomg	55,329	0.8435
tbebouw	55,329	0.8491
tonderhbrt	55,329	0.8522
tvervele	55,329	0.8461
brtvhmog	55,329	0.8475
tgehecht	55,329	0.8507
brtthuis	55,329	0.8452
brtbewverh	55,329	0.8586
brtpret	55,329	0.8501
tbevsams	55,329	0.8514
brtveilig	55,329	0.8579
tevrwink	55,329	0.866
tevrbasis	8,545	0.8551
tevrcreche	3,489	0.8545
bereikhuis	55,329	0.8647
bereikziek	55,329	0.8668
tevrstr	55,329	0.8541
Average Alpha		0.8614

Variance Inflation Factor:

	VIF	1/VIF
bestinkh rlog	2.508	.399
vermogh rd	14.774	.068
percwelvaart	2.982	.335
OAD	2.86	.35
c.OAD#c.vermogh	15.059	.066
2.srtwon	11.7	.085
3.srtwon	12.353	.081
4.srtwon	13.157	.076
2.srtwon#c.OAD	10.449	.096
3.srtwon#c.OAD	10.42	.096
4.srtwon#c.OAD	10.877	.092
2.socparthuurkoop	1.272	.786
3.socparthuurkoop	2.28	.439
2.leeftijd	5.625	.178
3.leeftijd	6.176	.162
4.leeftijd	7.45	.134
5.leeftijd	7.584	.132
6.leeftijd	6.981	.143
7.leeftijd	5.407	.185
Mean VIF	7.89	.

APPENDIX 3 – Data exploration

Appendix 3; Table A.1: Ownership, type of residence and urbanity

	Type of ownership			Type of residence		Urbanity[23]		
	Social rent	Private rent	Owner of home	Flat, terraced house, semi-detached house	Detached house	Rural	Medium urban	Urban
Net income	-.201***	-.069*	.095***	.027**	.123***	.086***	.041**	.013
	(.026)	(.039)	(.014)	(.013)	(.024)	(.028)	(.017)	(.02)
Assets	.001***	-.021***	.001	0	.001**	.001	.001*	-.001
	(0)	(.006)	(.001)	(.001)	(.001)	(.003)	(0)	(.002)
Financial wealth	.007***	.007***	.005***	.006***	.003***	.003***	.005***	.006***
	(.001)	(.001)	(0)	(0)	(.001)	(.001)	(0)	(.001)
Urbanity								
Medium urban	-.036	-.109*	-.031***	-.052***	-.03			
	(.025)	(.06)	(.012)	(.013)	(.02)			
Urban	-.188***	-.206***	-.052***	-.154***	-.076**			
	(.028)	(.061)	(.014)	(.014)	(.035)			
Type of house[24]								
Terraced house	.051**	-.127***	.08***			-.053	-.027	.142***
	(.021)	(.04)	(.016)			(.033)	(.019)	(.019)
Semi-detached house	.28***	-.269***	.281***			.155***	.183***	.327***
	(.05)	(.104)	(.018)			(.037)	(.021)	(.032)
Detached house	.444***	.03	.279***			.174***	.184***	.282***
	(.088)	(.114)	(.018)			(.037)	(.022)	(.037)
Type of ownership[25]								
Private rent				.244***	-.097	.255***	.194***	.279***
				(.021)	(.14)	(.058)	(.03)	(.032)
Ownership				.756***	.547***	.686***	.681***	.76***
				(.015)	(.09)	(.033)	(.02)	(.027)

[23] Less than 1000 addresses per squared kilometer, is defined as rural. Between 1000 and 1500 is defined as medium urban, and more than 1500 addresses per squared kilometer is defined as urban (CBS, 2022a).

[24] Reference category: flat/apartment

[25] Reference category: social rent

	Type of ownership			Type of residence		Urbanity[26]		
	Social rent	Private rent	Owner of home	Flat, terraced house, semi-detached house	Detached house	Rural	Medium urban	Urban
Age[27]								
2 (25-34)	-.104**	-.022	.151***	-.025	.245	.112	.042	-.131**
	(.052)	(.077)	(.055)	(.034)	(.159)	(.08)	(.048)	(.056)
3 (35-44)	-.135**	-.033	.2***	.027	.356**	.251***	.077	-.11*
	(.057)	(.086)	(.054)	(.035)	(.156)	(.08)	(.048)	(.057)
4 (45-54)	.039	.037	.25***	.105***	.421***	.331***	.161***	-.039
	(.053)	(.088)	(.054)	(.034)	(.155)	(.078)	(.047)	(.056)
5 (55-64)	.279***	.189**	.396***	.287***	.518***	.508***	.32***	.125**
	(.051)	(.087)	(.054)	(.034)	(.155)	(.078)	(.047)	(.056)
6 (65-74)	.58***	.51***	.544***	.49***	.653***	.668***	.496***	.362***
	(.05)	(.08)	(.054)	(.033)	(.155)	(.077)	(.046)	(.055)
7 (75+)	.853***	.725***	.534***	.674***	.59***	.802***	.635***	.538***
	(.048)	(.076)	(.055)	(.033)	(.156)	(.078)	(.047)	(.055)
constant	8.573***	7.558***	6.034***	6.235***	5.536***	5.587***	6.072***	6.265***
	(.242)	(.383)	(.143)	(.127)	(.29)	(.278)	(.162)	(.191)
Observations	14,834	4,264	36,231	47,148	8,181	10,869	27,446	17,014
R-squared	.107	.085	.083	.205	.061	.218	.213	.229

Robust standard errors are in parentheses
**** p<.01, ** p<.05, * p<.1*

[26] Less than 1000 addresses per squared kilometer, is defined as rural. Between 1000 and 1500 is defined as medium urban, and more than 1500 addresses per squared kilometer is defined as urban (CBS, 2022a).

[27] Reference category: age 17-24

Appendix 3; Table A.2: Age							
	1 (17-24)	2 (25-34)	3 (35-44)	4 (45-54)	5 (55-64)	6 (65-74)	7 (75+)
Net income	-.146***	-.082**	.02	.02	-.029	.059*	.089**
	(.034)	(.033)	(.038)	(.026)	(.024)	(.035)	(.041)
Assets	.006	-.005	.004*	.003***	0	.001*	-
	(.007)	(.004)	(.002)	(.001)	(.001)	(.001)	
Financial wealth	.005***	.008***	.008***	.006***	.006***	.003***	.004***
	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)	(.001)
Urbanity							
Medium	.107	.061*	-.055*	-.038	-.053**	-.043*	-.067**
urban	(.089)	(.034)	(.03)	(.025)	(.024)	(.024)	(.026)
Urban	.133	.021	-.07*	-.076**	-.13***	-.119***	-.175***
	(.097)	(.039)	(.036)	(.03)	(.029)	(.028)	(.03)
Type of house[28]							
Terraced house	.282***	.248***	.259***	.142***	-.012	-.111***	-.155***
	(.075)	(.034)	(.036)	(.035)	(.03)	(.026)	(.027)
Semi-detached	.636***	.502***	.477***	.366***	.196***	.027	-.025
house	(.133)	(.048)	(.044)	(.041)	(.036)	(.033)	(.035)
Detached house	.362**	.44***	.479***	.4***	.195***	.088***	-.034
	(.168)	(.056)	(.048)	(.042)	(.037)	(.032)	(.036)
Type of ownership[29]							
Private rent	.251***	.363***	.281***	.201***	.167***	.213***	.151***
	(.082)	(.047)	(.062)	(.061)	(.057)	(.049)	(.042)
Ownership	.551***	.767***	.808***	.767***	.787***	.719***	.412***
	(.087)	(.041)	(.042)	(.037)	(.034)	(.033)	(.037)
constant	7.735***	6.937***	5.933***	6.176***	7.063***	6.613***	6.604***
	(.344)	(.312)	(.365)	(.248)	(.224)	(.341)	(.398)
Observations	1,375	7,310	8,027	10,573	11,056	9,962	7,026
R-squared	.113	.212	.242	.231	.212	.18	.116

Robust standard errors are in parentheses
**** p<.01, ** p<.05, * p<.1*

[28] Reference category: flat/apartment
[29] Reference category: social rent

APPENDIX 4 – Detailed scatter plots

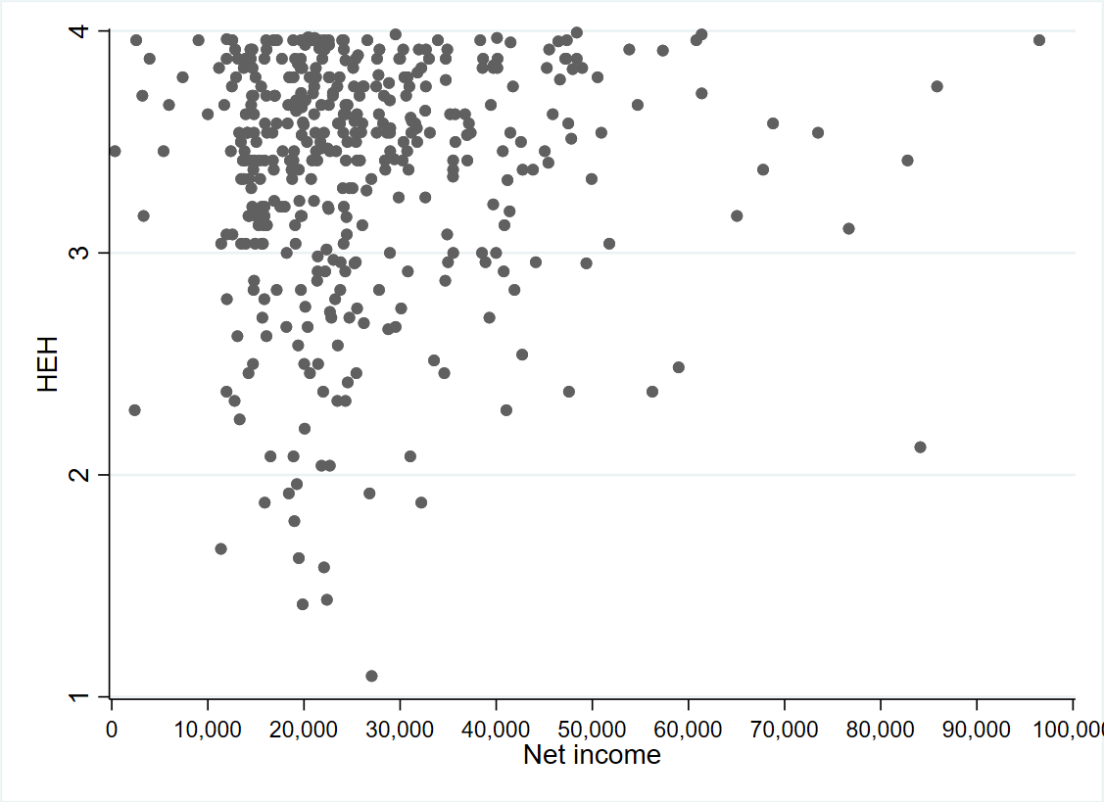

Figure a: Detailed scatterplot of net income and housing happiness below 4 out of 10

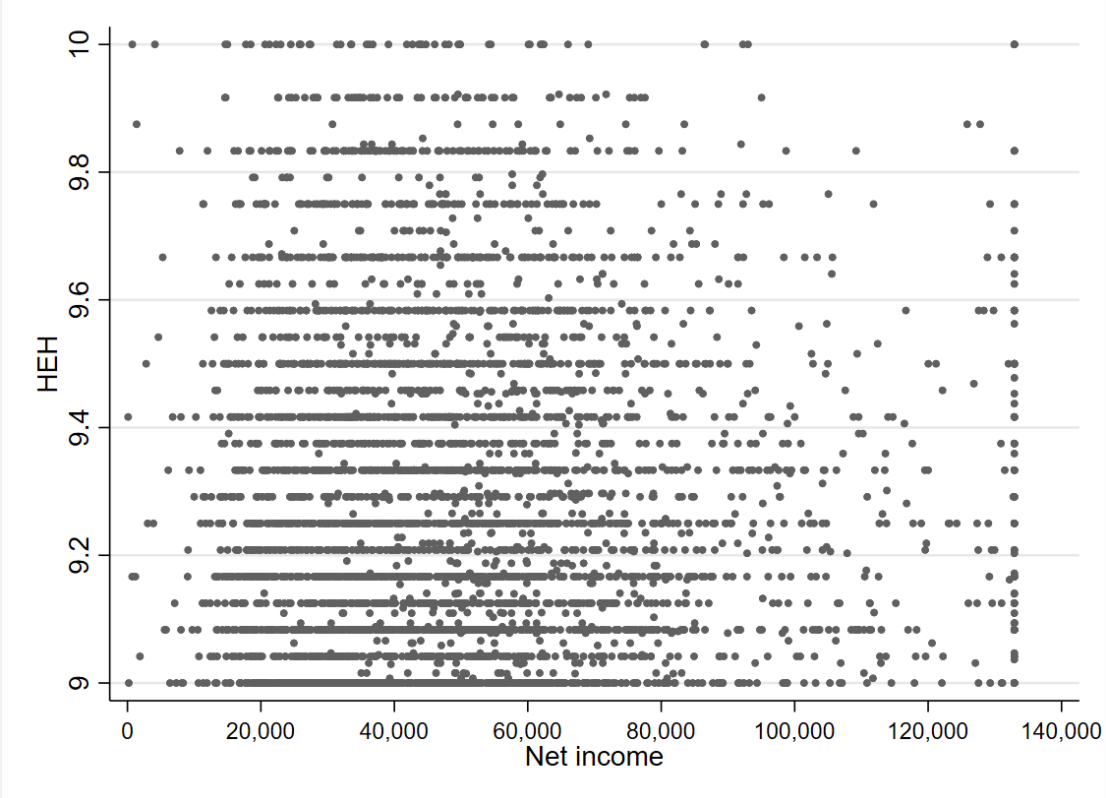

Figure b: Detailed scatterplot of net income and housing happiness above 9 out of 10

APPENDIX 5 – Do-file Stata

```
clear all

*import excel "WoON2018_e_1.0.xlsx", firstrow case (lower)
*67.254 observaties, 922 variabelen

*use "C:\Users\Marije vdm\OneDrive\Bureaublad\scriptiepoging7.dta"
*When on UWP:
*use "X:\My Documents\Stata\maindata.dta"

ssc install asdoc

*-------Merge urbanity of COROP regions-----
*clear
*sysuse maindata, clear
*merge m:1 corop using datasetdiejewilgebruiken.dta
*drop if _merge != 3
*drop _merge

*ren StatistischegegevensOmgevingsa OAD
*OmgevingsAdressenDichtheid
*sum OAD

*save "finaldofile.dta"
*When on UWP:
*use "X:\My Documents\Stata\finaldofile.dta"
use "C:\Users\Marije vdm\OneDrive\Bureaublad\finaldofile.dta"

*-------Data cleaning----------------
tabulate mrhhipd
*1.929/59.352, 3.25% wonen met andere huishoudens
tabulate hhonderh
*254/1.370 is onderhuurder
tabulate eighuurb
*548/21.454 betalen geen huur

drop if eighuura==.
drop if eighuurb==2
drop if mrhhipd==1

drop if bestinkh_r < 0
drop if percwelvaart==.

drop if srtwon > 4

*--------GENERATE----------------------------
gen bestinkh_rlog=log(bestinkh_r)
gen vermogh_rd=vermogh_r/100000
```

```
gen vermogh_rdummy=1 if vermogh_r>=0
replace vermogh_rdummy=0 if vermogh_rdummy==.

gen levendummy=1 if leven>=8
replace levendummy=0 if levendummy==.

ssc install winsor2
ssc install asdoc
winsor2 vermogh_r, cuts (1 99) replace
winsor2 bestinkh_r, cuts (0 99) replace

*Generate urbanity
gen urbanity=.
replace urbanity=3 if OAD>=1500
replace urbanity=2 if inrange(OAD, 1000, 1500)
replace urbanity=1 if OAD<=1000
*According CBS: above 1500 is urban, below 1000 is rural. 1= rural 2= medium urban, 3= urban

gen socparthuur=.
replace socparthuur=1 if huurmnd<=710.68 & eighuura==2
replace socparthuur=2 if huurmnd>710.68 & eighuura==2
*Definition social rent in 2018 <=710.68 euro

gen socparthuurkoop=.
replace socparthuurkoop=3 if eighuura==1
replace socparthuurkoop=2 if socparthuur==2
replace socparthuurkoop=1 if socparthuur==1
*All three housing types in one category

*-------Housing happiness ------
*BLOK 12 (10 punten)
replace twoning=0.75 if twoning==2
replace twoning=0.5 if twoning==3
replace twoning=0.25 if twoning==4
replace twoning=0 if twoning==5
*Hoe tevreden bent u met uw huidige woning? 1=zeer tevreden

replace tocht=0 if tocht==1
replace tocht=1 if tocht==2
*Heeft u last van tocht in uw woning? 1=ja

replace schimmel=0 if schimmel==1
replace schimmel=1 if schimmel==2
*Heeft u last van vocht of schimmel in uw woning? 1=ja

replace warm=0 if warm==2
*Lukt het om de woning aangenaam warm te krijgen? 1=ja

replace tindelin=0.75 if tindelin==2
replace tindelin=0.5 if tindelin==3
replace tindelin=0.25 if tindelin==4
```

```
replace tindelin=0 if tindelin==5
*dit is tindelin_a=de indeling is geschikt. 1=ja

replace tteklein=0.75 if tteklein==4
replace tteklein=0.5 if tteklein==3
replace tteklein=0.25 if tteklein==2
replace tteklein=0 if tteklein==1
replace tteklein=1 if tteklein==5
*dit is tindelin_b=de woning is te klein. 1=ja

replace ttegroot=0.75 if ttegroot==4
replace ttegroot=0.5 if ttegroot==3
replace ttegroot=0.25 if ttegroot==2
replace ttegroot=0 if ttegroot==1
replace ttegroot=1 if ttegroot==5
*dit is tindelin_c=de woning is te groot. 1=ja

replace tonderho=0.75 if tonderho==4
replace tonderho=0.5 if tonderho==3
replace tonderho=0.25 if tonderho==2
replace tonderho=0 if tonderho==1
replace tonderho=1 if tonderho==5
*dit is tindelin_d=de woning is slecht onderhouden. 1=ja

replace sfeer=0.75 if sfeer==2
replace sfeer=0.5 if sfeer==3
replace sfeer=0.25 if sfeer==4
replace sfeer=0 if sfeer==5
*dit is tindelin_e=de woning heeft een goede sfeer. 1=ja

replace onvbuit=0.75 if onvbuit==4
replace onvbuit=0.5 if onvbuit==3
replace onvbuit=0.25 if onvbuit==2
replace onvbuit=0 if onvbuit==1
replace onvbuit=1 if onvbuit==5
*dit is tindelin_f=ik heb onvoldoende buitenruimte. 1=ja

*local list12 "twoning tocht schimmel warm tindelin tteklein ttegroot tonderho sfeer onvbuit"
*foreach i in `list12' {
        *replace `i' = 0 if `i'==.
*}

*BLOK 13 (36 punten)
replace twoonomg=0.75 if twoonomg==2
replace twoonomg=0.5 if twoonomg==3
replace twoonomg=0.25 if twoonomg==4
replace twoonomg=0 if twoonomg==5
*hoe tevreden bent u met uw huidige woonomgeving?

replace tbebouw=0.75 if tbebouw==2
replace tbebouw=0.5 if tbebouw==3
```

```
replace tbebouw=0.25 if tbebouw==4
replace tbebouw=0 if tbebouw==5
* tevrbuurt_a = de bebouwing in deze buurt is aantrekkelijk

replace tonderhbrt=0.75 if tonderhbrt==2
replace tonderhbrt=0.5 if tonderhbrt==3
replace tonderhbrt=0.25 if tonderhbrt==4
replace tonderhbrt=0 if tonderhbrt==5
* tevrbuurt_b = de woningen in deze buurt zijn goed onderhouden

replace tvervele=0.75 if tvervele==4
replace tvervele=0.5 if tvervele==3
replace tvervele=0.25 if tvervele==2
replace tvervele=0 if tvervele==1
replace tvervele=1 if tvervele==5
* tevrbuurt_c = het is vervelend om in deze buurt te wonen

replace brtvhmog=0.75 if brtvhmog==4
replace brtvhmog=0.5 if brtvhmog==3
replace brtvhmog=0.25 if brtvhmog==2
replace brtvhmog=0 if brtvhmog==1
replace brtvhmog=1 if brtvhmog==5
* tevrbuurt_d = als het mogelijk is, ga ik uit deze buurt verhuizen

replace tgehecht=0.75 if tgehecht==2
replace tgehecht=0.5 if tgehecht==3
replace tgehecht=0.25 if tgehecht==4
replace tgehecht=0 if tgehecht==5
* tevrbuurt_e = ik ben gehecht aan deze buurt

replace brtthuis=0.75 if brtthuis==2
replace brtthuis=0.5 if brtthuis==3
replace brtthuis=0.25 if brtthuis==4
replace brtthuis=0 if brtthuis==5
* tevrbuurt_f = ik voel mij thuis in deze buurt

replace brtbewverh=0.75 if brtbewverh==4
replace brtbewverh=0.5 if brtbewverh==3
replace brtbewverh=0.25 if brtbewverh==2
replace brtbewverh=0 if brtbewverh==1
replace brtbewverh=1 if brtbewverh==5
* tevrbuurt_g = steeds meer buurtgenoten vehruizen ergens anders naar toe

replace brtpret=0.75 if brtpret==2
replace brtpret=0.5 if brtpret==3
replace brtpret=0.25 if brtpret==4
replace brtpret=0 if brtpret==5
* in deze buurt gaat men op een prettige manier met elkaar om

replace tbevsams=0.75 if tbevsams==2
replace tbevsams=0.5 if tbevsams==3
```

replace tbevsams=0.25 if tbevsams==4
replace tbevsams=0 if tbevsams==5
* ik ben tevreden met de bevolkingssamenstelling in deze buurt

replace brtveilig=0.75 if brtveilig==4
replace brtveilig=0.5 if brtveilig==3
replace brtveilig=0.25 if brtveilig==2
replace brtveilig=0 if brtveilig==1
replace brtveilig=1 if brtveilig==5
* ik ben bang in deze buurt om lastiggevallen of beroofd te worden

replace tevrwink=0.75 if tevrwink==2
replace tevrwink=0.5 if tevrwink==3
replace tevrwink=0.25 if tevrwink==4
replace tevrwink=0 if tevrwink==5
* hoe tevreden bent u met winkels voor dagelijkse boodschappen in uw buurt

replace tevrbasis=0.75 if tevrbasis==2
replace tevrbasis=0.5 if tevrbasis==3
replace tevrbasis=0.25 if tevrbasis==4
replace tevrbasis=0 if tevrbasis==5
replace tevrbasis=. if tevrbasis==6
* hoe tevreden bent u met basisscholen in uw buurt? 6=weet niet/ niet van toepassing. Die heb ik nu een . gegeven. Kijken wat je er mee doet.

replace tevrcreche=0.75 if tevrcreche==2
replace tevrcreche=0.5 if tevrcreche==3
replace tevrcreche=0.25 if tevrcreche==4
replace tevrcreche=0 if tevrcreche==5
replace tevrcreche=. if tevrcreche==6
* hoe tevreden bent u met creches in uw buurt? 6=weet niet/ niet van toepassing. Die heb ik nu een . gegeven. Kijken wat je er mee doet.

replace bereikhuis=0.75 if bereikhuis==2
replace bereikhuis=0.5 if bereikhuis==3
replace bereikhuis=0.25 if bereikhuis==4
replace bereikhuis=0 if bereikhuis==5
* hoe goed kunt u de huisartsenpraktijk bereiken?

replace bereikziek=0.75 if bereikziek==2
replace bereikziek=0.5 if bereikziek==3
replace bereikziek=0.25 if bereikziek==4
replace bereikziek=0 if bereikziek==5
* hoe goed kunt u het ziekenhuis bereiken

replace tevrstr=0.75 if tevrstr==2
replace tevrstr=0.5 if tevrstr==3
replace tevrstr=0.25 if tevrstr==4
replace tevrstr=0 if tevrstr==5
* hoe tevreden bent u met de regio waarin u woont

* op dit moment zijn er 17 variabelen nu meegenomen.

```
*local list "twoonomg tbebouw tonderhbrt tvervele brtvhmog  tgehecht brtthuis brtbewverh tevrwink tevrbasis tevrcreche bereikhuis bereikziek tevrstr"
*foreach i in `list' {
        *replace `i' = 0 if `i'==.
*}

local blok13list "twoonomg tbebouw tonderhbrt tvervele brtvhmog tgehecht brtthuis brtbewverh brtpret tbevsams brtveilig tevrwink tevrbasis tevrcreche bereikhuis bereikziek tevrstr"
local blok12list "twoning tocht schimmel warm tindelin tteklein ttegroot tonderho sfeer onvbuit"

egen countblok13=rownonmiss(`blok13list')
egen countblok12=rownonmiss(`blok12list')

egen blok12=rowtotal(twoning tocht schimmel warm tindelin tteklein ttegroot tonderho sfeer onvbuit)
egen blok13=rowtotal(twoonomg tbebouw tonderhbrt tvervele brtvhmog tgehecht brtthuis brtbewverh brtpret tbevsams brtveilig tevrwink tevrbasis tevrcreche bereikhuis bereikziek tevrstr)

tabulate countblok12
tabulate countblok13

gen EH=(blok13/countblok13*10)
*environmental happiness on a scale from 0 to 10
gen HH=(blok12/countblok12*10)
*housing happiness on a scale from 0 to 10
drop if HH==.
gen HEH=(HH+EH)/2
*housing & environmental happiness on a scale from 0 to 10

*---------- DESCRIPTIVES ----------
histogram bestinkh_r, frequency normal kdensity
histogram vermogh_r, frequency normal kdensity
histogram HEH, frequency normal kdensity

asdoc sum HEH bestinkh_r vermogh_r percwelvaart leven, detail save(descriptives)

asdoc tabulate socparthuurkoop, save(tabulate)
asdoc tabulate leeftijd, save(tabulate)
asdoc tabulate urbanity, save(tabulate)
asdoc tabulate srtwon, save(tabulate)
asdoc tabulate urbanity, save(tabulate)

*Explanation srtwon:
*1. Flat, appartement, etagewoning, boven- of benedenwoning
*2. Rijtjeshuis, tussenwoning, hoekwoning
*3. Half-vrijstaande woning
*4. Vrijstaande woning
*5. Boerderij, woning met tuindersbedrijf
*6. Woning met aparte winkel, kantoor-, praktijk- of bedrijfsruimte
*7. Wooneenheid met gezamenlijk gebruik van keuken of toilet
*8. Ander soort woning
```

```
asdoc tabstat HEH, statistic (n mean sd min max) by (socparthuurkoop)
asdoc tabstat HEH, statistic (n mean sd min max) by (leeftijd)
tabstat leven, statistic (n mean sd max min) by (socparthuurkoop)
summarize leven

*-----------RELATEDNESS------------------------
alpha twoonomg tbebouw tonderhbrt tvervele brtvhmog tgehecht brtthuis brtbewverh brtpret tbevsams brtveilig tevrwink tevrbasis
tevrcreche bereikhuis bereikziek tevrstr, item
alpha twoning tocht schimmel warm tindelin tteklein ttegroot tonderho sfeer onvbuit, item

*save "everythinguntilregression.dta", replace
*use "everythinguntilregression.dta"

*----------HOOFD REGRESSIE----------
*clear all
*use "X:\My Documents\Stata\allesbehalveregressie.dta"

*HEH
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart i.urbanity##c.vermogh_rd ib1.socparthuurkoop ib1.leeftijd ib1.srtwon,robust nested
save(asdocHEH) replace
asdoc vif
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.socparthuurkoop ib1.leeftijd ib1.srtwon ib1.urbanity, robust nested
save(asdocHEH)
asdoc reg HEH bestinkh_rlog ib1.socparthuurkoop ib1.leeftijd ib1.srtwon ib1.urbanity, robust nested save(asdocHEH)
asdoc reg HEH vermogh_rd ib1.socparthuurkoop ib1.leeftijd ib1.srtwon ib1.urbanity, robust nested save(asdocHEH)
asdoc reg HEH percwelvaart ib1.socparthuurkoop ib1.leeftijd ib1.srtwon ib1.urbanity, robust nested save(asdocHEH)

*DUMMY VERMOGEN, DUMMY LEVEN, EXCLUSIEF LEVEN
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.socparthuurkoop ib1.leeftijd ib1.srtwon ib1.urbanity, robust nested
save(asdocVERMLEV) replace
asdoc reg HEH bestinkh_rlog vermogh_rdummy percwelvaart ib1.socparthuurkoop ib1.leeftijd ib1.srtwon ib1.urbanity, robust nested
save(asdocVERMLEV)
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart levendummy ib1.socparthuurkoop ib1.leeftijd ib1.srtwon ib1.urbanity, robust nested
save(asdocVERMLEV)
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.socparthuurkoop ib1.leeftijd ib1.srtwon ib1.urbanity leven, robust nested
save(asdocVERMLEV)

*--------CORRELATION DEP AND INDEP VARS--------
asdoc pwcorr HEH bestinkh_rlog vermogh_r percwelvaart socparthuurkoop leeftijd leven urbanity srtwon, star(0.05) save(asdocCORR)
replace

*--------CHOW TESTS-----------------------------
*per leeftijd
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.socparthuurkoop ib1.srtwon  ib1.urbanity if leeftijd==1, robust nested
save(asdocLFTD) replace
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.socparthuurkoop ib1.srtwon ib1.urbanity if leeftijd==2, robust nested
save(asdocLFTD)
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.socparthuurkoop ib1.srtwon ib1.urbanity if leeftijd==3, robust nested
save(asdocLFTD)
```

```
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.socparthuurkoop ib1.srtwon ib1.urbanity if leeftijd==4, robust nested save(asdocLFTD)
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.socparthuurkoop ib1.srtwon ib1.urbanity if leeftijd==5, robust nested save(asdocLFTD)
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.socparthuurkoop ib1.srtwon ib1.urbanity if leeftijd==6, robust nested save(asdocLFTD)
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.socparthuurkoop ib1.srtwon ib1.urbanity if leeftijd==7, robust nested save(asdocLFTD)

*per urbanity
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.socparthuurkoop ib1.leeftijd ib1.srtwon if urbanity==1, robust nested save(asdocURBAN) replace
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.socparthuurkoop ib1.leeftijd ib1.srtwon if urbanity==2, robust nested save(asdocURBAN)
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.socparthuurkoop ib1.leeftijd ib1.srtwon if urbanity==3, robust nested save(asdocURBAN)

*per type woning
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.socparthuurkoop ib1.leeftijd ib1.urbanity if srtwon<=3, robust nested save(asdocSRTWON) replace
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.socparthuurkoop ib1.leeftijd ib1.urbanity if srtwon==4, robust nested save(asdocSRTWON)

*per eigendom
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.leeftijd ib1.srtwon ib1.urbanity if socparthuurkoop==1, robust nested save(asdocEIGEN) replace
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.leeftijd ib1.srtwon ib1.urbanity if socparthuurkoop==2, robust nested save(asdocEIGEN)
asdoc reg HEH bestinkh_rlog vermogh_rd percwelvaart ib1.leeftijd ib1.srtwon ib1.urbanity if socparthuurkoop==3, robust nested save(asdocEIGEN)
```