

Tenure type and housing satisfaction in the Netherlands

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Abstract

This thesis explores the relationship between housing satisfaction and tenure type (owning vs. renting) in the Netherlands. The central research question is: "What is the relationship between housing satisfaction and tenure type in the Netherlands in 2021?" With the use of data, from the 2021 Netherlands' Housing Survey (WoON), this study performs a binary logistic regression analysis to examine how tenure type is associated with housing satisfaction and how this relationship varies across age cohorts. The analysis reveals that homeowners consistently report higher levels of housing satisfaction compared to renters. This trend is observed across all age cohorts, with key contributing factors including better housing maintenance, and greater neighborhood satisfaction among homeowners. Renters, particularly younger ones, show more variability in satisfaction and a higher desire to move, indicating a less stable housing satisfaction.

Keywords: housing satisfaction, tenure type, homeownership, renting, age cohorts, Netherlands.

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1. Introduction

1.1 Motivation

Shelter is a basic human need and, historically, the emphasis of housing has been put on the provision instead of the living conditions. Housing satisfaction is an important predictor of overall life satisfaction and wellbeing. Therefore, in many Western societies, the livability of (urban) areas has become a key focus on political agendas. This focus highlights the importance of understanding what contributes to peoples housing satisfaction. According to Salah et al. (2016) there is an increase in mismatch between households' current living conditions and housing needs, making it an important issue to studies. In the Netherlands, there are currently 3.111.000 households residing in rental accommodations, constituting 40% of the overall housing supply. The reaming 60% of households own the property (Ministry of the Interior and Kingdom Relations (BZK) and Statistics Netherlands (CBS), 2022). According to a study by ESB, which asked, "To what extend does the current living situation match the housing preferences of the population?"-1.8 million households find themselves in a mismatch with their housing situation (van Dijk and van Rooij, 2023).

The housing market has undergone significant changes over the past two decades due to economic fluctuations, evolving housing policies, and demographic shifts (Andrews and Sánches, 2011; Doling and Ronald, 2010). This demographic change of an aging population increases the relevance of the topic healthy ageing. Aging populations require housing that supports their health, safety, and well-being, making housing satisfaction an important factor in their quality of life. In housing for older adults, physical and environmental aspects play an important role in their ability to age healthily (Engelen et al., 2021). In many Western societies, there has been a growing recognition of the need to adapt housing and urban environments to better support the aging population. In the Netherlands, approximately 25% of the population is expected to be 65 years or older by 2040 (Statistics Netherlands (CBS), 2023). This highlights the importance of addressing their specific housing needs, which improves housing satisfaction.

In the academic literature it is well-known that homeownership positively impacts housing satisfaction (Elsinga and Hoekstra, 2005; Diaz Serrano, 2009). From the eight countries that Elsinga and Hoekstra (2005) investigate, using data from the European Household panel, seven countries show significant differences in housing satisfaction between tenure type, including the Netherlands. Similarly, Diaz Serrano (2009) highlights that the security, autonomy, and financial stability associated with homeownership contribute to greater satisfaction among individuals compared to those in rental housing. This thesis focuses specifically on the Netherlands to further investigate the relationship between housing satisfaction and tenure type.

1.2 Research problem

The research aim of this study is to explore the relationship between housing satisfaction and tenure type in the Netherlands, with a particular focus between age cohorts. The central research question is:

"What is the relationship between housing satisfaction and tenure type in the Netherlands in 2021?"

To address this question, the thesis is structured around three sub-questions:

1. What is the underlying mechanism between housing satisfaction and tenure type according to academic literature?

This sub-question focuses on the underlying mechanism between housing satisfaction and tenure type according to literature that has already been written about previous studies.

2. What is the association between housing satisfaction and tenure type?

This sub-question focuses analyzing data from the Netherlands in 2021 to identify patterns and correlations between different types of tenure and the level of housing satisfaction reported by residents.

3. How different is the association between housing satisfaction and tenure type between different age cohorts?

This sub-question aims to uncover whether and how the impacts of tenure on housing satisfaction vary across age cohorts, reflecting the distinct priorities and challenges faced by each cohort. Also here the data from WoON research 2021 will be used.

By addressing these questions, the thesis will contribute not only to academic discussions but also provide insights with potential policy implications. It will address both the theoretical and societal relevance of the research, offering a comprehensive analysis of the factors that shape the living conditions and well-being of individuals in the Netherlands.

1.3 Thesis structure

The thesis is structured as follows. Chapter 1 outlines the motivation for the study and introduces the research topic and problem. Chapter 2 reviews existing literature on housing satisfaction, tenure types, and age cohorts. Chapter 3 details the research design, data collection methods, and the binary logistic regression. Chapter 4 presents the empirical and inferential statistics. Lastly, chapter 5 draws conclusions and discusses the possible impacts for further research and implications.

2. Theoretical framework

2.1 Housing satisfaction

Housing satisfaction is a multifaceted phenomenon that reflects the degree to which residents feel content with their living conditions (Mridha, 2023). It describes various aspects such as the physical quality of the house, the surrounding environment, accessibility to services, and the sense of community (Lu, 1999). Research indicates that housing satisfaction is influenced by both objective factors, such as, housing quality, size, location and subjective factors such as personal preferences and expectations (Amerigo and Aragones, 1997).

According to Morris and Winter (1975), the housing adjustment theory suggests that residents keep evaluating their housing situation and comparing it to their housing aspirations and needs. When there is a mismatch, residents may experience housing dissatisfaction, reminding them to either adapt to their current situation or seek new housing. This theory highlights the dynamic nature of housing satisfaction. It also shows that socio-economic constraints and individual preferences are of importance in shaping the satisfaction of these residents

Furthermore, studies have shown that housing satisfaction is an important predictor of overall life satisfaction and well-being (Rohe and Basolo, 1997; Nakazato et al., 2011). This emphasizes the important role of the right housing in promoting mental and physical health. This makes it a key area of interest for policymakers and researchers on this topic.

2.2 Tenure type

The term tenure type refers to a legal arrangement under which a person occupies a residence, most often categorized into ownership and rental tenure (Mo et al., 2023). This concept is important in understanding housing experiences and satisfaction levels. While ownership and rental are the primary forms of tenure, other tenure types include cooperative housing, leasehold, and shared ownership (Blessing, 2012). For the sake of this research and with the available data, ownership and rental are the two tenure types used.

Theories of tenure choice indicate that households make tenure decisions based on a combination of economic, social, and psychological factors (Huynh and Truong, 2024). Economic theories tell that homeownership is preferred when it is financially possible, providing benefits such as increasing property value, tax incentives, and potential for wealth increase (DiPasquale and Glaeser, 1999). Homeownership typically offers greater stability due to long-term commitment and financial investment involved, which creates security and continuity (Haurin et al., 2002). As a form of investment, homeownership allows individuals to build wealth through property value appreciation and encourages investment in property maintenance and improvements, unlike renting, where payments do not contribute to personal assets and renters are less likely to invest in property improvements (Herbert and Belsky 2008).

Social theories, on the other hand, emphasize the symbolic value of homeownership, associating it with social status, security, and community attachment (Rohe et al., 2001). Homeowners often experience a strong sense of psychological ownership, taking pride in and personalizing their homes, which enhances satisfaction and well-being (Rohe et al. 2001). This sense of ownership creates a deeper connection to the community and a greater sense of belonging (Perkins & Long, 2002). In contrast, renters often have less control over their living spaces and a lower sense of emotional investment due to the temporary nature of rental agreements and landlord restrictions (Desmond, 2016). This lack of control and emotional investment can lead to lower levels of housing satisfaction and weaker community ties (Rohe et al., 2001).

Research indicates that homeowners most of the time report higher levels of housing satisfaction compared to renters, greater control over their living environment and financial benefits of ownership are big contributors to this (Elsinga & Hoekstra, 2005). However, the relationship between tenure type and satisfaction is complex. The relationship is influenced by factors such as housing market conditions, cultural attitudes towards homeownership, and individual life stages (McCarthy et al., 2001).

2.3 Housing preferences in different age cohorts

Housing preferences are shaped by a large number of factors including age, lifestyle, socio-economic status, and cultural background (Elsinga and Hoekstra, 2005). Different age cohorts have distinct housing preferences due to differing needs and priorities at different stages of life (Balestra and Sultan, 2013).

Young adults, in the early stages of their careers, more often prefer rental housing due to its flexibility and lower financial commitment (Stone et al., 2011). Their housing preferences are influenced by proximity to employment opportunities, social amenities, and the urban environment (Smith et al., 2013). As persons are starting to get in the stage of forming families, their preferences shift towards larger and owned homes in suburban areas that offer more space, better schools, and a safer environment for raising children (Clark and Deurloo, 2006).

Middle-aged and older adults tend to prioritize stability and security. They seek homeownership as a way of financial investment and a source of stability (Kendig, 1984). For older adults, their housing preferences may change again towards downsizing or moving into age-friendly communities. Because of their change in health and mobility they may need housing that provides the necessary support and amenities. (Demirkan, 2007).

Boehm and Schlottman (2004) suggests that housing preferences are always changing and thus evolve with changes in the life course of people. Highlighting the importance of considering age-specific needs in housing policies are necessary. Understanding these preferences across different age cohorts can help

in designing housing solutions that a response to the different needs of the population.

2.4 Conceptual model

Figure 1 shows the conceptual model, it focuses on understanding the factors influencing housing satisfaction. Housing satisfaction is identified as the dependent variable, which is the main outcome of interest. The key independent variable in this study is tenure type, which differentiates between renting and owning a home. This model also uses several control variables that are hypothesized to affect housing satisfaction. These include age, household income, neighborhood satisfaction, household type, living surface, housing maintenance, and housing cost. Each of these components is described in more detail below.

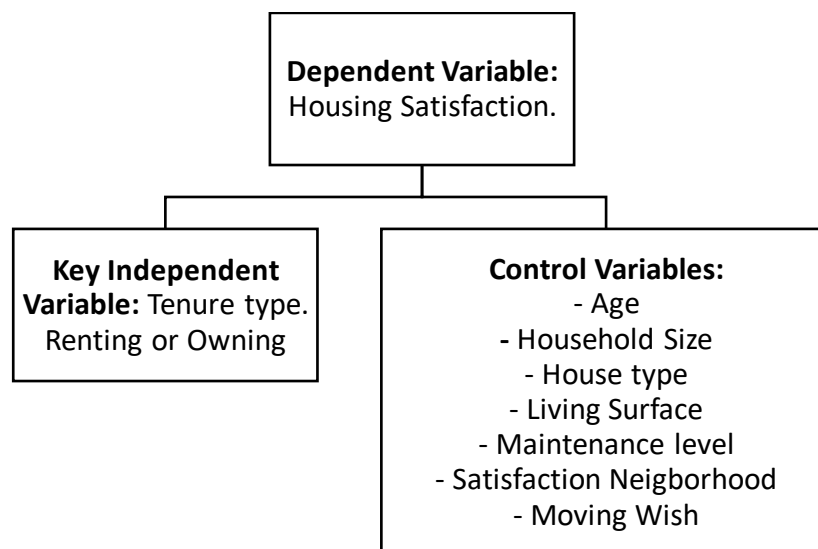


Figure 1: Conceptual Model

2.5 Hypotheses

Bases on the theoretical framework and conceptual model in this thesis, the following hypotheses are formulated to guide the research and analysis.

Hypothesis 1:

"There is a significant positive relationship between homeownership and housing satisfaction in the Netherlands in 2021."

This hypothesis claims that homeowners are likely to report higher levels of housing satisfaction compared to renters. It is expected that homeownership provides greater stability, financial investment potential, and psychological ownership. These factors contribute to a higher sense of satisfaction with housing. Further, it is expected that homeowners in the Netherlands are more satisfied with their housing than renters. This hypothesis aims to confirm whether this is true with the latest data from the 2021 Netherlands' Housing Survey.

Hypothesis 2:

"The association between housing satisfaction and tenure type varies significantly across different age cohorts."

This hypothesis suggest that the effect of tenure type on housing satisfaction is not the same across all age cohorts. It is expected that older age cohorts such as 55+ years will experience a bigger positive effect of homeownership compared to 17-24 year olds. Young adults who are in the early stages of their careers may prioritize rental housing for its flexibility and lower financial commitment. Older age cohorts may seek stability and security through homeownership.

3. Methodology

3.1 Data

The data for this thesis came from the 2021 Netherlands' Housing Survey (WoON), a comprehensive survey conducted on behalf of the Dutch Government. WoON collected information from 46.658 residents across the Netherlands between August 2020 and September 2021, focusing on various aspects of their living situations. Respondents completed the survey anonymously and were identified only by participation numbers, ensuring the confidentiality of their responses. Given that the survey is conducted on behalf of the Dutch Government, the data is presumed to be of high quality.

The data for this thesis was sourced from the Data Archiving and Networked Services (DANS), a national archive repository. To gain access, an email request was sent to DANS, including details such as the applicant's name and function, the dataset's DOI, the research aim, and the motivation for the application. After approval, the data could be downloaded and securely stored. The WoON survey ensures that respondents' permission is obtained for academic use of their data prior to publication. Given that this research relies on secondary data, the risk of ethical issues is minimal. All data was treated with strict confidentiality and stored on a password-protected computer with a university account at the University of Groningen. This ensured protection against unauthorized access. Respondents' anonymity was maintained through the use of participation numbers, safeguarding their privacy throughout the research process. In line with ethical guidelines, all data, including the syntax output from SPSS, will be deleted from the university account and computer after the completion and grading of the thesis.

For this study, the statistical analysis was performed using the SPSS software tool to ensure clarity in data interpretation. The analytic sample consist of individuals categorized as either homeowners or renters. The valid sample includes 26.222 homeowners, representing 63.8% of the participants, and 14.890 renters, representing for 36.2%.

3.2 Data management

The dependent variable in this study is housing satisfaction. For this variable respondents were asked, "How satisfied are you with your current house?" The responses were on a Likert scale from 1 (very satisfied) to 5 (very dissatisfied). There were no outliers in this variable, as all response options were valid and needed to be considered. A total of 5,718 responses were missing, which was managed using listwise deletion. To simplify the analysis, the Likert scale was recoded into a binary variable using SPSS's "Recode into Different Variables" option. Responses of 1 (very satisfied), 2 (satisfied), and 3 (neither satisfied nor dissatisfied) were recoded into 1 (satisfied), while responses of 4 (dissatisfied) and 5 (very dissatisfied) were recoded into 0 (dissatisfied). This decision was

made because of the fact that neutral response typically indicate a lack of negative feelings rather than a clear indication of dissatisfaction.

For the variable "tenure type", respondents were asked, "Are you or is a member of your household the owner of this house?" The responses were binary: yes or no. All responses were valid, so no outliers were present. A total of 5,546 responses were missing and were addressed using listwise deletion. For analysis, the responses were recoded: "Yes" was recoded as 1 (Owners), and "No" was recoded as 0 (Renters).

For the variable "age cohort", respondents were asked. "What is your date of birth?" The responses were given as a date, which was then categorized into seven age groups: 1 (17-24 years), 2 (25-34), 3 (35-44), 4 (45-54), 5 (55-64), 6 (65-74), and 7 (75+). These categories were recoded into five groups for analysis: 0 (17-24), 1 (25-34), 2 (35-44), 3 (45-54), and 4 (55+). The recoding in this manner simplifies the analysis while still effectively capturing the distinct housing preferences associated with life stages. There were no missing values. As the data was organized into predefined age cohorts, no outliers were present, and all data were included in the analysis.

The analysis included several control variables recoded for clearer comparison. The number of people in the household was recoded into five groups: 1, 2, 3, 4, and 5 persons, with households of 3 persons as the control cohort. Housing type was categorized into seven types: Terraced house, Corner house, Semi-detached house, Linked house, Detached house, Flat/Apartment, and Other, with "Other" serving as the control variable. The surface area of living space was divided into seven ranges: <20 m², 20-24 m², 25-29 m², 30-34 m², 35-39 m², 40-49 m², 50+ m², using 30-34 m² as the control group. Housing maintenance was simplified into three categories: Agree, No opinion, and Disagree, with "No opinion" as the control. Satisfaction with the neighborhood was recoded into a binary variable: 1: Satisfied or 0: Dissatisfied. Similarly, the wish to move was also recoded into a binary variable: 1: Yes or 0: No.

3.3 Descriptive statistics

Table 1: Descriptive statistics

Descriptive statistics	N	Minimum	Maximum	Mean	Std. Deviation
Housing satisfaction	40940	1	5	1,72	,805
Owning or renting	41112	1	2	1,36	,481
Number of people in household	46658	1	5	2,38	1,248
Age cohorts	46658	,00	4,00	2,6402	1,47672
Housing type	22361	1	7	1,96	1,274
Living space m2	40940	5	200	40,39	22,501
Housing maintenance	40940	1	5	4,04	1,015
Neighborhood satisfaction	46658	1	5	1,83	,829
Wish to move?	46658	1	5	1,72	1,074

Table 1 shows the descriptive statistics of the variables used. The variable "housing satisfaction" has a mean score of 1.72, which indicates that

respondents generally lean towards being satisfied. The std. deviation of 0.805 suggests that responses are concentrated around this high level of satisfaction, indicating positive housing experiences within the sample.

Owning or renting has a mean value of ,6378 which indicates that a majority of the respondents are homeowners. The std. deviation of ,481 suggest that while there is some variability in housing type, most respondents are homeowners.

Age cohort has a means value of 2,64 which places the average respondent in the 35-44 cohort. The std. deviation of 1,477 indicates a broad distribution across all age categories, reflecting a good range within the sample.

In this study, most variables had different sample sizes (N) due to missing responses. The maximum number of responses was 46,658, but variables such as housing satisfaction (N = 40,940), owning or renting (N = 41,112), housing type (N = 22,361), living space (N = 40,940), and housing maintenance (N = 40,940) had fewer responses. To address the varying sample sizes and manage the missing data, listwise deletion was used in SPSS, ensuring that only cases with complete data across all variables were included in the final analysis.

3.4 Methodology

To examine the relationship between housing satisfaction (a binary outcome: satisfied or dissatisfied) and several independent variables, a binary logistic regression is performed. This statistical model is suitable when the dependent variable is binary and allows us to estimate the probability of a specific outcome based on predictors.

The standard formula for the binary logistic regression is as follows:

$$\text{Logit}(\pi_i) = \ln\left(\frac{\pi_i}{(1 - \pi_i)}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_{\{ki\}}$$

In this situation, Logit is the probability that a household is satisfied with their house / 1 – probability that a household is satisfied with their house. The intercept, β_0 , indicates the baseline log odds of satisfaction when all predictor variables are zero. The coefficients, $\beta_1, \beta_2, \dots, \beta_k$, represent the impact of each corresponding predictor variable (X_1, X_2, \dots, X_k) on the log odds of being satisfied.

It is checked whether the regressions and the corresponding variables are significant with a 95% confidence level and considering a type I or type II error. Reference categories are used in the regressions to compare the results of the different variables. In advance, it was estimated which categories differ the most and which were the middle categories. These most different and middle categories were used as reference categories to compare against. Based on the results of the binary logistic regression, conclusions can be drawn about the strength of the relationship and any influences of the independent and control variables on the outcome.

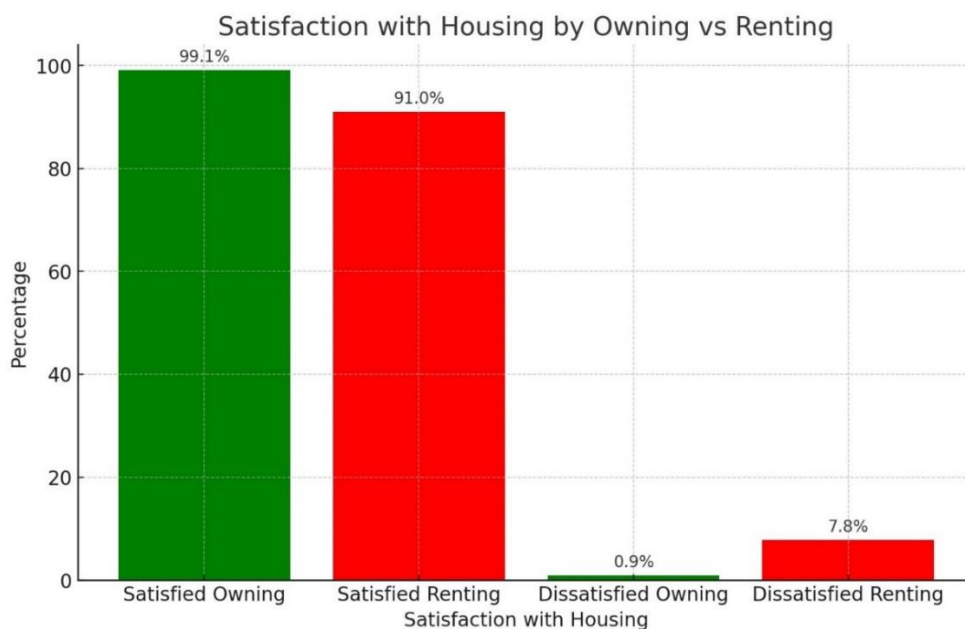
4. Results

4.1 Frequency statistics

Table 8 in appendix A provides an overview of frequency statistics for the variables included in the binary logistic regression, where housing satisfaction is the dependent variable. These variables give insight into the demographic and housing-related characteristics of the respondents. A few notable variables will be discussed.

4.1.1 Housing satisfaction

Among renters, 7.8% are dissatisfied, while 91.0% are satisfied. In contrast, only 0.9% of homeowners are dissatisfied, with 99.1% reporting satisfaction. This suggests a higher satisfaction rate among homeowners compared to renters in line with the academic literature (Elsinga and Hoekstra, 2005; Diaz-Serrano, 2009). Graph 1 gives a visual representation of these statistics.



Graph 1: Satisfaction with housing by owning vs renting

4.1.2 Housing characteristic & demographic variables

Single-person households are more common among renters, consisting of 52.8% of the rental population, compared to just 21.2% of homeowners. This suggests that larger households tend to own homes, possibly because families with children are more likely to buy houses. These results are in line with the literature (Clark and Deurloo, 2006). Regarding age, younger people are more likely to rent than older people. Individuals aged 17-34 make up 29.6% of renters but only 11.8% of homeowners. This observation is consistent with the literature (Stone et al., 2011; Smith et al., 2013).

Other housing characteristic variables include Type of Functional Housing, Living Room Area, and Maintenance. Among both renters and owners, terraced houses are the most common, with 24.0% of renters and 28.0% of owners living in

them. Detached houses are more general among owners (17.7%) than renters (0.4%). These findings are in line with the literature, which often highlights the preference for larger, detached houses among homeowners (Elsinga and Hoekstra, 2005).

Regarding living room area, renters mostly occupy smaller spaces, with 21.1% in areas of 20-24 m² and 17.4% in 25-29 m². Owners tend to have larger living spaces, with 29.8% in areas of 50 m² or more. This is consistent with the literature that indicates homeowners generally prefer and have access to larger living spaces (Diaz-Serrano, 2009).

Maintenance perceptions show that 19.2% of renters believe their house is poorly maintained, compared to only 3.9% of owners. A significant 88.0% of owners disagree with this statement, versus 59.6% of renters. These results align with the literature, which suggests that homeowners tend to invest more in the upkeep of their property and perceive it to be better maintained (Rohe et al., 2001; Herbert and Belsky, 2008).

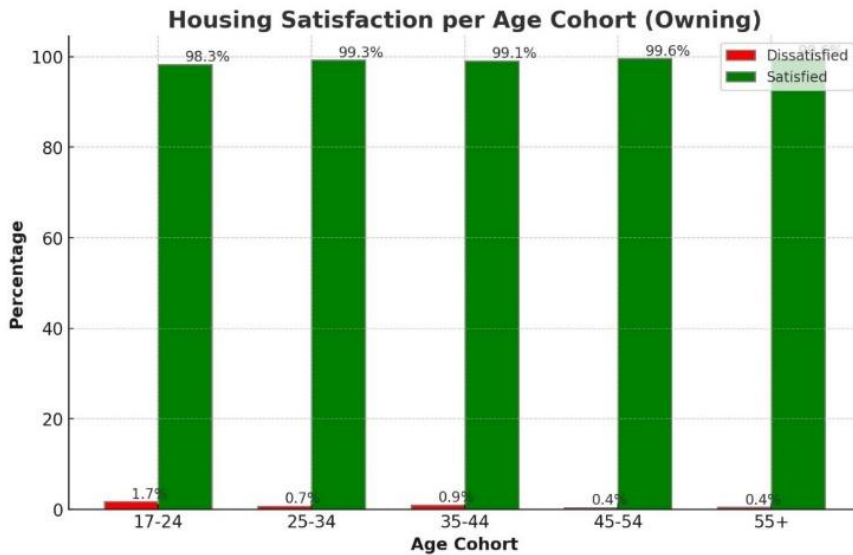
Demographic variables such as neighborhood satisfaction indicate higher satisfaction among owners, with only 2.8% dissatisfied compared to 8.8% of renters. Satisfaction rates are 97.2% for owners and 91.2% for renters. This aligns with the literature, which shows that homeowners generally report higher neighborhood satisfaction due to their long-term investment and emotional attachment to their homes (Rohe et al., 2001; Diaz-Serrano, 2009).

Regarding the desire to move, 15.4% of renters and 4.8% of owners wish to relocate, indicating a stronger tendency to remain among homeowners. These results are consistent with the literature, which suggests that homeowners have a greater sense of stability and attachment to their residence, making them less likely to move (Haurin et al., 2002; Herbert and Belsky, 2008).

4.1.3 Housing satisfaction by tenure type and age cohort

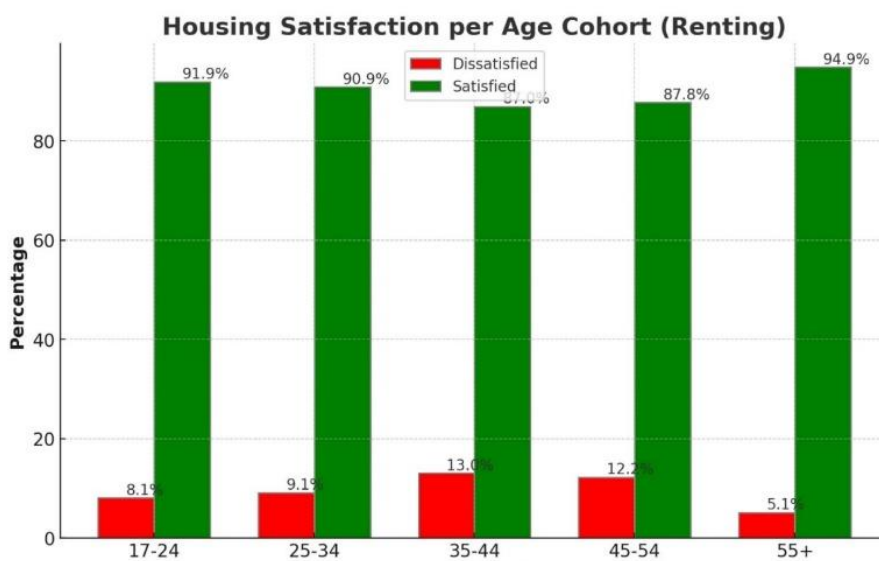
Graphs two and three named "Housing Satisfaction per Age Cohort (Owning)" and "Housing Satisfaction per Age Cohort (Renting)" present a comparison of housing satisfaction across different age cohorts for homeowners and renters.

In graph two, the data indicates consistently high levels of satisfaction among homeowners across all age cohorts. Specifically, satisfaction rates range from 98.3% for the 17-24 age cohort to 99.6% for the 45-54 and 55+ age cohorts. Dissatisfaction is minimal across all age cohorts, with the highest dissatisfaction being observed in the 17-24 age cohort at 1.7%. The other age cohorts report even lower dissatisfaction rates, such as 0.7% for the 25-34 cohort and 0.4% for those aged 45 and above. This consistent satisfaction highlights the overall positive perception of housing among homeowners regardless of age and aligns with the literature that indicates homeowners generally report higher levels of housing satisfaction due to stability and financial security (Elsinga and Hoekstra, 2005; Rohe et al., 2001).



Graph 2: Housing satisfaction per age cohort (owning)

However, graph three shows more variability in the satisfaction levels among renters. Conversely, the "Housing Satisfaction per Age Cohort (Renting)" chart shows more variability in satisfaction levels among renters. Satisfaction is highest among the 55+ age cohort at 94.9%, while the 35-44 age cohort shows the lowest satisfaction at 87.8%. Dissatisfaction rates among renters are notably higher compared to homeowners, particularly in the younger age cohorts. For example, 8.1% of renters aged 17-24 and 9.1% of those aged 25-34 report dissatisfaction. The 35-44 age cohort has the highest dissatisfaction at 13.0%, followed by the 45-54 age cohort at 12.2%. These findings are consistent with the literature that suggests renters generally report lower satisfaction levels compared to homeowners, with younger renters experiencing higher dissatisfaction due to the lack of stability and control over their living environment (Diaz-Serrano, 2009; Stone et al., 2011).



Graph 3: Housing satisfaction per age cohort (renting)

While the graphs provide a clear visualization of satisfaction levels, they do not account for other factors influencing housing satisfaction. Additionally, the binary classification of satisfaction may oversimplify the nuanced experiences of residents, missing out on the middle ground of neither satisfied nor dissatisfied responses.

Given these limitations, further analysis is necessary to explore other determinants of housing satisfaction. Factors like housing characteristics, neighborhood satisfaction, and the wish to move need to be considered. The upcoming section 4.3 will delve into a more detailed examination of these variables, providing a comprehensive understanding of what drives housing satisfaction beyond tenure type and age.

4.2 Inferential statistics

4.2.1 Basic binary logistic regression

Model building and fit statistics

Table 2 presents the coefficients from various binary logistic regression models examining the log odds of housing satisfaction. The dependent variable is housing satisfaction, and the analysis include the variable owning or renting (binary: owning = 1, renting = 0) across all models. The models are structured to progressively include different sets of variables, providing insight into the impact of each set on housing satisfaction.

Table 2: Coefficients for Various Binary Logistic Regression Models of the Log Odds of Housing Satisfaction

Coefficients for various binary logistic regression models of the log odds of housing satisfaction

	(1)		(2)		(3)		(4)	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Owning or Renting	2,303***	,074	2,421***	,079	1,290***	,123	1,165***	,128
17-24 years			-,367**	,114	0,152	,233	0,581*	,260
25-34 years			-,591***	,078	-,104	,155	0,140	,169
35-44 years			-,803***	,087	-,040	,159	0,128	,169
45-54 years			-,812***	,084	-,465***	,135	-,351*	,144
1 person			,221*	,095	0,194	,158	0,126	,169
2 persons			,239*	,099	0,286	,156	0,290	,167
4 persons			0,016	,122	-,137	,179	-,130	,192
5 persons			-,322*	,132	-,266	,203	-,375	,215
Terraced house					0,101	,287	-,121	,310
Corner house					-,114	,294	-,376	,317
Semi-detached house					0,530	,341	0,095	,362
Linked house					0,613	,656	0,193	,668
Detached house					-,098	,438	-,514	,472
Flat/apartment					-,482	,559	-,667	,598
<20 m2					-,321	,192	-,325	,206
20-24 m2					-,226	,156	-,187	,165
25-29 m2					-,159	,157	-,138	,167
35-39 m2					0,336	,212	0,334	,223
40-49 m2					0,301	,190	0,350	,201
50+ m2					0,253	,186	0,232	,194
House is well maintained					1,509***	,126	-1,497***	,134
House is not well maintained					-1,263***	,144	1,154***	,149
Satisfaction with neighborhood							2,056***	,121
Wish to move							1,293***	,130
Observations	40940		40940		22361		22361	
R-Square	,132		,152		,278		,365	

Note: Dependent variable is Housing Satisfaction. The reference category include Age Cohort equals 55+ years, Number of Persons equals 3, Type of Housing equals Other and Surface Area equals 30-34 m2. *All models chi-squares are significant at $p < .05$. * $p < .05$, ** $p < .01$, *** $p < .001$

Model 1 serves as the baseline and focuses exclusively on the relationship between owning or renting and housing satisfaction. The model's R-square value is 0.132, indicating that ownership status alone explains 13.2% of the variance in housing satisfaction. Model 2 incorporates demographic variables. The inclusion of these variables improve the model fit, going to 0.152. This increase suggest that demographic factors do contribute to housing satisfaction, even though relatively minimal. Model 3 further expands by including housing characteristic variables. The R-square goes to 0.278. This increase indicates that housing characteristics affect housing satisfaction, providing a better understanding. Model 4 includes all variables. This model also achieves the highest R-square value at 0,365, suggesting that these factors also play a role in explain housing satisfaction.

Analysis of control variables

Model 2 shows that younger age cohorts (17-24, 25-34, 35-44 and 45-54 years) report lower level of housing satisfaction compared to the reference group. The coefficients for these age groups are all negative and significant, suggesting that older individuals are more satisfied with their housing situations. This finding aligns with existing literature, which suggests that older adults often have more stable housing arrangements and prioritize security and long-term satisfaction (Kendig, 1984; Demirkan, 2007).

Household size also emerges as a significant predictor in model 2. Smaller households (1 or 2 persons) exhibit a slight positive impact on housing satisfaction. This result is consistent with the theory that smaller households may experience fewer conflicts and have simpler housing needs, leading to higher satisfaction (Rohe & Basolo, 1997).

In model 3 the coefficients for housing type are not significant. This aligns with literature suggesting that once basic housing needs are met, the specific type of housing may not significantly impact overall satisfaction (Mridha, 2023). However, living in larger spaces, specifically those ranging from 40-49 m² and 50+ m², tends to positively affect satisfaction. In contrast, residing in smaller spaces, such as those under 20 m² and between 20-24 m², is associated with lower satisfaction levels, although these effects are not statistically significant.

In model 4 well maintained houses have a strong positive effect on housing satisfaction, indicated by a significant positive coefficient for well-maintained houses and a significant negative coefficient for not well maintained houses. Similarly, neighborhood satisfaction significantly enhances overall housing satisfaction. These findings are consistent with Morris and Winter's (1975) housing adjustment theory. Additionally, a significant positive relationship is found between the desire to move and housing dissatisfaction, this highlights how dissatisfaction makes people want to move.

Focus on owning vs renting

Across all four models, the coefficient for owning versus renting consistently remains positive and significant, highlighting a strong link between homeownership and higher housing satisfaction.

In model 1, homeowners exhibit significantly higher satisfaction with a coefficient of 2.303, aligning with research that attributes benefits such as stability, financial security, and autonomy to homeownership. In model 2, even after accounting for demographic factors like age and household size, the coefficient slightly rises to 2.421, underscoring the continued positive impact of owning a home on satisfaction beyond basic demographic influences. Model 3 shows a reduction in the coefficient to 1.290 when housing type and size are included, suggesting that part of the satisfaction from homeownership is related to the superior physical characteristics typically associated with owned properties. In model 4, the coefficient further decreases to 1.165 upon adding variables for housing maintenance and neighborhood satisfaction. Despite this reduction, the significance persists, reflecting that the benefits of homeownership, including long-term stability and psychological comfort, continue to enhance overall satisfaction, even when considering physical and environmental factors.

4.2.2 Binary logistic regression per age cohort

Splitting the data into age cohorts is an important step in understanding the complexity of housing satisfaction across different stages of life. This approach aligns with the literature, which highlights that housing needs, preferences, and satisfaction levels vary across age cohorts (Demirkan, 2007).

Table 3: Coefficients for Various Binary logistic Regression Models of the Log Odds of Housing Satisfaction (17-24 years)

	17-24 years							
	(1)		(2)		(3)		(4)	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Renting or Owning	1,633***	,462	1,721***	,470	,013	,648	-,070	,662
1 person			,182	,369	,480	,820	,738	,861
2 persons			-,166	,391	,056	,850	,152	,879
4 persons			-,611	,449	-,895	,795	-,615	,821
5 persons			-,660	,391	-,323	,765	-,157	,778
Terraced house					,474	,672	,521	,699
Corner house					,253	,744	,537	,793
Semi-detached house					17,375	5974,930	17,735	5721,101
Linked house					-1,989	1,192	-1,816	1,272
Detached house					-,289	1,022	,037	1,131
Flat/apartment					-,413	,982	-,463	1,057
<20 m2					-1,013	,836	-,621	,870
20-24 m2					-,351	,946	,115	,996
25-29 m2					-,866	,930	-,852	,963
35-39 m2					17,464	5991,715	17,886	5661,659
40-49 m2					-,756	1,051	-,483	1,112
50+ m2					-,898	,989	-,700	1,010
House is well maintained					-1,443**	,556	-1,534*	,621
House is not well maintained					1,222	,719	,917	,755
Satisfaction with neighborhood							1,564**	,595
Wish to move							1,170**	,443
Observations	1625		1625		523		523	
R-Squared	,032		,050		,310		,391	

Note: Dependent variable is Housing Satisfaction. The reference category include Age Cohort equals 55+ years, Number of Persons equals 3, Type of Housing equals Other and Surface Area equals 30-34 m2. *All models chi-squares are significant at $p < .05$. * $p < .05$, ** $p < .01$, *** $p < .001$

For the youngest cohort, aged 17-24 years, the results in table 3 reveal a significant relationship between homeownership and housing satisfaction. In model 1, homeownership is associated with a coefficient of 1.633, indicating a strong positive impact on satisfaction. This suggests that young adults who own their homes are significantly more satisfied with their housing situation compared to renters. This is in line with findings by Elsinga and Hoekstra (2005).

In model 2, the coefficient increases to 1.721 when demographic factors like age and household size are included, indicating that these variables do not change the effect of tenure type on satisfaction. However, in model 3, after accounting for housing characteristics, the coefficient goes to 0.013 and is not significant. This suggests that homeownership does not improve satisfaction once the housing characteristics are considered. In model 4, the coefficient further decreases to -.070 and remains non-significant. These findings imply that for young adults, the quality and characteristics of their living environment play a bigger role in satisfaction than whether they own or rent their home. These findings are in line with the literature (Diaz Serrano, 2009; Morris and Winter, 1975)

Table 4: Coefficients for Various Binary logistic Regression Models of the Log Odds of Housing Satisfaction (25-34 years)

	25-34 years							
	(1)		(2)		(3)		(4)	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Renting or Owning	2,011***	,177	2,123***	,183	1,108***	,302	,846*	,329
1 person			,364	,196	-,091	,410	-,156	,451
2 persons			,324	,197	,260	,394	,211	,423
4 persons			,875	,262	-,494	,417	-,633	,448
5 persons			,151	,305	-,056	,537	-,014	,567
Terraced house					-1,296	1,069	-1,039	1,111
Corner house					-1,739	1,085	-1,706	1,130
Semi-detached house					-1,716	1,124	-2,126	1,170
Linked house					-2,207	1,681	-2,905	1,689
Detached house					15,949	7053,253	15,365	7053,90
Flat/apartment					-,856	1,511	-,423	1,566
<20 m2					-,314	,437	-,278	,480
20-24 m2					-,484	,375	-,460	,411
25-29 m2					,464	,435	,606	,476
35-39 m2					,956	,779	,753	,794
40-49 m2					,785	,543	,947	,578
50+ m2					,131	,435	-,075	,470
House is well maintained					-1,466***	,330	-1,416***	,353
House is not well maintained					1,306***	,385	1,354***	,402
Satisfaction with neighborhood							2,277***	,356
Wish to move							1,733***	,291
Observations		5797		5797		2651		2651
R-Squared		,098		,103		,270		,394

Note: Dependent variable is Housing Satisfaction. The reference category include Age Cohort equals 55+ years, Number of Persons equals 3, Type of Housing equals Other and Surface Area equals 30-34 m2. *All models chi-squares are significant at $p < .05$. * $p < .05$, ** $p < .01$, *** $p < .001$

For individuals aged 25-34 years, table 4 shows that homeownership consistently enhances housing satisfaction, although the effect decreases slightly as additional control variables are introduced. In model 1, the coefficient is 2.011, reflecting a positive relationship between homeownership and satisfaction. In model 2, the coefficient increases to 2.123 when demographic controls are added, indicating that these factors do not lessen the positive impact of homeownership. However, with the inclusion of housing characteristics in model 3, the coefficient decreases to 1.108. Finally, in model 4, the coefficient further drops to 0.846, but it remains statistically significant at the 0.05 level. This indicates that while homeownership still plays an important role in improving

satisfaction, other factors such as the quality of the home and the living environment also significantly influence housing satisfaction for this age cohort. This is in line with the literature according to Elsinga and Hoekstra (2005) and Diaz Serrano (2009).

Table 5: Coefficients for Various Binary logistic Regression Models of the Log Odds of Housing Satisfaction (35-44 years)

	35-44 years							
	(1)		(2)		(3)		(4)	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Renting or Owning	2,743***	,175	2,804***	,185	1,241***	,295	,989**	,314
1 person			-,115	,207	-,244	,396	-,402	,446
2 persons			-,008	,232	,145	,404	,226	,457
4 persons			-,191	,234	,401	,498	,384	,442
5 persons			-,447	,256	-,396	,403	-,713	,450
Terraced house					-,844	1,068	-1,656	1,209
Corner house					-1,311	1,074	-2,238	1,214
Semi-detached house					-,627	1,153	-1,716	1,293
Linked house					16,065	4274,448	14,926	4216,389
Detached house					16,514	4299,210	15,320	4241,266
Flat/apartment					-3,324	1,979	-4,532*	1,918
<20 m2					-,475	,549	-,759	,584
20-24 m2					-,125	,462	-,104	,503
25-29 m2					-,151	,445	-,130	,490
35-39 m2					-,031	,526	,034	,569
40-49 m2					-,109	,477	-,142	,518
50+ m2					-,258	,446	-,378	,476
House is well maintained					-1,429***	,333	-1,393***	,366
House is not well maintained					1,346***	,374	1,435***	,398
Satisfaction with neighborhood							2,510***	,306
Wish to move							1,357***	,313
Observations	5854		5854		3742		3742	
R-Squared	,202		,204		,279		,408	

Note: Dependent variable is Housing Satisfaction. The reference category include Age Cohort equals 55+ years, Number of Persons equals 3, Type of Housing equals Other and Surface Area equals 30-34 m2. *All models chi-squares are significant at $p < .05$. * $p < .05$, ** $p < .01$, *** $p < .001$

In the 35-44 years age cohort, table 5 shows that the impact of homeownership on housing satisfaction remains strong but shows a decreasing trend as more variables are introduced into the models. In model 1, the coefficient is 2.743, indicating a strong positive effect of homeownership. Model 2 slightly increases the coefficient to 2.804 with the addition of demographic controls, reinforcing the substantial benefit of homeownership independent of basic demographic factors. However, the coefficient drops to 1.241 in model 3 when housing type and surface area are considered. This suggests that the satisfaction boost from homeownership in this age group is partly due to owning different and larger properties. In model 4, with the inclusion of housing maintenance and neighborhood satisfaction, the coefficient further decreases to 0.989 but remains significant at the 0.01 level. This is all in line with the literature (Elsinga and Hoekstra, 2005; Diaz Serrano, 2009).

Table 6: Coefficients for Various Binary logistic Regression Models of the Log Odds of Housing Satisfaction (45-54 years)

	45-54 years							
	(1)		(2)		(3)		(4)	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Renting or Owning	2,453***	,147	2,476***	,158	1,590***	,255	1,557***	,262
1 person			-,040	,194	,107	,315	-,083	,332
2 persons			-,031	,207	-,017	,301	-,006	,321
4 persons			-,019	,235	-,510	,317	-,559	,339
5 persons			-,339	,269	-,471	,377	-,576	,396
Terraced house					-,359	,793	-,102	,898
Corner house					-,474	,802	-,308	,908
Semi-detached house					,408	,893	-,592	,998
Linked house					15,914	3886,359	14,924	3797,598
Detached house					,077	1,295	-,105	1,370
Flat/apartment					17,186	19811,824	16,546	19794,457
<20 m2					-,947	,442	-1,204**	,463
20-24 m2					-,327	,345	-,364	,370
25-29 m2					,635	,336	-,674	,362
35-39 m2					-,020	,410	-,028	,442
40-49 m2					,128	,414	,247	,449
50+ m2					-,027	,397	-,031	,421
House is well maintained					-1,731***	,268	-1,778***	,286
House is not well maintained					1,114***	,299	,929**	,313
Satisfaction with neighborhood							1,888***	,266
Wish to move							1,279***	,282
Observations	6994		6994		4414		4425	
R-Squared	,173		,174		,334		,412	

Note: Dependent variable is Housing Satisfaction. The reference category include Age Cohort equals 55+ years, Number of Persons equals 3, Type of Housing equals Other and Surface Area equals 30-34 m2. *All models chi-squares are significant at $p < .05$. * $p < .05$, ** $p < .01$, *** $p < .001$

For the 45-54 years cohort, table 6 shows that homeownership consistently improves housing satisfaction, with a strong and significant impact across all models. In model 1, the coefficient is 2.453, highlighting a positive relationship between owning a home and satisfaction. With demographic factors included in model 2, the coefficient slightly increases to 2.476, suggesting that age and household size do not significantly lessen the positive effect of homeownership. When housing type and surface area are added in model 3, the coefficient decreases to 1.590, indicating that the satisfaction associated with homeownership is also linked to owning more desirable or spacious properties. Finally, in model 4, the coefficient remains relatively stable at 1.557, maintaining its significance. This indicates that while ownership continues to play a significant role in enhancing satisfaction, factors such as the maintenance of the property and the quality of the neighborhood are also crucial for this age group. This is all in line with literature (Elsinga and Hoekstra, 2005; Diaz Serrano, 2009).

Table 7: Coefficients for Various Binary logistic Regression Models of the Log Odds of Housing Satisfaction (55+ years)

	55+ years							
	(1)		(2)		(3)		(4)	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Renting or Owning	2,235***	,126	2,259***	,131	1,304***	,204	1,164***	,209
1 person			,681***	,186	,491	,264	,506	,278
2 persons			,868***	,191	,627*	,262	,719**	,276
4 persons			,285	,353	,129	,466	,364	,511
5 persons			-,402	,410	-,741	,569	-,767	,572
Terraced house					1,008*	,417	,756	,468
Corner house					,897*	,427	,662	,477
Semi-detached house					1,653**	,515	1,307*	,560
Linked house					16,951	2046,812	16,524	2030,763
Detached house					,137	,581	-,377	,623
Flat/apartment					-1,029	1,168	-,630	1,277
<20 m2					,123	,335	,140	,352
20-24 m2					-,137	,229	-,078	,241
25-29 m2					-,046	,234	-,011	,246
35-39 m2					,442	,323	,401	,336
40-49 m2					,474	,293	,519	,307
50+ m2					,834	,333	,864*	,345
House is well maintained					-1,529***	,197	-1,500***	,208
House is not well maintained					1,262***	,219	1,156***	,226
Satisfaction with neighborhood							2,124***	,186
Wish to move							1,219***	,255
Observations	20670		20670		11020		11020	
R-Squared	,113		,120		,273		,350	

Note: Dependent variable is Housing Satisfaction. The reference category include Age Cohort equals 55+ years, Number of Persons equals 3, Type of Housing equals Other and Surface Area equals 30-34 m2. *All models chi-squares are significant at $p < .05$. * $p < .05$, ** $p < .01$, *** $p < .001$

For the oldest cohort (55+ years), table 7 shows that homeownership continues to significantly influence housing satisfaction, although its impact lessens with the addition of more variables. In model 1, the coefficient is 2.235, demonstrating a strong positive effect of homeownership. The coefficient slightly increases to 2.259 in model 2 with the introduction of demographic controls, indicating that homeownership remains a key factor in enhancing satisfaction for older adults. When housing type and surface area are included in model 3, the coefficient drops to 1.304. In model 4, with the addition of housing maintenance and neighborhood satisfaction, the coefficient further reduces to 1.164 but remains statistically significant. This results are all in line with the literature (Elsinga and Hoekstra, 2005; Diaz Serrano, 2009).

5. Conclusion

This thesis aimed to explore the relationship between housing satisfaction and tenure type in the Netherlands in 2021. It also focused on how this relationship varies across different age cohorts. The study used data from the 2021 Netherlands' Housing Survey. A binary logistic regression was performed. Results indicated that homeownership is consistently linked to higher levels of housing satisfaction compared to renting. However, the depth and dimensions of this satisfaction vary by age cohort.

To answer the main question, the findings show that homeowners report higher levels of housing satisfaction than renter across all age cohorts. This higher satisfaction for homeowners can be linked to several factors, including the stability and security that come with owning a home, the financial benefits and investment potential, and a greater sense of autonomy and control over their living environment.

For renters, particularly younger adults, satisfaction levels are more varied. This group tends to prioritize flexibility and affordability, often seeking rental accommodations that fit their evolving lifestyles. However, this flexibility sometimes comes at the cost of dissatisfaction related to poorer maintenance and less desirable neighborhood conditions, as renters often have less control over these aspects.

The findings align with existing literature, which suggests that homeownership typically offers greater stability, financial benefits, and a stronger sense of community and psychological ownership. These factors all contribute to higher housing satisfaction (Elsinga & Hoekstra, 2005; Rohe et al., 2001). This study builds on previous research by confirming that these trends are still true with the latest data from 2021.

The study highlights the social benefits of homeownership, especially for middle-aged and older adults seeking stability. With an aging population, adaptable, age-friendly housing is important. Young adults prioritize flexibility, requiring diverse, affordable rental options. Real estate developers should improve rental quality and community feel. Policymakers could enhance homeownership through financial support while ensuring rental housing quality and affordability. Investments in neighborhood livability will boost satisfaction across all demographics.

This study of course has its limitations. It relies on the 2021 WoON survey, which is comprehensive but due to time constraints not all factors could be include in the analysis. Simplifying satisfaction into two categories may overlook some people's true feelings. Future research could look at housing satisfaction over longer periods to understand how it is evolving. Using more detailed satisfaction measures and studying new types of housing can provide better insights.

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Appendix

Appendix A

Table 8: Frequency statistics

	Variable	Renting Frequency	Renting Percent	Owning Frequency	Owning Percent
Satisfaction with Housing	Dissatisfied	1,163	7.8%	223	0.9%
	Satisfied	13,555	91.0%	25,999	99.1%
Number of People in Household (5 classes)	1 person	7,855	52.8%	5,554	21.2%
	2 people	4,539	30.5%	11,059	42.2%
	3 people	1,202	8.1%	3,467	13.2%
	4 people	735	4.9%	4,462	17.0%
	5 or more people	559	3.8%	1,680	6.4%
Age in 5 Classes	17-24 years	1,369	9.2%	297	1.1%
	25-34 years	3,042	20.4%	2,797	10.7%
	35-44 years	1,688	11.3%	4,183	16.0%
	45-54 years	1,694	11.4%	5,312	20.3%
	55 years and older	7,097	47.7%	13,633	52.0%
Type of Functional Housing	Terraced house	3,569	24.0%	7,335	28.0%
	End house	1,599	10.7%	3,766	14.4%
	Semi-detached house	336	2.3%	4,120	15.7%
	Linked house	32	0.2%	515	2.0%
	Detached house	55	0.4%	443	1.7%
	Flat / apartment	44	0.3%	8	0.0%
	Other type of house	127	0.9%	412	1.6%
Living Room Area	Less than 20 m ²	1,824	12.2%	677	2.6%
	20-24 m ²	3,138	21.1%	2,011	7.7%
	25-29 m ²	2,589	17.4%	2,659	10.1%
	30-34 m ²	2,365	15.9%	4,209	16.1%
	35-39 m ²	1,138	7.6%	3,062	11.7%
	40-49 m ²	1,364	9.2%	5,795	22.1%
	50 m ² or more	2,300	15.4%	7,809	29.8%
House is Poorly Maintained	Agree (Totally agree + Agree)				
	Neither agree nor disagree	2,858	19.2%	1,022	3.9%
	Disagree (Disagree + Totally disagree)	2,986	20.1%	2,138	8.2%
		8,874	59.6%	23,062	88.0%
Satisfaction with Neighborhood	Dissatisfied	1,304	8.8%	723	2.8%
	Satisfied	13,586	91.2%	25,499	97.2%
Wish to Move?	No	2,299	15.4%	1,270	4.8%
	Yes	12,591	84.6%	24,952	95.2%