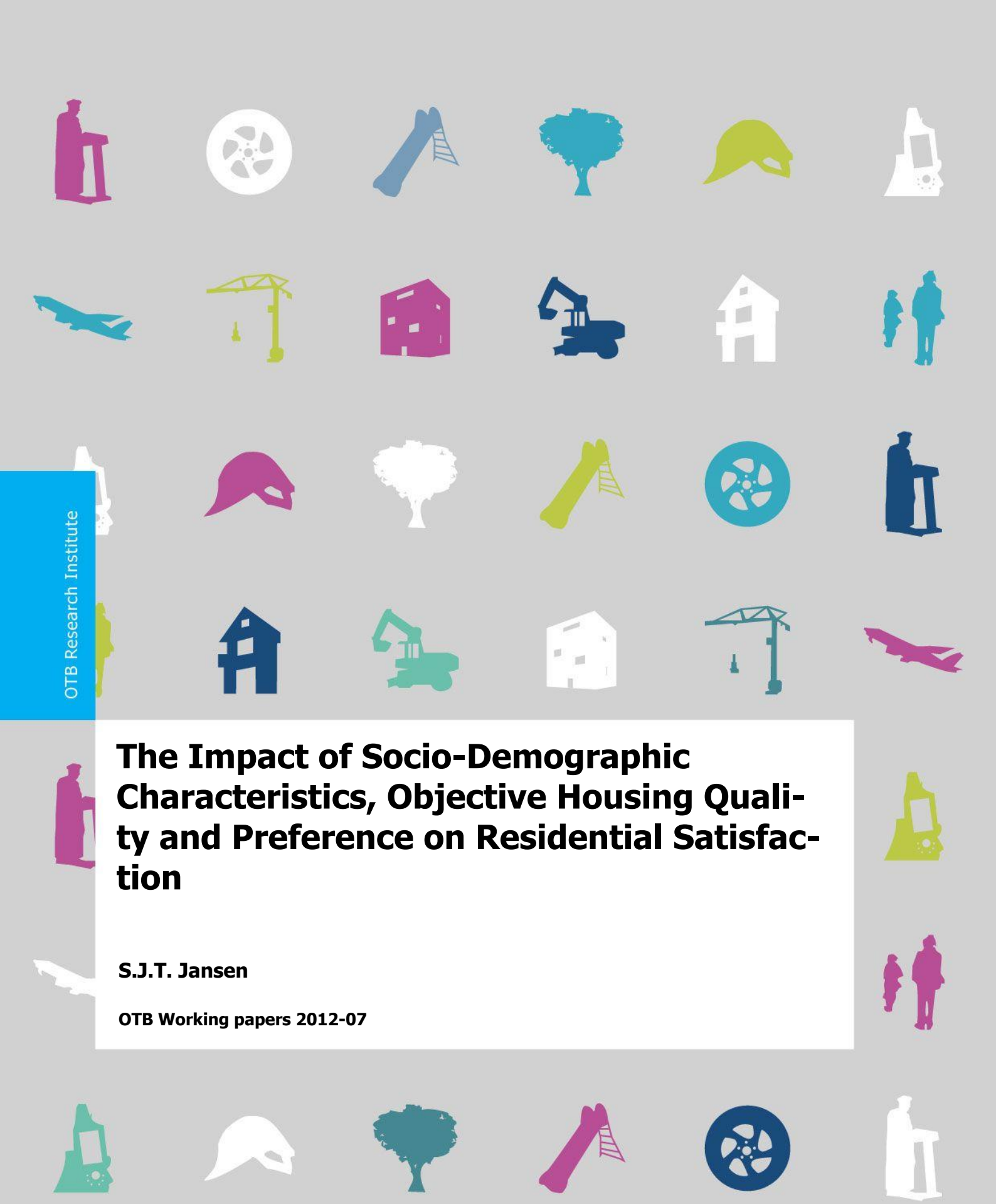

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The Impact of Socio-Demographic Characteristics, Objective Housing Quality and Preference on Residential Satisfaction

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OTB Working papers 2012-07

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The Impact of Socio-Demographic Characteristics, Objective Housing Quality and Preference on Residential Satisfaction

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Abstract

Residential satisfaction is an important topic in the domain of housing. It refers to the individuals' appraisal of the conditions of their residential environment, in relation to their needs, expectations and achievements. In the current study respondents were asked to indicate their residential satisfaction on a scale ranging from 1 (very dissatisfied) to 10 (very satisfied). In general, the respondents are quite satisfied (mean satisfaction = 8.2; n = 1557). With the use of regression analyses, the impact of socio-demographic characteristics and objective housing quality on residential satisfaction is explored. A statistically significant impact is observed for tenure, age, number of persons in household, dwelling type, liveliness of neighborhood, size of outdoors space and dwelling 'value' (R^2 = 18%). The study also explored the impact of preference on satisfaction. Surprisingly, the results showed that respondents who lived in accordance to their preferences were as satisfied as those who did not.

Keywords: housing, satisfaction, preference

Introduction

Residential satisfaction is an important research topic. Housing is the single most important item of consumption as households spend approximately 25% of their income on buying or renting a dwelling (Clark and Dieleman 1996, Dieleman 1996). Furthermore, housing also provides security, privacy, neighborhood and social relations, status, community facilities and services, access to jobs and control over the environment (Vera-Toscano and Ateca-Amestoy 2008). Housing is therefore an important component of individual well-being and quality of life (Vera-Toscano and Ateca-Amestoy 2008). Knowledge about the determinants of housing satisfaction can be used to design more effective housing programs and to prevent problems arising from incongruence between perceptions of policy makers and residents (Weidemann et al. 1982; Lu 1999; Vera-Toscano and Ateca-Amestoy 2008). Furthermore, this knowledge is also critical for a better understanding of decision processes underlying household mobility (Lu 1999).

Residential satisfaction refers to individuals' appraisal of the conditions of their residential environment, in relation to their needs, expectations and achievements (Amérigo and Aragonés 1997). This implies that, besides objective housing quality, residential aspirations or preferences have a large influence on residential satisfaction. If the current housing situation is about similar to the aspirations, then satisfaction should occur (Galster and Hesser 1981; Galster 1985). If there is a discrepancy between the actual housing situation and the preferred housing situation, dissatisfaction may be present (Mason and Faulkenberry 1978; Gärling and Friman 2002; Amérigo 2002; Vera-Toscano and Ateca-Amestoy 2008). This discrepancy is also known as the have-want discrepancy (e.g., Wu 2008). Thus, residential satisfaction provides an indication of the difference between a household's actual and preferred housing situation (Galster and Hesser 1981).

It is known from the literature that residential satisfaction might be predicted by socio-demographic characteristics and objective housing quality, although the effect is usually relatively small. Housing quality might not have a large influence on residential satisfaction because different people have different preferences. Marcuse (1971) pointed out that identical living conditions may have directly opposite results in terms of individual satisfaction. After all, one resident may live in a dwelling with only two rooms and be perfectly happy because of the relatively small effort in upkeep whereas another might have an urgent need for individual privacy and prefer a more spacious dwelling. A previous study by Jansen (submitted) explored the impact of preference on housing appreciation for various aspects of the dwelling (dwelling type, tenure, etc). The study showed that, generally, among respondents who live in a particular housing situation, those that prefer this housing situation show higher mean appreciation scores than those who do not. Similarly, among respondents who do not live in a particular housing situation, those who prefer the particular situation show higher mean appreciation scores than those who do not. These results point to the impact of preference on housing appreciation. Furthermore, the study showed that some dwelling aspects showed no statistically significant differences in mean appreciation scores for levels with different quality. For example, residents who lived in, and preferred, a living room of about 20 m^2 appreciated this size of the living room as much as did residents with a preference for, and living in, a living room of 30 m^2. Thus, although the housing quality differed (20 m^2 versus 30 m^2), the appreciation score for the size of the living room was equal. If this is the case, the different levels of objective housing quality seem to be unrelated to residential satisfaction.

In the current study the influence of socio-demographic characteristics, objective housing quality and preference on residential satisfaction is explored. The research questions are the following:
1) What is the impact of socio-demographic characteristics on residential satisfaction?
2) What is the impact of objective housing quality on residential satisfaction?
3) what is the mutual impact of socio-demographic characteristics and objective housing quality on residential satisfaction?
4) What is the impact of preference on residential satisfaction?

Results

Study design and respondents

The data for the study presented in this paper are collected in the spring of 2012 in the context of the large study “House buyers in Profile" (in Dutch: "Huizenkopers in Profiel”; Boumeester et al. 2008) that has been performed every one or two years in the Netherlands since 1995. In this study, data on residential preferences and the actual housing situation are collected from residents who have at least a standard income; this applies to approximately 72% of all Dutch households. The goal of the "House buyers in Profile" study is to determine the needs and wishes of future homebuyers in order to establish what has to be built.

The Housebuyer in Profile study is interested in 1) exploring the willingness to move in a representative sample of the Dutch population with at least a standard income and 2) exploring the housing preferences in those who are willing to move. A sample of 9104 Dutch residents with, theoretically, at least a standard income was obtained from a marketing bureau. After sending an introductory letter, 8009 potential respondents were approached by telephone to participate in the study. The remaining 1095 had not been contacted because the desired number of participants had been reached. Of the 8009 potential respondents, 3107 (39%) agreed to cooperate in the telephone interview and 2717 (34%) refused. The remainder could not be contacted within the interview schedule (no answer, busy, answering machine, disconnected, other; n = 2185; 27%).

The respondents were stratified according to region (north, east, south and west) so that the final sample contained approximately 25% from each region. As explained earlier, the respondents were selected by a marketing bureau on having at least a standard income (2011: € 1811). In practice, however, sixteen percent of respondents (n = 177 of 1131 for whom the monthly net household income was available) turned out to have a lower than standard income. These respondents were nonetheless retained in the analyses. The questionnaire could only be answered by homeowners, tenants or their partners.

An important question during the telephone interview was whether respondents would be willing to move if they could find a dwelling that would fulfill all their needs with regard to housing. Twenty-three percent of respondents (n = 729) indicated that they were willing to move in such a situation. This leaves 2373 respondents who were not willing to move in such a situation (note that the willingness to move was unknown in 5 respondents who quitted the interview before this question had been asked). About two thirds of respondents in the latter group (n = 1540; 65%) were presented with a very short version of the survey in which no socio-demographic characteristics or preference questions were obtained, due to budgetary reasons. The socio-demographic characteristics of the remaining sample that is used for the analyses are provided in Table 1.

Table 1. Respondents' characteristics

Age (n = 1552)		
Mean (Std)	51 (13)	
Education (n = 1503)		
Primary/lower vocational education (reference)	277	18%
Secondary education	550	37%
Higher vocational education	516	34%
University	122	8%
Other	38	3%
Gender (n = 1519)		
Female	879	58%
Household type (n = 1554)		
Single (reference)	125	8%
Couple without children < 18 living at home	529	34%
Couple with children < 18 living at home	698	45%
Other composition	202	13%
Nr of persons in the household (n = 1556)		
Mean	3.0 (1.3)	
Monthly net income ¥ (n = 1127)		
Mean	2972 (1267)	
Paid work (n = 1555)		
Yes	1108	71%
Tenure (n = 1560)		
Owner-occupier	1290	83%

¥: Four respondents with a standardized score > 5 (i.e., a monthly net income > € 10.000) were omitted from the analyses

The residential preferences and choices

The following dwelling characteristics were used in the current study. Categorical housing aspects: 1) type of dwelling, 2) type of architectural design, 3) type of residential environment, 4) liveliness of the neighborhood and 5) region. Numerical housing aspects: 6) number of rooms, 7) size of the living room, 8) size of the outdoors space and 9) 'value' of the dwelling.

The distribution of the categorical housing aspects for the actual housing situation is shown in Table 2. The actual type of dwelling was explored by asking respondents whether they lived in a multi-family dwelling or in a single-family dwelling. Next, it was further explored whether they lived in a detached, a semi-detached or a terraced house; or in a ground-floor flat, an upstairs flat or an apartment. The preferred type of dwelling was explored by eliciting respondents' preferences for each of nine different dwelling types. Among these nine types were the current dwelling types, except for a ground-floor flat. After a short explanation of the types of architectural design, respondents were asked whether they inhabited a dwelling with a traditional, a modern or an experimental design. To determine the preferred architectural design, respondents were asked which type they preferred. The type of residential environment was explored by asking respondents whether they lived: in the city center, at the city's edge, in the built-up area of a smaller municipality or outside the built-up area. The preference for type of residential environment was obtained in the same way as described above. The liveliness of the neighborhood was explored by asking respondents whether they lived in a very quiet neighborhood, a quiet neighborhood, a lively neighborhood or very lively neighborhood. The preferred type of neighborhood was explored in a similar way. The respondents who were indifferent were assumed to have a preference for each category of the particular dwelling aspect, for example, respondents who

were indifferent with regard to architectural design were assumed to have no objections against either type of design. Actual region was known (North, East, South, West of the Netherlands), but the preferred region had not been asked.

Table 2. Categorical housing characteristics of current housing situation

	Number of cases	%
Type of dwelling		
Detached (reference category)	402	26%
Semi-detached	383	25%
Terraced	627	40%
Upstairs flat	40	2%
Ground-floor flat	33	3%
Apartment	73	5%
Architectural design		
Traditional (reference category)	1291	84%
Modern	213	14%
Experimental	36	2%
Type of residential environment		
City center (reference category)	149	10%
City edge	535	34%
Smaller municipality	722	46%
Outside the built-up environment	152	10%
Neighborhood		
Very quiet (reference category)	224	14%
Quiet	898	58%
Lively	366	24%
Very lively	65	4%
Region		
North (reference category)	809	26%
East	775	25%
South	794	26%
West	729	24%

The distribution of the numerical housing aspects is shown in Table 3. The number of rooms was questioned by asking how many rooms the actual and preferred dwelling had (only the living room, sleeping rooms and working rooms). The size of the living room of the current and preferred dwelling was asked. The perceived current house price was asked from owner-occupiers and the monthly rent from renters. In order to combine the two different measures, standardized scores were calculated (z-scores). The z-scores were combined into one variable that indicates the housing quality in terms of dwelling 'value'. Finally, the size of the actual and preferred outdoors space (backyard or balcony) was determined. These values were also combined using standardized scores.

Table 3. Numerical housing characteristics of current housing situation

	n	Mean	Std	Min	Max
Number of rooms	1558	5.0	1.3	2	15
Size of the living room in m^2	1465	42.9	17.2	10	200
Dwelling 'value' (standardized scores)	1451	0.0	1.0	-2.4	9.8
Size of the outdoor space (standardized scores)	1467	0.0	1.0	-1.2	4.0

The satisfaction scores

Respondents were asked to indicate the satisfaction with their dwelling on a scale ranging from 1 (very dissatisfied) to 10 (very satisfied). The question asked is: "Taken everything into account, how satisfied are you with your current dwelling?" In general, the respondents (n = 1557) are quite satisfied with their dwelling (mean satisfaction = 8.2, std = 1.1).

The relationship between socio-demographic characteristics and residential satisfaction

Firstly, the relationship between the socio-demographic characteristics and residential satisfaction is explored. The relationship between the numerical variables age, income and number of persons in the household and residential satisfaction is explored by calculating the correlation coefficients. The correlation coefficients are .15, .11 and -.08 for age, income and number of persons in the household, respectively (all $p < 0.01$). The effect size of the relationships (about .1) is only small. Age and income are positively related indicating that a higher age or a higher income gives rise to a higher residential satisfaction. In contrast, a higher number of persons in the household is related to less residential satisfaction.

The mean residential satisfaction scores for various categories of the socio-demographic characteristics are presented in Figure 1 (education and household type) and Figure 2 (having paid work, gender and tenure). An analysis of variance shows an overall effect for household type, indicating that residential satisfaction differs between various types of households ($F(3, 1549) = 9.18$, $p < 0.01$). A further analysis using post-hoc tests (Games-Howell test) shows that couples without children < 18 living at home show a higher residential satisfaction than all of the other groups. An independent samples t-test shows that respondents without paid work report more residential satisfaction than respondents with paid work ($t = -3.09$, $p < 0.01$). Furthermore, owner-occupiers are more satisfied than renters ($t = 9.08$, $p < 0.01$). The residential satisfaction does not differ for educational level and gender.

Figure 1. Mean residential satisfaction for various categories of education and household type

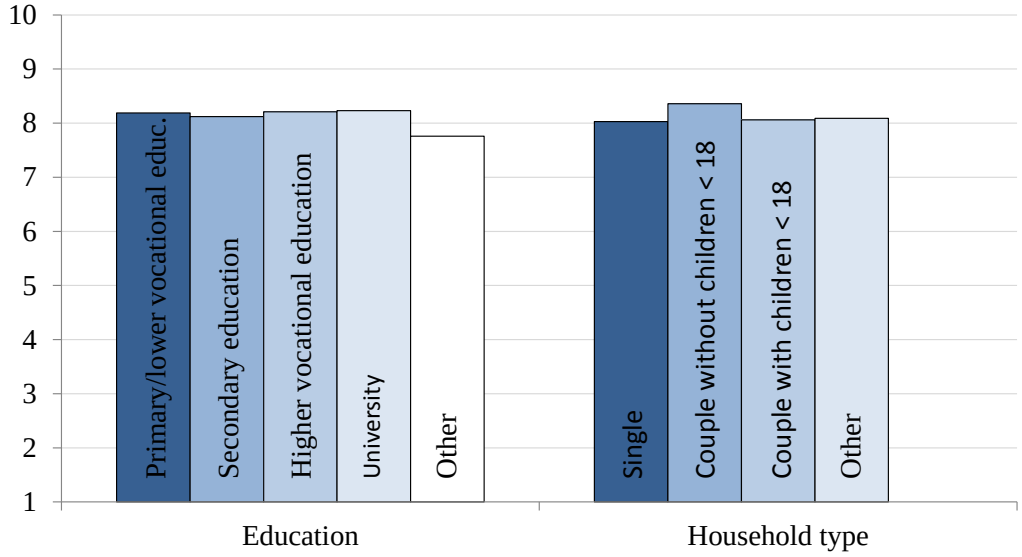
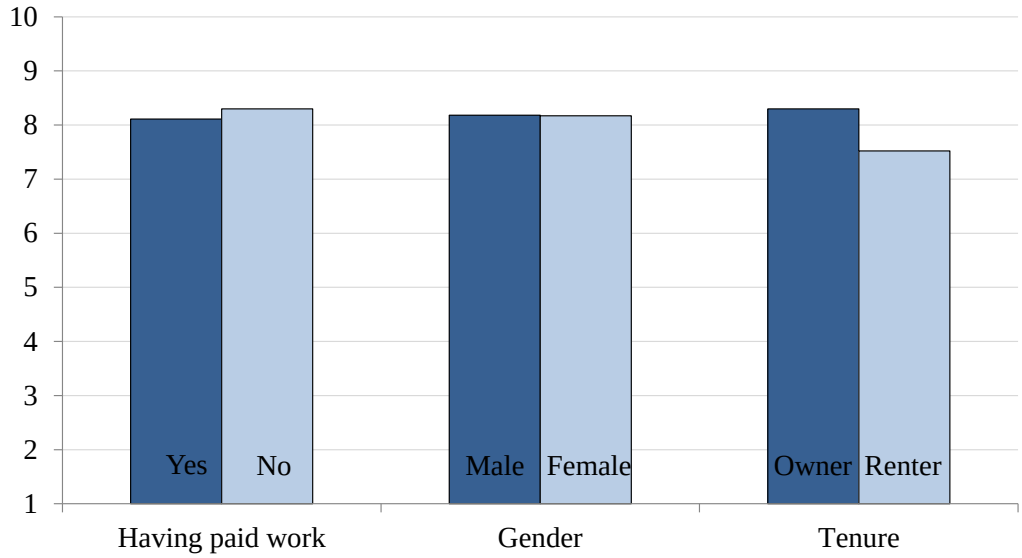


Figure 2. Mean residential satisfaction for having paid work, gender and tenure



The relationship between objective housing quality and residential satisfaction

Next, the impact of objective housing quality on residential satisfaction is explored. The mean residential satisfaction scores for various categories of the objective housing quality are presented in Figure 3 (dwelling type and architectural design) and Figure 4 (type of residential environment, liveliness of the neighborhood and region). An analysis of variance shows an overall effect for dwelling type ($F(5, 1548) = 27.98$, $p < 0.01$). A further analyses using post-hoc tests (Games-Howell test) shows that respondents living in detached houses are more satisfied than respondents in all other types of dwelling, except for a ground-floor flat. Furthermore, respondents living in a semi-detached house show a higher mean residential satisfaction than respondents living in a terraced dwelling and an apartment. An overall effect is also found for type of residential environment ($F(3, 1552) = 8.05$, $p < 0.01$). Respondents who live outside the built-up area are more satisfied than respondents in all other types of dwelling. Furthermore, an overall effect is found for neighborhood ($F(3, 1547) = 11.08$, $p < 0.01$). Both respondents who live in a very quiet neighborhood and those who live in a quiet neighborhood are gen-

erally more satisfied than respondents who live in a lively or very lively neighborhood. Finally, an overall effect is found for region ($F(3, 1553) = 3.54$, $p < 0.05$). The only two regions that differ statistically significantly with regard to residential satisfaction are the South and the West. Respondents living in the South show a higher mean residential satisfaction than respondents living in the West of the Netherlands. The residential satisfaction does not differ for architectural design.

The relationship between the numerical variables number of rooms, size of the living room in m^2, dwelling 'value' and size of the outdoor space and residential satisfaction is explored by calculating the correlation coefficients. The correlation coefficients are .18, .20, .22 and .20, respectively (all $p < 0.01$). The effect size of the relationships lies between weak and mediocre. All variables are positively related indicating that a higher value gives rise to a higher residential satisfaction.

Figure 3. Mean residential satisfaction for various categories of dwelling type and architectural design

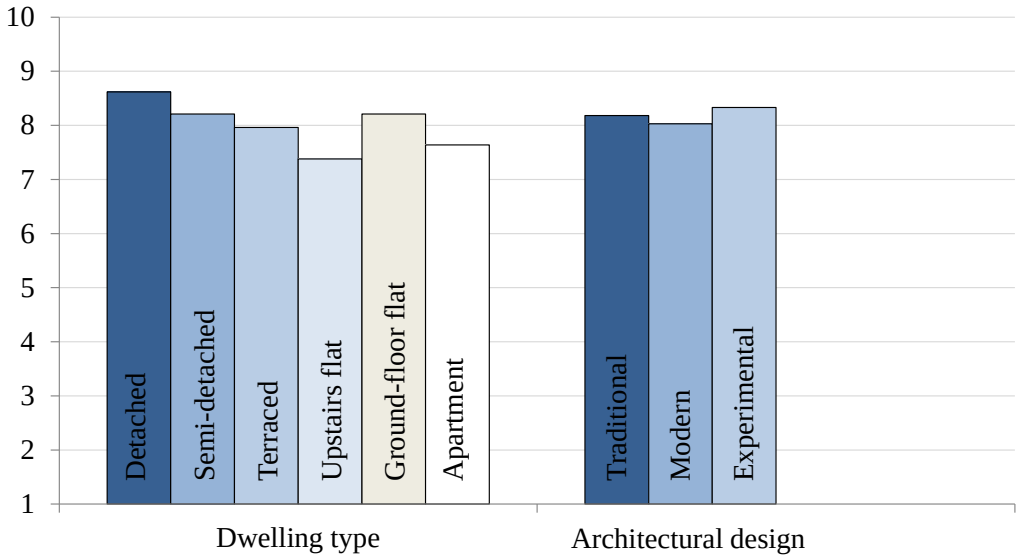
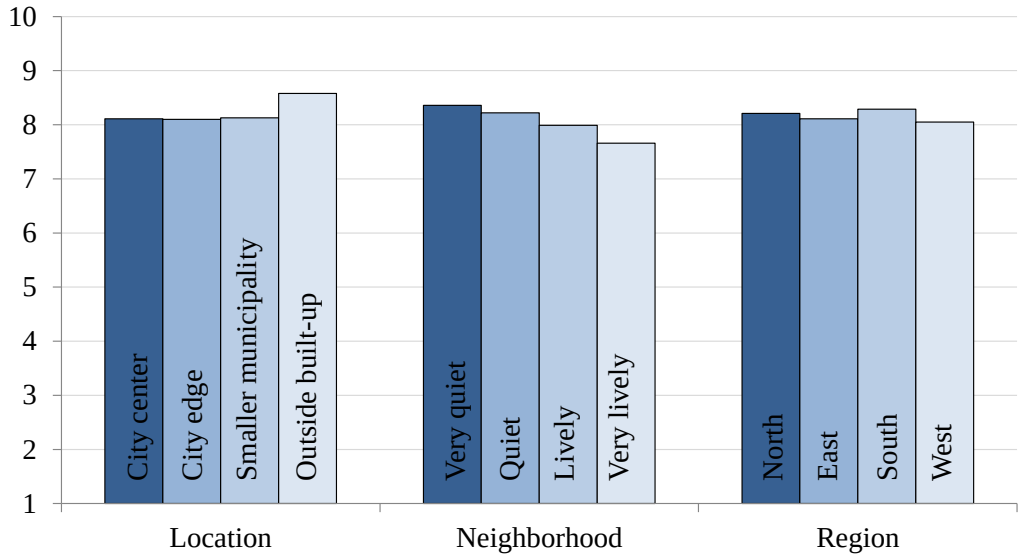


Figure 4. Mean residential satisfaction for various categories of type of residential environment, liveliness of the neighborhood and region



The mutual impact of socio-demographic characteristics and objective housing quality on residential satisfaction

The mutual influence of socio-demographic characteristics and objective housing quality on residential satisfaction is explored using regression analyses. Education and household type were entered in the regression analysis with the use of dummy variables. Education originally had five levels, but the levels "higher vocational education" and "university" were pooled in the analyses. Furthermore, the category "other education" (n = 38) was excluded. For all dummy variables, the reference category is indicated in Table 2 and in Table 3.

An Ordinary Least Squares (OLS) regression analysis was performed with residential satisfaction as outcome variable. The optimal model was found using a backward-elimination-by-hand procedure. This means that all socio-demographic characteristics and all housing quality aspects were entered simultaneously in the regression analysis. The method "enter" was used. Next, the characteristic with the highest, non-significant, p-value was omitted from the analysis. This process was repeated until only statistically significant predictors remained. Firstly, income was omitted (p = 0.91), followed by architectural design (p = 0.81 and p = 0.79). Next the following predictors were omitted: region (p = 0.89, p = 0.75 and p = 0.27), having paid work (p = 0.56), type of residential environment (p = 0.68, p = 0.58 and p = 0.21), education (p = 0.64, p = 0.17), type of household (p = 0.45, p = 0.41 and p = 0.11) and gender (p = 0.09).

The socio-demographic variables age, number of persons in the household and tenure are statistically significant predictors of residential satisfaction. Together, they explain 11% of the variance in residential satisfaction. The housing aspects dwelling type, liveliness of the neighborhood, size of the outdoors space and housing 'value' are statistically significant predictors of residential satisfaction. Together, they explain 7% of the variance in residential satisfaction. Thus, the total percentage of explained variance is 18%. The coefficients and other important parameters are provided in Table 4.

The most important predictor of residential satisfaction is tenure. The residential satisfaction is about 0.73 points lower for renters than for owners. The second most important predictor is the dwelling 'value'. An increase in dwelling 'value' with the size of 1 standard deviation yields about 0.20 points increase in residential satisfaction. One standard deviation equals about € 152.000 with regard to the perceived dwelling price and € 158 with regard to monthly rent. For dwelling type, all categories are compared against a detached house. Living in a terraced house, an upstairs flat or an apartment de-

creases residential satisfaction with about 0.17, 0.87 and 0.38, respectively. Living in a very lively neighborhood decreases the residential satisfaction with about 0.45 when compared to living in a very quiet neighborhood. Finally, a higher age is related to a higher residential satisfaction whereas a higher number of persons in the household is related to less residential satisfaction.

Combining these findings, it shows that younger respondents with a higher number of persons living in the household, who rent their upstairs dwelling in a very lively neighborhood, who have a small outdoors space and whose dwelling 'value' is relatively low, have the lowest residential satisfaction. In contrast, older respondents with a smaller number of persons living in the household, who own their detached dwelling in a very quiet neighborhood, who have a large outdoors space and whose dwelling 'value' is relatively high, show the highest residential satisfaction.

Table 4. Results from the regression analysis with residential satisfaction as outcome (n = 1360)

Predictor	Coefficient	95% Confidence interval		t-value	p-value
		Lower	Upper		
Constant	9.006	8.615	9.505	39.914	p < 0.01
Age	0.008	0.003	0.013	3.018	p < 0.01
Nr of persons	-0.090	-0.142	-0.038	-3.416	p < 0.01
Tenure	-0.734	-0.889	-0.578	-9.252	p < 0.01
Dwelling type					
Detached	---	---	---	---	---
Semi-detached	-0.119	-0.284	0.045	-1.422	p = 0.15
Terraced	-0.173	-0.338	-0.008	-2.059	p = 0.04
Upstairs flat	-0.870	-1.251	-0.489	-4.477	p < 0.01
Ground-floor flat	0.111	-0.273	0.495	0.566	p = 0.57
Apartment	-0.379	-0.680	-0.077	-2.463	p = 0.01
Neighborhood					
Very quiet	---	---	---	---	---
Quiet	-0.004	-0.161	0.154	-0.048	p = 0.96
Lively	-0.072	-0.255	0.112	-0.768	p = 0.44
Very lively	-0.450	-0.746	-0.153	-2.975	p < 0.01
Size outdoors	0.070	0.009	0.131	2.251	p = 0.02
Dwelling 'value'	0.198	0.132	0.264	5.896	p < 0.01

The impact of preference on residential satisfaction

The previous analyses examined the influence of socio-demographic characteristics and objective housing quality on residential satisfaction. It is known, however, that both factors do not explain residential satisfaction to a large extent. Other factors might be present. One of these is preference. Housing quality might not have a large influence on residential satisfaction because different people have different preferences. Based on the discussion above, it is assumed that the effect of housing quality on residential satisfaction is mediated by preference. The effect of preference is explored in the current study by comparing, for each dwelling aspect, the residential satisfaction of respondents who live according to their preference against those who do not. The latter respondents show a discrepancy between what they have and what they want (a have-want discrepancy) with regard to a particular dwelling aspect. Whether there is a have-want discrepancy is examined by comparing the preferred dwelling aspect (for example, a semi-detached house) to the actual housing situation (for example, an apartment). If the preferred housing situation with regard to a particular dwelling aspect is not similar

to the actual housing situation, than there is a have-want discrepancy on this particular dwelling aspect. These analyses are performed only in respondents who are willing to move, because housing preferences have only been obtained in this group. Furthermore, the analyses are not performed for the attribute of dwelling 'value'.

The results are presented in Table 5. The column labeled "Actual housing situation, preferred" contains respondents who live in the particular housing situation that they prefer. For example, there are 140 respondents who currently live in a detached house. One hundred and twelve of those respondents prefer to live in a detached house; they provide a mean residential satisfaction of 8.4. There are 28 respondents who currently live in a detached house but who prefer another type of dwelling. They show a have-want discrepancy with regard to dwelling type. The mean residential satisfaction of these respondents is 8.5. The effect of preference can be tested using the independent samples t-test for each of the dwelling aspects. The results show that the mean residential satisfaction does not differ between the groups for any of the tested dwelling aspects.

Table 5. Mean appreciation scores for various aspects of the dwelling situation in respondents who are willing to move (n = 738)

	Actual housing situation, preferred		Actual housing situation, not preferred	
	Mean	n	Mean	n
Dwelling type				
Detached house	8.4	112	8.5	28
Semi-detached house	7.9	112	7.9	59
Terraced house	7.6	220	7.8	110
Upstairs flat¥	7.0	8	6.4	13
Apartment¥	7.9	20	6.7	22
Architectural design				
Traditional	7.8	467	7.7	123
Modern	7.8	68	7.5	39
Experimental¥	8.5	6	8.1	10
Location				
City center	7.8	46	7.8	30
City edge	7.7	178	8.0	85
Smaller municipality	7.8	222	7.8	97
Outside the built-up environment¥	8.2	27	7.9	20
Neighborhood				
Very quiet	8.0	38	7.9	47
Quiet	7.9	274	7.9	151
Lively	7.7	111	7.4	55
Very lively¥	7.5	2	7.0	31
Number of rooms				
2/3 rooms¥	7.4	20	7.3	43
4 rooms	7.8	70	7.5	125
5 rooms	7.8	96	7.8	177
6 or more rooms	8.2	42	8.1	146
Size living room				
10-25 m^2¥	7.6	11	7.5	66
26-34 m^2	7.6	119	7.6	91
35-45 m^2	8.0	118	7.7	121
46-55 m^2	8.1	64	8.1	93
More than 55 m^2	8.1	51	8.3	85
Size outdoors space (backyard/balcony)				
Less than 8 meters / less than 4 m^2	7.2	31	7.6	48
8 - 12 meters / 5 - 9 m^2	7.8	171	7.8	128
13 - 17 meters / 10-12 m^2	7.9	47	7.7	74
More than 17 meters / more than 12 m^2	8.2	64	8.1	84

Note: ‡ = information on preference for ground floor flat is lacking; ¥ = not analyzed statistically due to small sample size

The results presented above show that there was no impact of preference on residential satisfaction. It is, however, possible that a have-want discrepancy with regard to just one aspect of housing does not have a major impact on overall residential satisfaction. Therefore, the number of discrepancies between experience and preference was counted for each housing aspect shown in Table 5. The minimum number of possible discrepancies is 0 and the maximum number is 7. Thus, one can have a discrepancy between preferred and current housing situation with regard to dwelling type, architectural design and so on. The mean residential satisfaction for each number of discrepancies is presented in Table 6.

Table 6. Mean satisfaction scores for categories of the number of discrepancies between preference and actual housing situation on eight dwelling aspects

Number of discrepancies	Mean residential satisfaction	n	%
7	8.4	5	1%
6	7.4	25	4%
5	7.9	79	12%
4	7.7	141	21%
3	7.8	186	28%
2	7.8	157	23%
1	7.9	68	10%
0	7.9	14	2%
Total	7.8	675	100%

The effect of the number of discrepancies is tested using an analysis of variance (ANOVA). The groups with 6 and 7 discrepancies are pooled to obtain a sufficient number of respondents within this group. The same is done for the respondents with 0 and 1 discrepancy. This analysis showed that residential satisfaction does not differ for groups of respondents with various numbers of have-want discrepancies (Welch robust test: $p = 0.64$). Thus, we have to conclude that the actual study cannot establish an effect of preference on residential satisfaction.

Discussion

The current paper explored the impact of socio-demographic characteristics, objective housing quality and preference on residential satisfaction. Firstly, the impact of socio-demographics was examined. These explained about 11% of the variance in residential satisfaction, which is in the range of what is usually found in the literature. The impact of age, tenure and number of persons in the household is in accordance with the literature (for example, Veenhoven 1996, Vera-Toscano and Ateca-Amestoy 2008). It is interesting that income was univariately related to residential satisfaction but that it is not a statistically significant predictor of residential satisfaction in the multivariate regression analysis. It is known from the literature that income is frequently related to residential satisfaction, although the relationship is usually weak. The fact that income was not a statistically significant predictor of residential satisfaction in the current study is probably the result of a particular combination of predictors. It was tested whether multicollinearity did play a role, but this was not the case. The correlations between income and the other predictors do not show multicollinearity, for example, the correlation between income and dwelling ‘value’ is only .32. The Variance Inflation Factors were 1.6 at the highest, thus did not show multivariate multicollinearity.

Secondly, the impact of objective housing quality was examined. These explained about 7% of the variance in residential satisfaction. This is relatively low, although the effect in the literature is usually only about 10%. With regard to objective housing quality, the dwelling 'value' was the most important predictor. A higher rent or a higher perceived housing price was related to more residential satisfaction. Thus, this variable did indeed seem to provide a measure for housing quality. Other statistically significant predictors were dwelling type, liveliness of the neighborhood and size of the outdoors space.

Thirdly, the effect of preference on residential satisfaction was explored. It was assumed that respondents who live in accordance to their preferences show higher residential satisfaction, irrespective of objective housing quality. Surprisingly, this assumption could not be confirmed in the current study. It is possible that the overall measure of residential satisfaction was too general to find effects for individual dwelling aspects. However, the number of discrepancies between actual and preferred dwelling characteristics was also not related to residential satisfaction. Thus, respondents with a large discrepancy between what they have and what they want are as satisfied with their current dwelling as respondents who live in accordance to their preferences. This finding has to be explored further. Perhaps the direction of the discrepancy also plays a role. For example, respondents who want to "downsize" could be more satisfied with their current dwelling than respondents who want to "upgrade".

A limitation of the current study concerns the composition of the respondent group. Beforehand, a sample of residents with at least a standard income was selected by a marketing bureau because of the goal of the Housebuyers in Profile study, i.e., exploring residential preferences of potential homebuyers. This criterion might decrease the variance in residential satisfaction. In practice, however, not all respondents turned out to meet the income requirements and the final sample indeed did include respondents with a lower than standard income (17%, compared to 28% of people in the Dutch population). Furthermore, people living in relatively low quality housing (a small living room of 20 m^2, a dwelling with few rooms, and a small backyard or balcony) were still represented in the current study

Another limitation concerns the limited number of dwelling aspects that have been examined in the current study. This had to do with the evaluation questions being part of the larger study into residential preferences. We had to limit ourselves to a limited number of dwelling aspects and could not take into consideration other important aspects of the dwelling and its environment, such as the home's interior and exterior, relationships with neighbors, the local physical environment, and aesthetics and health features, as mentioned, for example, by Rioux and Werner (2011, online first).

It is known from the literature that there are other determinants of residential satisfaction, for example, cognitive restructuring and future perspectives. Cognitive restructuring (sometimes also called cognitive dissonance reduction) is the tendency for individuals to seek consistency among their cognitions (i.e., beliefs, opinions) or between cognitions and behavior. This is done in order to avoid negative feelings. If the actual dwelling situation is perceived as being less than optimal and one perceives that one cannot change this situation, then cognitive dissonance reduction might diminish the unpleasant feelings resulting from such a housing situation (Priemus 1984, 1986; Amérigo and Aragonés 1997). The impact of future perspectives refers to the perceived opportunity to attain one's ideal in the future. This allows a household to appear quite satisfied with current housing conditions, even where those conditions do not meet current needs or preferences, because of the belief that things will get better in the future (Bourne 1981). The impact of the latter two aspects is explored in another study (Jansen, working paper). Yet other potential determinants of residential satisfaction are psychosocial factors, such as place attachment, social comparison and social interactions or networks that form between inhabitants.

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