Housing, Theory and Society

ISSN: 1403-6096 (Print) 1651-2278 (Online) Journal homepage: www.tandfonline.com/journals/shou20

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To cite this article: Sylvia J.T. Jansen (2014) Different Values, Different Housing? Can Underlying Value Orientations Predict Residential Preference and Choice?, Housing, Theory and Society, 31:3, 254-276, DOI: 10.1080/14036096.2013.867279

To link to this article: https://doi.org/10.1080/14036096.2013.867279

Published online: 16 Dec 2013.

Housing, Theory and Society, 2014
Vol. 31, No. 3, 254–276, http://dx.doi.org/10.1080/14036096.2013.867279

Routledge
Taylor & Francis Group

Different Values, Different Housing? Can Underlying Value Orientations Predict Residential Preference and Choice?

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ABSTRACT *Various demographic, socio-economic and socio-cultural shifts have taken place in recent decades. These trends result in a change in the volume and quality of the housing demand as well as in the choice of location. Consequently, the traditional method, which implies asking relatively simple and straightforward questions about the willingness to move, residential preferences and the current housing situation, might no longer be adequate to explain and predict residential preference and choice. Therefore, a search is going on for new methods. The current paper explores the use of underlying value orientations. Respondents were divided into two groups according to whether they attached more importance to "Self-direction" or to "Security" as a guiding principle in housing. A number of differences were observed. Respondents who find Self-direction important more often live in the city centre and prefer an existing dwelling with an innovative design in a neighbourhood with various types of residents and a mix of residential and commercial land uses. Residents who attach more importance to Security more often live outside the city centre and prefer a newly built dwelling with a traditional design in a neighbourhood with mainly housing and the same type of residents. The results provide some indication that residents may indeed prefer particular dwelling or neighbourhood characteristics because they pursue values and goals that are important to them.*

KEY WORDS: Housing, Lifestyle, Revealed preference, Stated preference, Values

Introduction

Up-to-date knowledge on consumers' residential preferences is important for stakeholders in order to determine what housing consumers want. This applies to both small-scale research by, for example, a building investor who wants to develop a new apartment building that meets its future residents' requirements, as well as large-scale research for predicting the housing demand on a urban, regional or national level. Residential preferences are frequently recorded using the traditional housing demand research method (see, e.g. Boumeester 2011). This method implies

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that relatively simple and straightforward questions are asked about the willingness to move, residential preferences and the current housing situation. Furthermore, socio-demographic and socio-economic characteristics are collected, such as type of household and income. Next, residential preferences are predicted on the basis of the background variables and generalized, when needed, to a larger population. The method assumes that social background may both create opportunities and limit residential choices (Ganzeboom 1988). Thus, the housing situation is adjusted to correspond with the financial resources and the spatial requirements of the household (Karsten 2007). For example, the birth of the first child – thus, the transition from couple to family – is frequently preceded or followed closely in time by a move from renting to owning (Clark, Deurloo, and Dieleman 1994).

However, society changes rapidly. Households have become smaller and the variation in household types has increased. Other changes concern a greater variety of specific lifestyle-based subcultures (e.g. senior communities, ecological neighbourhoods, floating houses, etc.) and an increase in the proportion of affluent households (at least, up to the 2008 crisis). These shifts have generated more diverse housing preferences and a broader variety in housing behaviour (van Diepen and Arnoldus 2003; Kersloot and Kauko 2004). The volume and quality of the housing demand change as well as the location at which that demand is expressed. In view of this, socio-demographic and socio-economic characteristics might no longer suffice to predict residential preferences. People with the same background variables may have totally different preferences and behavioural patterns whereas people who score differently on the same background variables can have similar preferences (Michelson and Reed 1974; Wells 1974; Gunter and Furnham 1992; Pinkster and van Kempen 2002). Furthermore, now that the basic housing needs (shelter, bathroom facilities, etc.) have generally been provided for and consumers have more money to spend, residential preferences might be highly influenced by variables such as tastes and values. The house is more than a functional shelter (Gram-Hanssen and Bech-Danielsen 2004; Kauko 2006). Salama and Sengupta (2011) argue that housing today signifies a unique expression of the chosen life-style, one's pride and sensibilities. Karsten (2007) writes that housing can be thought of as one form of consumption through which the self can be expressed and might even be seen as the crucial identifier of who you are. Elliott and Wadley (2013) refer to Maslow's hierarchical model and argue that a house can be viewed as an end in itself by allowing the owner to self-actualize through his or her aesthetics and taste. Such subtleties cannot be captured by the traditional housing demand research method and, therefore, this method might nowadays fall short. For example, Karsten (2007) explains that the preferences of middle-class families for urban living cannot be explained by demographic and economic factors alone. She introduces a framework that considers housing in relation to daily activity patterns, social networks and identity constructions.

To overcome the shortcomings of the traditional method, new ways of examining residential preferences are sought for. One of the approaches that obtains increasing attention in housing is the lifestyle approach. Lifestyle can be defined as social differentiation led by consumption, leisure and other individual or collective preferences (Kriese and Scholz 2012). Gunter and Furnham (1992) point out that lifestyles are patterns in which people live and spend their time and money; that are primarily functions of consumers' values. Lifestyle research assumes that lifestyles are structured by quantitative differences in universal values across groups (Holt 1997).

People with similar life styles tend to live in similar neighbourhoods and consume similar goods and services including housing (Beamish, Goss, and Emmel 2001). Lifestyle provides a more refined insight into the choice for housing and into the features that express who we are and what makes a shelter home (Beamish, Goss, and Emmel (2001).

Lifestyle research is thriving; Jansen (2011) describes almost 40 different lifestyle typologies, of which more than 20 are specifically developed for the domain of housing. Numerous descriptive papers on the relationship between lifestyle and residential preference and choice have been published, recently as well as in the past. A number of these studies are described in, for example, Ha and Weber (1992), Beamish, Goss, and Emmel (2001), Heijs, Carton, Smeets, and van Gemert (2005, 2009), Aero (2006), Salama (2011) and Jansen (2011, 2012). However, despite the large number of descriptive studies, statistical investigations into the relationship between lifestyle and residential preferences are relatively scarce. Aero (2006) argues that the study of lifestyle is traditionally carried out using qualitative research.

The empirical studies that have been performed generally show that the influence of lifestyle (variables) on residential preferences is rather limited (see, e.g. Driessen and Beereboom 1983; Bootsma 1995; Coolen, Boelhouwer, and van Driel 2002; Pinkster and van Kempen 2002; Kim, Kim, and Kim 2003; Aero 2006; Heijs, van Deursen, Leussink, and Smeets 2011; Jansen 2012). For example, Coolen, Boelhouwer, and van Driel (2002) explored the added worth of values in the relationship between intended tenure choice and socio-demographic characteristics. The authors showed that intended tenure choice could be predicted by age, current tenure, income and household composition (explained variance: 39%) and that values have a small, but statistically significant, additional effect (explained variance: 4%). The more important the values of power and achievement were deemed to be, the greater the tendency towards owning. Also, the more important the value type family values was (values: harmonious family life, safety for family, mature love and good parenthood), the higher the tendency to rent. Heijs, van Deursen, Leussink, and Smeets (2011) explored whether lifestyle groups (based on behavioural intentions) could act as a supplement to traditional variables in the prediction of residential preferences. The authors concluded that a majority of the residential preferences (84%) were not related to lifestyle groups. Furthermore, in the remaining cases, the traditional variables (sometimes combined with basic sociocultural characteristics) could predict residential preferences as well as the lifestyle groups did.

Summarizing, explaining and predicting residential preferences have become more difficult because of demographic, socio-economic and sociocultural changes. Lifestyle research might be able to deal with this problem because it adds psychological variables to the traditional characteristics in the hope that it leads to more accurate explanations and predictions of consumers' preferences and choices. More empirical research is needed in order to verify this assumption. This is the purpose of the current study. More specifically, the research question is: can underlying value orientations predict residential preference and choice? This study combines research into socio-demographic and socio-economic factors with a lifestyle approach in order to achieve a deeper understanding of the many factors that affect residential preference and choice.

Methods

The Data Collection

The data used in this paper were collected in the context of a large study, "House Buyers in Profile", that has been performed every one or two years in the Netherlands since 1995. This study gathers data on residential preference and choice from respondents with at least an average household income, which applies to approximately 70% of all Dutch households. This criterion increases the probability that respondents actually have a choice with regard to carrying out their (residential) preferences. Not having much choice might diminish the use of lifestyle as an explanatory factor in residential choice (Aero 2006). The goal of the "House Buyers in Profile" study is to determine the needs and wishes of potential future homebuyers in order to determine what has to be built. The data for the current study were collected through telephone interviews with about 2000 respondents in 2010.

Values as Operationalization of Lifestyle

Unfortunately, there is no clear definition of lifestyle. Anderson and Golden (1984) point out that: "Lifestyle is all things to all people, but this very fact that has made the concept appealing also impedes the development of further precision". The concept of lifestyle may vary from a limited characteristic to a broad spectrum of behaviour and various psychological and social variables. The most frequently occurring operationalizations of lifestyle are based on the following: (1) behaviour only (e.g. buying behaviour); (2) latent variables only (e.g. attitudes, opinions); (3) a mix of behavioural and latent variables; (4) a combination of socio-demographic characteristics; and (5) a combination of socio-demographic characteristics and other variables (Jansen 2012).

For the current study, it was decided to operationalize lifestyle on the basis of latent variables only (in this case: values). Thus, lifestyle is defined here as the orientation of people towards spending their time and money (Bootsma 1995). Behavioural variables were thought to be less useful in the prediction of residential preferences and choices. It is, for example, quite difficult to find behaviour that would be related to the preference for a traditional architectural design. Besides, certain behaviour can follow from very different motivations and does not necessarily reflect underlying preferences. Finally, socio-demographic characteristics are not believed to be part of lifestyle. A combination of socio-demographic characteristics may indicate a stage of the lifecycle or life course but not lifestyle.

Values are defined by Schwartz (1996) as desirable, transsituational goals, varying in importance, that service as guiding principles in one's life. With regard to housing, Kersloot and Kauko (2004) argue that the choice of the dwelling can be understood as part of the person's general value orientation. Consumers are usually goal-oriented and choose a particular dwelling because they pursue values and goals that are important to them. For example, a consumer might want to live in the city centre in order to fulfil the value "an exciting life". Lindberg et al. (1987) hypothesized that housing attributes allow certain activities to be performed thereby fulfilling life values. These authors found some evidence that was consistent with this assumption as well as some additional direct relationships between values and housing attributes. In a study published in 1988, Lindberg and coauthors explored the perceived effects of housing attributes on the possibility to attain each of 12 life

values. The authors conclude that this indeed was the case and that beliefs about the consequences for the attainment of life values determine the evaluations of housing attribute levels.

Some well-known instruments for measuring values and value systems are the Rokeach Value Survey (Rokeach 1973), the List of Values (Kahle 1983) and the Schwartz Value Survey (Schwartz 1992). Beamish, Goss, and Emmel (2001) provide a short history of housing values for explaining and predicting the preference and choice for different types of housing.

The decision to operationalize lifestyle in terms of values was based on a number of arguments. Firstly, as argued above, values are supposed to guide residential preference and choice. Secondly, some researchers argue that values, as the innermost drivers of behaviour, are more stable and generalizable than other lifestyle variables, such as activities and attitudes (Wedel and Kamakura 2000). Thirdly, values could be derived from a well-known and well-validated set, the Schwartz Value Survey (see, e.g. Schwartz 1992; Schwartz and Boehnke 2004). Finally, values are relatively easy for questioning in a telephone survey.

The values applied in the present study were based on the Schwartz Value Survey (1992), which contains 57 different values (SVS57). Schwartz (1994) classifies the values into 10 motivationally distinct value types that form a continuum of related motivations (see Figure 1). The 10 value types are provided here with some examples of values belonging to each type in parentheses: (1) Self-direction (freedom, creativity), (2) Stimulation (an exciting life, a varied life), (3) Hedonism (pleasure, enjoying life), (4) Achievement (ambitious, influential), (5) Power (social power, wealth), (6) Security (family security, healthy), (7) Conformity (obedient, self-discipline), (8) Tradition (respect for tradition, devout), (9) Benevolence (helpful, responsible) and (10) Universalism (equality, unity with nature). Schwartz (1994) argues that adjacent value types share motivational emphases, e.g. power and

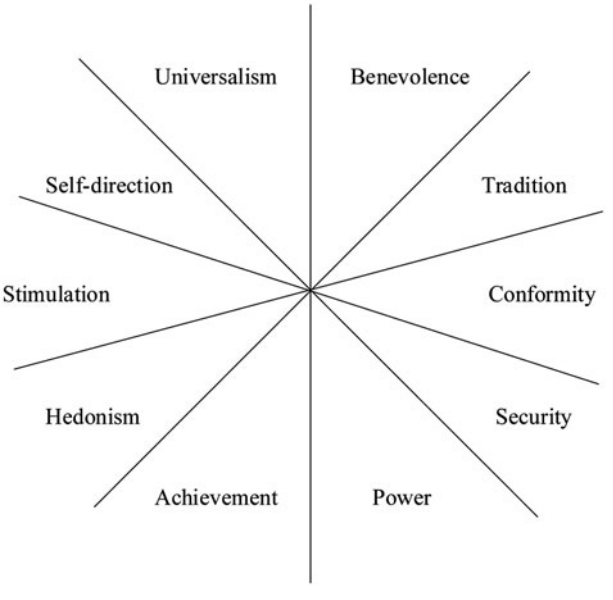

Figure 1. Theoretical structure of value types as proposed by Schwartz (1992).

achievement both emphasize social superiority and esteem. Furthermore, increasing distance between the value types indicates decreasing compatibility and greater conflict. For example, focusing on achievement values might conflict with the pursuit of benevolence values: seeking personal success for oneself is likely to hinder actions that are aimed at enhancing the welfare of others who need one's help (Schwartz 1994).

In the current study, some of the original values were rephrased slightly in order to make them more appropriate for the field of housing. For example, we adapted Schwartz's original value "clean (neat, tidy)" into "clean (neat, tidy home)". We did this because the general aspect of values is seen as one of the drawbacks of this method (Vyncke 2002). Furthermore, previous research in the housing domain had shown that general values have little influence on housing preference (see, e.g. Coolen, Boelhouwer, and van Driel 2002). We expect housing-specific values to have a stronger relationship with residential preferences. Besides, it makes it easier for the respondents to determine the importance of values as a guiding principle in housing. In accordance with Schwartz (1992), each item was followed in parentheses by a short phrase that further specifies its meaning, e.g. "Family security (safety for loved ones)". The questions were phrased in the following way: "How important do you find [the specific value] as a guiding principle in housing?" (adapted from Schwarz's wording: "How important do you find [the specific value] as a guiding principle in life?"). The respondents could provide an answer on a seven-point scale ranging from "not important at all" (1) to "extremely important" (7).

The 57 adapted values were tested in an expert sample, consisting of 15 colleagues (all of them researchers in the field of housing). We asked them to indicate the perceived importance of the values with regard to housing on the seven-point scale mentioned above. On the basis of this pretest, we selected the 29 most important values for inclusion in the final list. We had to make a selection of values because these questions were part of a larger survey, as explained above. If too many questions were included, the interview burden would be too high (fatigue, boredom, no time). The 29 selected items theoretically belong to nine different value types.

For the research described in the current study, it was decided to examine the impact of value types, not individual values. Sets of values (value types) might show a higher reliability than single values (Bilsky and Schwartz 1994). Furthermore, two opposite value types were selected in order to capture lifestyle differences with regard to housing. Being restrained by the limited number of values included in the study and the need for opposite value types, two value types were selected: Security (six values) and Self-direction (five values) (see Figure 1). Security and Self-direction are opposite aspects on an underlying dimension from "Openness to change" to "Conservation". This dimension contrasts the domains Self-direction and Stimulation with the domain's Security, Conformism and Tradition (Schwartz 1992, 1996, 2003). Respondents who find Self-direction more important are supposed to form a homogeneous group in terms of the main motives underlying their residential preferences and to differ in this regard from respondents who find Security more important.

The value type Self-direction is derived from organismic needs for mastery and from interactional requirements of autonomy and independence (Schwartz 1992, 1994, 2006). Self-direction relates to independent thought and action – choosing, creating and exploring (Schwartz 1992). In this study, the value type Self-direction is comprised of the values: freedom, independent, privacy, self-respect and creativity. The value type Security is derived from basic individual (organism) and group

requirements (Schwartz 1992, 2006). According to Schwartz (2006), some Security values serve primarily individual interests (e.g. clean); others serve wider group interests (e.g. national security). Security stands for safety, harmony and stability of society, of relationships and of self (Schwartz 1992). In this study, the value type Security is comprised of the values: healthy, family security, security in the dwelling environment, clean and household order.

Residential Preferences

Residential preferences can be subdivided into revealed and stated preferences. Revealed preferences concern choices that have actually been made in the "real world". In the case of a house, choice will always reflect the joint influences of preference, market conditions, regulations, availability and internal and external personal factors such as lifestyle and social class. Therefore, revealed preferences might not show a strong relationship with stated preferences. Stated preferences are responses to survey questions. They are a relatively unconstrained evaluation of attractiveness. In the current study, both types of residential preferences will be explored; four types of revealed preferences and eight types of stated preferences (see Table 1).

Table 1. Revealed and stated preferences included in the study

Revealed preferences	Stated preferences
Tenure	*Same as left, plus*
Owner-occupied dwelling	
Rental dwelling	*Preference for existing or newly-built dwelling*
	Existing dwelling
Type of architectural design	Newly-built dwelling
Traditional	No preference for either option
Modern	
Innovative	*Dwelling in new housing development acceptable*
	Yes
Type of residential environment	Maybe
City center	No
City edge	
Smaller municipality	*Preferred residential composition of neighborhood*
Outside the built-up area	Neighborhood with mainly same type of residents in terms of age, income and behavior
	Neighborhood with mainly different types of residents in terms of age, income and behavior
Liveliness of the neighborhood	No preference for either option
Very quiet	
Quiet	*Preferred housing composition of neighborhood*
Lively	Neighborhood with mainly housing
Very lively	Neighborhood with a mix of residential and commercial land uses, like shops and small businesses
	No preference for either option

With regard to the relationship between value type (Self-direction vs. Security) and residential preferences, the following hypotheses were formulated.

Tenure. With regard to the relationship between value types and tenure, contradictory arguments are found in the literature. Firstly, both homeownership and renting might satisfy a need for safety, which is supposed to be more important for respondents in the Security group. Homeownership might be more attractive because the built-up equity might bring about feelings of safety with regard to one's own future or those of the kids (Sjorslev 2012). It might also bring financial security, security against termination of tenancies and security against extraordinary rent increases (Skifter Andersen 2011; Elliott and Wadley 2013). However, renting can also enhance safety and security, because by renting there is no risk of losing money when house prices drop (Skifter Andersen 2011). Secondly, both homeownership and renting might satisfy a need for freedom, which is supposed to be more important for respondents in the Self-direction group. Homeownership might be attractive because it allows home-owners to satisfy their need for freedom to dispose over and adapt the house (Skifter Andersen 2011). Furthermore, the control afforded by home ownership might encourage a sense of privacy and individualism (Elliott and Wadley 2013). Independence and privacy are values that belong to the value type Self-direction. However, renting might also be viewed as providing more freedom when it comes to terminating a tenancy agreement, without having to bother about selling the house (Karsten 2009). In conclusion, both renting and homeownership might attract both types of value types groups. Therefore, it is hypothesized that the groups do not differ with regard to tenure.

Architectural design. It is hypothesized that respondents in the Security group more often (want to) live in a dwelling with a traditional (conservative) architectural design and that respondents in the Self-direction group more often are open to modern and innovative styles because of their openness for change and desire for creativity.

Type of residential environment. Karsten (2007) describes that the diversity found in the city yields a sense of freedom. Freedom is one aspect of the value type Self-direction and it is, therefore, hypothesized that those who find Self-direction relatively important more often prefer to live in the city centre. Living in the city is also related to an overall lack of safety (Karsten 2007). The rural residential environment is safer; it has a lower crime rate (Feijten, Hooimeijer, and Mulder 2008). Lovejoy, Handy, and Mokhtarian (2010) found that respondents living in a suburban neighbourhood believed that their neighbourhood was more safe than respondents living in a traditional [city centre] neighbourhood. Furthermore, Schopphoven (1991) found that respondents living in a rural area more often found security important. Brun and Fagnani (1994) indicate that respondents living in the suburbs more often show a desire to lead a life centred on family and with security for the children. Consequently, respondents in the Security group are supposed to prefer a suburban or a rural residential environment more often.

Liveliness of the neighbourhood. It is hypothesized that respondents in the Security group are more favoured towards a quiet or very quiet neighbourhood, because it is a relatively safe and stable environment, and that respondents in the Self-direction

group prefer a livelier neighbourhood, because of the opportunities for new experiences and meeting interesting people.

Preference for existing or newly-built dwelling. It is assumed that the respondents in the Self-direction group more frequently prefer a newly built dwelling, because they are more open for change and new experiences. The respondents in the Security group are supposed to want as much certainty, security and safety as they can get and as few surprises as possible. Thus, they are supposed to prefer an existing dwelling (what you see, is what you get).

Dwelling in new housing development. It is assumed that respondents in the Self-direction group more frequently prefer a dwelling in a new housing development, for the same reasons as provided above for the existing or newly built dwelling.

Residential composition of neighbourhood. It is hypothesized that respondents in the Security group have a preference for residents with about the same income, behaviour and age because it will provide them with a sense of harmony and stability. In contrast, respondents in the Self-direction group will prefer a neighbourhood with different types of residents because of the higher probability of meeting interesting people and gaining new experiences.

Housing composition of neighbourhood. It is assumed that respondents in the Self-direction group more frequently prefer a neighbourhood with a mix of residential and commercial land uses. In contrast, respondents in the Security group are assumed to prefer a neighbourhood with mainly housing, for the same reasons as provided above for the residential composition of the neighbourhood.

Statistical Analyses

As indicated above, the 11 values theoretically belong to the domains of Self-direction (5 values) and Security (six values). Two methods have been used to examine whether this is also the case methodologically. The first method uses Cronbach's Alpha. This is a measure that reflects internal reliability in a score between 0 and 1. The higher the score, the better the internal consistency of the separate items. A score of at least 0.70 is generally believed to be sufficient (Nunnally 1978, 245). Furthermore, Multidimensional scaling (MDS) is used. This is a technique that uncovers any structure or pattern that may be present in the data and that identifies the dimensions on which subjects make their similarity judgments (Everitt and Dunn 2001). The process of finding structure in the data is accomplished by assigning observations to specific locations in a low-dimensional space in such a way that the distances between points in the space match the given similarities or dissimilarities in the data as closely as possible. For example, if respondents who find "Privacy" important also frequently find "Self-respect" important, these two values will be located close to each other in the graph. The differences between data points are usually measured according to Euclidean distance. This technique is explained in, for example, Everitt and Dunn (2001, 93). The method used in the present study is MDS (Proxscal: Proximity Scaling) based

on Euclidean distance and standardized scores. A solution on one underlying dimension is selected.

Two value type groups are constructed by computing indexes of the importance of each value type by averaging the importance ratings of the specific values representative of that type. The relative importance for each respondent is determined by comparing the two value types within the same respondent. By doing so, a correction for response tendencies is performed (see, e.g. Schwartz 1992; Lee, Soutar, and Louviere 2007). The non-parametric Mann–Whitney U-test is used to examine whether or not the two groups differ with regard to each of the values and the two values type groups. Furthermore, the value type groups are compared with regard to their socio-demographic characteristics using the independent samples t-test (age, household income and number of persons in the household) and the χ^2 test (education, gender, household type, and having paid work). Based on the literature, the two groups are expected to differ with regard to age (Schwartz et al. 2001) and education (Prince-Gibson and Schwartz 1998; Schwartz et al. 2001). Age should be negatively correlated with Self-direction and positively with Security, because as people grow older they have more social networks and habitual patterns and they experience less arousing and exciting changes and challenges. Education is supposed to be positively related to Self-direction as educational experiences have a positive effect on the intellectual openness, flexibility and breadth of perspective that is necessary for self-direction values. For the other characteristics, no information on expected relations was found in the literature.

Next, the groups are compared with regard to their revealed and stated residential preferences using the χ^2 test. To examine whether differences are really the result of opposite underlying value orientations or that they are due to differences in socio-demographic characteristics between the groups, a multinomial logistic regression analysis was performed for each of the residential preferences that turned out to differ statistically significantly between the groups. The following procedure was followed for each regression analysis. The particular residential preference was included as the outcome variable. All socio-demographic characteristics and the variable indicating group membership were entered simultaneously in the regression analysis. Age, household income and number of persons in the household were included as continuous predictors, the other characteristics as categorical predictors. Next, the socio-demographic characteristic with the highest, non-significant, p-value, on the basis of the Likelihood Ratio Test, was omitted from the analysis. This process was repeated until only statistically significant predictors remained (backward-elimination-by-hand procedure) together with the group membership variable. If the group membership variable is statistically significant ($p < 0.05$), then the groups differ on the particular residential preference, after correction for socio-demographic characteristics.

Results

The Sample

A sample of Dutch residents with (in theory) at least an average income was obtained from a specialized bureau. After sending an introductory letter, 4982 potential respondents were approached to participate in the study. Of those potential respondents, 2057 (41%) agreed to cooperate and 1199 (24%) refused. The

remainder could not be contacted within the interview schedule (no answer, busy, answering machine, disconnected, other; $n = 1726$; 35%). The respondents were stratified according to region (north, east, south and west) so that the final sample contained approximately 25% from each region. Respondents, selected by the specialized bureau, had to have at least an average income for the House buyer in Profile study. In practice, however, almost 5% of the respondents ($n = 63$) turned out to have a lower than average income. These respondents were nevertheless retained in the current 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 fulfil all their housing needs. Eleven hundred and seventeen respondents (55%) were not willing to move in such a case, 930 respondents (45%) answered this question positively (10 respondents did not answer the question). Questions regarding residential preferences have not been asked in the first group because it is assumed that these respondents live in a housing situation that does not differ much from what they want. As a consequence, the following analyses are performed only in the group of respondents who are willing to move if they could find a dwelling that would fulfil all their housing needs ($n = 930$).

The Value Type Groups

Six of the seven values that, according to Schwartz (1992), theoretically belong to the value type Security and five of the six values that theoretically belong to the value type Self-direction were included in the study. The descriptions and mean scores of the 11 values are shown in Table 2. “Healthy” is found to be the most important value by the respondents, followed by “Family security”. The least importance is attached to “Sense of belonging”.

Computing Cronbach’s Alpha on the six values that together form the value type Security yields a score of 0.66. However, if the value “Sense of belonging” is omitted from the scale, the coefficient becomes 0.74, which is satisfactory. Computing Cronbach’s Alpha on the five values that form the value type Self-direction yields a score of 0.72, which is satisfactory. The result of the MDS analysis is presented in Figure 2. This figure shows that there is a clear distinction between the values that belong to the value type Security (left) and the value type Self-direction (right).

Both methods show that the values can be reliably combined to form the value types Self-direction and Security. When both value types are compared within the same respondent, 504 respondents (57%) find values that relate to Security more important for housing than values that relate to Self-direction. In contrast, 235 respondents (26%) find Self-direction more important than Security. Finally, there are 150 respondents (17%) who find both value types equally important; this latter group will not be used in further analyses. The mean scores of the two groups on the 10 values and the two value types are shown in Figure 3.

The statistical analyses, using the non-parametric Mann-Whitney U-test, show that respondents in the Security group find all values that belong to the value type Security more important than respondents in the Self-direction group (all: $p < 0.01$). In contrast, respondents in the Self-direction group find all values that belong to the value type Self-direction more important than respondents in the Security group.

Table 2. The descriptions and means of the 11 values

Value	Mean importance to housing	Standard deviation	Number of cases
Self-direction (independent thought and action – choosing, creating and exploring (Schwartz 1992))			
Freedom (freedom of action and thought)	6.48	0.93	907
Independent (self-reliant and self-sufficient)	6.32	0.92	896
Privacy (the right to have a private sphere)	6.26	0.94	896
Self-respect (belief in one's own worth)	6.22	1.06	894
Creativity (uniqueness and imagination)	5.46	1.29	907
Security (safety, harmony and stability of society, of relationships and of self (Schwartz 1992))			
Healthy (not being sick physically or mentally)	6.82	0.61	895
Family security (safety for loved ones)	6.57	0.86	908
Security *in the dwelling environment* (protection of my *neighbourhood* from *degeneration*)*	6.49	0.79	895
Clean (neat, tidy *home*)*	5.91	1.13	896
Household order (stability of the *household*)*	5.90	1.20	909
Sense of belonging (feeling that *other members of the household* care about me)*	5.24	1.75	895

Notes: * = slightly adapted in wording to relate better to housing; adaptations are indicated in italics.

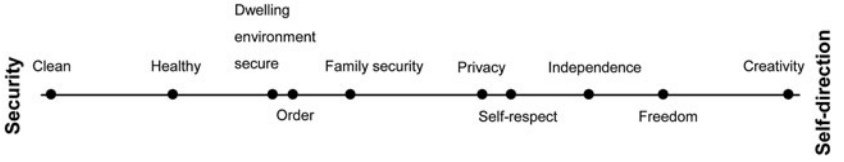

Figure 2. The values on a dimension from Security to Self-direction.

Thus, the two groups have different underlying value orientations with regard to housing, as planned.

The Socio-Demographic Characteristics of the Two Value Type Groups

The two groups are compared first with regard to their socio-demographic characteristics, which are shown in Table 3. The analyses show that respondents in the Self-direction group more frequently have a high education ($\chi^2 = 18.52$, df = 2, $p < 0.01$). Furthermore, respondents in the Self-direction group are more frequently single ($\chi^2 = 8.92$, df = 3, $p = 0.03$). The average number of persons in their households is slightly lower ($t = 2.22$, df = 737, $p = 0.03$). Finally, they have more frequently work for which they are paid than respondents in the Security group ($\chi^2 = 18.52$, df = 2, $p < 0.01$).

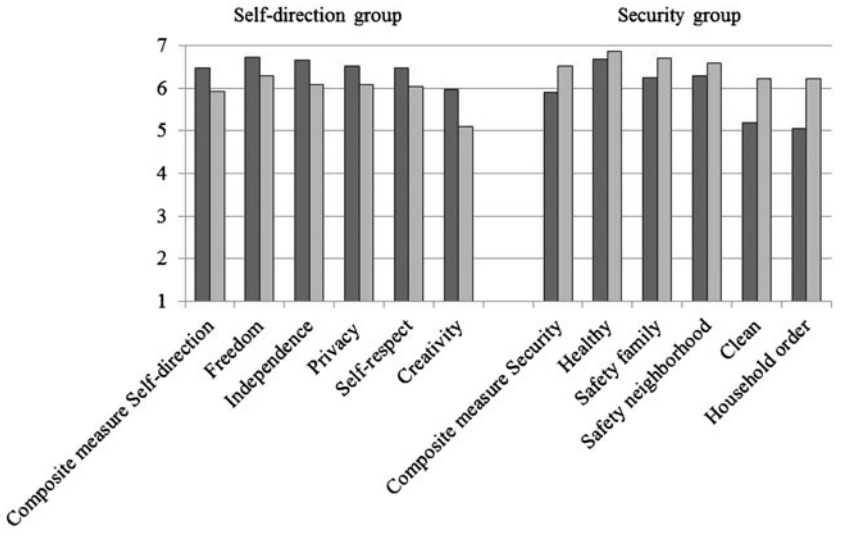

Figure 3. Means of the 10 values and two value types in the two value type groups Self-direction (dark bars, $n = 235$) and Security (light bars, $n = 504$).

Table 3. Socio-demographic characteristics of the two value type groups

	Security $n = 504$	Self-direction $n = 235$	p-Value difference
Mean age (std)	51 (13)	51 (11)	0.66
Education			<0.01
Low	126 (26%)	38 (17%)	
Middle	178 (37%)	67 (29%)	
High	182 (37%)	124 (54%)	
Gender			0.64
Female	278 (55%)	134 (57%)	
Household type			<0.05
Single	46 (9%)	37 (16%)	
Couple without children < 18 living at home	201 (40%)	89 (38%)	
Couple with children < 18 living at home	232 (46%)	93 (40%)	
Other composition	25 (5%)	16 (7%)	
Mean monthly net income (std)	2829 (1179)	2882 (1164)	0.59
Mean number of persons in household (std)	2.8 (1.3)	2.6 (1.3)	<0.05
Paid work			
Yes	320 (64%)	174 (74%)	<0.01

Residential Preferences

The results with regard to the revealed preferences are shown in Table 4. The results show that there is no difference with regard to tenure, as hypothesized. Respondents in the Self-direction group more frequently live in the city centre ($\chi^2 = 7.53$, df = 3, $p = 0.05$). This result is also in agreement with the hypothesis. Architectural design and liveliness of the neighbourhood do not show statistically significant differences between the groups, contrary to what was hypothesized.

The results with regard to the stated preferences are presented in Table 5. The results show that respondents in the Self-direction group more frequently prefer an innovative architectural design ($\chi^2 = 20.08$, df = 3, $p < 0.01$), a neighbourhood composed of residents who differ with regard to income, behaviour and age ($\chi^2 = 8.94$, df = 2, $p < 0.01$) and a neighbourhood with a mix of residential and commercial land uses ($\chi^2 = 9.83$, df = 2, $p < 0.01$). These results confirm the hypotheses. No difference is observed for tenure, which was also hypothesized.

Respondents in the Self-direction group less frequently prefer a newly built dwelling ($\chi^2 = 14.91$, df = 2, $p < 0.01$) and a dwelling in a new housing development ($\chi^2 = 12.21$, df = 2, $p < 0.01$). Interestingly, these results contradict the hypotheses. The respondents who find Self-direction more important were supposed to prefer a newly built dwelling and a dwelling in a new housing development more frequently than respondents who find Security more important. However, the results showed exactly the opposite effect. Finally, type of residential environment and liveliness of the neighbourhood do not show statistically significant differences in contrast to what was hypothesized.

Table 4. Revealed preferences for four dwelling aspects in the two value type groups

	Security	Self-direction	*p*-Value
Tenure (*n = 738*)			0.89
Owner-occupied dwelling	353 (70%)	162 (69%)	
Rental dwelling	151 (30%)	72 (31%)	
Architectural design (*n = 733*)			0.07
Traditional	382 (76%)	189 (81%)	
Modern	99 (20%)	31 (13%)	
Innovative	19 (4%)	13 (6%)	
Residential environment (*n = 739*)			0.05
In the city centre	37 (7%)	32 (14%)	
At the city edge	217 (43%)	93 (40%)	
In a smaller municipality	206 (41%)	93 (40%)	
Outside the built-up environment	44 (9%)	17 (7%)	
Liveliness of the neighbourhood (*n = 737*)			0.47
Very quiet	65 (13%)	35 (15%)	
Quiet	255 (51%)	123 (53%)	
Lively	153 (30%)	59 (25%)	
Very lively	30 (6%)	17 (7%)	

Table 5. Stated preferences for eight dwelling aspects in the two value type groups

	Security	Self-direction	*p*-Value
Tenure (*n* = 735)			0.64
Owner-occupied dwelling	295 (59%)	146 (62%)	
Rental dwelling	126 (25%)	52 (22%)	
No preference for either option	79 (16%)	37 (16%)	
Architectural design (*n* = *735*)			<0.01
Traditional	277 (55%)	108 (46%)	
Modern	95 (19%)	40 (17%)	
Innovative	17 (3%)	26 (11%)	
No preference for either option	111 (22%)	61 (26%)	
Residential environment (*n* = *735*)			0.40
In the city centre	45 (9%)	15 (6%)	
At the city edge	192 (38%)	94 (40%)	
In a smaller municipality	174 (35%)	74 (31%)	
Outside the built-up environment	53 (11%)	34 (14%)	
No preference for either option	36 (7%)	18 (8%)	
Existing or newly built dwelling (*n* = *734*)			<0.01
Existing	113 (23%)	80 (34%)	
Newly built	103 (21%)	28 (12%)	
No preference for either option	283 (57%)	127 (54%)	
Dwelling in new housing development (*n* = *735*)			<0.01
Yes	317 (63%)	119 (51%)	
Maybe	96 (19%)	53 (23%)	
No	87 (17%)	63 (27%)	
Liveliness neighbourhood (*n* = *735*)			0.95
Very quiet	64 (13%)	32 (14%)	
Quiet	265 (53%)	124 (53%)	
Lively	159 (32%)	74 (31%)	
Very lively	5 (1%)	1 (0%)	
No preference for either option	7 (1%)	4 (2%)	
Residential composition of neighbourhood (*n* = *734*)			0.01
Homogeneous neighbourhood	119 (24%)	34 (14%)	
Different types of residents	284 (57%)	155 (66%)	
No preference for either option	96 (19%)	46 (20%)	
Housing composition of neighbourhood (*n* = *735*)			<0.01
Mainly housing	351 (70%)	143 (61%)	
A mix of residential and commercial land uses	78 (16%)	59 (25%)	
No preference for either option	71 (14%)	33 (14%)	

Multivariate Results

The previous analyses showed that respondents in the two value type groups differ with regard to their preferences for one out of four revealed preferences and five out of eight stated preferences. Next, multinomial logistic regression analyses were performed to examine the influence of value type after correction for differences in socio-demographic characteristics between the groups.

The results are described below and summarized in Table 6. Note that the results with regard to the socio-demographic characteristics will not be described in detail for reasons of brevity. The odds ratio reflects the change in odds (which is the probability of the event occurring divided by the probability of the event not occurring) resulting from a unit change in the predictor (Field 2009). The 95% confidence interval (CI) around the odds ratio reflects its accuracy. The CI indicates that for 95% of the time, the true odds ratio in the population will fall within these limits (Field 2009). Thus, if the CI is large, then the result is less precise. If the CI does not contain the value "1", the predictor has a statistically significant impact on the dependent variable.

Preferred architectural design. Number of persons in the household, income, age, having paid work and group membership are statistically significant predictors. Note that the number of respondents is relatively small for this analysis because a number of respondents have missing values on income. The reference is respondents who prefer a traditional architectural design. Compared to this group, respondents who prefer an innovative design are almost four times (1/0.26) more likely to belong to the Self-direction group. Furthermore, compared to the reference group, respondents with no clear preference are almost 1.5 times (1/0.64) more likely to belong to the Self-direction group.

Actual residential environment. Age, number of persons in the household and gender are statistically significant predictors. The overall group membership variable is not statistically significant for this dwelling aspect ($p = 0.10$). Nevertheless, the detailed results show that, when compared to respondents living in the city centre, respondents who live at the city edge or in a smaller municipality are 1.9 and 1.8 times, respectively, more likely to belong to the Security group.

Preference for existing or newly-built dwelling. Number of persons in the household, household type and group membership are statistically significant predictors. The reference is respondents who prefer an existing dwelling. When compared to this group, respondents who prefer a newly built dwelling are 2.5 times more likely to belong to the Security group. Furthermore, compared to the reference group, respondents with no clear preference are 1.6 times more likely to belong to the Security group.

Acceptability of dwelling in new housing development. Age and group membership are statistically significant predictors. The reference is respondents who would accept a dwelling in a new housing development. When compared to this group, respondents who doubt that they would and respondents who definitely would not accept are 1.5 times (1/0.67) and almost two times (1/0.52), respectively, more likely to belong to the Self-direction group.

Preferred residential composition of neighbourhood. Group membership is the only statistically significant predictor. The reference is respondents who prefer the same type of residents. When compared to this group, respondents who prefer different types of residents or respondents who have no preference are almost two times (1/0.52) and 1.7 times (1/0.60), respectively, more likely to belong to the Self-direction group.

Table 6. Results for the six preferences that showed statistically significant differences between the groups

Residential choice and preference	Total Nagel-kerke R^2	Socio-demographic characteristics	Effect of group membership: Security vs. Self-direction	Odds Ratio	95% CI
Preference for architectural design (n = 630) Ref. = Traditional	12.6%	Nr of persons in household**	Overall**		
		Income*	Modern	0.87	0.54−1.40
		Education*	Innovative	0.26**	0.13−0.54
		Having paid work*	No preference	0.64*	0.41−0.98
Actual residential environment (n = 739) Ref. = City center	5.8%	Age**	Overall		
		Nr of persons in household**	City edge	1.94*	1.13−3.36
		Gender*	Smaller mun	1.79*	1.04−3.07
			Outside	2.10	0.9−4.43
Preference for existing or newly-built dwelling (n = 734) Ref. = Existing	4.8%	Nr of persons in household*	Overall**		
		Household type*	Newly-built	2.55**	1.53−4.25
			No preference	1.59*	1.11−2.27
Would accept dwelling in new housing developm. (n = 735) Ref. = Yes	3.4%	Age**	Overall**		
			Maybe	0.67¥	0.45−1.00
			No	0.52*	0.35−0.76
Preferred residential composition of nbh (n = 734) Ref. = Same type	1.5%	—	Overall**		
			Different types	0.52**	0.34−0.80
			No preference	0.60¥	0.35−1.00
Preferred housing composition of nbh (n = 735) Ref. = Mainly housing	7.1%	Age**	Overall **		
			A mix	0.52**	0.35−0.78
			No preference	0.87	0.55−1.38

Notes: reference group = Security; ¥ $p = 0.05$; * = $p < 0.05$; ** = $p < 0.01$.

Preferred housing composition of neighbourhood. Age and group membership are statistically significant predictors. The reference is respondents who prefer a neighbourhood with mainly housing. When compared to this group, the respondents who prefer a mix of residential and commercial land uses are almost two times (1/0.52) more likely to belong to the Self-direction group.

Discussion

The current research explored to what extent underlying value orientations can predict residential preference and choice. Two groups were formed: residents that strive for Self-direction values and residents that find Security values more important. Security stands for safety, harmony and stability of society, of relationships and of self (Schwartz 1992). In terms of housing, it was argued that these respondents might require a safe and stable environment with few new and exciting, and potentially threatening, experiences. Self-direction relates to independent thought and action – choosing, creating and exploring (Schwartz 1992). These respondents are assumed to be open to change, to want to explore new possibilities and to want to live in a creative and lively environment.

The two groups do not differ with regard to age, gender and income. The result with regard to age is opposite to the literature. Schwartz et al. (2001) argue that age should be negatively correlated with Self-direction and positively with Security, because as people grow older they have more social networks and habitual patterns and they experience less arousing and exciting changes and challenges. Note, however, that other authors argue that safety and security are deemed to be key values in older age, but also autonomy, personal growth and revitalization (described in: Sudbury and Simcock 2009). The latter values are more closely related to Self-direction. This might explain the lack of relationship between age and value type group in the current study. The fact that the value type groups in this study do not differ with regard to household income indicates that they both have the same opportunities with regard to realizing their residential preferences. The groups do differ with regard to education; respondents in the Self-direction group have a somewhat higher educational level. This finding agrees with the literature. Educational experiences have a positive effect on the intellectual openness, flexibility and breadth of perspective that is necessary for self-direction values (Prince-Gibson and Schwartz 1998; Schwartz et al. 2001). Furthermore, differences were observed with regard to household type, number of persons in the household and having paid work. Respondents in the Self-direction group are somewhat more frequently single, have paid work more frequently and have smaller families. Respondents in the Security group more frequently have younger children living at home and less frequently have paid work. The lower work participation in this group might be explained because more respondents in this group take care of the children and do the housekeeping full time.

The groups were assumed to differ on seven housing characteristics; three of which were examined as both revealed and stated preferences and four as stated preferences only. The groups were hypothesized not to differ with regard to tenure as the literature provided contradictory arguments with regard to the direction of such a relationship. The hypothesis with regard to tenure was confirmed. It seems that both renting and homeownership attract both value types, although for different motivational reasons.

The hypothesis with regard to architectural design was partly confirmed. No difference was observed for the actual architectural design (revealed preference). However, respondents in the Security group more often prefer to live in a dwelling with a traditional architectural design and respondents in the Self-direction group more often prefer an innovative architectural style. It was hypothesized that respondents who find Self-direction more important are more open to change (new experiences) and have a desire for creativity. These needs can be met in the form of an innovative

architectural design. In contrast, respondents in the Security group might prefer what is already known to be safe and stable, i.e. a traditional architectural design.

The hypothesis with regard to residential environment was also partly confirmed; respondents in the Self-direction group indeed more frequently live in the city centre and respondents in the Security group more frequently live at the city edge or in a smaller municipality. The latter group strives for a life centred on safety and security for the family, which might be easier to obtain outside the city centre. Nevertheless, no effect was observed for the stated preferences.

With regard to the liveliness of the neighbourhood, it was hypothesized that respondents in the Security group are more favoured towards a quiet or very quiet neighbourhood (a safe and stable environment) and that respondents in the Self-direction group prefer a livelier neighbourhood, because of the opportunities for new experiences. These hypotheses could not be confirmed.

In contrast to what was hypothesized, respondents in the Self-direction group less frequently prefer a newly built dwelling and less frequently would accept a dwelling in a new housing development. It was argued that these people would prefer something new because of their openness for change and new experiences. However, it is possible that a new housing development or a newly built dwelling is seen as dull, monotonous and boring uniformity. A new housing development might be viewed as endless rows of identical houses with identical families. Older houses and neighbourhoods might be perceived as being more creative because such dwellings will have been changed and adapted with the passing of time, thereby becoming more and more unique.

The hypotheses with regard to the residential composition and the housing composition of the neighbourhood were both confirmed. It was hypothesized that respondents in the Security group have a preference for residents with about the same income, behaviour and age and for a neighbourhood with mainly housing because it will provide them with a sense of harmony and stability. In contrast, respondents in the Self-direction group will prefer a neighbourhood with different types of residents and a mix of residential and commercial land uses because of the new experiences it will bring along.

Summarizing, residents who find values related to Self-direction important tend to be somewhat higher educated, to have smaller families and more frequently have paid work. They more often live in the city centre and prefer an existing dwelling with an innovative architectural design in a neighbourhood that consists of various types of residents and a mix of residential and commercial land uses. Residents who attach importance to values related to Security tend to be somewhat lower educated, have larger families and less frequently have paid work. They more often live outside the city centre and prefer a newly built dwelling with a traditional architectural design in a new housing development located in a neighbourhood that is homogeneous with regard to the type of residents and that is directed mainly to housing.

A limitation of the study concerns the respondent group that was used for the analyses. Respondents who had indicated not to be willing to move in the case when they would find their ideal dwelling were not questioned about their residential preferences and, thus, were not included in the analyses. It was argued that these respondents most likely live in accordance to their preference. However, respondents might have various reasons for why they are not willing to move, such as place attachment and costs, and refusing to move does not necessarily mean that they live in their preferred housing situation. The choice to exclude these respondents was based on

budget constraints. Providing these respondents with shorter questionnaires decreases interview time (and thus, the costs). Most likely, however, the exclusion does not influence the results. Firstly, a χ^2 analysis showed that the distribution of the value type groups (Self-direction vs. Security) does not differ between respondents who are willing to move (Self-direction: 32%, Security: 68%) and those who are not (Self-direction: 28%, Security: 72%) ($\chi^2 = 2.50$, df = 1, $p = 0.11$). Furthermore, there seems to be little reason to assume that the relationship between values and residential preferences is dependent upon the willingness to move.

Another limitation concerns the subdivision into the two groups (Self-direction and Security). This subdivision was based on the comparison, within each respondent, of their importance scores for the two value types. Respondents were allocated to the value type for which they showed the highest importance. As a result, both groups consist of respondents with large differences between Security and Self-direction but also of respondents with only small differences in importance. This might affect the results in the sense that the relationships between value types and residential preferences might become stronger (but less generalizable) when the analysis would be restricted to respondents who differ considerably on the two value types. Furthermore, a group of respondents for whom both value types were equally important ($n = 150$, 17%) was omitted from the analyses. These respondents apparently find opposite motivational goals equally important at the same time. This might partly be explained by an effect of the scale: 21% of these respondents ($n = 32$) consider all of the Security and Self-direction values to be very important (a score of seven on the seven-point scale; 35 in total for the five values that form each scale). Another 41% shows scores of 34 and 33 for each of the value types, which indicates that almost all values are deemed to be very important. Such a finding is relatively common with the method developed by (Schwartz 1992). Schwartz (1992) argues that respondents who attach much importance to all values fail to make a serious effort to differentiate among their values. In the current paper, omitting these respondents from the analyses seems a logical step because they cannot be allocated to either of the two groups. Nevertheless, these respondents seem to reflect a result that does not comply with the theory of (conflicting) motivational goals as developed by Schwartz (e.g. 1992, 1994).

In conclusion, the results provide some indication that residents may indeed prefer particular dwelling or neighbourhood characteristics because they pursue values and goals that are important to them. In this sense, adding values to socio-demographics characteristics does lead to more accurate explanations and predictions of consumers' preferences and choice as well as to a richer description of consumer groups. Nevertheless, the predictions are still far from being perfect. Besides from values, residential preferences might be influenced by many other aspects, such as perceived budget constraints, the perceived availability of suitable dwellings, preferences of other members of the household and work- and family-related concerns. Taking values into account still solves only part of the puzzle.

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