



The effect of educational level, income, and knowledge on willingness to participate in the climate transition, and how age moderates these effects.

Abstract. The world population is growing, as well as the prosperity of the world, which has led to environmental problems (Duyvendak & Bouw, 2013). This paper looked at the various factors influencing an individual's willingness to participate in the energy transition on a municipality level. It was suspected that income, knowledge, and education could positively influence the willingness to participate (Shen & Saijo, 2008; Lee et al., 2015) and that these effects might be influenced by age. Using multiple linear regressions, including gender and the municipality and neighbourhood as control variables, no effect of income, education, or age was found. There only was a positive effect found between knowledge and willingness. This paper was done on an explorative level and had several limitations regarding the data collection and analysis. Therefore additional research should be done to determine if indeed no effect of income, age, and education exist and if the effect of knowledge can be repeated. Preferably, longitudinal research should be conducted to determine the directing of the relationships.

Keywords: Environment, Education, Knowledge, Income, Willingness, Age, Energy Transition

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1. Introduction

The world population is growing, as well as the prosperity of the world, which has led to environmental problems (Duyvendak & Bouw, 2013). Climate change is a threat to our natural ecosystems and our society, yet previous research has found that awareness and concern vary greatly among the public (Lee et al., 2015). It is requiring extensive policy changes to reverse the damage and address its widespread risks due to its global threat (Goldberg et al., 2020). Multiple worldwide agreements have been formed to help make this shift. One of them is the Paris agreement of 2015, where 195 countries, including the Netherlands, have agreed to take action to ensure that the average global temperature rise should remain well below 2 °C (Nederlandse Emissieautoriteit, n.d.). The Dutch government would like to see itself as the international leader on environmental issues (Duyvendak & Bouw, 2013). However, even though the Netherlands takes fifth place in the ranking of European countries fighting climate change, the Dutch haven't been able to reach all intermediate goals drawn up in the Paris climate agreement (Climate Action Network, 2018). For instance, the Netherlands were unable to reduce the greenhouse gas emission in 2020 by 25 per cent compared to 1990 and it is unlikely that the Netherlands will be able to reach their long-term goal, namely to reduce their greenhouse gases by 49% in 2030 compared to 1990 (Planbureau voor de Leefomgeving, 2019; RIVM, 2019).

Reducing global warming will require enforcing strong climate policies, which will not happen without strong public support (Goldberg et al., 2020). This is even more so in the Netherlands because the government has been trying since the nineties, to involve the industry and citizens more with policymaking and taking a less caring role regarding environmental issues (Duyvendak & Bouw, 2013). Therefore, the responsibility for achieving the climate agreement lies partly with the provinces and even partly with the municipality. Because the responsibility lies with the municipalities, the aim of this paper is to investigate the possible effect of certain demographic characteristics on the willingness to participate in the energy transition at the level of municipalities. This will be done on an explorative level.

The overall climate goals of the Netherlands are reflected in the plans of some of its municipalities. For instance, the municipality of Houten has the goal of being completely climate and environmentally neutral by 2040, and thus completely getting rid of natural gas (Gemeente Houten, 2020). Its citizens have to make the switch to alternatives themselves, which makes involving them in the energy transition important for the municipality (Gemeente Houten, 2020). The municipality of Utrecht (2020) and Amersfoort (2021a,b)

have comparable plans, and similar to the municipality of Houten (2020, 2021a,b), the municipalities transition a few districts or neighbourhoods at a time (Gemeente Utrecht, 2020; Gemeente Amersfoort, 2021a).

Government budgets are limited and as such the government and municipalities are not always able to invest in all factors. Furthermore, in order to reach the Dutch climate goals, it is important to create strong public support as the public plays an important role in the global emission reduction and energy transition (Goldberg et al., 2020; Smith & Leiserowitz, 2013). Within the previously mentioned municipalities, the citizens have to make the switch and largely invest in alternatives themselves, which requires relatively more willingness (Gemeente Houten, 2020; Gemeente Houten, 2021a,b; Gemeente Utrecht, 2020; Gemeente Amersfoort, 2021a). Furthermore, even though some research is done on the social aspect of the energy transition, it is still an underexposed point of attention (Gemeente Houten, 2020). Therefore it is important to find which factors are most influential regarding willingness to participate in the energy transition. It can help municipalities to spend their budgets as efficiently and effectively as possible, investing in the factors that show the most effect on willingness to participate in the energy transition (Laerd statistics, n.d.). Additionally, by knowing which demographic characteristic influences willingness, rough predictions can be made for the willingness in an area which can help to make investments more wisely (Alchemer, 2021; Laerd statistics, n.d.). Together, they therefore might lead to better results regarding the energy transition.

Traditionally, there are five demographic variables that are looked at in the literature regarding environmental concerns, namely age, gender, socioeconomic status, residence, and political preference effects which all have shown to have significant effects (Shen & Saijo, 2008). Of these variables, a rough estimate could possibly be made for age, gender, and social class in a given neighbourhood based on data recorded by the municipality (Statline, 2021). However, gender might be hard to take into account when estimating willingness for climate policies as most households exist of both men and women who together determine the willingness to improve for example their homes. Besides gender, political orientation might be hard to take into account for municipalities when looking at willingness per city or even by neighbourhoods. This is because political preference is only measured at the level of municipalities and cities in the Netherlands (Kiesraad, 2021). Thus when looking at a more local level, extra data has to be collected. This can be expensive as it should be done repeatedly and might be invasive for citizens. Lastly, residence might be hard to take into

account for cities as residence effects exist between urban and rural residents, where urban residents are more likely to be environmentally concerned (Shen & Saijo, 2008). Within a city, it might therefore be less likely to find a residence effect (de Kluizenaar et al., 2020). Therefore, when trying to make predictions of willingness within city neighbourhoods regarding environmental issues, it might be best to look at age and socioeconomic status. These are variables that municipalities already have data on and show effects within cities.

Besides demographic variables, knowledge about the environmental transition has shown to be an important and influential factor for willingness (Lee et al., 2015; Goldberg et al., 2020; Steg et al., 2015) and is something that can be positively influenced by municipalities. Furthermore, knowledge can positively influence the legitimacy of climate policy, which is important for citizen participation (van Noije & Carabain, 2020). Therefore, this paper will look if socio-economic status, split in education and income, or knowledge influences the willingness to participate in the energy transition. Age will be taken into account as a moderating effect because age can influence all three variables. For example, on average, income increases with age in the Netherlands until you reach retirement, after which it declines (Statline, 2020).

To investigate the current state of certain neighbourhoods and their citizens, the municipalities of Houten, Utrecht, and Amersfoort have collaborated with the University of Utrecht and the Academie van de Stad. They have conducted research in order to get a better understanding of what the residents needed and wanted, regarding the energy transition. The data collected within that research will be used for this paper. However, it has several limitations. For example, between datasets, different methods were used for gathering respondents and for conducting the surveys due to the Covid-19 crisis. Therefore this research will be done on an explorative level, which can still be relevant as it might lead to possible focus points for future research.

For the Netherlands, the level of municipalities is important to focus at, as the energy transition is mostly the responsibility of municipalities themselves (Gemeente Houten, 2020; Duyvendak & Bouw, 2013). Furthermore, the effects and policies on an international level can differ from a local level. Lastly, not much research has been done on the level of municipalities, but rather on an international or even global level. Therefore, this research will be done at the level of municipalities. This leads to the following research question: “What is the effect of Educational level, Income, and Knowledge on willingness to

participate in the energy transition in the region of Utrecht, and how does age moderate these effects?

2. Theory chapter

2.1 Socio-economic status and willingness

According to Maslow's hierarchy of needs theory, basic needs must be fulfilled in order for individuals to fulfil their higher needs like self-actualization (Maslow, 1970). An example of higher needs can be a concern for the environment, and as such can only be fulfilled if basic needs, like economic security, are met (Shen & Saijo, 2008). Therefore it is more likely that individuals with higher education and/or income are more able to be concerned with the environment and show higher environmental policy support because they were able to fulfil their basic needs. This is in line with the low-cost hypothesis which showed that with a higher perceived cost and displeasure due to environmental policies, less environmental concern will be shown (de Kluizenaar et al., 2020). Both theories show that inequality in resources can affect the ability and therefore the willingness to participate in the energy transition.

This was supported by Sardianou and Genoudi (2013) who looked at which factors affected the willingness of residential consumers to use renewable energies in their homes. They used an empirical analysis based on data of 200 consumers in Greece, which showed that highly educated people and those with higher incomes, were more willing to adopt renewable energy sources. Similar results were found by Shen and Saijo (2008) who looked at the influence of socio-demographic characteristics on environmental concern in a non-western country. They conducted a survey among 1200 respondents in China. In their research, they looked at possible age, gender, and social class effects. They found that higher levels of income and education had a positive effect on environmental concerns. Somewhat different results were found by Goldberg et al. (2020) who reported that higher educated people were more likely to show support for environmental policies while those who had higher incomes showed less support.

When looking at education levels, in general, previous literature showed that higher educated people show more environmental concern and more support for environmental policies. According to Lee et al. (2015), education is the strongest predictor of climate change awareness. Furthermore, they found that education level is one of the most important factors for engagement and support for climate action. Van Liere and Dunlap (1980) found an overall positive effect of education on environmental concern. This seems to be similar in the

Netherlands. According to the research of the Social and Cultural Planning Office (2020), a higher education level is related to a more positive attitude about a nitrogen emissions-free policy. This is partially related to the higher problem awareness of higher educated people. Additionally, de Kluizenaar et al. (2020) reported that in the Netherlands, those with higher education showed an increase in concerns and less scepticism regarding climate change over the last 10 years compared to lower educated people. They also reported that the positive relationship of education on willingness and policy support is related to a higher problem awareness and willingness to take action. Furthermore, Tilanus (2018) reported that in the Netherlands, higher educated people more often consider combating climate change as important and more often take measures to do so. Lastly, de Kluizenaar (2020) found more support among educated people in the Netherlands for the natural-gas-free housing goals and policies. Therefore it is possible that, similar to the findings of Lee et al. (2015), Sardianou and Genoudi (2013), and Shen and Saijo (2008), in the Netherlands individuals with higher education show more willingness and support for environmental policies. Therefore, the hypothesis regarding education levels will be as follows: *H1: Higher educated individuals are more willing to participate in the energy transition than lower educated individuals.*

Another factor that can influence willingness is income (Shen & Saijo, 2008). Previous research has mostly shown that a higher income can be positively correlated with the willingness to participate in environmental policies (Sardianou & Genoudi, 2013; Yang & Zhao, 2015). Furthermore, it has a positive influence on whether or not people want to contribute and the amount they contribute to environmental causes (Kotchen & Moore, 2007). Additionally, income can be positively correlated with higher levels of positive attitudes and more willingness to participate in environmental policies because people who have more income experience fewer economic hurdles (Sardianou & Genoudi, 2013; Yang & Zhao, 2015; Shen & Saijo, 2008). This is in line with Maslow's hierarchy of needs theory, which states that basic needs, like economic security, must be fulfilled before individuals can fulfil their higher needs like being able to participate in the energy transition (Maslow, 1970).

De Kluizenaar et al. (2020) found similar results in line with Maslow's (1970) hierarchy of needs theory. They looked at support among Dutch citizens for the transition to natural-gas-free housing by 2050. Surveys were conducted among 2386 respondents which showed that those who are financially better off and who find it easier to make ends meet show more support for the transition to natural-gas-free houses. De Kluizenaar et al. (2020) reported that this positive link is a combination of factors including the concerns about the

expected impact of climate policy on their own way of life. In other words, those with more financial means have less concern for the negative effects of environmental policies on their personal life. The findings of de Kluizenaar et al. (2020) are in line with Maslow's hierarchy of needs theory (1970) because those who find it easier to make ends meet and who experience fewer economic hurdles are more able to fulfil their higher needs like participating in the energy transition. The Social and Cultural Planning Office (2020) found similar results, namely that people in the Netherlands who feel that they can get by easily, are more positive about the natural nitrogen emissions-free policy, compared to people who did not feel like they had these financial resources. This leads to the following hypothesis: *H2: People with a higher income are more willing to participate in the energy transition than people with a lower income.*

2.2 Knowledge and willingness

According to the cognitive dissonance theory, we all seek for our behaviour to be in a self-consistent state (Glassman & Hadad, 2013). Cognitive dissonance is a tension that arises when our actions and attitudes are not in line with one another. This discomfort is tried to be avoided, but when this is not possible, people seek to reduce the importance of the conflicting cognition, change it, or acquire new information that outweighs the confliction cognition (Glassman & Hadad, 2013). However, it might be harder to change your attitudes if you have more knowledge about environmental problems. Furthermore, it might be harder to find information that outweighs the conflicting cognition if you have more knowledge about the environmental problems or the benefits of environmental-friendly living.

This is in line with the findings of Lorenzoni et al. (2007) who researched the possible barriers individuals might experience with engaging with climate change, using a mixed-method study. They reported that people get a feeling of uncertainty about climate change when they have a lack of knowledge which might explain the positive effect of knowledge on willingness. Additionally, knowledge can reduce perceived barriers regarding climate policies. Lorenzoni et al. (2007) also found that individuals may use denial strategies as a way to cope with their emotions brought on by the negative consequences of climate change. Denial strategies might also be used as a way to cope with the negative consequences their lifestyle puts on the environment (Lorenzoni et al., 2007). The use of these strategies is in line with the cognitive dissonance theory as it is used to avoid discomfort caused by cognitive dissonance (Glassman & Hadad, 2013). As these strategies are related to a lack of knowledge (Lorenzoni et al., 2007), they might be reduced with an increase in knowledge.

Lastly, Lorenzoni et al. (2007) found that information and knowledge about climate change are important for engagement, which is in line with the findings of Lee et al. (2015) who looked at the relative effect of socio-demographic attributes, perceived well-being, public climate change awareness, geography, and risk perceptions at a national scale. They used surveys conducted in over 119 countries to study these relations on an international scale. As mentioned before, education is the strongest predictor of climate change awareness, however understanding that the cause for climate change lies in human activity, is the strongest predictor of climate risk perception. They also found that education level, knowledge about climate change, and public understanding of the local dimensions of climate change are the most important factors for engagement and support for climate action.

Goldberg et al. (2020) tried to understand the relative influence of predictors on environmental policy support in the United States of America and how they differ depending on the political affiliation of the subject. By conducting a survey, they found that: "worry about global warming, risk perceptions, certainty that global warming is happening, belief that global warming is human-caused, and general effect toward global warming" were the largest predictors in that order. This is in line with the findings of Steg et al. (2015). They conducted literature research to understand the human aspects of a sustainable energy transition, focussing on knowledge, motivation, and contextual factors. They explained that more knowledge about climate change can positively influence the concern about these problems, and increase the positive attitudes toward environmental protection, but the knowledge has to be factual. Thus, similar to Lee et al. (2015), Goldberg et al. (2020) and Steg et al. (2015) found the importance of knowledge when trying to gain more support for climate-related actions and policies.

A contradicting paper is that of Engels et al. (2013). They reported that self-reported knowledge about climate change did not lower scepticism, which was not in line with their knowledge deficit hypothesis. However, an increase in information did decrease environmental scepticism (Engels et al., 2013). Contrary to this, Reynolds et al. (2010) reported that the difference between climate change believers and non-believers might be corresponding with their knowledge gaps thus also finding a positive effect of knowledge on climate awareness. Most papers are in line with the previously mentioned articles and found that knowledge is positively correlated with environmental concern and pro-environmental attitudes (McCright, 2010; Franzen & Vogl, 2013; Vainio, 2020). Furthermore, besides being interrelated, environmental knowledge and pro-environmental attitudes can strengthen each

other (Vainio, 2020). Additionally, more knowledge regarding the environment is positively correlated with pro-environmental behaviours (Vainio, 2020). Which was supported by the findings of Selvakumaran and Ahlgren(2019). Looking at the Netherlands specifically, Verbeek and Boelhouwer (2011) also found a positive effect of knowledge. More specifically, Verbeek and Boelhouwer (2011) found that the relatively large environmental concern is not enough for environmentally friendly behaviour. According to the authors, this lack of relationship is caused by a lack of knowledge, especially regarding the consequences of one's behaviour regarding environmental issues. As the above-mentioned articles mostly found a positive relationship between knowledge and willingness, the hypothesis will be as follows: *H3: Individuals who have more knowledge about the climate crisis will show more willingness to participate in the energy transition.*

2.3 Age and willingness

The literature has not been able to find conclusive results regarding the effect of age on willingness and policy support regarding environmental issues. Sardanou and Genoudi (2013) for example showed that middle-aged people were more willing to adopt renewable energy sources compared to young people. Shen and Saijo (2008) found similar results in that age had a positive effect on environmental concern. In other words, the older the individual, the more support is to be expected. Van Dalen and Henkens (2019) conducted a survey in the Netherlands regarding environmental concerns and scepticism among 2138 respondents. They reported that in the Netherlands, age groups don't differ that much regarding environmental concern and scepticism. Even more, the percentage of younger people who showed environmental concern was not the highest compared to other age groups and scepticism was not the lowest.

Contradicting these findings is the article from Liere and Dunlap (1980) who found support for the so-called age hypothesis, which entailed that younger people have on average, more concern for the state of the environment than older people. A possible explanation given in their paper is that this difference is caused by the level of integration in society. Younger people are less integrated in the existing social order, which makes them perceive environmental policies as less threatening to that order compared to the older age groups (Liere & Dunlap, 1980). Furthermore, a cohort effect is mentioned as a possible explanation for this negative effect. Using Mannheim's (1970) theory of generation Liere and Dunlap (1980) explained that historical events can have permanent effects on a cohort if they happen during the adolescence of the young adult phase. As information about environmental issues

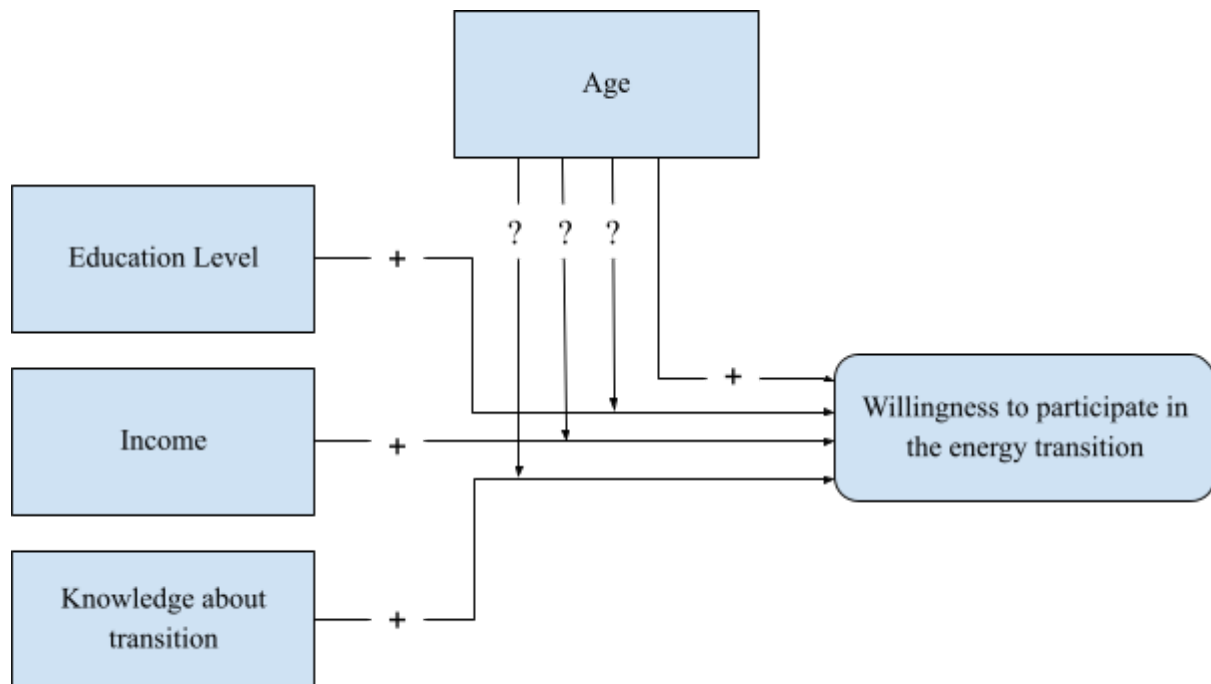
has increased in the past decades, this might have left an imprint on the younger generation and might explain why the younger cohort shows more environmental concern (Liere & Dunlap, 1980). Franzen en Vogl (2013) found similar results. Younger individuals showed more environmental concern which was explained by the younger age cohort being more exposed to social media in general and to the media showing information regarding climate problems. Furthermore, Goldberg et al. (2020) found that regardless of political preferences, older people showed less support for environmental policies.

This is in line with finding in the Netherlands. De Kluizenaar et al. (2020) found more support among young adults for the natural-gas-free housing policies. Similar results were found by Van Houwelingen e.a. (2014) who found that older age groups significantly showed less support than middle age groups. Additionally, younger people are more positive about the natural gas-free policy than the older age groups (Sociaal en Cultureel Planbureau, 2020). As most findings point to a negative effect of age (Liere & Dunlap, 1980), the hypothesis is as follows: *H4: Younger people are more willing to participate in the energy transition than older people.*

Age can thus be an important factor for willingness (Liere & Dunlap, 1980; Shen & Saijo, 2008). Furthermore, it can influence the other independent variables. For example, income increases with age in the Netherlands with the age group 55 to 65 forming the top and decline after the retirement age of 67 (CBS, 2020). Furthermore, the distribution in education levels differs between age strata (Statline, 2021). Therefore, the moderating effect of age on the relation of education, income, and knowledge on willingness to participate in the energy transition will be investigated as well. No hypotheses will be formed for these possible relations as I was not able to find literature regarding the moderating effect of age within this context. All relations are visualized in Figure 1.

Figure 1

Relations between willingness and education, income, knowledge, and age



3. Method

3.1 Data

As can be seen in figure 1, this paper uses education, income, and knowledge as independent variables, willingness to participate as the dependent variable, and age as a moderating factor. For this paper, the data collected for the municipalities of Houten, Utrecht, and Amersfoort will be used. The datasets, including the datasets of the municipalities not used in this research, contained 607 respondents, of which 390 filled in the questionnaire used in this paper. Of these respondents, 359 answered questions used in this paper and thus were included. The research was conducted in 2019-2020 or in 2020-2021, except for Houten, where data was collected for both periods. The other municipalities in which surveys were conducted by the students, namely Zeist and Veenendaal, were not included because they were not similar enough compared to the above-mentioned datasets. Within the reports, questionnaires were created for each municipality, which were designed to collect the knowledge and opinions of the residents regarding different climate topics. This was complemented with some basic demographic attributes of these residents. The students of the Policy and Evaluation course at the University of Utrecht created and conducted the surveys, however, they were guided and supervised by teachers of the Utrecht University and members of the Academie van de Stad.

The data was collected as neighbourhood research, using face-to-face interviews, paper and pencil interviews, and, due to the COVID-19 crisis, digital surveys. With the first two methods, students went in duos door to door in designated neighbourhoods to collect respondents. However, for the digital surveys, Facebook and websites that concerned the neighbourhood as well as flyers through the letterbox were used to reach out to respondents. The respondents could fill in the survey in Qualtrics using a QR code or a link. This might have created selection bias as respondents who were more interested in the environment were more likely to fill in the online survey. For the face-to-face interviews, two students were involved with conducting the survey of which one of the two conducted the survey while the other took notes. These surveys were filled in outside or in the participants' homes. For the paper and pencil surveys, people were asked to fill in a paper survey which the students then picked up after a week. Some of the municipalities had sent information ahead of the students so that the residents were aware of the research. Furthermore, in some municipalities, incentives were used in the form of a lottery. Both qualitative and quantitative questions were asked, however in this research, only the quantitative questions will be included.

The following reports measured the variables that are of interest for this paper, Utrecht 2020, Houten 2020, Houten 2021a, Houten 2021b, Amersfoort 2021a, Amersfoort 2021b. The datasets of these reports will be combined on the above-mentioned variables to create a larger data set. The possible relationships will additionally be controlled by the municipality and neighbourhood of which the data is collected as well as the gender of the respondents. Gender is used as a control variable because previous research has shown that gender has an effect on willingness to participate in the energy transition (Sardianou & Genoudi, 2013; Shen & Saijo, 2008; de Kluizenaar et al., 2020).

3.2 Operationalization

The level of education was measured by asking for the highest attained education level, where participants could choose from different answers. In the survey of Utrecht (2020), the respondents additionally had the answering option, “Don’t want to say”, however, respondents using this answer option were excluded for this variable and recoded as missing. Age was measured in years. Income was asked differently among all questionnaires with some asking for gross income while others asked for net income. Furthermore, some asked for income per month while others asked per year. For this reason, the respondents of Houten (2021a,b) were excluded for this variable as income was asked on a gross level and specifically for the respondent themselves instead of their household. As no questions were

asked regarding other partners' or family members' income or about the hours the respondents worked, it was not possible to reconstruct income on the same levels as the other municipalities. All measured income was recorded for the other municipalities to measure yearly net income using the scales “up to €20.000”, “from €20.000 to €35.000”, “from €35.000 to €68.000”, and “from €68.000”. Furthermore, the answering option “I'd rather not say” was changed into missings as this answering option was not given in all datasets. gross income was recoded to net income for the questionnaire of Houten (2021) by calculating the gross income version of the above-mentioned scale using a digital income calculator (Berekenhet.nl, n.d.).

The questions regarding knowledge were not exactly the same among all municipalities, however, for the purpose of conducting this research, it will be assumed that they were similar enough. The limitations of this method will be discussed further in the limitation section in the discussion. The questions measuring knowledge were standardized for each municipality which made it possible to compare the differences between municipalities and carry out the analyses. First, reliability analysis was conducted to find the best question to create the knowledge variable per municipality after which an average scale of knowledge was made. This was followed by creating a Z-scores for each municipality per respondent. This ensured that for each respondent, the answers for knowledge were on the same scale. For Amersfoort (2021) the following statements were used: “I am well aware of the council's plans regarding energy transition. ”, and “I know well what opportunities there are for participating in the energy transition to natural gas-free living. ”. For Utrecht (2020), questions regarding the consequences of the Paris agreement, the sustainable alternatives for natural gas, and where to find information were used. An example is the question: “I know what I can do to make my home gas-free. ”. The questionnaire of Utrecht (2020) also included an answering option “no opinion”, however, the respondents who used this answering option were excluded for the variable knowledge. The statement used from the questionnaire of Houten (2020) was: “I follow developments in climate policy.”. This was complemented with yes/no statements regarding the steps the municipality was taking, which steps they should take, and the sustainability of their energy. Because the yes/no statements had no intermediate categories, these three statements were taken together and a Z-score was made separately from the first statement. An average was taken of both Z-scores to create a Z-score for Knowledge. From the questionnaire of Houten (2021a-b), similar statements were used, for example: “I am aware of the ambitions of the municipality of Houten.”, and “I know

how to insulate my home.”. Other questions regarded the cost, feeling informed, and where to find missing information.

Willingness to participate in the energy transition was measured similarly to the variable Knowledge. An average scale of willingness was made, using a reliability test for most municipalities. Afterwards, a Z-score was created. To create a willingness scale in Utrecht (2020), statements were used regarding feeling responsible, involved, and positive regarding the energy transition, and willing to cooperate with others regarding the transition. An example of such a question is: "I feel responsible for making Overvecht-Noord natural gas-free.". All statements had a “don’t want to say” option, but those respondents that used this option were removed for this variable.

The statement used to measure willingness in Houten (2020) were “I think it is important to live more sustainably.” with the answering options going from “Disagree completely” being 0, to “Agree completely” being 4. This was supplemented with the statement: “Do you have plans to make your home more sustainable?” which had the answering options “Yes”, “No”, and “Maybe”. Because the latter statement only has 3 answering options, the answers were recoded with “Yes” getting the value “4”, “Maybe” the value “2”, and “no” the value “0”, making them on the same scale as the first statement. An average was taken of both statements after which a Z-value was created. For Houten (2021a-b) the following statement was used: “I intend to participate in the policy of diverting natural gas from the municipality of Houten”. The statements used to measure willingness in Amersfoort (2021a-b) was: “How do you currently estimate the chance that you will participate in the transition from natural gas to renewable (sustainable) energy sources? ”. For both municipalities, a Z-score was created without the need for an average score.

The relations were controlled for multiple variables. The first control variable was the city the respondent lived in and the second control variable was the neighbourhood a respondent lived in. The last control variable was gender which was made on a binary scale. Respondents using the answering options that were different from “male” or “female” were excluded from the variable. Appendix 1 holds an overview of all the original questions used.

3.3 Descriptive statistics

For the descriptives of the merged dataset, see Table 1. Based on the boxplots, there were two participants that had no education and nine who had no income in the final dataset, which made them outliers. The outliers for education were removed as it made the variable more normally distributed and the linearity between education and willingness increase. The

outliers for income were not removed as they formed a valid group and income would not become more normally distributed when removed. After removing the outliers, the dependent variable and all independent variables were reasonably normally distributed.

Table 1

Descriptive statistics of the dependent, independent, and control variables.

Variable	Min.	Max.	Mean	SD	N
Neighbourhood	1.00	7.00	4.331	2.444	356
Municipality	1.00	3.00	1.789	.810	356
Age	0.00	6.00	3.068	1.448	355
Education	1.00	6.00	4.854	1.083	356
Income	0.00	3.00	2.070	.767	215
Gender	0.00	1.00	.433	.496	351
ZWillingness	-1.76	1.92	-.018	.858	328
ZKnowledge	-1.83	2.49	.005	.707	348

3.4 Analysis

Firstly, before the average for the variable Willingness and Knowledge were taken, a reliability analysis was conducted in order to determine which willingness and knowledge questions were best suited to form these variables. An initial Alpha above 0,6 was deemed acceptable (Morling et al., 2018). Furthermore, the inter-item correlation had to be below 0.8 and the corrected item-total correction had to be above 0.4. After creating the Z-scores and merging the datasets together, the dataset was checked for outliers using boxplots. Normality was checked using histograms. For the dependent variable willingness, normality was additionally tested using the Kolmogorov-Smirnov and Shapiro_Wilks test. Afterwards, the assumptions for linear regression analysis were checked using scatterplots. Multiple regression analyses were used to test the hypothesis, which included interaction terms for age

with the independent variables to test the moderation effect of age. It was controlled by the effect of city, neighbourhood, and gender.

4. Results

4.1 Assumptions and tests

The assumptions of linear regression and normality have been met. However, it should be noted that the factor of x was relatively small for the linearity between education and willingness. The data were normally distributed, except for the dependent variable. However, when the normality test was done on the residuals, normality was found and the analysis could continue (Williams et al., 2013). The reliability analysis for knowledge shown in Utrecht 2019-2020 gave an Alpha of .721 for all six items which was well above the acceptable level of .600 (Morling et al., 2018). The alpha level could not be increased by deleting any of the variables except for the item @28_gemeente_aardgasvrij. This item was not removed as new variables needed to be removed when the item was excluded. Furthermore, the variables all were within the limits of the inter-item correlation and the corrected item-total correction. The increase of the Alpha of 0.09 was therefore not large enough. The reliability analysis for Willingness shown in Utrecht 2019-2020, had an alpha of .775 which again was acceptable. The alpha level could not be increased by deleting any of the variables.

The reliability analysis for knowledge shown in Houten 2019-2020 that the Alpha for all five items was .557. @26.Rolmensinklimaatverandering had to be excluded because all participants gave the same answer. The alpha could have been increased to .566 by removing @25.Volgenontwikkelingenrondklimaatbeleid. The descriptives of willingness did not change when it was excluded, but the corrected item-total correction became below 0.4 for item 27, so item @25 was not removed. The reliability analysis for knowledge shown in Houten 2020-2021, gave an Alpha of .860 for all eight items which was acceptable. However, the lowest value for the inter-item correlation was negative and the corrected item-total correction was below 0.4 for information_2. The alpha increased to 0,884 when item information_2 was removed. Additionally, the lowest value of the inter-item correlation became positive and the corrected total item corrections were all above 0.4. For the other values and municipalities, no reliability analysis was needed as not enough items were used to construct the new variable.

4.2 Regression

Model 1 included the variable for Knowledge, Income and Education. Model 2 added Municipality, Neighborhood and Gender and Model 3 added Age, Education_Age, Income_Age, and ZKnowledge_Age. The explained variance in model 1 was 12.3% of the variance ($R^2=.123$; F-change(3, 188)= 8.807; $P<.001$). Both Model 2 and 3 explain more variance but are not significant (Model 2: $R^2= .140$; F-change(3, 185)= 1.228; $P< .301$) (Model 3: $R^2= .163$; F-change(4, 181)= 1.223; $P< .303$). When only including Model 1 and Model 3, the outcome is similar (Model 1: $R^2= .114$; F-change(3, 190) = 8.141; $P< .001$) (Model 3: $R^2= .129$; F-change(4, 186)= .792; $P< .532$). Therefore, within this paper, only Model 1 will be looked at. Model 1 explains 11.4% of the total variance ($R^2= .114$; F(3, 190)= 8.141; $P< .001$).

Looking at the regression analysis of Model 1 (see Table 2), no significant effect of Education on Willingness was found ($b= -.061$, $t(189)= -1.079$ $p= .282$). Therefore no support for the first hypothesis was found. Furthermore, no significant effect of Income on Willingness was found ($b= .052$, $t(189)= .690$, $p= .491$). Therefore no support for the second hypothesis was found either. The regression analysis only showed a significant effect for Knowledge on Willingness ($b= .390$, $t(189)= 4.730$, $p<0.001$). So therefore only evidence for hypothesis three was found. Because model 3 did not explain more when added, it was not investigated in depth. However, when looking at model 3 in the first analysis, age also showed no significant effect. Therefore, no evidence was found for hypothesis four. No significant effects were found for the control and interaction variables either. Looking at the semi partial correlation, knowledge has the largest unique contribution explaining 32.3% of the variation in the dependent variable. Lastly, the VIF of all variables are below five, and therefore, therefore there is no multicollinearity problem.

Table 2*The Effect of Education, Income and Knowledge on Willingness*

			Correlations	Statistics
	B	SE	Part	VIF
(Constant)	.197	.296		
Education	-.061	.056	-.074	1.045
Income	.052	.075	.047	1.056
ZKnowledge	.390***	.083	.323	1.011

* $p < .05$; ** $p < .01$; *** $p < .001$

5. Conclusion

In this paper, various factors influencing an individual's willingness to participate in the energy transition have been discussed. The aim was to see what the effect of income, knowledge, and education would be on the willingness to participate and if these effects might be influenced by age. Data collected in several municipalities in the Netherlands was used for this research. Multiple linear regressions were conducted to test the four hypotheses formulated in this paper. The first hypothesis predicted that higher educated individuals are more willing to participate in the energy transition. The second hypothesis predicted that individuals with higher incomes showed more willingness to participate in the energy transition. The third hypothesis predicted that those with more knowledge, show more willingness to participate in the energy transition. The last hypothesis predicted that younger people are more willing to participate in the energy transition. The linear regression showed that the interaction variables and control variables had no significant effect on the levels of willingness. Therefore, this paper only looked at the effect of income, education, and knowledge.

When looking at the results, no significant effect was found of education on willingness which is not in line with the previous finding of Lee et al. (2015), Sardianou and Genoudi (2013), and Shen and Saijo (2008). Furthermore, this seems to differ from the positive effect expected based on Maslow's hierarchy of needs theory (Maslow, 1970). This lack of result might be explained by the findings of Steg et al. (2015) who reported that knowledge regarding climate change is higher among those with a higher level of education.

The factor of x was relatively small for the linearity between education and willingness, which means that the relationship was close to being horizontal. Therefore the effect of education might have not been significant because of its relation with knowledge.

Additionally, Goldberg et al. (2020) also discussed a possible moderating effect of political preference on the effect of education on willingness. The reason given in their paper was that education was related to an increase in consumption of facts and therefore knowledge increased which positively influenced willingness. Goldberg et al. (2020) found that this relation differs in strength depending on the political preference. They also mentioned media consumption as a possible counterbalance of education effects. Both factors were not included in this paper and might explain the lack of effect of education. Other explanations might lie in the limitations that will be discussed below.

For income and willingness, no evidence was found for a relation either. This was not in line with several previous papers, for example, that of de Kluizenaar et al. (2020), Shen & Saijo (2008), and Sardianou and Genoudi (2013). This might be explained by the findings of Franzen and Vogl (2013). They mentioned that on the one hand, wealthier people are more able to focus on other concerns as they have fewer economic concerns. However, on the other hand, they tend to consume and demand more goods, both private and public and thus might be less willing to give that up. Additionally, in times of economic hardship, material values grow more important than post material values like environmental concern (Franzen & Vogl, 2013). In the last two decades, the Netherlands has had three economic crises with the latest being the economic crisis (Statline, 2021). This might explain the lack of effect between income and willingness to participate in the energy transition as environmental concern might be less important than material values right now. Another possible explanation for the lack of relationship found might lie in how an individual's standard of living is not only determined by income, but also by the amount and quality of public goods (Franzen & Vogl, 2013). Thus income might not be sufficient to measure personal wealth (Franzen & Vogl, 2013; Vainio et al., 2020). Additionally, when there are sufficient social goods and support provided by a country, socio-economic differences might be smaller and therefore the effect of income on environmental concern (Vainio et al., 2020). As the Netherlands relatively has a lot of social support, it might explain the lack of relation found between income and willingness to participate.

This paper did find evidence that people who have more knowledge regarding the energy transition also show more willingness to participate in the transition, which is in line

with findings of previous research (Lee et al., 2015; Goldberg et al., 2020; Steg et al., 2015). Results from that same research indicated that concern about environmental problems, risk perception, and positive attitudes toward environmental protection are the key factors related to this relationship (Lee et al., 2015; Goldberg et al., 2020; Steg et al., 2015).

Lastly, there was no effect found of age on willingness, which was not in line with most previous research (Liere & Dunlap, 1980; Shen & Saijo, 2008). This might be explained by the findings of Verbeek and Boelhouwer (2011). He found that older people have less knowledge compared to younger people, but that they have a different reason for participating and showing willingness. Older people show more environmentally friendly behaviour and willingness for the future generation, while younger people's willingness is more influenced by the advantage that they themselves have from their behaviour (Boelhouwer, 2011). As the energy transition demands relatively more personal and financial investments compared to other environmental friendly behaviour, younger people might show less willingness and therefore counterbalance the initial negative effect of age.

To summarize, when looking only at the effect of income, education, and knowledge, knowledge was the only variable that showed a significant effect. Based on the data, it seems that individuals who have more knowledge regarding the energy transition show more willingness regarding the energy transition. However, this paper has several limitations and this research was done on an exploratory level. Therefore, further research is needed.

6. Discussion

When looking at the limitation, the first limitation is that secondary data was used in this research. Different researchers went door to door for the data collected in 2019, which might have created some researchers' bias. Furthermore, the data was collected differently depending on the year and municipality, which brings several limitations on its own. For example, the data collected in 2020-2021 might have been influenced by selection bias as respondents had to fill in the questionnaire online, based on a link or QR-code received on Facebook, websites, or flyer. Therefore it required more motivation to find the survey and fill it in compared to surveys conducted or delivered at home. Thus, the respondents who filled in the online survey might have been more likely to be interested in the environment which might have created a selection bias. Similar could be true for the incentives being used, and them being used only in some municipalities. Additionally, in Houten 2020-2021 questions were asked with the notion to answer them with the situation before the Corona crisis in mind. However, the Corona crisis had been ongoing for almost a year at that point which

might have made it difficult to correctly recollect the situation before the crisis, altering the results. The different data collection in combination with the possible research bias might not have given the most consistent and representative image of the population. This negatively influences the generalizability of the results. Furthermore, multiple datasets have been merged together in order to increase the number of respondents. This was done based on questions that were reasonably similar, however, they might not have measured the same which might have altered the results. Therefore a dataset that used the same questionnaire for all respondents would have been better.

When looking at the education variable, several limitations should be noted. Firstly, the linearity assumption for education has been met, but the factor of x was relatively small for the linearity between education and willingness. This could not be fixed by taking the square of these variables. Therefore another transformation method might have been better, but that was beyond the scope of this paper. This relatively low factor of x might explain the lack of significant results found for education. Secondly, the factor had to be recoded into smaller groups to make it similar among all datasets. However, this might have led to the loss of information, by reducing the scale size.

Another set of limitations lies with the variable income. First of all, some datasets did not specify if income should be given as a net or gross value. The data seemed similar among all participants within those municipalities, which suggests that they interpreted the question similar to one another, but this might not be the case. Furthermore, the income for Houten 2019-2020 had to be calculated from gross income to net income. An online scale was used, which gave a rough indication, however, some variables, like additional benefits, were missing which made the calculation less precise. Furthermore, the retirement age was not taken into account as this only applied to four respondents. Similar to education, income had to be recoded into smaller groups as well, which led to large data loss as income was recoded from a ratio scale to an ordinal scale. Together, this might have altered the results and might be the reason why no effect on income was found.

When looking at knowledge, the biggest limitation was the Alpha of Houten 2019-2020 which was below the required 0.6. The analysis was continued, however, this might have altered the results. Furthermore, as this was cross-sectional data, it was not possible to determine if knowledge caused more willingness or more willingness caused more knowledge. Additionally, for the analysis, Z-scores were used for the variable willingness and knowledge, which implies a reasonable similarity between the questions used for the different

municipalities. However, this might have not been similar enough, and due to wording, the questions might have been interpreted differently by respondents, which might have influenced the results.

Lastly, this research has several limitations regarding willingness specifically. Within this paper, willingness to participate was measured using several items regarding actually willing to participate and investing in the transition. However, no distinction was made in types of willingness. People with lower incomes might for example be less inclined to invest money in the energy transition, but are willing to alter their behaviour in order to help in the transition like taking shorter showers. If no distinction is made in types of willingness, their measured willingness might be lower than their actual willingness to participate in the energy transition. Another limitation is that, due to the nature of the datasets, this paper only looked at the willingness to participate in the energy transition. However, the levels of willingness to participate and actually participating might not be equal to each other. Therefore, future research should look at the different types of willingness to participate and whether wanting to participate is equivalent to actually participating. Furthermore, because of the explorative nature of this research and the quality of the data, this research should be repeated with more and better data in order to see if there indeed is no effect of income, education, and age and if the effect of knowledge can be repeated. It would be best to do this using longitudinal data, in order to determine the direction of the relation. Besides the several limitations, this paper can still be relevant as it has led to possible focus points for future research and given a first indication of the possible factors promoting willingness to participate in the energy transition in municipalities.

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Appendix 1. Questions used**Age****Utrecht 2020**

1. Wat is uw leeftijd in jaren?
 - A. Vul in: [tekstvak]
 - B. Wil ik niet zeggen

Houten 2020

1. Wat is uw leeftijd? [tekstvak]

Houten 2021-a and Houten 2021-b

- Q5 Wat is uw leeftijd? (in jaren) [tekstvak]

Amersfoort 2021-a and Amersfoort 2021-b

- Wat is uw leeftijd? [tekstvak]

Education level**Utrecht 2020**

7. Wat is uw hoogst behaalde opleiding?
 - A. Geen opleiding
 - B. Lagere school/ Basisonderwijs
 - C. Lbo, vbo, lts, vmbo
 - D. Mavo, vmbo-t
 - E. Mbo
 - F. Havo/ Vwo
 - G. Hbo
 - H. Wo
 - I. Wil ik niet zeggen

Houten 2020

5. Wat is uw hoogst afgeronde opleidingsniveau? Geen opleiding Lagere school / Basisonderwijs LBO, VBO, LTS, VMBO Mavo, VMBO-t MBO HAVO VWO HBO WO

Houten 2021-a and Houten 2021-b

Q7 Mijn hoogst genoten opleiding is...

- Geen opleiding (1)
- Lagere school / basisschool (2)
- LBO, VBO, LTS, VMBO (3)
- Mavo, VMBO-t (4)
- MBO (5)
- Havo, VWO (6)
- HBO (7)
- WO (8)

Amersfoort 2021-a and Amersfoort 2021-b

Wat is uw hoogst afgeronde opleiding of bent u nog mee bezig?

Income

Utrecht 2020

14. Wat is het maandelijks netto inkomen van uw huishouden?

- A. Vul in: [tekstvak €]
- B. Weet ik niet
- C. Wil ik niet zeggen

Houten 2020

9. Wat is het geschatte bruto gezamenlijk inkomen van uw huishouden? Tel uw kinderen niet mee. [tekstvak]

Houten 2021-a and Houten 2021-b

Q8 Mijn maandelijks bruto inkomen is... (per persoon)

- € 0-1000 (1)

- o € 1001-2000 (2)
- o € 2001-3000 (3)
- o € 3001-4000 (4)
- o € 4001-5000 (5)
- o Meer dan € 5000 (6)
- o Wil ik liever niet zeggen (7)
- o Weet ik niet (8)

Amersfoort 2021-a and Amersfoort 2021-b

“In welke inkomensschaal valt uw huishouden per jaar?”

(1) t/m €20.000 (2) Vanaf €20.000 t/m €35.000 (3) Vanaf €35.000 t/m €68.000 (4) Vanaf €68.000 (5) Zeg ik liever niet.

o Mochten ze dit niet weten: Hoeveel verdient u per maand?

o Mochten ze dit niet aan willen geven, is dat natuurlijk oké, vermeld dit ook

Knowledge about transition

Utrecht 2020

24 “Ik ben bekend met de redenen waarom Nederland geen aardgas meer wil gebruiken.”

- A. Helemaal mee eens
- B. Mee eens
- C. Neutraal
- D. Niet mee eens
- E. Helemaal niet mee eens
- F. Geen mening

25 “Ik ben me bewust van de gevolgen van het klimaatakkoord van Parijs.”

- A. Helemaal mee eens
- B. Mee eens
- C. Neutraal
- D. Niet mee eens
- E. Helemaal niet mee eens
- F. Geen mening

26 “Ik ben bekend met duurzame alternatieven voor aardgas.”

- A. Helemaal mee eens
- B. Mee eens
- C. Neutraal
- D. Niet mee eens
- E. Helemaal niet mee eens

27 “Ik weet wat ik kan doen om mijn huis aardgasvrij te maken.”

- A. Helemaal mee eens
- B. Mee eens
- C. Neutraal
- D. Niet mee eens
- E. Helemaal niet mee eens
- F. Geen mening

28 “Ik weet hoe de gemeente me kan helpen bij het aardgasvrij maken van mijn huis.”

- A. Helemaal mee eens
- B. Mee eens
- C. Neutraal
- D. Niet mee eens
- E. Helemaal niet mee eens
- F. Geen mening

29 “Ik weet waar ik informatie kan vinden over het aardgasvrij maken van mijn huis.”

- A. Helemaal mee eens
- B. Mee eens
- C. Neutraal
- D. Niet mee eens
- E. Helemaal niet mee eens
- F. Geen mening

Houten 2020

De volgende vragen zijn stellingen over kennis van klimaatverandering:

25. Ik volg ontwikkelingen van het klimaatbeleid. Nooit Zelden Soms
 Vaak Heel vaak

De volgende vragen zijn stellingen over de kennis van gemeenteplannen:

27. Ik weet welke maatregelen de gemeente treft op het gebied van het klimaatbeleid. Ja
 Nee

De volgende vragen zijn stellingen over de kennis van mogelijkheden binnen de eigen woning:

29. Ik weet welke stappen ik zou moeten ondernemen om van het aardgas af te stappen.
 Ja Nee

30. Ik ben op de hoogte van de duurzaamheid van mijn energiepakket. Ja Nee

Houten 2021-a and Houten 2021-b

Q20 De volgende vragen zullen gaan over uw kennis en hoeveel u afweet van overgang naar aardgasvrij en hoe u aan deze informatie bent gekomen (graag deze vragen te beantwoorden over de situatie VOOR corona).

Q21 In hoeverre bent u het eens met de volgende stellingen? (

Note: the following statements were asked in a raster. On the x-axis the following answering options were given, Helemaal mee oneens (1), Mee oneens (2), Neutraal (3), Mee eens (4), Helemaal mee eens (5). On the y-axis, the statements were given and are followed with five o.

- Ik ben op de hoogte van de ambities van de gemeente Houten. (1)
- Ik weet hoe ik mijn woning kan isoleren. (3)
- Ik voel me voldoende geïnformeerd over welke veranderingen er nodig zijn voor mijn huis voor de warmtetransitie en aardgasvrij wonen. (5)
- Ik heb een goed beeld van de kosten die bij deze veranderingen komen kijken. (6)
- Ik voel me voldoende ingelicht over hoe lang deze veranderingen kunnen duren. (8)

- Ik ben op de hoogte van de verschillende voordelen die bij deze veranderingen komen kijken (met betrekking tot geld besparen, klimaat en comfort). (10)
- Indien ik informatie mis over de warmtetransitie en aardgasvrij wonen, weet ik waar ik die kan vinden. (11)

Amersfoort 2021-a and Amersfoort 2021-b

Kennis is gemeten aan de hand van stellingen met antwoordmogelijkheden op een 5-punt Likertschaal van helemaal eens tot helemaal oneens:

- “Ik ben goed op de hoogte van de plannen van de gemeente met betrekking tot energietransitie.”
- “Ik weet goed welke mogelijkheden voor participatie er zijn voor de energietransitie naar aardgasvrij leven.”

Willingness to transition

Utrecht 2020

De volgende vragen gaan over de energietransitie in het algemeen en het project Overvecht-Noord aardgasvrij. Geef aan in hoeverre u het eens bent met de volgende stellingen:

“Ik voel me verantwoordelijk voor het aardgasvrij maken van Overvecht-Noord.”

- a. Helemaal mee eens
- b. Mee eens
- c. Neutraal
- d. Niet mee eens
- e. Helemaal niet mee eens
- f. Geen mening

“Ik sta positief tegenover de beleidsplannen van de Gemeente om Overvecht-Noord aardgasvrij te maken in 2030.”

- a. Helemaal mee eens
- b. Mee eens
- c. Neutraal
- d. Niet mee eens

- e. Helemaal niet mee eens
- f. Geen mening

Ik voel me betrokken bij de beleidsplannen om Overvecht-Noord aardgasvrij te maken.”

- a. Helemaal mee eens
- b. Mee eens
- c. Neutraal
- d. Niet mee eens
- e. Helemaal niet mee eens
- f. Geen mening

’Ik ben bereid samen te werken met buurtbewoners, als dat betekent dat we makkelijker en sneller van het aardgas af kunnen gaan.’”

- a. Helemaal mee eens
- b. Mee eens
- c. Neutraal
- d. Niet mee eens
- e. Helemaal niet mee eens
- f. Geen mening

Houten 2020

36. Ik vind het belangrijk om duurzamer te leven. Helemaal oneens Oneens Neutraal Eens Helemaal eens

42. Heeft u plannen om uw huis te verduurzamen? Ja Nee Misschien

Houten 2021-a and Houten 2021-b

Q17 Ik ben van plan te participeren in het beleid om van het aardgas af te gaan van de gemeente Houten

- Helemaal oneens (1)
- Oneens (2)
- Neutraal (3)
- Mee eens (4)

- o Helemaal mee eens (5)

Amersfoort 2021-a and Amersfoort 2021-b

Hoe schat u op dit moment de kans dat u zal participeren aan de transitie van aardgas naar hernieuwbare (duurzame) energiebronnen?"

- (1) '0% t/m 20%', (2) '21% t/m 40%', (3) '41% t/m 60%', (4) '61% t/m 80%', (5) '81% t/m 100%'.

Neighborhood of residents of participant

Utrecht 2020

The report only looks at Overvecht-Noord

Houten 2020

The report only looks at De Muren.

Houten 2021-a and Houten 2021-b

Q4 Waar woont u? (Woont u niet in 't Goy, Schalkwijk of Tull en 't Waal is deze vragenlijst niet van toepassing voor u)

- o 't Goy (1)
- o Schalkwijk (2)
- o Tull en 't Waal (3)
- o Ergens anders, namelijk: (4)

Amersfoort 2021-a and Amersfoort 2021-b

The report only looks at Nieuwland

Gender

Utrecht 2020

Wat is uw geslacht?

- Man
- Vrouw

- Anders
- Wil ik niet zeggen

Houten 2020

Wat is uw geslacht?

- Man
- Vrouw
- Anders

Houten 2021-a and Houten 2021-b

Wat is uw geslacht?

- Man
- Vrouw
- wil ik liever niet zeggen,
- anders namelijk"

Amersfoort 2021-a and Amersfoort 2021-b

Wat is uw gender?

Appendix 2: Informed consent letters

Utrecht 2020

There is no informed consent letter for Utrecht 2020.

Houten 2020

Beste,

Deze vragenlijst is opgesteld door studenten van de Universiteit Utrecht als onderdeel van een onderzoek naar de warmtetransitie in de wijk de Muren. Het onderzoek streeft er naar inzicht te verwerven in de kennis en de houding van de inwoners tegenover de warmtetransitie. Alle informatie is vertrouwelijk en het onderzoek wordt onafhankelijk van de gemeente uitgevoerd. Het invullen van de vragenlijst zal ongeveer 20 min. duren.

Tijdens de Klimaatovereenkomst van Parijs (2015) zijn er afspraken gemaakt tussen landen die verdere opwarming van de aarde moeten stoppen. Nederland heeft zichzelf tot doel gesteld het aantal broeikasgassen in 2050 met 95% te verminderen ten opzichte van 1990. Om dit voor elkaar te kunnen krijgen, moeten alle huizen in Nederland van het gas af en overstappen op hernieuwbare energiebronnen (zoals wind- en zonne-energie). Dit wordt ook wel de warmtetransitie genoemd. De gemeenten zijn nauw betrokken bij deze transitie omdat het op lokaal niveau een grote verandering in de infrastructuur teweeg zal brengen. Ook de gemeente Houten is op dit moment bezig met een warmtetransitie.

Houten 2021 group A/B

Beste deelnemer,

In het Klimaatakkoord is afgesproken dat alle woningen, kantoren en andere gebouwen worden verduurzaamd. Dat betekent minder energieverbruik én van het aardgas af. De gemeente Houten heeft de ambitie om in 2040 energieneutraal te zijn. Dat wil zij doen op een voor iedereen haalbare en betaalbare manier.

De gemeente Houten is daarom benieuwd naar uw mening. Hoe kijkt u aan tegen de overgang van aardgas naar andere manieren van koken en verwarmen? Uw medewerking is van groot belang!

De gemeente gaf ons, studenten sociale wetenschappen aan de Universiteit Utrecht opdracht om bewoners van de dorpen Schalwijk, 't Goy en Tull en 't Waal daarover te bevragen. In de volgende vragenlijst worden vragen gesteld over onder andere uw mening en kennis over de zogenaamde 'warmtetransitie', de overgang naar aardgasvrij.

U helpt ons en de gemeente door de vragenlijst in te vullen. Het invullen van deze vragenlijst kost ongeveer 15 minuten en kan tot 6 januari 2020. Daarnaast is er de mogelijkheid om met onderzoekers verder te praten over dit onderwerp. U kan zich daarvoor opgeven aan het einde van de vragenlijst.

Let op: U kunt aan dit onderzoek deelnemen indien u 18 jaar of ouder bent. Deelname is vrijwillig en u kunt op elk moment besluiten om te stoppen. De verkregen onderzoeksgegevens worden altijd vertrouwelijk behandeld. We delen antwoorden en informatie niet met derden. Uw antwoorden worden geanonimiseerd: ze zijn voor de gemeente dus niet terug te leiden naar u persoonlijk.

Mochten er achteraf dingen zijn die u wilt bespreken naar aanleiding van dit onderzoek, dan kunt u contact met ons opnemen via warmewijkenhouten@gmail.com.

Indien u bereid bent om uw medewerking aan dit onderzoek te verlenen, vink dan aan dat u toestemming geeft en klik op volgende om verder te gaan naar de volgende pagina.

Ik geef toestemming voor gebruik van mijn gegevens voor wetenschappelijk onderzoek en ga akkoord met deelname aan dit onderzoek (1)

Amersfoort 2021 group A/B**Toestemmingsformulier**

Geachte heer/mevrouw,

Voor u ligt een toestemmingsverklaring met betrekking tot uw deelname aan het onderzoek over de energietransitie in de wijk Nieuwland in gemeente Amersfoort. Deze toestemmingsverklaring bestaat uit twee delen. In het eerste deel komt de informatievoorziening aan orde waarin de details van het onderzoek beschreven worden met betrekking tot uw deelname. In het tweede deel komt de toestemmingsverklaring naar voren waarin wordt beschreven waaraan u toestemming geeft als u mee zou doen aan het onderzoek. U kunt na het lezen van deze verklaring de beslissing nemen of u meedoet met het onderzoek. Wij vragen u deze toestemmingsverklaring dus goed door te lezen voordat u akkoord zou gaan.

Informatievoorziening

Dit onderzoek wordt uitgevoerd door sociologie studenten van Universiteit Utrecht in opdracht van de gemeente Amersfoort. Het algemene thema van dit onderzoek is de energietransitie, waarin alle huizen in Nederland voor het jaar 2050 CO2 neutraal moet zijn wat beschreven staat in het Parijs akkoord. De gemeente Amersfoort heeft interesse in uw mening, houding, ervaring en betrokkenheid omtrent de energietransitie met als doel om burgers meer te laten betrekken in dit onderwerp en zo dus het beleid van energietransitie succesvoller te laten verlopen. Als u besluit deel te nemen aan het onderzoek zorgt u er potentieel voor dat het energietransitie beleid in Nieuwland effectiever en efficiënter wordt uitgevoerd door de gemeente, dit is niet alleen gunstig voor u, maar ook voor iedereen die in Nieuwland woont. Het onderzoek bevat een interviewsessie met een student van de faculteit sociale wetenschappen aan Universiteit Utrecht Daarnaast is uw deelname geheel anoniem. Met anoniem wordt bedoeld dat de gegevens die u overhandigt niet te traceren zijn naar uzelf. Dit zorgt ervoor dat gegevens onherkenbaar zijn en dat bijvoorbeeld de gemeente niet informatie kan linken aan bepaalde inwoners van een wijk. De informatie van het interview wordt opgeslagen in een databestand waar alleen de desbetreffende studenten en docenten toegang tot hebben. Wees er wel van bewust dat niet uitsluitend de interviewer met u

gegevens werkt, maar dat alle betrokken studenten tot het onderzoek deze data kunnen gebruiken.

Deelname tot dit onderzoek is **altijd** vrijwillig. Als u besluit niet mee te willen doen aan het interview is dat uiteraard aan de goede orde. Als u besluit mee te doen aan het onderzoek is het niet verplicht om op elke vraag van de interviewer antwoord te geven. Een ander scenario dat kan voorkomen is dat u akkoord gaat en dat u tijdens het interview voelt dat u de sessie niet wil laten doorzetten. U kunt dit dan aangeven aan de interviewer, het interview wordt dan per direct gestaakt. U hoeft niet een reden te geven voor deze staking.

Toestemmingsverklaring

Als u de intentie heeft om mee te doen aan dit onderzoek, dan geeft u toestemming voor de volgende tien punten:

1. Ik verklaar dat ik volwassen ben en wilsbekwaam.
2. Ik verklaar dat ik geheel vrijwillig aan het onderzoek meedoe.
3. Ik verklaar dat ik voldoende geïnformeerd ben over het onderzoek.
4. Ik verklaar dat ik de gelegenheid had om vragen te stellen aan de interviewer waar hij of zijn informatief op reageerde waardoor mijn vragen beantwoord werden.
5. Ik ga akkoord dat mijn gegevens anoniem zijn en dat deze gebruikt mogen worden voor onderzoeksdoeleinden.
6. Ik ga akkoord dat mijn gegevens voor een langere periode bewaard worden in een databestand, na de afronding van het onderzoek worden deze vernietigd.
7. Ik ga akkoord dat het volledige interview wordt opgenomen voor de wetenschappelijk doeleindes.
8. Ik ga akkoord dat mijn gegevens gepubliceerd kunnen worden in het onderzoeksrapport wat overhandigd wordt aan de gemeente Amersfoort.
9. Ik ga akkoord dat meerdere onderzoekers van de opleiding sociologie aan Universiteit Utrecht toegang hebben om mijn gegevens te gebruiken.
10. Ik verklaar dat ik de volledige toestemmingsverklaring heb gelezen voorafgaand aan het onderzoek.

Als u besluit om niet akkoord te gaan met minimaal één van deze punten, dan wordt het interview niet afgenomen. Mocht u vragen hebben over de toestemmingsverklaring dan kunt

u dit stellen aan de desbetreffende interviewer. Wilt u na het interview vragen stellen, dan kunt u deze mailen naar:

Amersfoortnieuwland2020@gmail.com

Wanneer u deelneemt aan het onderzoek, geeft u een mondelinge verklaring dat u akkoord gaat met de algemene voorwaarden en geeft u dus toestemming. Deze verklaring wordt opgenomen als bewijsstuk.