# The saving motives of Dutch households

And the effect of individual characteristics on the importance of saving motives.

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*This Master's Thesis is carried out as a part of the education at the University of Agder and is therefore approved as a part of this education. However, this does not imply that the University answers for the methods that are used or the conclusions that are drawn.*

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## Abstract

I looked at the saving motives of individuals, and which saving motives are the most important for individuals in the Netherlands. I also looked at how individual characteristics can explain how people rate the saving motives of different importance.

I started my thesis with a presentation of the concept of saving, and gave an overview of the various definitions of saving motives of individuals.

I used the data from a questionnaire conducted in the Netherlands in 2012, and used the replies to questions regarding the saving motives of individuals. Based on the replies to these questions I found the precautionary saving motive to be the most important saving motive for individuals in the Netherlands. The bequest motive, the calculation motive and the enterprise motives are saving motives that are less important for individuals in the Netherlands. Based on the results I found that most people in the Netherlands think it is important to have money saved. There were differences in importance among the different motives for saving.

I found that individual characteristics can explain how important people think it is to save money. The most important finding was that women considered the different saving motives as more important than men. I also found that having more kids in the household affects the motives for saving. I also found the importance of saving motives to vary by individuals' partnership status, ownership of accommodation, age, income and education.

I found the results to be interesting, and many of the results in my thesis supports previous work on the area of saving motives.

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# 1. Introduction

## 1.1 Clarifications

When I started to work on my thesis, I found the theory of saving to be extensive. I had to limit my research to the saving motives of individuals. As I read numerous of articles and previous research on the area, I noted that many researchers had looked at the saving motives of people and that the strength of the saving motives can determine how people are saving. I found saving motives to be an interesting topic. I wanted to explore the saving motives in more detail. A study on the saving motives of households is important because it can enable us to better understand the saving behaviour of households, and also predict the actual saving rates in the future.

I used data from a survey that was conducted in the Netherlands, and which had questions that asked individuals how important they rated different saving motives. I will use the answers to those questions to look at (1) what saving motives are most important for individuals in the Netherlands, and (2) how individual characteristics can affect the strength of the motives of individuals.

The goal of my thesis is to find out what saving motives are the most important for people in the Netherlands. I will also try to find out if some individual characteristics can explain why individuals rate saving motives of different importance.

I'm not going to look at the actual saving or the saving behaviour of Dutch households, but I will assume that the saving motives of people can affect the actual saving. By looking at the saving motives, we could get an impression of the actual saving behaviour of individuals, and to predict how the saving rates will be in the future.

My research questions are:

*"What are the most important motives for saving for individuals in the Netherlands?"*

*"How do individual characteristics affect the importance of the saving motives?"*

## 1.2 Outline

In chapter 2 I will present the basic concept of saving, criteria people have when selecting how to save and some different ways to save. I will then present what saving motives is, and give a conceptual clarification. I will here present some variations in the definitions of saving motives, and at the end explain the saving motives that I am going to use in my thesis.

In chapter 3, I will give an overview of previous research and findings on saving motives. The previous research consists both of findings on the importance of saving motives, and also findings on how individual characteristics can affect the saving motives of individuals. I will present the expected findings in my thesis.

In chapter 4, I will present the methodology of my research. I will present the research questions, the methodology I used in my thesis, and a description of the methods of analysis. I will also present the DNB Household survey, which was the survey that provided me with data material in my thesis.

In chapter 5, I will present the analysis part. I will first give an overview of the sample and constructs the variables that I am going to use. I will then look at the means of the different motives, and look at the means for different age categories and regions. I will also show a ranking of the different questions that measured the saving motives. I will then use linear regression to see how individual characteristics can affect the saving motives.

In chapter 6, I will discuss the results of my tests relating them to previous research on the area. I divide the discussion into three parts: Part one is a discussion of the results to my own expectations. Part 2 is about the importance of saving motives related to previous research, and part 3 is about the effect of individual characteristics on the saving motives related to previous literature.

In chapter 7, I will conclude my findings.

In chapter 8, I will discuss some of the limitations of my thesis, and make suggestions for future research.

## 2. Theory

### 2.1 Saving

There are many definitions of what saving is, but the most accepted definition is that saving is income not spent. In other words, saving is the unconsumed part of disposable income. We can say that people have a choice between consuming or saving money.

The online business dictionary has the following definition of saving:

*"Savings is the portion of disposable income not spent on consumption of consumer goods but accumulated or invested directly in capital equipment or in paying off a home mortgage, or indirectly through purchase of securities"* [1]

As the definition tells us, savings and investments can be closely linked. While I stated in the beginning that saving is the unconsumed part of disposable income, people can also save by investing in assets. It is not for sure that this form of investment is positive or negative, but it is important to note that also investments can be viewed as saving. In my thesis, I would expand the definition of saving to include investing.

The focus on saving is nowadays an important topic in Norway, because of the high debt-level of Norwegian households. Since the house-prices are rising people can be tempted to save through buying an apartment because of the opportunity to get a solid earning on their investment. Because of the tax-advantage of paying interests on loan, investing in a real estate is by many viewed as a good way to save in the country.

Saving is essential in today's society, and it is of concern both for individuals and for countries as a whole to sustain economic growth and to have a healthy economy.

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[1] http://www.businessdictionary.com/definition/savings.html

### 2.1.1 Criteria for selecting how to save

When an individual is selecting a method of saving or investing, he, or she has some criteria for the selection of what saving choice is the best. Boye et.al (2008) suggested that there are three criteria most individuals consider when finding which saving choice are the best for an individual. These criteria include return, risk and monitoring requirements, and the three criteria are all closely linked together. I will shortly discuss each of them, and supplement with some other criteria or considerations people make when selecting how to save.

**Return**

The return is what and individual get in return for taking the saving alternative at hand or making an investment. An important aspect of return is that the individual must consider several factors when considering the return of an investment. The interest rate is an influential factor for the saving alternatives, but also the tax policy of interest earned/paid. When talking about real estate, we must consider the value increase of property, tax policy of interest paid, and maintenance cost when talking about the return on investment.

**Risk**

Risk is an essential aspect when considering which saving alternative is the most appropriate for an individual. The risk is how likely an individual are to win or lose money on an investment. Some saving alternatives are more or less non-exposed to risk (bank-deposits, secured funds, pension), and others are more exposed to risk (stocks and bonds, real estate).

**Monitoring requirements**

Some saving alternatives need to be monitored continuously, like stocks and real estates. Other saving alternatives, like bank-deposits, may need much less monitoring. The monitoring process can for many people seem stressful, and many people want easy and predictive behaviour of their investments and savings.

**Other factors**

The taxation of the different saving alternatives is an influential factor to consider when making a saving decision. This subject has already been mentioned under the return section, but can also be viewed as a separate element. In Norway, the tax rate on interest earned is 28%, but there is no taxation on profits an individual make on real estates (as long as you

have lived in the real estate the last year before selling). If people are viewing real estates as an investment, they might be tempted to invest in a real estate rather than saving money in the bank or stocks/bonds.

Another important factor is how easy it is to release the capital invested. Saving options like real estate and long term stocks or bonds can be difficult to transform into money in the short run. People who like to have money easy available might choose to save money in bank accounts because they can be withdrawn on short notice.

Individuals can also have savings constraints, which limit their choices of saving alternatives. Not all people are, for example, able to invest in real estates. In Norway, the Finance Department are demanding a 15% capital requirement for banks to carry out a loan. This restriction may force a lot of people to save in bank accounts, stocks or bonds.

People may also not have enough income, or have such high expenditures that they are not able to save money at all.

### 2.1.2 Different saving alternatives

The saving criteria mentioned in the last chapter can determine how individuals would save their money. There are many ways an individual or households could save money. Halvorsen (2011, p 32) defined saving to entail the following actions:

**<u>Cash savings</u>**

This was a regular way to save in the old days, and another word for this is "under the mattress" saving. To hold cash savings in your house or your pocket could seem like a satisfactory way of saving, and is a common way to save amongst elderly people.

**<u>Place money in bank accounts</u>**

Bank deposits are a common way to save money. The main reason for this is that it is a quick and easy way to save money. People also trust banks, although we have examples of banks that have gone bankrupt and people have lost all their savings. The salary of people often comes as a bank deposit, and if people want to save a part of this amount then they could either just leave the money on the same account or transfer it to another account which earns higher interests. There are various types of bank accounts depending on the usage of the account.

**<u>Investment in securities</u>**

This saving alternative includes saving in stocks, bonds and funds. This saving alternative is associated with higher risk than traditional bank saving. The interest or return you get on this saving alternative can be higher than bank saving, but with stocks and bonds there is a risk of losing the money that are invested.

**<u>Contributions to pension plans</u>**

While some pensions are publicly controlled, individuals can also make private contribution to pension plans. Pension plans are money an individual save until he retires, and that the individual receives when retired.

**<u>Investment in fixed assets</u>**

This could be real estate, cars, boats or other durables. Saving in real estate is a well-known saving option in Norway.

**<u>Loan money to others</u>**

By lending to others, the individual are taking the role as a bank. By lending to others, it prevents the individual from using the money yourself and can, therefore, be viewed as a method of saving.

**<u>Repayments of loans</u>**

By doing this, the individual can reduce his debt. It is a common way to save in Norway, because of the heated real estate market. If it is a loan for buying a real estate, one can get the "saved" amount back when you realize your real estate, in other words when selling. By repaying loans, you can also reduce your interest expenses. People may argue that repayment of loans is consuming and not saving, but for many individuals this is viewed as a method of saving.

### 2.1.3　Saving motives and actual saving

In the saving literature, it is well established that there is a close link between saving motives and actual saving behaviour.

Kasilingam & Jayabal (2011) studied the impact of saving motives on household saving in India. They argue that the saving rate of an individual or a household is affected not only by their ability to save but also their willingness to save. While their ability to save is determined by his income and expenditures, his willingness to save is the saving motives of the individual. An important finding of their study was that the level of motives had a significant influence on the size of saving. They concluded that India had a high savings rate because Indians had a high level of motives to save and that as long as the Indians continued to have high level of saving motives, the present high level of saving rate would continue.

A lot of other researchers have also established the link between saving motives and actual saving, and I will come back to some of these studies in chapter 3. The link between saving motives and actual saving highlights the importance of my study. If we could get a greater understanding of the saving motives of people, we could also get an understanding of how people are saving and for what purpose. In the next part, I will look at what different saving motives people could have, and in the next chapter I will give an overview of previous studies on saving motives.

## 2.2 Saving motives: Conceptual clarification

While savings are the actual amount a person decides not to spend, the saving motives are the desire to reserve a portion of income for future needs. There could be many different motivation individuals can have to save. In this section, I will discuss the saving motives of individuals based on previous literature, and give an overview of the saving motives I will include in my thesis. The saving motives that I come up with, will be the base of my research, and from the questionnaire that I am using I will group the questions into the chosen saving motives.

Keynes (1936) listed eight motives for why people save money. These motives were reproduced by Browning & Lusardi (1996, p1797) with one extra motive added: the down payment motive:

1. "To build up a reserve against unforeseen contingencies" (**the precautionary motive**)
2. "To provide for an anticipated future relationship between the income and the needs of the individual" (**the life-cycle motive**)
3. "To enjoy interests and appreciation" (**the intertemporal substitution motive**)
4. "To enjoy a gradually increasing expenditure" (**the improvement motive**)
5. "To enjoy a sense of independence and power to things, though without a clear idea or definite intention of specific action" (**the independence motive**)
6. "To secure a masse de manoeuvre to carry out speculative or business projects" (**the enterprise motive**)
7. "To bequeath a fortune" (**the bequest motive**)
8. "To satisfy pure miserliness, i.e. unreasonable but insistent inhibitions against acts of expenditure as such" (**the avarice motive**)
9. "To accumulate deposits to buy houses, cars, and other durables" (**the downpayment motive**)

Furnham (1985) summarized the findings of Keynes (1936) but gave some of the motives different names:

- The precautionary motive was renamed the precaution motive.
- The life cycle motive was renamed the foresight motive
- The inter-temporal motive was renamed the calculation motive

- The bequest motive was renamed the pride motive

Lindquist (1981, p 9-11) proposed that the saving goals or saving motives of individuals had a hierarchical structure and called it the saving hierarchy of needs. He proposed that the bottom level on the saving hierarchy of needs was **cash management**- or to meet short-run financial needs. The next level on the hierarchy was **buffer saving**, or saving for unforeseen contingencies. The next level on the hierarchy was **goal saving**, to save for durables, house or holidays. The top level of the hierarchy was **wealth management** saving- and this level are reached when all the three mentioned levels are completed.

Katona (1975, p 233-234) conducted two surveys where people were asked about their purposes of saving. Based on the reported reasons he grouped the reasons for saving into these categories:

1. **For emergencies:** which means, saving for a rainy day.
2. **For retirement:** which means, saving for old age.
3. **For children and family needs:** which means, saving for education for children and other family members.
4. **Other purposes:** This means; saving for a house, business acquiring, durables and vacations.

Nyhus (2002) used in her dissertation questions regarding the importance of different saving motives. Based on a questionnaire, similar to the one I use in my thesis, she grouped the different motives. The motives she listed were:

- **The bequest motive**
- **The inter vivo transfer motive**
- **The precautionary motive**
- **The retirement motive**
- **The goal saving motive**
- **The calculation motive**

The reason why I choose to give an overview of the different saving motives is that a lot of researchers use different names and categories to the different motives. Although there are many different names of the motives, most of them are derived from Keynes earliest work. I will use a combination of the motives listed above to fit the data that I have in my research. I will explain what I consider each of the saving motives to include.

### 2.2.1 The bequest motive

The bequest motive is the desire to pass money or other valuable assets to the next generation. It is common that people transfer their belongings to their children or other relatives when they die, but it is, however, not always the case. If the relationship between parents and their children is bad, the motivation to pass on the fortune might not be great. The bequest motive arrives from Keynes (1936), and Furnham (1985) renamed the motive to pride.

**Bequest** can be saved in different ways. Bequest could be in the form of cash savings, in bank accounts, in securities and investments like a house or other fixed assets. Leaving **bequest** is often taxable for the recipients so this can be an explanation of why people consider the bequest motive as less important. That can also be an explanation for why people would prefer to give presents, gifts or to help children if they are in financial difficulties rather than passing the whole fortune when they die.

### 2.2.2 The inter vivo transfer motive

While the bequest motive can be viewed as passing money or other valuable assets to the next generation when an individual dies, the inter vivo transfer motive are cash transfers or gifts to children/grandchildren while the person are still alive. This motive for saving can be highly valuable for the young generation. If the parents have a strong motive to help their children if they are in financial trouble, then their children might not be so worried about getting into financial trouble. The motive is a form of a bequest motive, but I view this as a separate motive since they do not totally coincide. The inter vivo transfer motive is a form of gradually passing on the bequest before the individual dies, and should be viewed as a separate motive. Other descriptions: Bequest (Keynes, 1936; Browning & Lusardi, 1996), pride (Furnham, 1985), children and family needs (Katona, 1975).

**Inter vivo** transfers are cash transfers and are usually held in bank accounts or as cash. The tax issue are also apparent in inter vivo transfers. In Norway, there are a yearly amount of gifts that is exempt for tax, and the same goes for people in the Netherlands. People can view inter vivo transfers as more economically beneficial than leaving a bequest.

### 2.2.3    The retirement motive

The retirement motive is the motive relating to money to spend at retirement or to supplement your old age pension. As mentioned in the saving methods, people can save for retirement also by private saving. Some of the retirement savings are mandatory under public law, and if an individual need extra money to supplement this saving, the individual need to save it himself. Katona (1975) and Nyhus (2002) mentioned this as a separate motive, but the motive also refers to the life cycle motive stated by Keynes (1936) and Browning & Lusardi (1996).

Saving for **retirement** takes various forms. Obligatory pension plans ensure that people have enough money when they retire. People can also make private contributions to the pension plans. They could either choose to save through specific individual pension plans, or save money for themselves. If they save money for themselves, they could choose to save through bank accounts, through funds, stock or bonds, or even through assets which they sell when they will retire.

### 2.2.4    The precautionary motive

The precautionary motive encompasses savings to cover unforeseen expenses, and to meet daily financial liabilities and cover future high expenses. This is an essential motive for saving, because if an individual do not have money to cover his expenditures he might get bankrupt. Keynes (1936) divided the reasons for savings that I stated as precautionary into two motives, the precautionary motive and the improvement motive. Other names on the same motive are: buffer (Lindquist, 1981) and for emergencies (Katona, 1975).

Saving for **precaution** can like the other mentioned saving alternatives be done in various ways. When I think of precautionary savings, it is money that can be quickly made available and are, therefore, either saved in bank accounts or as cash. Other forms of saving are securities or down payment on loans.

### 2.2.5    The independence motive

The independence motive is about having the freedom to do whatever you like and that you are financial independent of others. I use Keynes (1936) approach to this motive.

Saving for **independence** is a more abstract term that is not associated with a specific saving alternative or with specific considerations to be made.

### 2.2.6    The goal-saving motive

The goal-saving motive relates to saving for durables such as houses, holidays or other things. Another way to put it is that it is saving for a specific thing or a specific goal. I did not find any of Keynes (1936) motives as fitting to this motive, but Lindquist (1981) and Nyhus (2002) defined this motive as I did.

I consider **goal-saving** to be associated with bank savings and cash holdings. Of course goal-saving can also be made through other saving options than this, but if people want to buy durables I consider this as the most common way to save. The importance of having the money made easily available when the goal is met, also limit the saving alternatives.

### 2.2.7    The calculation motive

The calculation motive is the motive to save to generate income through interests or dividends. It is much like the inter-temporal substitution motive which Keynes (1936) listed, while Furnham (1985) and Nyhus (2002) also used the term calculation motive. The reason why I called it the calculation motive was because I wanted to make clear that the motive was about calculation- that is a person expects to earn extra money on the saved amount. The term calculation motive was a more covering definition than inter-temporal substitution motive.

I consider saving for **calculation** to be associated through either bank accounts or securities. Income through interests is associated with having money in the bank, and income through dividends is associated with securities. The considerations to be made in such saving options are greater than the other saving options mentioned. People would consider the risk, the return and monitoring requirements as well as the taxation of dividends or interests.

### 2.2.8    The enterprise motive

The enterprise motive is the motive to set up your own business. Nyhus (2002) characterized this motive as an investment motive. I agree with that, but I would divide this into two motives because I believe that saving to set up your own business is quite different from the motive to generate income through interest or dividends. I think that more people could relate to the question regarding interests or dividends to the enterprise motive, and so I want to separate the two motives from each other.

The actual saving to set up your own **enterprise** can be made in different ways. The considerations to be made when saving for such purpose are also done in various ways. But because the actual motive is to set up your own business, the goal itself can be quite risky. It is also particularly few people who save to set up their own businesses.

## 3. Previous findings on saving motives

I will first give an overview of previous studies and previous findings on saving motives. I will both be looking at the importance of saving motives, and how individual characteristics can affect individuals' motives for saving. I will summarize the findings in the end.

### 3.1 Previous findings on saving motives

Katona (1975) reported the results from two surveys conducted in 1960 and 1966, in which people were asked about their reasons for saving. He found in his research that saving for rainy days (emergencies, illness, and unemployment) were the most frequent mentioned purpose for saving. Retirement (old age) and children's needs were also highly important. Saving for other purposes, like a house and durable goods, were of less importance. He also reported that few respondents mentioned earning interest or bequest as a saving purpose.

Lindqvist (1981, p.128) reported based on two surveys in 1977 and 1978 that the precautionary motive was the most important saving motive in Sweden. Saving for a house or a place to live was also an important motive for saving. Saving to buy durables (the goal saving motive) was also an important saving motive while the bequest motive was a less important motive to save in both surveys.

Furnham (1985) investigated, among others, the relationship between demographic (age, sex, education, vote and income) and attitudes toward saving money. He found that age was strongly and linearly related to the respondent's attitudes to saving and that older people were more positive towards saving. He also suggested that education discriminated between the various saving attitudes.

Xiao & Noring (1994) used data from the 1986 Survey of Consumer Finances to analyse the perceived saving motives of individuals. They found that the most frequently mentioned motives were saving for emergencies and that saving for purchases and retirement also were frequently mentioned motives for saving. They also argued that the perceived saving motives were different in terms of the household's home ownership, marital status, number of children, life cycle stage, employment status, income, asset and debt categories, net worth, and the heads gender and education.

Horioka & Watanabe (1997) tried to estimate net saving of different saving motives to overall household saving in Japan. They found that the retirement motive and the precautionary motive were of dominant importance for Japanese households. They also found that net saving for the bequest motive had a low percentage share of total net saving for all the motives. They also found that the saving motives vary greatly by age.

Nyhus (2002, p 127-128) found that the precautionary saving motive was the most important saving motive. The calculation motive and the bequest motive were a less important motive to save. She also suggested that women regarded saving as more important than men, with an overall higher level of reported importance of the different saving motives than men. She also suggested it to be age differences in the importance of saving motives. The bequest motive was more important for older age group while the inter vivo transfer motive was more important among the age group 30-44. She further argued that the precautionary motive, the calculation motive and the goal-saving motive declined with age.

Harris et.al (2002) did a research on the determinants of household saving in Australia. The respondents were to give self-enumerated reasons for saving. They found that the top three motives for saving for households was the retirement motive, saving for holidays (the goal saving motive) and the precautionary motive. They also found that people regarded the bequest motive as relatively unimportant. Based on the results they indicated that the main difference in saving motives between households with and without kids was saving for educational purposes. Results also show that the bequest motive was stronger among households with kids, than households without kids. They divided the results into different age categories, and found that the motives for saving were different when the age of the respondents was different. For young respondents (aged 18 to 24) buying durables and saving for holiday were the most important motive. Respondents aged 25-44 gave saving for retirement higher importance and the age group 45-64 rated this as their most important reason for saving. The importance of the precautionary saving motive seemed to be of more importance when individuals got older. They proposed that the importance of the retirement motive increases as the household income increased.

Kasilingam & Jayabal (2011) conducted a survey among teachers working at two Universities in India. The respondents were asked to rate the level of importance of saving motives on a

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five-point Likert-scale[2]. Based on the survey they found that the precaution motive and the foresight motive (retirement motive) were the two most important saving motives. The enterprise motive and the avarice motive were the motives that scored lowest, and considered as the least important motives for saving.

Halvorsen (2011) made an observation based on questions on the motives for saving and bequest from a survey that NOVA conducted in 2001 on Norwegian respondents. When people were asked about how important the bequest motive was for them, she made a number of observations. Almost half of the respondents regarded the bequest motive as important, and even among those without children there was a great share of people that regarded it as an important motive. She noted that when comparing against other motives for saving, the precautionary motive was the most important motive, and especially for those over 65 years.

## 3.2 Summary of previous findings

To summarize the previous researcher's findings, most researchers have found the precautionary motive to be the most important motive for saving. The retirement motive and saving for children needs are found to be important motives for saving. The bequest motive is by researchers found a saving motive of less importance than other motives. The importance of the saving motives is found to vary by individual characteristics, such as gender, age, educational level, home ownership, marital status, number of kids and income.

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[2] A Likert scale are a psychometric scale that are often used in questionnaires. The respondents are to answer important/unimportant, or how strong/weak they agree with a statement or a question.

# 4. Methodology

## 4.1 Research model

The research questions in my thesis are chosen to look at what saving motives are the most important for Dutch households, and also to find out whether individual characteristics can explain why individuals assign different importance to the motives. Through previous theory work on saving motives and also previous research on the topic, I chose to look at eight motives for saving and to see which one of them is considered as most important for individuals in the Netherlands.

*Research question 1: "What are the most important motives for saving for individuals in the Netherlands?"*

To answer my research questions, I will look at the answers of the respondents to –questions regarding the saving motives. I will first look at the means and medians of the responses on the different survey questions regarding the saving motives, and then I will relate the questions to the saving motives I have defined earlier to get an overall mean to the different motives. I will also show how the mean and median varies depending on the respondents' individual characteristics.

I expect to find that individuals in the Netherlands rate the precautionary motive as more important than other motives, and I also expect that the retirement motive will be an important motive for saving. I would also expect the enterprise motive, and the bequest motive to be of less importance.

*Research question 2: "How do individual characteristics affect the importance of the saving motives?"*

I want to look at some individual characteristics and how they can explain why individuals consider different motives as important. Through previous findings on saving motives and saving in general, I have found some factors that I think will play an important part in influencing motives for saving. There may be more factors, which can explain the results, but I chose the factors that I considered as most important. In addition, if I had included too many

factors it could lead to disorganisation instead of being informative. I will use linear regression to answer this research question, and use the different survey questions for the saving motives as dependent variables and the individual characteristics as independent variables.

The factors that I have chosen to concentrate on are:

**Sex**

In previous findings, it has been suggested that sex could be a factor that will affect the motives for saving. I want to see if men rate the different motives as less important than women. I will expect that women will regard the saving motives as more important than men.

**Children in the household**

Previous findings have suggested that number of kids affects the motives for saving. I will try to find out if having kids in the household will lead to differences in the importance of the different motives relative with not having kids. I expect that households with more children will regard the precautionary motive as more important, than households without children. I expect the opposite for the retirement motive. I also expect that having more kids will have an impact on the other saving motives.

**Partner**

Previous findings have suggested that the marital status affects the motives for saving. I will see if those with a partner in the household rate the different motives as more important than those without a partner. I expect that individuals with a partner will regard the saving motives as more important, than individuals who do not have a partner.

**Type of accommodation**

Previous findings have suggested that the motives for saving could be different if a person rents or owns a house. I expect that home-owners will regard the saving motives as important than the ones who rent.

**Age**

Previous findings have suggested that age could affect the different motives for saving. I will see if the older individuals rate the motives different than younger individuals. I expect that older individuals will regard saving for retirement as more important than younger

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individuals. I expect the opposite for the precautionary motive. I would also expect there to be differences in other saving motives between the age categories.

**Household income**

Previous findings have suggested that income could affect the motives for saving. I expect that individuals with higher income will regard the saving motives as more important than individuals with lower income.

**Educational level**

Previous findings have suggested that the educational level of an individual can affect the different motives for saving. I expect that higher educated individuals will regard the saving motives as more important than the less educated individuals.

## 4.2 Research design

We can say that social researchers are asking two fundamental types of research questions. While the question "What is going on?" can be viewed as descriptive research, the question "Why is it going on?" can be viewed as an explanatory research. (De Vaus, 2001, p.1).

I used research questions that were mostly descriptive. I wanted to find out how individuals in the Netherlands are rating different saving motives. I also wanted to find out if some individual characteristics could help explain why individuals have strong or weak motives to save. The questionnaire that I used had a descriptive form of research design. I used an explorative design when I collected information on previous findings and to come up with individual characteristics that could affect the saving motives of individuals in the Netherlands.

## 4.3 Data collection

**Primary and secondary data**

There are two types of data-resources: Primary and secondary data. Primary data is characterized as new data collected by the researcher while secondary data is collected by others. The advantage of primary data is that one can collect data for the exact purpose of your research. The disadvantage of primary data is that it often is time-consuming and challenging to perform. The response rate could also be quite low. Secondary data is often easy available and is not costly to obtain. The disadvantage with secondary data is that it might not measure what the researcher is interested in.

In my thesis, I did a lot of work collecting previous research on the area. I found literature that put names on different saving motives individuals can have, and that helped me to divide the questions into different motives. Then I collected information about factors that could affect the importance of the different motives, and I came up with factors that I was going to measure the effect of. In my thesis, I used data from a survey that was already performed. My data-resources are in other words secondary data. I saw the disadvantage of not constructing my own questionnaire, but I also realized that the questions from the questionnaire measured the things I wanted. I also wanted to have a large group of respondents and that I could get when using data from this questionnaire.

**Quantitative method**

In research, there is a distinction between quantitative and qualitative methods. The main difference between quantitative and qualitative methods is that qualitative methods have a main goal of analysing text, while quantitative methods usually involves interpreting numbers. To interpret numbers we use statistical methods, and the main goal is to generalize the results to a larger population.

The data I used in my thesis came from a questionnaire. A questionnaire is a typical tool to use when you are applying a quantitative research method.

## 4.4 The questionnaire

The DNB Household Survey 2012 is a longitudinal database with the purpose to study economical and psychological determinants of the saving behaviour of households in the Netherlands. The survey was conducted over the period February 2012 – October 2012 and consisted in 2012 of six questionnaires. The questionnaire *"Economic and psychological concepts"* was one of six questionnaires included in the 2012 DNB Household Survey. One part of this questionnaire asked about the saving motives of individuals, and there was 16 questions regarding the saving motives of the respondents[3]. The respondents were asked to state their importance of the different saving motives on a 7-Point Likert scale, where 1 was very unimportant and 7 were very important. Respondents were not forced to discriminate between the different motives and may as well rate each motive as very important or very unimportant.

### 4.4.1   Sample

The invitation to the questionnaire was presented as an online questionnaire through a panel of households, called the CentERpanel. All members of the CenterPanel were asked to answer the questionnaire. Respondents without access to the internet were provided with a simple computer with internet access.

The population was households in the Netherlands. From the population in the Netherlands, a random sample was collected, and the sample is representative of the Dutch population. The CenterPanel consisted of 1830 households and 4350 individuals in the 20th wave. All individuals aged 16 or over in the participant households were interviewed.

### 4.4.2   Response rate

The response rate on this questionnaire was 1638 households and 2152 individuals. The response rate in terms of households was 1638/1830 = 89.51 %. The low response rate based on individuals (2152/4350=49.47%) was mostly because only individuals over 16 years old were allowed to answer this questionnaire.

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[3] The 16 questions are included in the appendix

### 4.4.3   Comments to the questionnaire

I was only interested in one part of the questionnaires, the questions regarding the importance of saving motives. I have included the 16 questions that was asked about the saving motives in the appendix.

The response rate I commented on was based on all who participated in the questionnaire. Not all who participated in the questionnaire were allowed to answer the questions regarding the saving motives. Only respondents who were listed as head of the household, spouse or permanent partner (not married) were allowed to answer these questions, and so I got some missing values. Fortunately most of the respondents were allowed to answer these questions.

I also got some missing values due to respondents who answered "not applicable" to the questions regarding the saving motives. I will not go into a discussion why some respondents chose not to answer the different questions about motives, but I note that respondents may have answered this because of the fact that they did not see the saving motive as important- and may as well have answered alternative 1- very unimportant instead. They may also have chosen this alternative because they rate the motive as important, but since they are in a certain situation or age the motive are not applicable for them. To make it clear: the data analysis that I am making is based on respondents who rated the different motives, and the rest of the respondents are excluded in the analysis.

The 16 questions regarding the saving motives gave a subjective measure of the importance of the motives. Schunk (2007, p.2-3) says that the main advantage of such subjective measure is that the cognitive burden of the respondents is low and the non-response rate could be low. The main disadvantage is that individuals may answer in a certain way because there is a socially desired way of answering.

I will not go into a deeper discussion about the advantages and disadvantages of the measurement, but I can see that this could affect the answers. Since I am interested in how individual characteristics affect the importance of the different motives, this is not so much of importance. When looking at the total rating of the motives, this could be a thing of importance. For example, if there is a socially desired way of thinking that individuals should rate precautionary saving as important- the score may be higher than what individuals think about the saving motives.

The questions that were asked about the saving motives of the respondents can be directly linked to the research problem in the thesis. These 16 questions can be linked to the eight

motives listed earlier: the retirement motive, the inter vivo transfer motive, the precautionary motive, the independence motive, the bequest motive, the goal-saving motive, the calculation motive and the enterprise motive.

## 4.5 Methods of analysis

The data from the questionnaire were transferable to the data analysis program STATA for further analysis. I used STATA to get information about the sample, to get the mean and median of the population, to get the mean of different groups of respondents, and run linear regression to see if the individual characteristics did affect the saving motives on a significant level. Stata is a statistical software package, which is good to use in statistical analysis. Since the data from The DNB household survey were available as STATA data-files, I could use the program to conduct the analysis I wanted. In STATA, I could get information about the individual characteristics of the sample, and get the means of the different questions that I was going to measure. I also performed the linear regressions in STATA. The program was easy to use, and it helped me to obtain the information that I needed.

### 4.5.1 Means and medians

Mean (or average) and medians are two statistical terms that both play a role in how to understand the central tendency in a set of statistical scores. While the average (the mean) score can be considerably affected by a few particularly low or particularly high scores (extreme scores), the median can be of greater informative value as it separates the low scores from the high scores.

### 4.5.2 Regression analysis

Regression is a statistical technique that can be used to analyse the relationship between a single dependent variable and one or several independent variables. If we have two or more independent variables, multiple regression is the desired regression method to use. Multiple

linear regression attempts to show the relationship between two or more explanatory variables, and a response variable by fitting a linear equation to observed data.

### 4.5.2.1 Variables in the regressions

In my regressions, I will use the different questions regarding saving motives as dependent variables, and the different individual characteristics as independent variables.

### 4.5.2.2 Dummy variables

Dummy variables are qualitative variables that describe presence or an absence of a quality or an effect. I used dummy variables for most of my independent variables to see if there were differences in the rating of saving motives in terms of individual characteristics. I made these dummy variables:

Gender: Being a man was given the value 1, and being a woman was given the value 0. The interpretation of this variable is: "*being a man relative to being a woman*".

Number of kids: I did not make a dummy variable here. The interpretation of this variable is: *"having more kids in the household relative to not having kids in the household"*.

Partner: I made a dummy variable, where having a partner in the household was given the value 1, and not having a partner in the household was given the value 0. The interpretation of this variable is *"Having a partner in the household relative to not having a partner in the household"*.

Accommodation: I made a dummy variable where the owners were given the value 1, and renters were given the value 0. The interpretation of this variable is *"Owners relative to renters"*.

Age: I made three dummy variables in age. Respondents under age 36 (young age) were the first dummy. Respondents aged 36-59 were dummy 2 (middle age), and respondents over 59 years (old age) were dummy 3. I included dummy number two and three in the regression and the interpretation of these two dummies are:

- Dummy 2: Middle age relative to young age.
- Dummy 3: Old age relative to young age.

Household income: I made three dummy variables on income. Respondents with household income <14,000 Euro (low income) were the first dummy. Respondents with household income between 14,000 Euro and 40,000 were dummy 2 (medium income), and respondents with household income over 40,000 Euro (high income) were dummy 3. I included dummy 2 and three in the regression and the interpretation of these two variables are:

- Dummy 2: Middle income relative to low income.
- Dummy 3: High income relative to low income.

Highest education completed: I made three dummy variables on income. Respondents with low education (CSE or PE) were the first dummy. Respondents with medium education (HAVO or MBO) were dummy 2, and respondents with high education (HBO or WO) were dummy 3. I included dummy 2 and three in the regression and the interpretation of these two variables are:

- Dummy 2: Middle education relative to low education.
- Dummy 3: High education relative to low education.


### 4.5.2.3 Wald statistics

I run three Wald statistics in each of the regressions. The Wald statistic checks if two variables that I have included are the same. In my case, it checks the following:

*W –st1:*

Wald statistic that mid_age=old_age.

$H_0$: Mid_age = old_age

$H_1$: Mid_age $\neq$ old_age

If W-st is significant, reject $H_0$ ➔ mid_age and old age are not the same.

*W-st2:*

Wald statistic that mid_age=old_age.

$H_0$: Mid_inc = high_inc

$H_1$: Mid_inc $\neq$ old_inc

If W-st2 is significant, reject $H_0$ ➔ mid_inc and high_inc are not the same.

*W-st3:*

Wald statistic that mid_edu=high_edu.

$H_0$: Mid_edu = high_edu

$H_1$: Mid_edu $\neq$ high_edu

If W-st is significant, reject $H_0$ ➔ mid_edu and high_edu are not the same.

# 5. Analysis

In this section, I will go through the data which the questionnaire gave me. I will first give a description of the sample based on the individual characteristics I am using. Then I will show the ratings on the different questions regarding the saving motives, and show means of the different motives broken down to the individual characteristics. In the last section, I will test if the individual characteristics can explain the variations in importance of the different saving motives.

## 5.1 Description of the respondents

I conducted a description of the respondents who answered the questions regarding saving motives. The demographics is of important because I am going to use this in my test later on to explain why individuals have different motives for saving.

| Description | # Respondents | % |
|---|---|---|
| **Sex:** | | |
| Man | 1192 | 55.4 |
| Woman | 960 | 44.6 |
| Total | 2152 | 100.0 |
| | | |
| **Number of kids in HH:** | | |
| 0 child | 1413 | 65.7 |
| 1 child | 254 | 11.8 |
| 2 children | 321 | 14.9 |
| 3 or more children | 164 | 7.6 |
| Total | 2152 | 100.0 |
| | | |
| **Partner in HH:** | | |
| With partner | 1664 | 77.3 |
| Without partner | 488 | 22.7 |
| Total | 2152 | 100.0 |
| | | |
| **Type of accommodation:** | | |
| Owners | 1647 | 76.5 |
| Renters | 505 | 23.5 |
| Total | 2152 | 100.0 |
| | | |
| **Age:** | | |
| <30 | 123 | 5.7 |
| 30-44 | 391 | 18.2 |
| 45-59 | 620 | 28.8 |
| 60-74 | 770 | 35.8 |
| >75 | 248 | 11.5 |
| Total | 2152 | 100.0 |
| | | |
| **Household income:** | | |
| Less than 10,000 | 43 | 2.0 |
| Between 10,000 and 14,000 | 100 | 4.6 |
| Between 14,000 and 22,000 | 315 | 14.6 |
| Between 22,000 and 40,000 | 901 | 41.9 |
| Between 40,000 and 75,000 | 539 | 25.0 |
| 75000 and over | 61 | 2.8 |
| Don't know | 193 | 9.0 |
| Total | 2152 | 100.0 |
| | | |
| **Education:** | | |
| Continued special education (CSE) | 5 | 0.2 |
| Primary education (PE) | 83 | 3.9 |
| Pre-vocational education (VMBO) | 576 | 26.8 |
| Pre-university education (HAVO/VWO) | 266 | 12.4 |
| Senior vocational  training or training through apprentice system (MBO) | 331 | 15.4 |
| Vocational colleges (HBO) | 573 | 26.6 |
| University education (WO) | 294 | 13.7 |
| Did not have education (yet) | 2 | 0.0 |
| Other sort of education | 19 | 0.9 |
| Not applicable | 3 | 0.1 |
| Total | 2152 | 100.0 |

Table 1: Description of the respondents

The respondent could either be a man or a woman. There were 55 % men and 45 % women who responded to the questionnaire, and so there were a slight overweight by male respondents.

There was an overweight of respondents who had zero kids present in the household. 65.7 % of the respondents had no kids in the household.

Most respondents had a partner in the household. Almost 80 % had a partner present in the household.

In the questionnaire, respondents could be one of four types of accommodation. Most respondents seemed to have an owner-occupied property. For my purpose, I divided the respondents into two groups; owners and renters. The renters group are respondents who are not owners, and consist of the three groups that are not owners.

First I divided the age of the respondents into 5 groups. I am going to use these age groups when looking at the means of the different motives. Then I further divided the respondents into three groups, which I am going to use when running regressions at the end of the analysis chapter. By looking at the age categories, I saw that there was an overweight by older respondents. I divided the respondents into three groups. The young age group were defined as respondents who were 35 years or younger. The middle age group were respondents aged between 36 and 60 years old. The old age group were respondents aged 60>.

In the questionnaire, there was 7 alternatives about household income. I am going to use these income intervals when looking at the means. I further divided the respondents into three categories. The high income category consists of households with income high income of 40,000 Euro and more. The medium income category consists of households with income of between 14,000 and 40,000 Euro. The low income category consists of households with income of 14,000 Euro or less. The total number of respondents does not add up to 100% because of respondents who answered don't know, and are so excluded from the analysis.

In the questionnaire there were nine education groups. I am going to use these groups when looking at the means. It should be noted that when looking at the means, I do not show the means of respondents without education with other sort of education. I divided the respondents into three groups, for the purpose of the regressions. The high education group consists of respondents with a University degree or vocational colleges. The medium education group consists of people with pre-vocational education, pre-university education, or

senior vocational training. The low education group consists of respondents with continued special education, primary education, without education and other sort of education. The total amount of respondents from the three groups does not add up to 100% because of the 3 missing values (respondents who did not type in their education).

## 5.2 Rankings of questions regarding saving motives

In this section, I show the means and medians to the different questions regarding the saving motives. I also show how many respondents the calculations are based on. The reason why not all respondents answered the questions were due to missing values.

| Saving motive | Type of motive | Mean | Median | Observations |
|---|---|---|---|---|
| 1. To have enough money in your bank account to be sure you will be able to meet your financial liabilities. | Precautionary | 6.1 | 6.0 | 2003 |
| 2. To have some savings to cover unforeseen expenses | Precautionary | 6.0 | 6.0 | 2016 |
| 3. So that you do not ever need to ask other people for financial help | Independence | 5.8 | 6.0 | 1983 |
| 4. In order to cover future (high) expenses | Precautionary | 5.5 | 6.0 | 1989 |
| 5. To increase your freedom so you can do what you want | Independence | 5.4 | 6.0 | 1975 |
| 6. To supplement your general old-age pension | Retirement | 5.3 | 6.0 | 1708 |
| 7. To have some extra money to spend when you are retired | Retirement | 5.2 | 6.0 | 1903 |
| 8. To buy durable goods (such as furniture, electrical equipment or bikes) in the future | Goal-saving | 5.0 | 5.0 | 1981 |
| 9. To help children if they have financial difficulties | Inter vivo transfer | 4.9 | 5.0 | 1632 |
| 10. For a better future | Independence | 4.8 | 5.0 | 1914 |
| 11. To give presents or gifts to your children and/or grandchildren | Inter vivo transfer | 4.4 | 5.0 | 1684 |
| 12. To leave money to your children (or other relatives) | Bequest | 3.5 | 3.0 | 1739 |
| 13. To leave a house and/or other valuable assets to your children | Bequest | 3.4 | 3.0 | 1606 |
| 14. So that you can buy a (different) apartment or house in the future | Goal saving | 3.3 | 3.0 | 1622 |
| 15. To generate income from interests or dividends | Calculation | 3.3 | 3.0 | 1794 |
| 16. To set up your own business | Enterprise | 2.1 | 2.0 | 1376 |

**Table 2: Means on questions regarding saving motives**

When looking at the importance of the different questions, I see that the most important saving reason is to have enough saved to meet the financial liabilities and cover unforeseen expenses.

When looking at the actual questions regarding saving motives, without classifying them into an exact motive, we can see that saving to cover your financial liabilities and cover future unforeseen or future high expenses ranks high. The respondents are also ranting the independence motive with high importance, with having a high mean for questions regarding increased freedom and financial independency.

I will come back to the overall means in the end, but I will first give an overview of the means on the different characteristics.

## 5.3 Means on the different saving motives and the different household characteristics

In the previous section, I showed the overall means of the different questions regarding the saving motives. Now I am going to turn the questions into different motives. I will also show means and medians divided into different categories that I defined in the beginning of the chapter. Based on the table in the last section, and the description of the different motives mentioned in the theory section I could categorize the questions to the different saving motives. I have 2 tables, and the first table shows the first four motives: the bequest motive, the inter vivo transfer motive, the retirement motive and the precautionary motive. The second table shows the other motives: the independence motive, the goal saving motive, the calculation motive and the enterprise motive. First I will describe shortly which questions are related to which saving motives. In table 2 in the previous section, I said which saving motive the different questions was related to.

**Bequest motive**: There were two questions that measured the strength of the bequest motive, so the replies to these questions were added and divided by 2.

**Inter vivo transfer motive**: There were two questions that measured the strength of the inter vivo transfer motive, so the replies to these questions were also added and divided by 2.

**Retirement motive**: There were two questions that measured the strength of the retirement motive, so the replies to these questions were also added and divided by 2.

**Precautionary motive**: There were three questions that measured the strength of the precautionary motive. The replies to these three questions were constructed by adding the responses of the three questions and divided by three.

**Independence motive**: There were three questions that measured the strength of the independence motive. The replies to these three questions were also added and divided by three.

**Goal saving motive**: There were two questions regarding the goal-saving motive, and replies to these questions were added and divided by two.

**Calculation motive**: There was one question that measured the strength of the calculation motive, and replies to this question were used as a measure of the strength of the calculation motive.

**Enterprise motive**: There was only one question that measured the strength of the enterprise motive, and replies to this question were used as a measure of the strength of the enterprise motive.

| | Bequest motive Mean/med | Inter vivo transfer motive Mean/Med | Retirement motive Mean/med | Precautionary motive Mean/med |
|---|---|---|---|---|
| All | 3.5 / 3.0 | 4.6 / 5.0 | 5.2 / 6.0 | 5.9 / 6.0 |
| | | | | |
| **Sex:** | | | | |
| Men | 3.4 / 3.0 | 4.6 / 4.5 | 5.1 / 5.0 | 5.8 / 6.0 |
| Woman | 3.6 / 3.5 | 4.8 / 5.0 | 5.5 / 6.0 | 6.0 / 6.3 |
| | | | | |
| **# Kids in household:** | | | | |
| 0 kids | 3.4 / 3.0 | 4.6 / 5.0 | 5.3 / 6.0 | 5.9 / 6.0 |
| 1 child | 3.6 / 3.5 | 4.7 / 4.5 | 5.3 / 5.0 | 5.8 / 6.0 |
| 2 children | 3.7 / 4.0 | 4.8 / 5.0 | 5.1 / 5.5 | 5.9 / 6.0 |
| 3 or more | 3.5 / 3.0 | 4.7 / 4.5 | 5.1 / 5.0 | 5.8 / 6.0 |
| **Partner in HH:** | | | | |
| Partner | 3.5 / 3.0 | 4.7 / 5.0 | 5.2 / 6.0 | 5.8 / 6.0 |
| No partner | 3.3 / 3.5 | 4.4 / 5.0 | 5.2 / 6.0 | 5.9 / 6.0 |
| | | | | |
| **Type of accommodation:** | | | | |
| Owners | 3.6 / 3.8 | 4.6 / 5.0 | 5.3 / 6.0 | 5.9 / 6.0 |
| Renters | 3.1 / 3.0 | 4.6 / 5.0 | 5.2 / 6.0 | 5.8 / 6.3 |
| | | | | |
| **Age:** | | | | |
| Under 30 | 4.0 / 4.0 | 4.7 / 5.0 | 5.2 / 5.3 | 6.1 / 6.0 |
| 30-44 | 3.7 / 3.5 | 4.8 / 5.0 | 5.2 / 5.0 | 6.0 / 6.0 |
| 45-59 | 3.3 / 3.0 | 4.5 / 4.5 | 5.3 / 5.5 | 5.8 / 6.0 |
| 60-74 | 3.4 / 3.0 | 4.7 / 5.0 | 5.4 / 6.0 | 5.9 / 6.0 |
| Over 75 | 3.7 / 4.0 | 4.8 / 5.0 | 4.8 / 5.5 | 6.0 / 6.3 |
| | | | | |
| **Household Income last year:** | | | | |
| Under 10 | 3.5 / 3.8 | 4.2 / 4.5 | 5.1 / 5.8 | 5.5 / 6.0 |
| 10-14 | 3.3 / 3.0 | 4.2 / 4.0 | 5.1 / 5.5 | 5.8 / 6.3 |
| 14-22 | 3.4 / 3.5 | 4.6 / 5.0 | 5.4 / 6.0 | 5.9 / 6.0 |
| 22-40 | 3.4 / 3.0 | 4.7 / 5.0 | 5.2 / 5.5 | 5.9 / 6.0 |
| 40-75 | 3.5 / 3.5 | 4.7 / 5.0 | 5.2 / 5.5 | 5.8 / 6.0 |
| Over 75 | 3.7 / 3.0 | 5.0 / 5.3 | 5.7 / 6.0 | 5.9 / 6.0 |
| | | | | |
| **Highest education completed:** | | | | |
| CSE | 3.0 / 2.0 | 4.7 / 4.5 | 5.4 / 4.8 | 5.5 / 5.3 |
| PE | 3.6 / 4.0 | 4.9 / 5.0 | 5.3 / 5.5 | 5.8 / 6.2 |
| VMBO | 3.4 / 3.0 | 4.7 / 5.0 | 5.3 / 6.0 | 5.8 / 6.3 |
| HAVO/VWO | 3.4 / 3.5 | 4.6 / 4.5 | 5.4 / 6.0 | 6.0 / 6.0 |
| MBO | 3.6 / 4.0 | 4.7 / 5.0 | 5.1 / 5.0 | 5.8 / 6.0 |
| HBO | 3.4 / 3.0 | 4.6 / 4.5 | 5.2 / 5.5 | 5.8 / 6.0 |
| WO | 3.6 / 3.5 | 4.6 / 4.5 | 5.2 / 6.0 | 5.9 / 6.0 |

Table 3: Means of the different motives Part I

|  | Independence motive Mean/med | Goal saving motive Mean/med | Calculation Mean/med | Enterprise motive Mean/med |
|---|---|---|---|---|
| All | 5.3 / 5.7 | 4.1 / 4.0 | 3.3 / 3.0 | 2.1 / 2.0 |
|  |  |  |  |  |
| **Sex:** |  |  |  |  |
| Men | 5.2 / 5.7 | 4.0 / 4.0 | 3.3 / 3.0 | 2.1 / 2.0 |
| Woman | 5.5 / 5.7 | 4.4 / 4.5 | 3.3 / 3.0 | 2.2 / 2.0 |
|  |  |  |  |  |
| **# Kids in household:** |  |  |  |  |
| 0 kids | 5.3 / 5.7 | 4.1 / 4.0 | 3.4 / 3.0 | 2.0 / 2.0 |
| 1 child | 5.4 / 5.7 | 4.1 / 4.5 | 3.1 / 3.0 | 2.3 / 2.0 |
| 2 children | 5.3 / 5.7 | 4.2 / 4.5 | 2.9 / 3.0 | 2.3 / 2.0 |
| 3 or more | 5.1 / 5.3 | 4.1 / 4.5 | 2.9 / 2.5 | 2.5 / 2.0 |
|  |  |  |  |  |
| **Partner in HH:** |  |  |  |  |
| Partner | 5.3 / 5.7 | 4.2 / 4.5 | 3.3 / 3.0 | 2.1 / 2.0 |
| No partner | 5.4 / 5.7 | 4.1 / 4.0 | 3.3 / 3.0 | 2.3 / 2.0 |
|  |  |  |  |  |
| **Type of accommodation:** |  |  |  |  |
| Owners | 5.3 / 5.7 | 4.2 / 4.5 | 3.3 / 3.0 | 2.1 / 2.0 |
| Renters | 5.3 / 5.3 | 4.0 / 3.5 | 3.0 / 3.0 | 2.2 / 2.0 |
|  |  |  |  |  |
| **Age:** |  |  |  |  |
| Under 30 | 5.7 / 6.0 | 5.5 / 6.0 | 4.2 / 4.0 | 3.2 / 3.0 |
| 30-44 | 5.5 / 6.0 | 4.8 / 4.5 | 3.3 / 3.0 | 2.7 / 2.0 |
| 45-59 | 5.2 / 5.7 | 4.0 / 4.0 | 3.1 / 3.0 | 2.2 / 2.0 |
| 60-74 | 5.3 / 5.7 | 3.9 / 3.5 | 3.3 / 3.0 | 1.7 / 1.0 |
| Over 75 | 5.2 / 5.5 | 4.0 / 4.0 | 3.8 / 4.0 | 1.6 / 1.0 |
|  |  |  |  |  |
| **Household Income last year:** |  |  |  |  |
| Under 10 | 5.2 / 5.3 | 4.2 / 4.5 | 3.4 / 4.0 | 2.9 / 3.0 |
| 10-14 | 5.2 / 5.3 | 3.8 / 3.5 | 3.2 / 3.0 | 2.6 / 2.0 |
| 14-22 | 5.4 / 5.7 | 4.2 / 4.0 | 3.3 / 3.0 | 2.2 / 2.0 |
| 22-40 | 5.3 / 5.7 | 4.1 / 4.0 | 3.2 / 3.0 | 2.0 / 1.0 |
| 40-75 | 5.3 / 5.7 | 4.2 / 4.0 | 3.3 / 3.0 | 2.1 / 2.0 |
| Over 75 | 5.4 / 6.0 | 4.6 / 4.5 | 3.9 / 4.0 | 2.4 / 2.0 |
|  |  |  |  |  |
| **Highest education completed:** |  |  |  |  |
| CSE | 5.8 / 6.0 | 4.1 / 4.5 | 5.0 / 5.0 | 2.0 / 2.0 |
| PE | 5.5 / 6.0 | 3.8 / 3.5 | 4.0 / 4.0 | 2.0 / 1.0 |
| VMBO | 5.4 / 5.7 | 4.0 / 4.0 | 3.2 / 3.0 | 1.9 / 1.0 |
| HAVO/VWO | 5.3 / 5.7 | 4.0 / 4.0 | 3.3 / 3.0 | 2.1 / 1.0 |
| MBO | 5.3 / 5.7 | 4.2 / 4.0 | 3.0 / 3.0 | 2.2 / 2.0 |
| HBO | 5.3 / 5.7 | 4.2 / 4.0 | 3.0 / 3.0 | 2.1 / 2.0 |
| WO | 5.2 / 5.7 | 4.5 / 4.5 | 3.6 / 4.0 | 2.5 / 2.0 |

Table 4: Means of the different motives Part II

The two tables show the importance of the different motives divided into sex, how many kids the respondents have in their households, with/without a partner, owners/renters, age, household income last year and highest education completed.

It seems to be differences in how important the respondents rate the different saving motives. Respondents rate the precautionary motive, the retirement motive, and the independence motive as important. The inter vivo transfer motive and the goal-saving motive are rated as less important than the before mentioned motives. The enterprise motive is the least important motive, but also the bequest motive and the calculation motive are rated as less important than the other motives.

It seems like kids in the household affect the different saving motives. For some of the saving motives, the effect is of more importance, and for others the effect is of less importance.

It seems like owners are more positive towards the different motives than renters.

The different saving motives also seem to vary with age. The independence motive, the goal saving motive and the enterprise motive are rated as more important for the young age group, than the older age group. It also seems like the older the respondents get the less important do they regard the different saving motives.

It seems to be differences in how much income a household has. It seems like higher income households rate the saving motives as more important than lower income households.

Education also seems to affect the different saving motives.

## 5.4 Regression

In the last two sections, I have shown the score on the different questions related to saving motives and the score when I sort the different questions to saving motives. The regression results will check if I can find some significant differences in the individual characteristics.

I did 16 regressions based on the different questions about saving motives. I was going to look at how individual characteristics could differentiate the saving motives, so I had each of the questions as a dependent variable.

As stated earlier I made dummy variables for most of my independent variables. The reference groups are women, individuals with no kids, without a partner, renters, young age, with low income and low education.

When I state that independent variable X has a strong positive effect on the relevant motive, I mean that the individual tends to choose a higher category on the scale from 1-7.

### 5.4.1 Regression bequest motive

| Bequest motive | Coefficients (standard error) | |
|---|---|---|
| | **Bequest motive 1** | **Bequest motive 2** |
| (Intercept) | 3.492 (0.391)*** | 4.007 (0.384)*** |
| Sex_male | -0.089 (0.056) | -0.370 (0.096)*** |
| Nomkids | 0.162 (0.056)** | 0.192 (0.054)*** |
| Partner | 0.078 (0.137) | -0.152 (0.132) |
| Own | 0.528 (0.129)*** | 0.531 (0.123)*** |
| mid_age | -0.530 (0.262)* | -0.591 (0.245)** |
| old_age | -0.162 (0.268) | -0.142 (0.249) |
| med_inc | -0.059 (0.206) | -0.088 (0.204) |
| high_inc | -0.022 (0.223) | 0.033 (0.222) |
| mid_edu | -0.237 (0.239) | -0.287 (0.247) |
| high_edu | -0.310 (0.245) | -0.430 (0.253) ○ |
| W −st1 | 9.08** | 14.99*** |
| W −st2 | 0.11 | 1.25 |
| W −st3 | 0.50 | 2.01 |
| # Observations | 1544 | 1670 |
| F(10, 1625) | 3.65 | 5.91 |
| Prob > F | 0.0001 | 0.0000 |
| R-squared | 0.0232 | 0.0344 |
| Adj R-squared | 0.0169 | 0.0286 |

**Table 5: Regressions bequest motive**

\*\*\*(0,001); \*\*(0,01); \*(0,05); ○(0,1); significance level

There were two questions measuring the importance of the bequest motive:

- to leave a house and/or other valuable assets to your children= Bequest 1
- to leave money to your children (or other relatives)= Bequest 2.

From the regressions, I see that being a man has a negative effect on the bequest motives relative to being a woman, but this effect is only significant for the bequest motive 2. Having more kids has a positive and significant effect on both of the bequest motives relative to not having kids. Ownership of accommodation has a positive effect on of both of the bequest motives relative to renting and is highly significant for both of the motives. Being middle age (36-59 year) has a negative and significant effect on both of the bequest motives relative to young respondents (<36 year). Being highly educated (vocational colleges or university education) have a negative effect on both of the bequest motives relative to the low educated respondents (primary education). The effect is only significant for the bequest motive 2.

## 5.4.2 Regression inter vivo transfer motive

| Inter vivo transfer motive | Coefficient (Standard error) | |
| --- | --- | --- |
| | Intervivos 1 | Intervivos 2 |
| (Intercept) | 4.262 (0.361)*** | 4.518 (0.348)*** |
| Sex_man | -0.074 (0.090) | -0.426 (0.088)*** |
| Nomkids | 0.195 (0.052)*** | 0.105 (0.050)* |
| Partner | 0.231 (0.126) ○ | 0.287 (0.122) * |
| Own | 0.152 (0.115) | -0.202 (0.113) ○ |
| mid_age | -0.250 (0.242) | -0.223 (0.230) |
| old_age | -0.114 (0.249) | 0.257 (0.234) |
| med_inc | 0.344 (0.188) ○ | 0.319 (0.184) ○ |
| high_inc | 0.535 (0.205)** | 0.349 (0.202) ○ |
| mid_edu | -0.092 (0.220) | -0.226 (0.219) |
| high_edu | -0.152 (0.226) | -0.373 (0.225) ○ |
| W –st1 | 10.68* | 19.70*** |
| W –st2 | 3.61○ | 0.09 |
| W –st3 | 0.40 | 2.50 |
| # Observations | 1567 | 1617 |
| F(10, 1625) | 4.19 | 5.92 |
| Prob > F | 0.0000 | 0.0000 |
| R-squared | 0.0262 | 0.0355 |
| Adj R-squared | 0.0199 | 0.0295 |

Table 6: Regressions inter vivo transfer motive

***(0,001); **(0,01); *(0,05); ○(0,1); significance level

There were two questions measuring the importance of the inter vivo transfer motive:

- To help your children if they have financial difficulties = Intervivos1
- To give presents or gifts to your children and/or grandchildren = Intervivos2

Being a man has a negative effect on both of the Inter vivo transfer motives relative to being a woman. The effect is only significant and highly significant for Intervivos2. Having kids have a positive and significant effect on both of the inter vivo transfer motives relative to not having kids. Having a partner has a positive and significant effect on both of the inter vivo transfer motives relative to not having a partner. Ownership of accommodation has a positive effect on intervivos1, and a negative and significant effect on intervivos2 relative to renting. Medium income households (between 14,000 and 40,000) and high income households (over 40,000) have a positive and significant effect on both of the inter vivo transfer motives, relative to the low income households (under 14,000). High educated respondents (HBO or WO) have a negative effect on both of the inter vivo transfer motives relative to the low educated respondents. The effect is only significant for intervivos2.

### 5.4.3 Regression retirement motive

| Retirement motive | Coefficient (Standard error) | |
|---|---|---|
| | **Retirement 1** | **Retirement 2** |
| (Intercept) | 5.019 (0.299)*** | 5.278 (0.273)*** |
| Sex_man | -0.316 (0.079)*** | -0.461 (0.073)*** |
| Nomkids | -0.112 (0.042)** | -0.109 (0.041)** |
| Partner | 0.081 (0.104) | 0.048 (0.094) |
| Own | 0.001 (0.101) | 0.051 (0.092) |
| mid_age | 0.327 (0.172) ○ | 0.226 (0.169) |
| old_age | 0.126 (0.177) | 0.188 (0.171) |
| med_inc | 0.213 (0.157) | 0.144 (0.146) |
| high_inc | 0.308 (0.174) ○ | 0.174 (0.162) |
| mid_edu | -0.017 (0.223) | -0.114 (0.189) |
| high_edu | 0.071 (0.228) | -0.215 (0.194) |
| W –st1 | 4.76** | 0.20 |
| W –st2 | 1.08 | 0.13 |
| W –st3 | 0.42 | 1.73 |
| # Observations | 1636 | 1828 |
| F(10, 1625) | 2.86 | 5.24 |
| Prob > F | 0.0015 | 0.0000 |
| R-squared | 0.0173 | 0.0280 |
| Adj R-squared | 0.0113 | 0.0227 |

Table 7: Regressions retirement motive

***(0,001); **(0,01); *(0,05); ○(0,1); significance level

There were two questions measuring the importance of the retirement motive:

- To supplement your old age pension = Retirement 1
- To have some extra money to spend when you are retired = Retirement 2

Being a man has a negative and significant effect on both of the retirement motives, relative to being a woman. Having kids have a negative and significant effect on both of the retirement motives, relative to having no kids. Being middle age (36-59 years) have a positive and significant effect on the retirement 1 relative to the young age group (<36 years). High income households (>40,000) have a positive and significant effect on the retirement 1 motive relative to low income households (<14,000).

### 5.4.4 Regression precautionary motive

| Precautionary motive | Coefficient (Standard error) | | |
|---|---|---|---|
| | **Precautionary 1** | **Precautionary 2** | **Precautionary 3** |
| (Intercept) | 5.771 (0.232)*** | 5.886 (0.186)*** | 6.144 (0.192)*** |
| Sex_man | -0.343 (0.062)*** | -0.266 (0.050)*** | -0.321 (0.052)*** |
| Nomkids | -0.014 (0.035) | -0.031 (0.029) | 0.012 (0.030) |
| Partner | -0.073 (0.080) | 0.075 (0.064) | 0.016 (0.067) |
| Own | 0.058 (0.078) | 0.123 (0.063)* | 0.007 (0.065) |
| mid_age | -0.453 (0.141)*** | -0.153 (0.115) | -0.176 (0.119) |
| old_age | -0.278 (0.143) ○ | -0.109 (0.116) | -0.009 (0.120) |
| med_inc | 0.185 (0.125) | 0.207 (0.100)* | 0.192 (0.104)○ |
| high_inc | 0.170 (0.138) | 0.166 (0.111) | 0.131 (0.115) |
| mid_edu | 0.067 (0.163) | 0.025 (0.127) | 0.084 (0.132) |
| high_edu | 0.208 (0.167) | 0.068 (0.131) | 0.019 (0.135) |
| W –st1 | 5.97* | 0.56 | 1.04 |
| W –st2 | 0.04 | 0.52 | 1.04 |
| W –st3 | 4.65* | 0.67 | 1.42 |
| # Observations | 1914 | 1936 | 1924 |
| F(10, 1625) | 5.87 | 4.39 | 5.56 |
| Prob > F | 0.0000 | 0.0000 | 0.0000 |
| R-squared | 0.0299 | 0.0223 | 0.0282 |
| Adj R-squared | 0.0248 | 0.0172 | 0.0231 |

**Table 8: Regressions precautionary motive**

***(0,001); **(0,01); *(0,05); ○(0,1); significance level

There were three questions measuring the importance of the precautionary motive.

- In order to cover future (high) expenses = Precautionary 1
- To have some savings to cover unforeseen expenses = Precautionary 2
- To have enough money in your bank account to be sure you will be able to meet your financial liabilities = Precautionary 3

Being a man has a negative and highly significant effect on all of the precautionary motives, relative to being a woman. Ownership of accommodation has a positive effect on the three precautionary motives relative to the renting, but the effect is only significant for precautionary motive 2. Being middle aged (36-59) and being old age (>59) has a negative and significant effect on precautionary motive 1. The middle income group (14,000-40,000) have a positive effect on the precautionary motives relative to the low income category (<14,000), but the effect is only significant on precautionary 2 and 3.

## 5.4.5 Regression independence motive

| Independence motive | Coefficient (Standard error) | | |
|---|---|---|---|
| | **Independence 1** | **Independence 2** | **Independence 3** |
| (Intercept) | 6.214 (0.242)*** | 6.266 (0.258)*** | 5.758 (0.262)*** |
| Sex_man | -0.330 (0.064)*** | -0.116 (0.069) ○ | -0.343 (0.070)*** |
| Nomkids | 0.017 (0.037) | -0.158 (0.039)*** | -0.047 (0.039) |
| Partner | -0.158 (0.084) ○ | -0.152 (0.089) ○ | 0.068 (0.091) |
| Own | 0.067 (0.081) | 0.228 (0.087)** | 0.033 (0.088) |
| mid_age | -0.352 (0.148)* | -0.385 (0.158)* | -0.626 (0.157)*** |
| old_age | 0.128 (0.149) | -0.578 (0.160)*** | -1.03 (0.159)*** |
| med_inc | 0.068 (0.129) | 0.430 (0.141)** | 0.173 (0.143) |
| high_inc | 0.062 (0.144) | 0.627 (0.156)*** | 0.085 (0.158) |
| mid_edu | -0.084 (0.170) | -0.274 (0.179) | -0.069 (0.184) |
| high_edu | -0.268 (0.174) | -0.376 (0.183)* | -0.217 (0.188) |
| W –st1 | 40.58*** | 5.76* | 25.22*** |
| W –st2 | 0.01 | 6.30* | 1.21 |
| W –st3 | 7.32○ | 1.98 | 4.04* |
| # Observations | 1905 | 1898 | 1839 |
| F(10, 1625) | 9.35 | 5.72 | 9.33 |
| Prob > F | 0.0000 | 0.0000 | 0.0000 |
| R-squared | 0.0470 | 0.0294 | 0.0486 |
| Adj R-squared | 0.0420 | 0.0243 | 0.0433 |

Table 9: Regressions independence motive

***(0,001);**(0,01); *(0,05); ○(0,1); significance level

There were three questions measuring the importance of the independence motive:

- So that you do not ever need to ask other people for financial help = Independence 1
- To increase your freedom so you can do what you want = Independence 2
- For a better future = Independence 3

Being a man has a negative and significant effect on the three motives, relative to being a woman. Having more kids have a negative significant effect on independence 2 relative to not having kids. Having a partner has a negative and significant effect on independence 1 and 2, relative to not having a partner. The effect is positive for independence 3, but not significant. Ownership of accommodation has a positive effect on all three motives relative to renting, but the effect is only significant for independence 2. The middle age group (36-59) has a negative and significant effect for all the independence motives, relative to the young age group (<36). The old age group (>59) has a negative and highly significant effect on independence 2 and 3 relative to the young age group (<36). High income households (over 40,000) have a positive and significant effect on independence 2 relative to the low income households (<14,000).

## 5.4.6 Regression goal-saving motive

| | Coefficient (Standard error) | |
|---|---|---|
| **Goal saving motive** | **Goal saving 1** | **Goal saving 2** |
| (Intercept) | 4.925 (0.368)*** | 5.490 (0.263)*** |
| Sex_man | -0.281 (0.093)** | -0.345 (0.071)*** |
| Nomkids | -0.083 (0.051) ○ | -0.103 (0.040)* |
| Partner | -0.096 (0.124) | 0.056 (0.092) |
| Own | 0.573 (0.125)*** | 0.008 (0.090) |
| mid_age | -1.823 (0.201)*** | -0.566 (0.162)*** |
| old_age | -2.446 (0.159)*** | -0.534 (0.164)*** |
| med_inc | -0.153 (0.193) | 0.391 (0.145)** |
| high_inc | 0.018 (0.211) | 0.345 (0.161)* |
| mid_edu | 0.133 (0.275) | -0.075 (0.180) |
| high_edu | 0.360 (0.279) | -0.088 (0.185) |
| W –st1 | 32.39*** | 0.15 |
| W –st2 | 2.60 | 0.32 |
| W –st3 | 5.33* | 0.03 |
| # Observations | 1563 | 1905 |
| F(10, 1625) | 20.89 | 5.44 |
| Prob > F | 0.0000 | 0.0000 |
| R-squared | 0.1186 | 0.0279 |
| Adj R-squared | 0.1130 | 0.0228 |

**Table 10: Regressions goal-saving motive**

***(0,001); **(0,01); *(0,05); ○(0,1); significance level

There were two questions measuring the importance of the goal saving motive:

- So that you can buy a (different) apartment or house in the future = Goal saving 1
- To buy durable goods (such as furniture, electrical equipment or bikes) in the future = Goal saving 2

Being a man has a negative and significant effect on the two motives, relative to being a woman. Having more kids has a negative and significant effect on both of the motives, relative to not having kids. Ownership of accommodation has a positive significant effect on the goal saving 1, relative to renting. The middle age (36-59) and old age group (>59) have a negative and significant effect on both the motives, relative to the young age group (<36). Medium (14,000-40,000) and high (>40,000) income households have a positive and significant effect on goal saving 2, relative to low income households (<14,000).

### 5.4.7 Regression calculation motive

| Calculation motive | Coefficient (Standard error) Calculation |
|---|---|
| (Intercept) | 4.398 (0.336)*** |
| Sex_man | -0.015 (0.089) |
| Nomkids | -0.123 (0.050)* |
| Partner | -0.133 (0.117) |
| Own | 0.395 (0.115)*** |
| mid_age | -0.564 (0.201)** |
| old_age | -0.338 (0.204) ○ |
| med_inc | -0.118 (0.185) |
| high_inc | 0.063 (0.203) |
| mid_edu | -0.811 (0.236)*** |
| high_edu | -0.757 (0.241)** |
| W –st1 | 4.76* |
| W –st2 | 3.18○ |
| W –st3 | 0.34 |
| # Observations | 1729 |
| F(10, 1625) | 5.47 |
| Prob > F | 0.0000 |
| R-squared | 0.0308 |
| Adj R-squared | 0.0252 |

Table 11: Regressions calculation motive

***(0,001); **(0,01); *(0,05); ○(0,1); significance level

There was one question measuring the importance of the calculation motive:

- To generate income from interests or dividends = Calculation

Having more kids has a negative and significant effect on the motive, relative to having no kids. Ownership of accommodation has a positive and significant effect on the motive, relative to renting. The middle (36-59) and old age (>59) group have a negative and significant effect on the motive, relative to the young age group. The middle and high educated have a negative and significant effect on the motive, relative to the low educated group.

### 5.4.8 Regression enterprise motive

| Enterprise motive | Coefficient (Standard error) |
| --- | --- |
| | **Enterprise** |
| (Intercept) | 3.332 (0.311)*** |
| Sex_man | 0.052 (0.080) |
| Nomkids | -0.163 (0.106)* |
| Partner | -0.162 (0.106) |
| Own | -0.067 (0.104) |
| mid_age | -0.423 (0.170)* |
| old_age | -1.050 (0.177)*** |
| med_inc | -0.613 (0.161)*** |
| high_inc | -0.616 (0.177)*** |
| mid_edu | -0.019 (0.227) |
| high_edu | 0.181 (0.231) |
| W –st1 | 44.49*** |
| W –st2 | 0.00 |
| W –st3 | 5.65* |
| # Observations | 1332 |
| F(10, 1625) | 12.78 |
| Prob > F | 0.0000 |
| R-squared | 0.0882 |
| Adj R-squared | 0.0813 |

Table 12: Regressions enterprise motive

***(0,001); **(0,01); *(0,05); ○(0,1); significance level

There was one question measuring the importance of the enterprise motive:

- To set up your own business = Enterprise

Having more kids have a negative and significant effect on the motive relative to not having kids. The middle (36-59) and old age (>59) group have a negative and significant effect on the motive, relative to the young age group (<36). The middle (14,000-40,000) and high (>40,000) income households have a negative and significant effect on the variable, relative to the low income (<14,000) households.

I put the results from my regression in a table to see if there is a distinct effect of the different individual variables.

| | Man | Kids | Partner | Own | **Age** | | **Income** | | **Education** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | **Man** | **Kids** | **Partner** | **Own** | **Mid** | **Old** | **Med** | **High** | **Med** | **High** |
| Bequest1 | N | **P** | P | **P** | N | N | N | N | N | N |
| Bequest2 | **N** | **P** | N | **P** | N | N | N | P | N | N |
| Intervivos1 | N | **P** | **P** | P | N | N | P | **P** | N | N |
| Intervivos2 | **N** | P | P | N | N | P | P | P | N | P |
| Retirement1 | **N** | **N** | P | P | P | P | P | P | N | P |
| Retirement2 | **N** | **N** | P | P | P | P | P | P | N | N |
| Precautionary1 | **N** | N | N | P | **N** | N | P | P | P | P |
| Precautionary2 | **N** | N | P | P | N | N | P | P | P | P |
| Precautionary3 | **N** | P | P | P | N | N | P | P | P | P |
| Independence1 | **N** | P | N | P | N | P | P | P | N | N |
| Independence2 | N | **N** | N | **P** | N | **N** | **P** | **P** | N | N |
| Independence3 | **N** | N | P | P | N | N | P | P | N | N |
| Goal-saving1 | **N** | **N** | N | **P** | N | **N** | N | P | P | P |
| Goal-saving2 | **N** | **N** | P | P | N | **N** | **P** | **P** | N | N |
| Calculation | N | **N** | N | **P** | N | N | N | P | **N** | **N** |
| Enterprise | P | **N** | N | N | N | **N** | **N** | **N** | N | P |

**Table 13: Regressions: Effects and significance overview**

- N= negative coefficient
- P= positive coefficient
- Bold and underscore = highly significant
- Underscore = slightly significant

Based on the regressions I see that being a male has an overall negative effect on choosing higher categories on the different questions regarding saving motives relative to being a woman. The only time being a man has a positive effect is for the enterprise motive, but this effect is not significant.

Having more kids have for most of the motives a negative effect on reporting a high score on the different motives relative to not having kids. Having more kids have a positive effect for motives directly involving children, such as the bequest motive and the inter vivo transfer motive.

Having a partner in the household have a positive and significant effect on the inter vivo transfer motive, and a negative and significant effect for two of the questions regarding the independence motive relative to not having a partner in the household.

Ownership of accommodation has an overall positive effect on choosing a higher category for the different saving motives relative to renting. The effect is only negative for the intervivos 2 and the enterprise motive. I note that it is a positive and significant effect on both of the questions measuring the bequest motive.

It seems to be an overall negative effect on choosing a higher score on the different motives for the middle-age (36-59) and the old-age group (>59), relative to the young age group (<36). I note that there is a positive effect on the retirement motive.

It seems to be an overall positive effect on choosing a higher category for the different motives for the middle income households (14,000-40,000) and high income households (>40,000), relative to low income households (<14,000). I note that there is a negative but not significant effect on the bequest motive, and a negative and highly significant effect on the enterprise motive.

It seems to be a pattern also for the different education groups. The medium educated group has a negative effect on the bequest-, inter vivo transfer-, retirement-, independence-, calculation- and enterprise motive, relative to the low educated group. Most of the effects are not significant. The high educated group has a negative effect on the bequest motive, the independence motive, the retirement2, goal-saving2 motive and the calculation motive, relative to the low educated group. The effect is only significant for the calculation motive, the independence 2 motive and the bequest2 motive.

### 5.4.10  Comments to the regressions

**<u>R-squared and Adj R-Squared</u>**

Based on the regression results I see that the regression models and the variables I have included have low explanatory value to the whole variance in the different questions regarding the saving motives. The highest R-squared I get is from the goal-saving 1 motive (11.86% and 11.30% respectively). The point of the regressions was not to explain the whole variations in the different saving motives, but to see if there are differences among the individual characteristics and if these differences were significant.

**<u>F-test</u>**

STATA automatically conducts an F-test in each of the regressions, and tests the null hypothesis that nothing is going on in the regressions. In other words, it tests whether all of the coefficients on my independent variables are equal to zero. STATA rejects the null hypothesis with extremely high confidence in each of the regressions. The field **Prob>F** shows this test, and we can reject this hypothesis with extremely high confidence in each regressions. If we look at the test for bequest motive 1, we see that Prob>F=0.0001, and this means that we can reject the null hypothesis with a 99.99% confidence. All of the regressions show similar results. So even though the explanation power to the models as a whole is low, there is something going on in the tests.

**<u>Wald-statistics</u>**

As mentioned, the Wald statistic shows if two variables are the same.

*<u>W-st 1: Med age = old age</u>*

We can reject the null hypothesis in most of the cases. For the motives Retirement 2, precautionary 2 and 3, goal saving 2 we cannot reject the null hypothesis, and in these cases we cannot be sure that the medium age variable and the old age variable are not the same.

*<u>W-st 2: Med inc=high inc</u>*

We cannot reject the null hypothesis in most of the cases. Only for the motives Intervivos1, calculation and independence 2 we can do this. In the other cases, we cannot be sure that the medium income variable and the high income variable are the same.

We can reject the null hypothesis for the precautionary 1 motive, the independence motive 1 and 2, goal saving motive 1 and the enterprise motive. In the other cases, we cannot be sure that the medium education variable and the high education variable are the same.

# 6. Discussion

## 6.1 Discussion of the results and my expectations

Based on the answers to questions regarding the saving motives, I will discuss the results against my own research questions and expected results.

My first research question was to find the most important motive for saving in the Netherlands. In my overview of the means on the questions regarding the saving motives, I found that the three most important stated reasons for saving were:

- To have enough money in your bank account to be sure you will be able to meet your financial liabilities.
- To have some savings to cover unforeseen expenses
- So that you do not ever need to ask other people for help

From table 2,3 and 4 in chapter 5 I looked at the stated importance of different questions relating to saving motives, and the importance of the different saving motives. The two most important stated reasons relate to the precautionary motive, and when I sorted the questions into different motives I also saw that the precautionary motive was the most important reason for saving. The retirement motive was rated as a very important saving motive, rated below the precautionary motive and the independence motive. I also saw that the bequest motive and the enterprise motive were among the saving motives that had the lowest score. This was in line with my expectations about the importance of saving motives.

From the regression results, I see that the characteristics that distinguished the most of how respondents rated the saving motives were gender. I saw that men rated the motives as less important than women, and that this was significant for almost all of the motives. I could also see this when I looked at the means on the different motives earlier. This result was in line with my expectations.

Having more kids did not have a positive effect on the precautionary motive as I expected, however, it did have a negative effect on the retirement motive. Having more kids affected the other motives, as well. Respondents with more kids rated the bequest and the inter vivo transfer motive as more important than respondents without kids. The result was in line with my expectations.

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I expected that individuals with partner rated the different motives as more important than individuals without a partner. This was only significant on the inter vivo transfer motive. The rest of the motives got both positive and negative effects on having a partner. The results were not in line with my expectations as most of the effects of this variable were inconclusive.

I expected that owners rated the importance of saving motives as more important than individuals who rented. I found this to be true for most of the motives, and the results were in line with my expectations.

I expected that there would be differences in the importance of saving motives between age categories. I found that middle age individuals (36-59) and old age individuals (+ 59) rated the retirement motive as more important than young age individuals, and this was in line with my expectations. I found the opposite for the precautionary motive, and this was also in line with my expectations.

I expected that household with higher household income would regard the saving motives as more important than households with lower household income. Based on the regressions I found this to be true for most of the motives, except for the enterprise motive. The findings were in line with my expectations.

I expected that individuals with higher education would regard the saving motives as more important than individuals with lower education. Based on the regressions the expectations were not met. Individuals with higher education seemed to rate the precautionary motive as more important than individuals with lower education, but for most of the other motives individuals with higher education rated the different motives as less important than individuals with lower education.

## 6.2 The importance of the saving motives and previous research

The table of means in section 5.2 shows an overview of the answer to the importance of each of the questions regarding saving motives. I also divided the questions into eight different saving motives, and showed the means and medians for different groups based on the individual characteristics of the respondents.

We see that the precautionary saving motive is considered the most important saving motives for individuals in the Netherlands while the bequest motive, calculation motive and the enterprise motive are the least important. This is consistent with previous findings (Katona, 1975; Nyhus 2002). The ranking is also somewhat in line with what Kasilingam & Jayabal (2011 p.69) found, although they divided and named the motives a bit different than I did. The high importance of the precautionary motive is also supported by other researchers (Harris et.al (2002 p 208-209); Halvorsen (2011 p 33); Horioka & Watanabe (1997 p 537); Lindquist (1981 p 128)).

I also found the independence motive to be very important for the respondents. While I did not find a lot of evidence of the importance of this motive by other researchers, I note that there is a tendency for individuals in the Netherland to have rate financial freedom and financial independency as important motives for saving. The high importance of the independence motive are somewhat supported by Kasilingam & Jayabal (2011 p 69).

The retirement motive is also ranked high by the respondents. The high importance of the retirement motive is supported by other researchers. (Kasilingam & Jayabal (2011); Harris et.al (2002); Xiao & Noring (1994); Katona (1975)). The high importance of the retirement motive can somewhat be explained by age of the respondents, and that most of the respondents are in an age close to retirement and therefore, regard the motive as more important than other motives.

The inter vivo transfer motive and the goal saving motive are of somewhat medium importance for the respondents. I cannot conclude a lot based on this observation, but I note that Harris et.al (2002) found that saving for holidays were one of the most important reasons for saving. The questionnaire did not ask about saving for holidays, but it asked about durable goods.

The bequest motive was of less importance for the respondents. For me the result is surprising, I would have expected the bequest motive to be of higher importance due to the overweight by older respondents in the survey. It seems like most of the participants rather would consider the inter vivo transfer motive more important, like to help their children if they are in financial difficulties or giving them gifts. The low score of the bequest motive is, however, in line with previous research (Lindqvist (1981); Harris et.al (2002); Nyhus (2002).

The least important saving motive was the enterprise motive. The low rating is supported by other researchers (Kasilingam & Jayabal (2011); Nyhus (2002)).

## 6.3 The individual characteristics on saving motives

Based on the regressions I explored how individual factors can affect how individuals rate the different saving motives.

Being a male has an overall negative effect on reporting a high score on the different saving motives relative to being a woman. The only motive that reports a positive effect is for the enterprise motive, but this effect is not significant. The effect is significant for almost all questions regarding the saving motives. This is consistent with the findings of Nyhus (2002).

I found that having more kids in the household had a negative effect on reporting a high score on the different saving motives relative to not having kids. The exception is for the bequest and the inter vivo transfer motive, and this finding is supported by Harris et.al (2002). Not surprisingly are individuals with children in the household rating motives that involve children, either bequest motive or inter vivo transfer motive, higher than individuals without children.

I found that there were some differences in the reported saving motives with respondents who had a partner in the household relative to those who did not have a partner. Having a partner had a positive effect on reporting a high score on the retirement motive, the inter vivo transfer motive and the precautionary motive, relative to respondents without a partner. There were also negative effects on the independence motive, the calculation motive and the enterprise motive. Xiao & Noring (1994) suggested that perceived saving motives were different in

terms of marital status, and even though I did not look at the marital status as they did, I saw that partnership status had an effect on the different saving motives.

I found that homeowners had a positive effect on reporting a high score on most of the motives measured in the questionnaire. Browning & Lusardi (1996 p 1816) found saving to be higher for homeowners, and I found that homeowners also rated the different saving motives of more importance than renters.

I was a little surprised by the results I got by looking at the age. It seemed like except for the retirement motive, there was a negative effect on all the other variables for the old and middle age group, relative to the young age group. This implies that young respondents rated the different saving motives as more important than the older age respondents, and is not in line with the finding of Furnham (1985). Harris et.al (2002) found motives to be different when the age of the respondents were different. He used different age categories than I did, but I note that the goal saving motive was more important for young respondents than older age respondents, and this was supported by this research.

I found an interesting thing with regards to income. The medium and higher income categories seemed to be more positive towards the saving motives, than the low income category. As suggested by Xiao & Noring (1994) I saw that income could explain why individuals differentiate the saving motives. I also found that the importance of the retirement motive increased when income increased, and this is supported by Harris et.al (2002).

In terms of education, I found that respondents with medium or high education rated the bequest motive and the independence motive as less important relative to the low educated group. The precautionary motive was rated as more important by these groups relative to the low education group. There was also a significant negative effect on the calculation motive, relative to the low educated group. So the low educated group seemed to be more interested in generating income from interests and dividends. So I found out that there were differences among the education groups as suggested by Furnham (1985) and Xiao & Noring (1994).

Based on the regression results I saw that there were differences in perceived saving motives in terms of gender, number of kids in the household, partnership, type of accommodation, age, household income and education. This finding is supported by Xiao & Noring (1994).

## 7. Conclusion

In the interesting area of saving, I looked at the saving motives of individuals in the Netherlands.

In my thesis, I found that the respondents rated most of the motives for saving with high importance. I found that the precautionary motive was the most important saving motive for the respondents. They also rated the retirement motive and the independence motive as very important. The bequest motive, the calculation motive and the enterprise motive were rated as less important.

I found that gender played an important role when explaining how individual characteristics can affect the motives for saving. Men were rating the saving motives as less important than women. I also found that having more kids in the household, were associated with the saving motives. Not surprisingly, individuals with more kids in the household rated the motives concerning kids (like the bequest motive and the inter vivo transfer motive) as more important than individuals without kids. Individuals with more kids were more negative than individuals without kids, for other motives like retirement and goal-saving.

I found an interesting thing about homeowners. Individuals who owned a home rated the different saving motives as more important than individuals who did not own a home.

I found age to be strongly linked to the different saving motives. Older Individuals seemed to rate the motives as less important than younger individuals. This was not evident for the retirement motive.

There were also some interesting findings on income, and individuals with high income seemed to rate the different motives as more important than individuals with low income.

There were some explanations on the effect of education. Higher educated individuals rate the precautionary motive as more important than the lower educated individuals. They also rated the independence motive and the bequest motive as less important than the lower educated individuals.

# 8. Limitations and suggestions for future work

## 8.1 Limitations

The first limitation I am going to mention is the fact that the different questions were measuring what can be viewed as more than one motive. So the classification of the different questions relating to the different motives is somewhat a subjective classification from me. Of course, many of them relate to previous researchers' opinion about what different questions are measuring, but either way the formulation in the questions can make them measure not one but several motives.

The second limitation is that individuals can give answers to questions regarding saving motives, based on what the society "expects" them to answer. This can make the questions not reliable because we do want to measure ones opinion and not what the society would expect them to answer.

The third limitation is that for some of the motives we get missing values. We get missing values for individuals who answered -7 (not applicable) to the relevant question. The questions regarding the two motives that I choose, the precautionary motive and the retirement motive, had a low number of missing values compared to, for example, the bequest motive. The reason why I mention this is that the "not applicable" saving alternative, can by my opinion also give an understanding of the importance. Some individuals can use the not applicable answering choice because they do not think of this as a motive at all. Even though, they do not give an indication on the importance, the answer might mean that they do not regard it as important. I used a lot of time to see if I could take these answers into account when I did my research, but I finally decided to put these values as missing values. The answers to the different motives are, therefore, based on individuals who actually answered 1-7, and exclude those who answered not applicable.

I notice that while there is a distinction between the ratings of importance, it seems to be a pretty high importance for most of the saving motives. It can be argued of what is a high importance. The rating of importance goes from 1 to 7. 11 of 16 questions have an overall mean score of 4.4 or more. If I say that 4.0 is the boundary between unimportant and important, 11 of 16 questions are classified as important motives, and 5 of 11 are classified as unimportant. I will not go further into what is meant by important or not important, but I

notice that a rating of 4.4 do not necessarily mean that the motive is important. I would, however, say that ratings above 5 are an indication that the motive is important, and ratings below 3.0 are an indication that the motive is unimportant.

Books in methodology are warning about categorization of continuous variables. This is due to the fact that the boundaries often are random set and that categorization is reducing the variances. This will in turn affect the relationship between the variables. It was difficult to categorize the age variable. The distinction between the young age – middle age – and old age were a little random. I wanted to set a lower limit to the young age group, but since I got so few respondents I had to set the age limit higher, and 35 seemed as a reasonable limit to be viewed as a young respondent. I think that when individuals are 35 years many households are in the start of building a family because most individuals then have finished their education and have kids. The limit for the middle age and the high age group could also be discussed, but I landed on categorizing individuals aged 60 years or higher as old individuals.

There could also be objections against my categorization of the income variable and the education variable. I was not quite sure what low, medium and high income was in Holland. Since it was 6 original categories, I simply defined the two lowest income categories as low income, the two middle income categories as middle income, and the two highest categories as high income. I classified the education categories after I searched for the education system in the Netherlands, and the categorization could be objected by some people.

## 8.2 Suggestions for future work

My thesis explored the saving motives and how individual characteristics can explain why individuals rate motives for saving differently. It could be interesting to look at the relationship between saving motives and actual savings. I wanted to do this in my thesis, but due to missing values I could not retrieve enough data to give a proper analysis of this connection. Researchers have done this in the past (Fisher & Anong, (2012); Kasilingam & Jayabal (2011)) and it would be interesting to do further research on this topic. It would also be interesting to include more variables to explain why individuals have different motives for saving. It would also be interesting to take more individual characteristics into consideration when explaining why individuals have different motives for saving.

# Appendix

## Part of the questionnaire from the DNB Household Survey 2012

The appendix contains the questions that I used from the DNB Household Survey 2012. I also used data from questions regarding the individual characteristics, but these questions are not presented here. The full questionnaire and the documentation can be downloaded from CentERdata (http://cdata3.uvt.nl/dhs/users/login). The codebook named Wave 2012 was the DNB Household Survey of 2012. The questions that are presented are from page 165 in the questionnaire.

There may be many different reasons for saving money for a shorter or a longer period of time. Please indicate your opinion about each statement mentioned below.

**How important is it for you to have money saved?"**

Please indicate on a scale from 1 to 7 how important it is to you.

1 being "very unimportant"

7 being "very important"

1. SPAARM01: to leave a house and/or other valuable assets to your children.
2. SPAARM02: to help your children if they have financial difficulties
3. SPAARM03: to supplement your general old-age pension
4. SPAARM04: in order to cover future (high) expenses
5. SPAARM05: so that you do not ever need to ask other people for financial help
6. SPAARM06: so you can buy a (different) apartment or house in the future
7. SPAARM07: to generate income from interests or dividends
8. SPAARM08: to increase your freedom so you can do what you want
9. SPAARM09: to leave money to your children (or other relatives)
10. SPAARM10: to have some savings to cover unforeseen expenses
11. SPAARM11: to have some extra money to spend when you are retired
12. SPAARM12: to set up your own business
13. SPAARM13: to give presents or gifts to your children and/or grandchildren
14. SPAARM14: to have enough money in your bank account to be sure you will be able to meet your financial liabilities
15. SPAARM15: to buy durable goods (such as furniture, electrical equipment or bikes) in the future
16. SPAARM16: for a better future

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