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Health Insurance in the Netherlands

The Effect of Socio-Demographic Factors on the Individuals' Level of Health Insurance Coverage

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Health Insurance in the Netherlands: the Effect of Socio-demographic Factors on the Individuals' Level of Health Insurance Coverage

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"In order to succeed you must fail, so that you know what not to do the next time."

(Anthony J. D'Angelo)

Abstract

This study determines the effect of the socio-demographic factors gender, age, income, parenthood status, health status, health history, risk attitude towards health and susceptibility to informational influence on the individuals' level of health insurance coverage, within the context of the Dutch health insurance system in 2011. The levels of health insurance coverage under study were the level of additional deductible and the level of complementary health insurance coverage. The individuals' level of additional deductible was based on actual choices, while their level of complementary health insurance coverage was determined using a framework of complementary heath insurances; by counting the number of complementary health insurances the individual had selected from the framework, a hypothetical level of complementary health insurance coverage was obtained.

In the study, no significant effect of the socio-demographic factors on the level of additional deductible was found. For the level of complementary health insurance coverage, two socio-demographic factors had significantly effect on the number of complementary health insurances individuals had selected from the framework. Firstly, gender had a significant effect: females were likely to have more complementary health insurances than males. Secondly, parenthood status had a significant effect: individuals with underaged children were likely to have more complementary health insurances than individuals without underaged children.

Besides their effect on the number of complementary health insurances, the effect of the socio-demographic factors was also tested for the level of complementary health insurance coverage for seven types of medical services. The results of these data analyses revealed that the effect of the socio-demographic factors differed between the types of medical services.

The socio-demographic factor risk attitude towards health was included in the study as a mediator. Though no mediation effects could be identified, it was found that gender, income and personal health history all had a significant effect on the risk attitude towards health. In particular, females as well as individuals with higher levels of income were more risk averse towards health, while individuals reporting higher levels of perceived severity for their personal health history were more risk seeking towards health.

The study offers support in the debate on which socio-demographic factors affect the individuals' level of health insurance coverage. From a managerial perspective, study was relevant because the insights in the effect of socio-demographic factors on the individuals' level of health insurance coverage may help health insurers to stay competitive. They can use these insights to improve their marketing strategies, like product development, risk selection and marketing and advertising campaigns.

Keywords: Dutch health insurance system, level of health insurance coverage, socio-demographic factors, additional deductible, complementary health insurance

Acknowledgements

I am proud to present this master thesis as a conclusion of my study. It has been a long journey in which I learned a lot about myself. My perfectionism and the maybe slightly ambitious size of my thesis have led to the fact that it took me some time to finish it.

I am proud of the final outcome and first of all I would like to thank Mister Benedict Dellaert for contributing to this. He gave me a lot of good advice and helped me to stay on track the entire time. Secondly, I would like to thank my family for being supportive and loving along the way (mom, it is finally over). I would also like to thank my girlfriend for the moral support and for taking care of the household so I did not have to worry about that. Finally, I would like to thank my best friends for standing by me all this time.

Looking back at the period of writing this thesis I would have done a lot of things differently, but I guess that counts for most people. I am glad it is finished though I learned a lot from this writing process. I hope you will enjoy reading it.

Marco van Ree
Rotterdam, September 2013

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List of Abbreviations

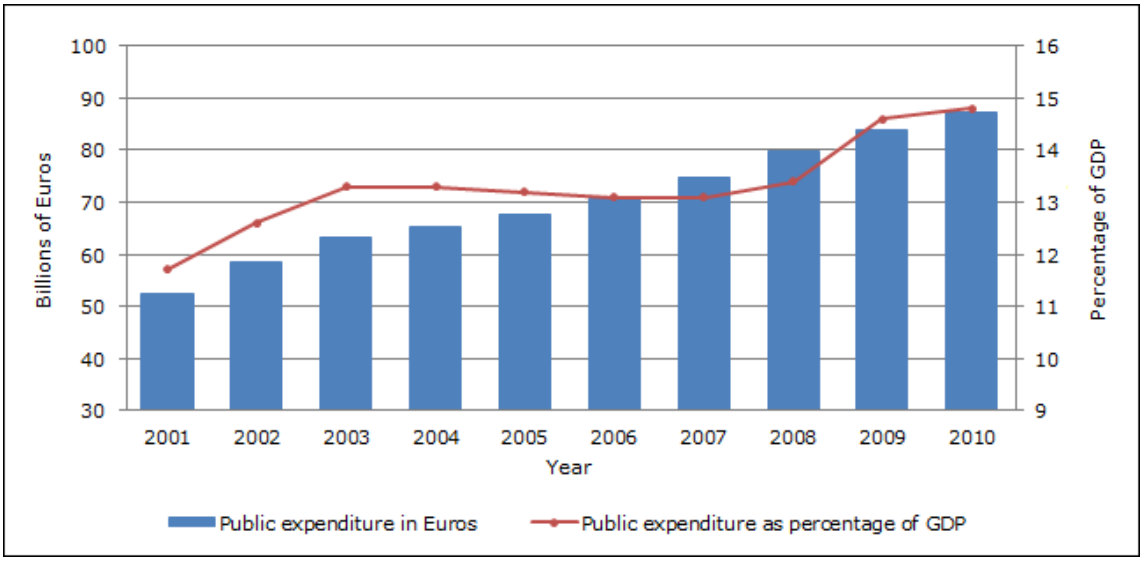
AWBZ	Algemene Wet Bijzondere Ziektekosten	Exceptional Medical Expenses Act
CBS	Centraal Bureau voor de Statistiek	Statistics Netherlands
CVZ	College van Zorgverzekeringen	Health Care Insurance Board
OECD	Organisatie voor Economische Samenwerking en Ontwikkeling	Organisation for Economic Cooperation and Development
RIVM	Rijksinstituut voor Volksgezondheid en Milieu	Netherlands National Institute for Public Health and the Environment
SCV	Stichting Consument en Veligheid	Consumer Safety Institute
VTV	Volksgezondheid Toekomst Verkenning	Public Health Status Forecast
VWS	Ministerie van Volksgezondheid, Welzijn en Sport	Ministry of Health, Welfare and Sport
ZFW	Ziekenfondswet	Sickness Funds Act
Zvw	Zorgverzekeringswet	Health Insurance Act

1 Introduction

1.1 Background

Public expenditure on health care in the Netherlands has rapidly increased over the last decade. From 2001 to 2010, public expenditure on health care in euros almost doubled, while the percentage of gross domestic product spent on health care raised from 11.7 percent to 14.8 percent (see Figure 1.1) (Centraal Bureau voor de Statistiek [CBS], 2012a). The main reason for this increase in public expenditure on health care was volume growth in health care; important determinants of this volume growth were the ageing of the Dutch population and increased welfare which caused persistent innovations in medical technology, more demanding individuals with respect to health and health care, and changes in epidemiology. Moreover, the prices in health care have increased, mainly due to the so-called "Baumol cost-disease effect" (Ministerie van Volksgezondheid, Welzijn en Sport [VWS], 2012).

Figure 1.1: Public Expenditure on Health Care in the Netherlands from 2000 to 2010, in Billions of Euros (Current Prices) and as Percentage of Gross Domestic Product (GDP)



Source: CBS (2012a)

Public expenditure on health care can be financed in different ways (Hsiao & Liu, 2001). In the Netherlands, the most important instrument that is used to finance health care is health insurance. In 2010, over seventy percent of the public expenditure on health care in the Netherlands was financed through the contributions of health insurance (CBS, 2012a). This percentage is higher than most other developed countries in the world (Organisation for Economic Cooperation and Development [OECD], 2009).

The Dutch health insurance system consists of three parallel compartments of health insurance, each under different regulatory regimes (Den Exter *et al.*, 2004) (see Table 1.1). The so-called "first compartment" refers to the system of health insurance for long-term care and high-cost treatment and is regulated by the Exceptional Medical Expenses Act or "Algemene Wet Bijzondere Ziektenkosten" (AWBZ) (Schäfer *et al.*, 2010). The AWBZ is a national insurance: with a few exceptions, all individuals who are legally residing or working in the Netherlands are mandatory enrolled (VWS, 2005a). The main reason is that the cost of health care covered by the AWBZ are such that they cannot be borne by individuals or adequately covered by private health insurance (Den Exter *et al.*, 2004). Individuals contribute to the AWBZ through an income-dependent contribution that is collected through the income and payroll tax systems. In addition, co-payments are required for most types of medical services covered by the AWBZ (Schut & Van den Berg, 2010).

The second compartment refers to the system of health insurance for essential curative care, regulated by the Health Insurance Act or "Zorgverzekeringswet" (Zvw) (Schäfer *et al.*, 2010). The Zvw is constructed under private law, but is perceived as a public health insurance system as it consist of different public limitations to preserve solidarity in and universal access to essential curative care (Maarse & Bartholomée, 2006). The Zvw mandates everybody who is covered by the AWBZ to take out a government-determined health insurance for essential curative care, also known as basic health insurance or "basisverzekering", from a private health insurer. These health insurers are obliged to accept every applicant at the same community-rated nominal premium, irrespective of age, gender or health status (VWS, 2005a). Individuals with an annual income below a certain threshold are eligible to receive health care allowance or "zorgtoeslag" from the Dutch government (Maarse, 2009). The basic health insurance has a mandatory deductible of €170 per year, which can be raised voluntary with an additional deductible varying between €100 and the legal maximum of €500 per year; opting for an additional deductible will lower the nominal premium of the individual for basic health insurance.[1] Besides the nominal premium, individuals contribute to the Zvw through an income-dependent employer contribution which is deducted through their payroll (Schäfer *et al.*, 2010).

The third compartment refers to the system of health insurance for health care that is neither covered by the AWBZ nor Zvw, also known as complementary health insurance or "aanvullende verzekering" (VWS, 2005a).[2] The compartment is not regulated by the Dutch government: it is a private market in which health insurers are free to design their own complementary health

[1] In 2011, the average exchange rate EUR/USD was €1.000/$1.337 (Internal Revenue Service, 2013).

[2] Most developed countries have a mixed health insurance system of public and private health insurance. However, the function of private health insurance may differ from country to country. Private health insurance may serve three functions. Firstly, as an alternative to public health insurance for individuals without access to the public health insurance system or are free to opt out of the public health insurance system. Secondly, as a supplement to public health insurance, providing access to more "luxurious" primary health care and/or providing coverage for co-payments and deductibles of public health insurance. Thirdly, as a complement to public health insurance, providing coverage for health care that is excluded from public health insurance (Wasem, Greß & Okma, 2004).

insurances, and also determine the acceptance rules. As a result, a great variety of complementary health insurances is available (Van Gameren, 2010). Purchasing complementary health insurance is on a voluntary basis (Maarse, 2009).

Table 1.1: Key Characteristics of the Dutch Health Insurance System in 2011

Compartment	Type of health care	Act	Status	Participation
One	Long-term care and high-cost treatment	AWBZ	Public	Mandatory
Two	Essential curative care	Zvw	Private public	Mandatory
Three	Luxury health care	None	Private	Voluntary

Sources: Maarse (2009), Schäfer *et al.* (2010)

Before 2006, the Netherlands had a fragmented system of health insurance for essential curative care (VWS, 2005a). Two-thirds of the Dutch population was mandatorily covered by the Sickness Funds Act or "Ziekenfondswet" (ZFW), while voluntary private health insurance was available for the remaining one-third (Maarse, 2009). Though the fragmented system achieved nearly universal coverage, it suffered from several deficiencies (Stewart, 2008).[3] Firstly, the fragmented system was characterized as complex. For example, how an individual was covered depended on their income, civil status, work situation and health status (VWS, 2005b). Secondly, there were many examples of what was considered to be an unfair distribution of the financial burden in paying for health insurance between the ZFW and the voluntary private health insurance system (Maarse, 2009). Thirdly, the fragmented system failed to promote efficiency and innovation in health care due to heavy supply-side intervention by the Dutch government, threatening the affordability of the Dutch health care system in the long run (Van de Ven & Schut, 2008).

To improve the efficiency, quality and affordability of the health care system while preserving solidarity and universal access, the Netherlands reformed the second compartment of the health insurance system in January 2006 (Maarse, 2009). The fragmented system was abolished and replaced by the Zvw.[4] The introduction of the Zvw changed the role of the individual on the Dutch health insurance market fundamentally (Schäfer *et al.*, 2010). It broadened the options for individuals to choose the level of health insurance coverage that best fit their preferences (Rosenau & Lako, 2008). Since the introduction of the Zvw, individuals participate within the Dutch health insurance system under the same conditions. Therefore, they have to make similar choices with respect to their level of health insurance coverage. The object of this study is to determine if individuals with similar socio-demographics (also) prefer similar levels of health insurance coverage.

[3] In 2005, about 1.5 percent of the Dutch population was not covered by the ZFW or by voluntary private health insurance (Van de Ven & Schut, 2008).

[4] For an overview of the key characteristics of the Dutch system of health insurance for essential curative care before and after the introduction of the Zvw in 2006, please refer to appendix A.

1.2 Research Question

The research question in the current study is:

"What is the effect of the socio-demographic factors gender, age, income, parenthood status, health status, health history, risk attitude towards health and susceptibility to informational influence on the individuals' level of health insurance coverage, within the context of the Dutch health insurance system?"

1.3 Research Objective

The research objective of the current study is to determine the effect of the socio-demographic factors gender, age, income, parenthood status, health status, health history, risk attitude towards health and susceptibility to informational influence on the individuals' level of health insurance coverage, within the context of the Dutch health insurance system. In doing this, it offers support in the debate on which socio-demographic factors affect the individuals' level of health insurance coverage.

1.4 Relevance

1.4.1 Scientific Relevance

The effect of socio-demographic factors on the individuals' level of health insurance coverage is underinvestigated. Most studies are focused on the effect of socio-demographic factors on the demand for health insurance in which the dependent variable is constructed as a binary choice: individuals have health insurance or not. Though these studies provide insights in the direction of the effect of socio-demographic factors on the level of health insurance coverage, the effect size does not provide insights in the effect on the individuals' level of health insurance coverage. The current study, therefore, aims to contribute to the existing literature by determining the relationship between socio-demographic factors and the individuals' level of health insurance coverage rather than whether individuals have health insurance or not. The levels of health insurance coverage under study are the level of additional deductible as well as the level of complementary health insurance coverage.

The socio-demographic factors included in the current study are gender, age, income, parenthood status, health status, health history, risk attitude towards health and susceptibility to informational influence of the individual. Most of these socio-demographic factors are selected based on past studies that are focused on the effect of socio-demographic factors on the demand for health insurance. Other are selected because they are perceived by the researcher as important within the context of the Dutch health insurance system or based on the personal interest of the researcher. The individuals' susceptibility to informational influence was included for explorative purposes only as the socio-demographic factor was, to the researchers' best knowledge, never studied within a health insurance context at all. The results of the current study might serve as starting point for other researchers.

1.4.2 Managerial Relevance

Due to the introduction of the Zvw in 2006, health insurers have to compete for customers more than before. Having insights in the effect of socio-demographic factors on the individuals' level of health insurance coverage may help health insurers to stay competitive. They can use these insights to improve their marketing strategies.

Product Development

Insights in the effect of socio-demographic factors on the individuals' level of health insurance coverage may help health insurers to adapt their health insurances to better fit the preferences of their customers. This is not only important to acquire individuals, but also to retain them. Though the mobility in the Dutch health insurance market is relatively low (6 percent of the Dutch population switched from health insurer in December 2010 [Vektis, 2011]), the performances of the health insurer can be seriously affected when the number of individuals leaving becomes too high.

Risk Selection

Insights in the effect of socio-demographic factors on the individuals' level of health insurance coverage may help health insurers to maximize their profits. An important instrument for health insurers to maximize their profits is risk selection (Roos & Schut, 2010). Under the Zvw, risk selection is not allowed. The financial incentives to focus on individuals with the most favorable health-risk profiles are neutralized as health insurers are obliged to accept all applicants at the same community-rated premium and a so-called "risk-equalization fund" is created to compensate those health insurers who are overrepresented by high-risk customers (VWS, 2005a). The principle of solidarity guaranteed universal access to essential curative care for all individuals (Roos & Schut, 2010).

In contrast to basic health insurance, the Dutch government stressed that complementary health insurance is not based on the principle of solidarity and, therefore, it does not guarantee universal access to benefits covered by complementary health insurance (Roos & Schut, 2010). Health insurers are free to design their own complementary health insurances and also determine the acceptance rules (Van Gameren, 2010). This gives them the opportunity to create tools for risk selection (Van de Ven & Schut, 2007).

Complementary health insurances can be an effective tool for risk selection in two ways. Firstly, health insurers can refuse individuals applying for complementary health insurance when they are expected to generate losses in basic health insurance. Health insurers can identify these individuals using medical questionnaires. Individuals who are rejected for complementary health insurance will most likely choose another health insurer for basic health insurance. Secondly, complementary health insurances can be used as a tool for self-selection by designing them in such a way they meet the preferences of individuals with favorable health-risk profiles best, while discouraging individuals with unfavorable health-risk profiles to apply (Roos & Schut, 2010). For the latter, insights in the effect of socio-demographic factors on the individuals' level of complementary health insurance coverage is important.

Advertising and Marketing Campaigns

The key to successful advertising and marketing campaigns is to reach the right group with the right message via the right channels. Insights in the effect of socio-demographic factors on the individuals' level of health insurance coverage may help health insurers to make their advertising and marketing campaigns more effective.

1.5 Scope

In this study, the effect of the socio-demographic factors gender, age, income, parenthood status, health status, health history, risk attitude towards health and susceptibility to informational influence on the individuals' level of additional deductible and level of complementary health insurance coverage, within the context of the Dutch health insurance system, is determined. The current study only focuses on the choices made by individuals aged 18 and older as individuals under the age of 18 (henceforth: underaged children) are, more or less, covered by their parents' health insurances.

1.6 Outline

The organization of the current study is as follows. The first chapter has given an introduction of the current study; it described the background information, research question, research objective, relevance, scope and limitations of the current study. In chapter two, the theoretical background of the current study is presented; a brief introduction on health insurances is given, followed by a review of relevant theoretical and empirical studies from economics and other sciences for each socio-demographic factor, resulting in testable hypotheses and the conceptual framework of the current study. The third chapter contains the methodology of the current study and describes the data collection, data measurement and data analysis. The results of the data analysis and findings that emerge from the current study are presented in chapter four. Finally, chapter five will provide the discussion and conclusions as well as the limitations of the current study and recommendations for further research.

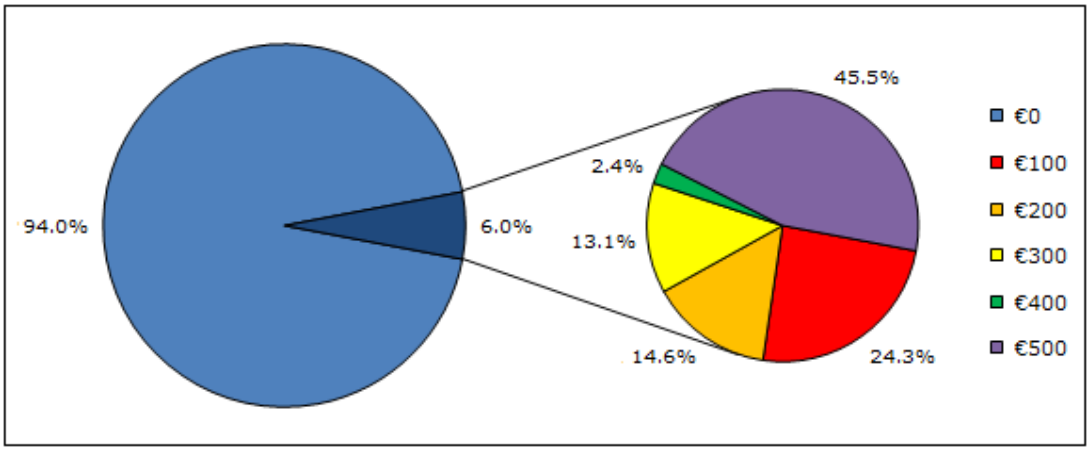
2 Theoretical Background

2.1 Level of Health Insurance Coverage

The introduction of the Zvw changed the role of the individual on the Dutch health insurance market fundamentally (Schäfer *et al.*, 2010). Individuals had more (financial) responsibilities, but also more freedom to choose the level of health insurance coverage that best fit their preferences (Maarse, 2009). Individuals have two options to influence their level of health insurance coverage: they can opt for an additional deductible and they can select complementary health insurance (Stroosnier, 2012).

To prevent misuse and overuse of essential curative care, the basic health insurance has a mandatory deductible of €170 per year (Maarse, 2008). Individuals can choose for a higher deductible by opting for an additional deductible of €100, €200, €300, €400 or €500 per year (van Ophem & Berkhout, 2009). The choice for an additional deductible lowers the nominal premium of basic health insurance, while increasing financial risk (Stroosnier, 2012). In 2011, 6 percent of the Dutch population had an additional deductible of which 46 percent opted for the legal maximum of €500 per year (see Figure 2.1) (Vektis, 2011).

Figure 2.1: Distribution of the Level of Additional Deductible in the Netherlands in 2011



Source: Vektis (2011)

Though the AWBZ and Zvw together provide extensive protection, several types of medical services are beyond the scope of the first and second compartment. To be covered for these types of medical services, individuals can opt for complementary health insurance. Individuals can choose from a great variety of complementary health insurances. The choice for complementary health insurance increases the nominal premium of the individual, but lowering financial risk (Stroosnier, 2012). Though opting for a complementary health insurance is voluntary, almost ninety percent of the Dutch population had complementary health insurance in 2011 (Vektis, 2011).

2.2 Decision Making under Risk

The choice for a level of health insurance coverage is an example of decision making under risk.[5] Individuals face risk because the outcome of their decision is uncertain as health problems and the resultant medical expenses are often unexpected (Manning & Marquis, 1996). Decision making under risk is always about choosing between alternatives. Each alternative is characterized by a variety of relevant attributes, including those that describe associated risk. Sometimes risk can be conceptualized as an objective characteristic of the decision, but mostly objective probabilities are unknown (Conchar *et al.*, 2004). For health problems and the resultant medical expenses, the objective probabilities are not or only partially known. As a result, individuals need to make their decisions for a level of health insurance coverage based on the degree they believe they will suffer from a future health problem. How individuals perceive the riskiness of a situation is called "risk perception". The extent to which individuals are willing to accept risks depends on their "risk attitude" (Mellers, Schwartz & Cooke, 1998). The risk attitude of individuals can range from "risk averse" to "risk seeking"; individuals having a positive attitude towards risk were more willing to take risk than individuals being risk averse (Van Osch & Stiggelbout, 2007).[6] Different studies have found that the individuals' risk attitude is affected by socio-demographic factors, for example Dohmen *et al*. (2005) and Dohmen *et al.* (2011).

2.3 Demand for Health Care and Health Insurance

Health insurance is an instrument for individuals to shift risks of financial losses caused by medical consumption. Different studies have found that the demand for health insurance is intimately related with the demand for health care (Sanhueza & Ruiz-Tagle, 2002, Höfter, 2006). It is believed that individuals with a greater demand for health care are more willing to shift risks of financial losses due to medical consumption and, thus, are more likely to have a higher level of health insurance coverage. The reversed effect also exists in health insurance markets: individuals having health insurance are more likely to utilize health care, because their health insurances reduce the effective price of health care. However, this problem, called "moral hazard", is beyond the scope of the current study (Höfter, 2006).

2.4 Informational Influence

Choosing a level of health insurance coverage is, generally, considered as a difficult task. Firstly, individuals have to make an estimation about their expected medical utilization of which the accuracy is only known in the future and secondly, the decision making process mostly requires a considerable amount of time, effort and knowledge as health insurances are complex and a great variety of health insurances is available, especially in the third compartment. As a result, uncertainty may arise among individuals when choosing a level of health insurance coverage. For example, they could wonder if they should opt for an additional deductible or could have concerns

[5] The distinction between risk and uncertainty is often encountered in literature. In the current study, the objective is not to deal with the substance of the risk-uncertainty distinction: both terms are used interchangeably.

[6] The concept of "risk averse" and "risk seeking" are useful to describe the risk attitude of individuals. Though both are widely accepted, there are other concepts to describe the attitude of individuals when being faced with risk. For more information about these other concepts, please refer to Conchar *et al.* (2004)

about whether the level of complementary health insurance coverage they have in mind is sufficient or not.

To reduce uncertainty when choosing a level of health insurance coverage, individuals can make use of internal and external information. An example of internal information is previous experience with risk that pertains to the current situation (e.g., "how did I make my decision last year?"), while an example of external information is reference groups (Conchar *et al.*, 2004). Bearden and Etzel (1982) define reference groups as an individual or group of individuals that significantly influence an individuals' behavior. Reference groups can be distinguished into normative and comparative reference groups. Normative reference groups provide individuals with norms, values and attitudes through direct interaction, while comparative reference groups provide standards of achievement to which individuals aspire but are relatively further removed from the individual. Examples of the former type of reference group are relatives, friends and colleagues, and of the latter athletes, politicians and other public figures (Childers & Rao, 1992).

Reference group influence is perceived as one of the most important determinants of individuals' behavior (Burnkrant & Cousineau, 1975; Bearden & Etzel, 1982; Bearden, Netemeyer & Teel, 1989). According to Makgosa and Mohube (2007), reference groups are important because they inform and make individuals aware of specific products, gave individuals with opportunities to compare their own thoughts with the attitudes and behavior of the reference group, and influence individuals to adopt attitudes and behavior that are consistent with the norms of the reference group. Bearden *et al*. (1989) states that susceptibility to reference group influence is a personal trait that varies between individuals and that an individuals' ability to get influenced in one situation tends to be positively related to their influenceability in other situations.

Following early conceptual work by Deutsch and Gerard (1955) and Kelman (1961), two types of reference group influence are generally distinguished: normative and informational influence. Individuals that are susceptible to normative influence feel the need to conform to the positive expectations of the reference group identify or enhance their image with significant others through the acquisition and use of products and brands and/or willingness to conform to the expectations of others regarding purchase decisions. Susceptibility to informational influence is the tendency to learn about products and services by observing others and/or seeking information from others (Bearden *et al.*, 1989). Though the literature generally distinguishes two types of reference group influence, this does not imply that both normative and informational influence should be present in a particular situation (Bearden & Etzel, 1982). Bearden and Etzel (1982) believe that it would seem reasonable to find one type of reference group influence operating and the other absent in a particular situation. Choosing a level of health insurance coverage may prove to be a particular situation in which informational influence is likely to operate. As stated before, choosing a level of health insurance coverage is, generally, considered as a difficult task due to the complexity of health insurances. Products that are complex tend to lend themselves to informational influence. Rather than investing time towards in-depth research, individuals may choose to use the advice of knowledgeable others (Noel, 2009).

As mentioned before, the tendency to learn about products and/or services by observing others and/or seeking information from others is referred to as susceptibility to informational influence (Bearden *et al.*, 1989). Faced with uncertainty, individuals will seek for information (Bearden & Etzel, 1982). Burnkrant and Cousineau (1975) have found that individuals use the product evaluations of others as source of information about products. After they have observed others evaluating a product favorably, individuals perceive this particular product more favorably themselves than they would have done if they did not observe this evaluation (Burnkrant & Cousineau, 1975). Park and Lessig (1977) suggest that informational influence may occur when individuals actively seek information from others who are considered as knowledgeable or from observing the behavior of acknowledged others; these elements are also mentioned in the definition of Bearden *et al*. (1989). Individuals tend to be influenced more by reference groups when the information is perceived as reliable and relevant to the problem and the information source is perceived to be trustworthy (Grimm, Agrawal & Richardson, 1999). In addition, credible reference groups are more likely to have informational influence on the individuals' behavior (Bearden & Etzel, 1982).

To summarize, choosing a level of health insurance coverage is, generally, considered as a difficult task and uncertainty may arise during the decision making process. The informational influence of reference groups may help individuals to reduce uncertainty. However, which effect informational influence has in a health insurance context is unclear. As mentioned in chapter one, paragraph 1.4.1, the individuals' susceptibility to informational influence was included for explorative purposes only.

2.5 Hypotheses

2.5.1 Gender

The socio-demographic factor gender is included in many studies analyzing the demand for health insurance. The importance of the factor lies mainly in gender differences in demand for health care. For most types of medical services, females have a greater medical consumption compared to males (Höfter, 2006). Besides biologically-based gender differences in morbidity, arguments for the greater medical consumption of females compared to males are gender differences in subjective health status, symptoms and illness reporting and help-seeking behavior (Bertakis *et al*., 2000). Different studies have found that females were more likely to have health insurance than males, including Cameron *et al.* (1988) and Sapelli and Vial (2003). Cameron *et al.* (1988) studied the situation for Australia. In their study, Cameron *et al.* (1988) found that females from both low and high income classes were more likely to opt for private health insurance which provided the most comprehensive coverage in the Australian health insurance system. Sapelli and Vial (2003) studied the demand for private health insurance among households in the Chilean market. According to Sapelli and Vial (2003), families having a female household head were more likely to purchase private health insurance.

As several countries with different health insurance systems showed that females have greater demand for health care and are more likely to purchase health insurances providing higher coverage, similar results are expected for the Netherlands. Therefore, it is assumed:

> Hypothesis 1a: The individuals' level of additional deductible depends significantly on the gender of the individual. In particular, it is expected that females are more likely to have a lower level of additional deductible than males.

> Hypothesis 1b: The individuals' level of complementary health insurance coverage depends significantly on the gender of the individual. In particular, it is expected that females are likely to have more complementary health insurances than males.

Another reason why gender is relevant as socio-demographic factor is gender differences in risk attitude. Based on a meta-analysis, Byrnes, Miller & Schafer (1999) concluded that females are less likely to take risks than males, not only in general, but also within different contexts. Studies confirming this result were Dohmen *et al*. (2005), Bonin *et al.* (2009) and Dohmen et al. (2011). In a health context, gender differences in risk attitude were found as well. Waldron (1983) stated that males were more likely to take risks that may harm their health, while females were more likely to engage in preventive behaviors designed to preserve or improve their health. According to Waldron (1983), these behavioral patterns were found for different types of risk behavior such as alcohol consumption, driving behavior, drug consumption and smoking behavior. Recent studies by Anderson and Mellor (2008), Biervliet *et al.* (2010) as well as Van Rooij, Schoenmakers and Van de Mheen (2011) confirmed these findings. Therefore, it is assumed:

> Hypothesis 2: The individuals' risk attitude towards health depends significantly on the gender of the individual. In particular, it is expected that females are more risk averse towards health than males.

2.5.2 Age

Like gender, the socio-demographic factor age is commonly included in studies analyzing the demand for health insurance. The relevance of the factor mainly lies in the underlying hypothesis that older individuals have greater medical needs (Höfter, 2006). Moreover, Boot and Knapen (2005) state that the subjective health status of individuals in the Netherlands becomes more negative as age increases. Examples of studies supporting these findings are Cameron *et al.* (1988), Schellhorn (2001), Sapelli and Vial (2003) and Schokkaert *et al.* (2010). Cameron *et al.* (1988) found that Australian individuals from higher income classes opt for private health insurance providing the most comprehensive coverage. For Switzerland, Schellhorn (2001) suggest that individuals are less likely to take a higher deductible as they become older, possibly because of a growing risk aversion or awareness of potential health problems. Sapelli and Vial (2003), studying the Chilean situation, found that families with an older household head were more likely to purchase health insurance. Schokkaert *et al.* (2010) investigated the demand for supplemental health insurance in Belgium. Their study partially supports a positive relationship between age and having supplemental health insurance. In particular, individuals aged between 50 and 70 years

have a higher probability to opt for supplemental health insurance in comparison to the reference group of 40 to 44 years old.

The studies mentioned above consistently show a positive effect of age on demand for health insurance and level of health insurance coverage over several countries and within different health insurance systems. Therefore, it is assumed that these results can be applied to the Netherlands also:

> Hypothesis 3a: The individuals' level of additional deductible depends significantly on the age of the individual. In particular, it is expected that as age increases, individuals are more likely to have a lower level of additional deductible.

> Hypothesis 3b: The individuals' level of complementary health insurance coverage depends significantly on the age of the individual. In particular, it is expected that as age increases, individuals are likely to have more complementary health insurances.

Another argument why age is of included as socio-demographic factor is age differences in risk attitude. A great variety of studies has found that younger individuals are more willing to take risks compared to older individuals, also in different contexts (Turner & McClure, 2003; Bonin *et al.,* 2009). Different studies have also determined the effect of age in the health context, for example Anderson and Mellor (2008) and Dohmen *et al*. (2011). Anderson and Mellor (2008) studied the effect of socio-demographic factors on risk taking for several health activities. In their study, conducted in the United States of America, Anderson and Mellor (2008) found that older individuals were more risk averse in alcohol consumption, driving behavior and smoking behavior. For the German population, Dohmen *et al*. (2011) found a negative relationship between age and risk towards health. It is believed that these results were applicable for the Netherlands. Therefore, it is assumed:

> Hypothesis 4: The individuals' risk attitude towards health depends significantly on the age of the individual. In particular, it is expected that as age increases, individuals become more risk averse towards health.

2.5.3 Income

The income of the individual is one of the most important socio-demographic factors of purchase of health insurance. Firstly, the level of income plays an important role in having access to health insurance. Individuals from low income classes are less likely to have access to health insurance, unless having health insurance is mandatory or publicly provided (Sanhueza & Ruiz-Tagle, 2002). In the Netherlands, having basic health insurance is mandatory; access to basic health insurance is ensured as health insurers are obliged to accept all individuals and individuals with low levels of income may receive health care allowance or "zorgtoeslag" from the Dutch government to enable them to purchase basic health insurance (Van Gameren, 2010). For complementary health insurance such legislation does not exist; its private health insurance which voluntary can be purchased by individuals in addition to basic health insurance. Therefore, individuals with lower

levels of income may not have access to complementary health insurance due to a budget constraint.

Second, the level of income does not only affects whether individuals have health insurance or not, but also which type of health insurance is purchased (Sanhueza & Ruiz-Tagle, 2002). In general, a relationship between the nominal premium of health insurance and the level of health insurance coverage: nominal premiums increase as financial risk decreases. The choice for an additional deductible lowers the nominal premium of basic health insurance, but increases financial risk, while the choice for complementary health insurance increase the nominal premium of the individual, but decreases financial risk (Stroosnier, 2012). Therefore, individuals with higher levels of income are able to purchase health insurances with higher levels of health insurance coverage. The positive relationship between level of income and demand for health insurance was found in several studies, including Sapelli and Vial (2003) and Schokkaert *et al.* (2010). Sapelli and Vial (2003) showed that families with higher levels of income have a higher probability of purchasing health insurance and a higher probability of choosing private health insurance. Schokkaert *et al.* (2010) found that individuals in higher socio-economic classes are more likely to take-up supplemental health insurance. The positive relationship between the level of income and type of health insurance has also been found for other countries and health insurance systems like the United States of America (Rice & McCall, 1985), England and Wales (Propper, 1989), Republic of Ireland (Harmon & Nolan, 2001), and Chile (Sanhueza & Ruiz-Tagle, 2002; Höfter, 2006) and within specific subpopulations such as American elderly (Hurd & McGarry, 1997) and South African females (Kirigia *et al.*, 2005).

The positive effect of income of the demand for health insurance and level of health insurance coverage has been found in numerous studies and several countries. Therefore, it is also for the Netherlands assumed that:

> Hypothesis 5a: The individuals' level of additional deductible depends significantly on the income of the individual. In particular, it is expected that as income increases, individuals are more likely to have a lower level of additional deductible.

> Hypothesis 5b: The individuals' level of complementary health insurance coverage depends significantly on the income of the individual. In particular, it is expected that as income increases, individuals are likely to have more complementary health insurances.

Besides differences in access to health insurance, individuals with higher levels of income and individuals with lower levels of income differ in risk attitude. Most studies showed that income had a positive effect on the individuals' willingness to take risk, also with different context (Donkers, Melenberg & Van Soest, 2001; Dohmen *et al.*, 2005). In the health context, however, evidence is mixed. For example, Anderson and Mellor (2008) hardly found a relationship between income and risk taking behavior, while Bonin *et al.* (2009) and Dohmen *et al.* (2011) both showed a highly

significant positive relationship between income and risk seeking among the German population. It is believed that these results were applicable for the Netherlands. Therefore, it is assumed:

> Hypothesis 6: The individuals' risk attitude towards health depends significantly on the income of the individual. In particular, it is expected that as income decreases, individuals become more risk averse towards health.

2.5.4 Parenthood Status

The position of underaged children within the second and third compartment of the Dutch health insurance system differs from that of individuals aged 18 and older. Under the Zvw, underaged children are covered by the basic health insurance of one of their parents, while the Dutch government is responsible for paying their nominal premium (VWS, 2005a). For complementary health insurance, such legislation does not exist since the third compartment is not regulated by any act. In theory, this means that every individual who wants to have coverage for health care beyond the scope of the AWBZ and Zvw has to purchase complementary health insurance himself, even underaged children. In practice, however, most health insurers offer individuals with underaged children the possibility to cover their underaged children by the complementary health insurance of one of their parents at no additional cost (Roos & Schut, 2009).

Given that underaged children are, more or less, covered by their parents' health insurances, it seems reasonable to believe that having underaged children could influence both the individuals' level of additional deductible and level of complementary health insurance coverage. However, from a theoretical perspective, this is only true for the individuals' level of complementary health insurance coverage as underaged children do not have a mandatory deductible and cannot opt for an additional deductible (College voor Zorgverzekeringen [CVZ], 2013). This means that the level of additional deductible of individuals with underaged children does not affect the basic health insurance of their children. However, Van der Maat and De Jong (2010) suggest that about thirty percent of the Dutch population does not know that underaged children do not have a mandatory deductible and cannot opt for an additional deductible. This lack of knowledge seems a valid argument to assume that having underaged children might also have effect on the individuals' level of additional deductible.

An argument that might explain why having underaged children affect the individuals' level of health insurance coverage is the demand for health care of their underaged children. When individuals with underaged children choose a level of health insurance coverage, they not only set their own level of complementary health insurance coverage, but also that of their underaged children. Individuals with underaged children, therefore, have to be sure that the chosen level of health insurance coverage is sufficient for themselves and for their underaged children. It seems reasonable to believe that individuals with underaged children take the demand for health care of their underaged children into account when choosing a level of health insurance coverage to avoid (potential) out-of-pocket cost caused by them. However, this may cause that individuals with underaged children have to opt for a higher level of health insurance coverage as they needed themselves. For example, though the benefit package of the basic health insurance provided

extensive coverage, several common and types of medical services for underaged children are not included, like orthodontics. When individuals want their underaged children to be covered for these types of medical services, the only possibility for them is to purchase a complementary health insurance that provides coverage for these types of medical services, even if they do not need it themselves. According to Vektis (2011), underaged children relatively often have complementary health insurance compared to other age categories; this mainly lies in the demand for health care of underaged children. Therefore, it is assumed:

> Hypothesis 7a: The individuals' level of additional deductible depends significantly on the parenthood status of the individual. In particular, it is expected that individuals with underaged children are more likely to have a lower level of additional deductible than individuals without underaged children.

> Hypothesis 7b: The individuals' level of complementary health insurance coverage depends significantly on the parenthood status of the individual. In particular, it is expected that individuals with underaged children are likely to have more complementary health insurances than individuals without underaged children.

Another argument why the socio-demographic factor parenthood status possibly is important was differences in risk attitude between individuals with and without underaged children. Different studies have showed that individuals with underaged children were more risk averse than individuals without underaged children, also in different contexts (Warner & Cramer, 1995; Dohmen *et al.*, 2011). Examples of studies testing the effect of parenthood status on the risk attitude towards health in a health context were Dohmen *et al.* (2005) and Bonin *et al.* (2009). Dohmen *et al.* (2005) partially found that individuals with underage children were more risk averse than individuals without underaged children. In particular, individuals with three children under the age of 16 were more risk averse towards health than individuals without. Bonin *et al.* (2009) revealed that individuals having underaged children were less willing to take health-related risks. In a comparative study about differences in risk attitude between migrants and natives in Germany, Bonin *et al.* (2009) found for the overall sample evidence for the greater risk aversion towards health of individuals with children aged 16 or younger. It is believed that these results were applicable for the Netherlands. Therefore, it is assumed:

> Hypothesis 8: The individuals' risk attitude towards health depends significantly on the parenthood status of the individual. In particular, it is expected that individuals with underaged children are more risk averse towards health than individuals without underaged children.

2.5.5 Health Status

Though individuals cannot perfectly predict their future demand for health care, they are likely to have information about their health status and, thus, expected financial losses due to medical consumption (Höfter, 2006). This information is not known by health insurers when individuals apply for health insurance. As a result, an information asymmetry exist between both parties regarding health status as this information is not known by health insurers when individuals applying. Health insurers anticipate to information asymmetries when determining the nominal premiums of their health insurances, resulting that the nominal premiums for healthier individuals are relatively high which reduces the attractiveness of health insurance for them when having health insurance is voluntary, while for less healthy individuals the nominal premiums are relatively low which leads to a greater demand for health insurance. This process is called "adverse selection" (Sanhueza & Ruiz-Tagle, 2002).

Examples of recent studies analyzing the effect of health status on the demand for health insurance are Trujillo (2003), Kirigia *et al.* (2005) and Höfter (2006). Trujillo (2003) studied the demand for public health insurance among Colombian workers in 1997 as only forty percent of the workers were enrolled in the public health insurance system while participation was mandatory. According to Trujillo (2003), healthy workers were more likely to opt out of the public health insurance system and have no health insurance at all compared to less healthy workers, suggesting adverse selection. Kirigia *et al.* (2005) examined health insurance ownership among South African females after the apartheid ideology in 1995. The result of their study suggest the existence of adverse selection in the South African health insurance system as the demand for health insurance was likely to be high among less healthy females compared to healthier females. Höfter (2006) partly found evidence for adverse selection in the Chilean health insurance system in 2000. The results revealed that individuals who reported being in "good" or "very good" health were more likely to have alternative private health insurance, but no evidence was found that individuals who assessed their health status as "bad" or "very bad" were more likely to have public health insurance.

For the Netherlands, the impact of health status on the level of health insurance coverage seems to be relevant. Though basic health insurance is mandatory, information about their health status may give individuals an advantage when deciding to opt for an additional deductible or not, and if so what amount. For healthier individuals, opting for an additional deductible is attractive in order to obtain a lower nominal premium for basic health insurance. Less healthy individuals may rather not want to opt for an additional deductible in order to avoid high levels of out-of-pocket cost (Maarse, 2009).

For complementary health insurance, information about their health status also give individuals an advantage as they can voluntary opt for complementary health insurance. Complementary health insurance seemed to be attractive for individuals who are expecting high medical expenses due to medical consumption of health care that is neither covered by the AWBZ nor Zvw. Health insurers are free to accept or reject any individual applying for complementary health insurance and also have the possibility to request individuals to fill in a medical questionnaire. However, in practice, only a few health insurers made use of medical questionnaires (Verzekeringssite.nl, 2010).

To summarize, the health status of individuals seemed to play a role when choosing a level of health insurance coverage. The theory of adverse selection suggest that less healthy individuals are more willing to have health insurance compared to healthier individuals, because the expected benefits of having health insurance for them are greater. Therefore, it is assumed:

> Hypothesis 9a: The individuals' level of additional deductible depends significantly on the health status of the individual. In particular, it is expected that as the health status become more negative, individuals are more likely to have a lower level of additional deductible.

> Hypothesis 9b: The individuals' level of complementary health insurance coverage depends significantly on the health status of the individual. In particular, it is expected that as the health status become more negative, individuals are likely to have more complementary health insurances.

Besides differences in demand for health care, another argument why health status was important was differences between healthier and less healthy individuals in risk attitude. Dohmen *et al.* (2005) and Dohmen *et al.* (2011) both showed that, in general, German individuals perceiving themselves as less healthy, were more risk averse than healthier Germans. However, in a health context, findings were mixed. Dohmen *et al.* (2011) found that less healthy German did not differ in risk attitude towards health from healthier Germans, while Dohmen *et al*. (2005) revealed in their study that individuals perceiving themselves as "unhealthy" were more risk seeking in the health context compared to "healthy" individuals. The results of Dohmen *et al*. (2005) were confirmed by Eisenhauer and Principe (2012). Therefore, it is assumed:

> Hypothesis 10: The individuals' risk attitude towards health depends significantly on the health status of the individual. In particular, it is expected that as the health status becomes more negative, individuals becomes more risk averse towards health.

2.5.6 Health History

For a long time, the theory of decision making under risk suggested that individuals were rational actors whose risk perception depended only on the considered decision characteristics (i.e., probabilities and outcomes) and cannot be influenced by outside factors. However, different studies challenges that individuals were rational actors by showing that risk perception could be influenced by outside factors, like past experiences of decision-relevant events (Cohen, Etner & Jeleva, 2008). An example of such event in a health insurance context is past experienced non-chronic health problems.[7]

[7] A distinction between chronic and non-chronic health problems is made as the decision-relevant events should be random events and, thus, risks independent of each other. For chronic health problems this is not the case. Chronic health problems are defined as irreversible health problems without any prospect of full recovery (Hoeymans & Schellevis, 2008). Technically, once individuals have a chronic health problem, there will not be a new moment of getting the particular health problem.

Tversky and Kahneman (1974) describe how past experiences of decision-relevant events affect decision making under risk. In their study, Tversky and Kahneman (1974) propose that individuals rely on a limited number of heuristic principles when assessing probabilities, mental strategies which reduce the complex tasks of assessing probabilities to simplify decision making under risk. According to Tversky and Kahneman (1974), heuristic principles are quite useful, but sometimes may cause "severe and systematic errors". The latter suggest that the errors due to the use of heuristic principles are not random, but that they can be described and even be predicted (Sunstein, 2003).

Tversky and Kahneman (1974) propose three types of heuristic principles of which the "availability heuristic" and "representativeness heuristic" from a more theoretical perspective can explain the effect of past experiences of decision-relevant events on decision making under risk (Papon, 2008). When individuals asses the probability of a decision-relevant event by the ease with which instances or occurrences can be brought to mind, the availability heuristic is applied (Tversky & Kahneman, 1974). For example, when choosing a level of health insurance coverage, individuals may assess the risk of getting non-chronic health problems by recalling such occurrences from the past. Instances or occurrences that are vivid and/or have happened recently are more easily retrievable and will be perceived as more likely (Tversky & Kahneman, 1974). As a result, individual will overestimate the probability of the decision-relevant event. This cognitive error is called the "availability bias" (Cohen, Etner & Jeleva, 2008).

Individuals assessing probabilities of a decision-relevant event by the degree to which it is similar in essential characteristics to its parent population and reflects the salient features of the process by which it is generated applying the representativeness heuristic (Kahneman & Tversky, 1972). The representativeness heuristic may cause a great variety of cognitive errors, including the "gamblers fallacy" (Tversky & Kahneman, 1974). The gamblers fallacy is a misperception of randomness. Individuals believe that the likelihood of a random decision-relevant event increase or decrease depending upon recent occurrences and will be self-correcting (Corney & Cummings, 1985).

Examples of studies analyzing the effect of past experience of decision-relevant events on the demand for insurance are Kunreuther (1996) and Browne and Hoyt (2000). Kunreuther (1996) have studied the demand for insurances which provide coverage for natural hazards, including the demand for earthquake insurance among homeowners in California during the "Loma Prieta" earthquake in 1989. Kunreuther (1996) stated that before the earthquake, 34 percent of the uninsured individuals felt that earthquake insurance was unnecessary, while after the earthquake only 5 percent gave this answer. Kunreuther (1996) also stated that individuals with insurance for natural hazards are likely to terminate their insurance when not having made a claim after a few years. Browne and Hoyt (2000) found that the demand for flood insurance in a certain region during the current period was positively correlated with the level of flood losses in the particular region during the prior period.

As different studies have showed that past experiences of decision-relevant events affect decision making under risk in an insurance context, it seems plausible that past experiences of decision-relevant events, like past experiences with non-chronic health problems, affect the choice for a level of health insurance coverage. However, the direction of the effect is unclear (Cohen, Etner & Jeleva, 2008). Based on the availability heuristic, individuals without past experiences with non-chronic health problems will perceive the probability of a decision-relevant event as low and will have a decreasing demand for health insurance; those recently hit overestimate the risk and will have an increasing demand for health insurance (Cohen, Etner & Jeleva, 2008; Papon, 2008). Based on the representativeness heuristic, individuals who are recently hit are less willing to have health insurance, because they underestimate the probability of repetition (Cohen, Etner & Jeleva, 2008). As can be seen, the availability heuristic and representativeness heuristic both predict a different direction of the effect of past experiences of decision-relevant events on decision making under risk (Papon, 2008).

To summarize, different studies have found that past experiences of decision-relevant events affect decision making under risk. Past experiences with non-chronic health problems may have influence on the individuals' level of health insurance coverage. However, the direction of the effect is unclear due to the availability bias and gamblers fallacy. It was believed that the proposed arguments of the availability bias and gamblers fallacy were also applicable to explain the effect of past experiences with non-chronic health problems on the individuals' risk attitude towards health. Therefore, it is assumed:

> Hypothesis 11a: The individuals' level of additional deductible depends significantly (positively or negatively) on the personal health history of the individual.
>
> Hypothesis 11b: The individuals' level of complementary health insurance coverage depends significantly (positively or negatively) on the personal health history of the individual.
>
> Hypothesis 12: The individuals' risk attitude towards health depends significantly (positively or negatively) on the personal health history of the individual.

Besides non-chronic health problems that individuals have had themselves, another example of a past experience of a decision-relevant event that may have influence on the individuals' level of health insurance coverage is relatives having genetic health problems. A genetic health problem is a health problem that is caused by an abnormality in the genetic material of individuals. These abnormalities can range from a small mutation in a single gene to the addition or subtraction of an entire chromosome or set of chromosomes (Genetic Science Learning Center, 2013).

Every individual inherits genetic material from their parents, including genetic material that may affect the health of the individual negatively; this genetic material cannot be changed. Some genetic health problems already appear at birth, but most evolve during life. For most genetic health problems, the effect of genetic material on their evolvement is unclear. However, it is clear that those individuals whose relatives suffer from a genetic health problem have greater changes getting that particular genetic health problem as well. As the family ties get closer, the risk rates become higher as more genetic material corresponds. Important is that abnormalities in genetic material not always causes genetic health problems (Senf, 2011).[8] An example of a health problem where genetic material plays an important role is diabetes mellitus. The two common types of diabetes mellitus are diabetes mellitus type I and diabetes mellitus type II. Both types of diabetes mellitus are highly caused by abnormalities in genetic material, especially diabetes mellitus type II (see Table 2.1).[9]

Table 2.1: Genetic Risk Rates of Diabetes Mellitus Type I and Type II

Diabetes Mellitus Type I	
Relative	Risk Rate
One of your parents	1-4
Both of your parents	20-40
One of your brothers or sisters	1-8
Your identical twin brother or sister	23-50

Diabetes Mellitus Type II	
Relative	Risk Rate
One of your parents	10-20
Both of your parents	20-40
One of your brothers or sisters	15-20
Your identical twin brother or sister	70-90

Source: Brouns-Van Engelen (2012)

To summarize, relatives having genetic health problems may have influence on the individuals' level of health insurance coverage. Firstly, because individuals can see what impact the genetic health problems have on the lives of relatives they care about. Secondly, because they may suffer the particular genetic health problem in the future themselves as they share the same genetics. However, as mentioned before, as the direction of the effect of past experiences of decision-relevant events on the demand for health insurance is unclear due to the availability bias and gamblers fallacy. Once again, it was believed that the proposed arguments of the availability bias and gamblers fallacy were also applicable to explain the effect of past experiences with genetic health problems in the family on the individuals' risk attitude towards health. Therefore, it is assumed:

> Hypothesis 13a: The individuals' level of additional deductible depends significantly (positively or negatively) on the family health history of the individual.

[8] For more information about genetic health problems, please refer to Nationaal Informatiecentrum Erfelijkheid (http://www.erfelijkheid.nl/).

[9] For more information about diabetes mellitus type I and type II, please refer to Diabetes Fonds Nederland (http://www.diabetesfonds.nl/).

Hypothesis 13b: The individuals' level of complementary health insurance coverage depends significantly (positively or negatively) on the family health history of the individual.

Hypothesis 14: The individuals' risk attitude towards health depends significantly (positively or negatively) on the family health history of the individual.

2.5.7 Risk Attitude towards Health

The choice for a level of health insurance coverage is an example of decision making under risk. Individuals face risk because the outcome of their decision is uncertain as health problems and the resultant medical expenses are often unexpected (Manning & Marquis, 1996). Individuals may vary in the way they resolve decisions that involve risk. These differences are often explained by differences in risk attitude (Weber, Blais & Betz, 2002). The risk attitude is the extent to which individuals are willing to accept risks (Mellers, Schwartz & Cooke, 1998). The risk attitude of individuals can range from "risk averse" to "risk seeking". Risk seeking individuals will accept more risks than someone who is risk averse (Van Osch & Stiggelbout, 2007).

For a long time, the risk attitude of individuals was considered to be a general trait (Weber, Blais & Betz, 2002). However, different studies suggest that individuals do not appear to be consistently risk averse or risk seeking when making decisions under risk, but that the risk attitude depends on the context of the decision (Dohmen *et al.*, 2005; Dohmen *et al.*, 2011). As health insurances are instruments for individuals to shift the risks of financial losses due to medical consumption as well as facilitating access to health care, it is believed that the individuals' risk attitude towards health is of importance when choosing a level of health insurance coverage. Van Osch and Stiggelbout (2007) stated that individuals differ in their risk attitude towards health and that this results in differences in preventive health risk behavior and treatment preferences. Therefore, it is assumed that:

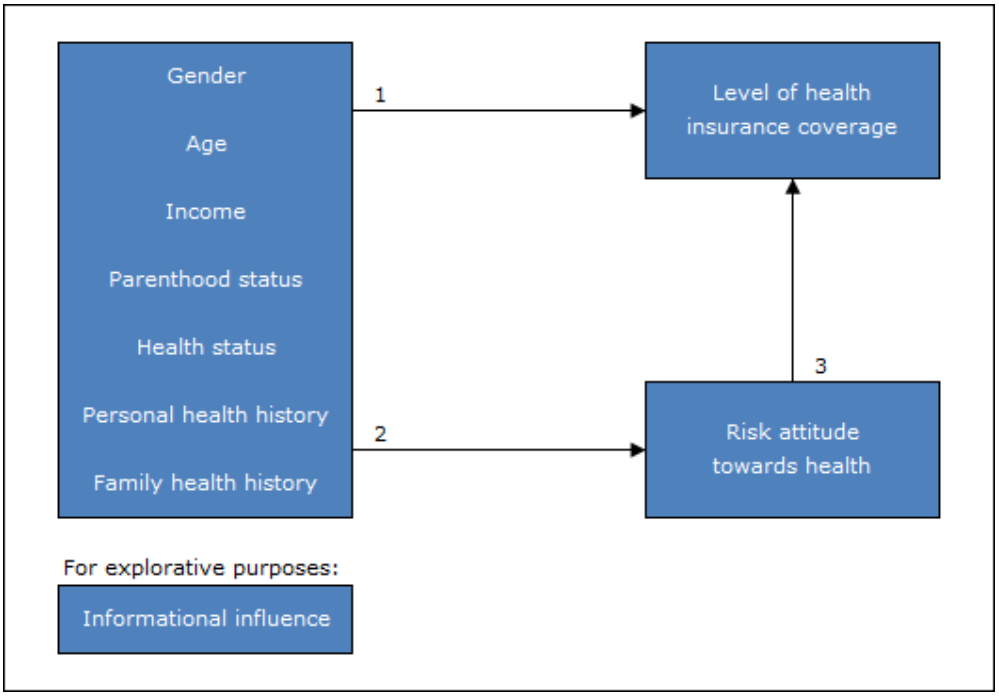
Hypothesis 15a: The individuals' level of additional deductible depends significantly on the risk attitude towards health of the individual. In particular, it is expected that as individuals become more risk averse towards health, they are more likely to have a lower level of additional deductible.

Hypothesis 15b: The individuals' level of complementary health insurance coverage depends significantly on the risk attitude towards health of the individual. In particular, it is expected that as individuals become more risk averse, they are likely to have more complementary health insurances.

2.6 Conceptual Model

In Figure 2.2, the conceptual model of the current study is visualized. In the conceptual model, several pathways are assumed. Firstly, a direct effect of the socio-demographic factors gender (H1a, H1b), age (H3a, H3b), income (H5a, H5b), parenthood status (H7a, H7b), health status (H9a, H9b), personal health history (H11a, H11b), family health history (H13a, H13b) and risk attitude towards health (H15a, H15b) on the individuals' level of health insurance coverage is assumed. Moreover, a direct effect of the socio-demographic factors gender (H2), age (H4), income (H6), parenthood status (H8), health status (H10), personal health history (H12) and family health history (H14) on the individuals' risk attitude towards health is assumed; the latter is positioned in the conceptual model as mediator variable, because different studies have found that socio-demographic factors directly affect the individuals' risk attitude Dohmen *et al*. (2005) and Dohmen *et al.* (2011). Important to note is that the socio-demographic factor susceptibility to informational influence was positioned outside of the conceptual model, because it was included for explorative purposes only.

Figure 2.2: Conceptual Model of the Current Study



1) For level of additional deductible: H1a, H3a, H5a, H7a, H9a, H11a and H13a
   For level of complementary health insurance coverage: H1b, H3b, H5b, H7b, H9b, H11b and H13b
2) H2, H4, H6, H8, H10, H12 and H14
3) For level of additional deductible: H15a
   For level of complementary health insurance coverage: H15b

3 Methodology

3.1 Data Collection

The target population of the current study consisted of individuals of at least 18 years of age who were living or working in the Netherlands and, thus, obliged to have at least basic health insurance; individuals under the age of 18 were excluded from participation as they were, more or less, covered by their parents' health insurances. The units of analysis were individuals. The individuals were initially recruited through the researchers' personal network. In order to control for (too much) sample bias, members of the online panel of the website "ThesisTools" were invited as well to create a (more) diverse sample.[10]

The data of the current study were collected by the researcher as no database with actual health insurance data of individuals was available. The data were collected in June 2011 through online survey research. This research method was perceived as most appropriate, considering the research objectives and the time and resources available. Firstly, online survey research enables the researcher to collect large volumes of data more quickly and at lower cost compared to most other types of research methods. Secondly, data could easily be imported into statistical programs, increasing the speed and accuracy of data collection (Fleming & Bowden, 2009). Thirdly, individuals are more willing to answer socially threatening questions in online survey research, because of an increased perception of anonymity (Pealer *et al.*, 2001). The latter was important, because individuals were also requested to answer some questions about their health and that of their relatives. The online survey research had a cross-sectional design.

For the construction of the online survey research, a questionnaire was developed and posted on the "ThesisTools" website. The questionnaire was written in Dutch and consisted of twenty-seven questions in total, some of which were extracted from previous research. The distribution of the questionnaire was done through the Internet; individuals received an e-mail consisting of a brief introduction on the research, a request to participate, and a hyperlink to the website hosting the questionnaire. In order to encourage response rates, a monetary incentive was given out to five of the individuals who completed the questionnaire. In appendix B, an example of the questionnaire can be found.

[10] http://www.thesistools.nl/.

3.2 Data Measurement

3.2.1 Dependent Variables

Level of Additional Deductible

The actual choice of individuals with regard to their level of additional deductible was determined in two steps. First, a distinction was made between individuals with and without basic health insurance, using a screener question. Though having basic health insurance is mandatory under the Zvw, a small percentage of the individuals in the Netherlands did not have basic health insurance and, therefore, did not have to make the decision on opting for an additional deductible or not. Individuals with basic health insurance were asked to indicate which level of additional deductible they had selected on top of the mandatory deductible of €170 per year; the variable was measured by a six-point ordinal scale consisting of the options "I do not have an additional deductible", "€100", "€200", "€300", "€400" and "€500". The responses were reverse-coded afterwards for better understanding of the results of data analyses as higher levels of additional deductibles indicate that individuals have to pay a higher amount of essential curative care themselves before their health insurer compensate and, thus, lower levels of health insurance coverage.

Level of Complementary Health Insurance Coverage

Determining the actual choice of individuals with regard to the level of complementary health insurance coverage was difficult due to the great variety of complementary health insurances available on the Dutch market. In theory, this problem could be solved by asking individuals detailed questions about the conditions of their complementary health insurances. However, a study by TNS NIPO (2010) indicates that most Dutch only had limited knowledge about their level of complementary health insurance coverage. For example, they did not know which types of medical services were covered by their complementary health insurances or what the maximum reimbursement rates were. Therefore, it was decided to determine the individuals' hypothetical level of complementary health insurance coverage, using a framework of complementary health insurance. The framework consists of self-designed complementary health insurances from which individuals were asked to choose. Based on their choices, a hypothetical level of complementary health insurance coverage was determined.

The framework was based on two different methods that are applied in the Netherlands to offer complementary health insurance. The first method is the "traditional method", offering individuals a choice of complementary health insurances, ranging from those covering only a restricted set of medical services to complementary health insurances proving extensive coverage (Maarse, 2009). This method was applied by most Dutch health insurers. The second method was applied by only one health insurer in the Netherlands, called FBTO. Instead of offering a range of complementary health insurances covering a total package of health care, FBTO allowed individuals to indicate per type of medical service whether they wanted complementary health insurance or not (henceforth:

the FBTO method).[11] As a result, individuals could compose their own complementary health insurance. However, they were not able to select the level of complementary health insurance coverage that best fit their preferences, because FBTO only offers one complementary health insurance per type of medical service.

To create the framework, the key characteristics of the traditional and FBTO method were combined. This was done for two reasons. Firstly, when the framework was based on the traditional method only, it was perceived as problematic that individuals had to process a lot of information before they could make a decision. It was believed this might decrease their motivation to finish the questionnaire or might stimulate them just to pick an option at random. Secondly, when the framework was based on the FBTO method only some problems were expected as individuals could only choose one complementary health insurance per type of medical service and the fact that nominal premiums were beyond the scope of the current study. It was believed that both aspects might encourage individuals to choose complementary health insurance for a type of medical service without (really) needing it. Moreover, it was not possible to determine a level of complementary health insurance coverage as the outcome of the individuals' decision under the FBTO method is binary: individuals had complementary health insurance coverage for a type of medical service "yes" or "no".

By combining the key characteristics of the traditional and FBTO method, individuals were able to indicate per type of medical service whether they want complementary health insurance, and if so, at which level. It was believed this combination might trigger individuals to think about their hypothetical level of complementary health insurance coverage (more) carefully, because it lowered the amount of information they had to process as only relevant information for that type of medical service had to be processed, and offered them the opportunity to make a choice that might better fit their preferences than the binary choice.

The framework was created in two steps. First, the types of medical services for the framework were selected. In order to encourage individuals to choose a hypothetical level of complementary health insurance coverage as well as reduce the (potential) problem of content issues, the eight types of medical services that were perceived as most important to be covered when choosing complementary health insurance were selected; this ranking was provided by an expert during an interview in April 2011. The eight types of medical services were (listed in alphabetical order): alternative medicine, dental care, glasses and contact lenses, maternity care, medical care abroad, medicines, physiotherapy and psychological care.

[11] For more information about the FBTO method, please refer to FBTO (http://www.fbto.nl/).

After the types of medical services were selected, the complementary health insurances of the framework were designed. In total, thirty-seven complementary health insurances were designed for the framework. For seven types of medical services, five complementary health insurances were designed; medical care abroad only had two complementary health insurances, because it was believed it was not possible to design three extra options without going (too much) into detail. The designed complementary health insurances only consisted of a benefit package; nominal premiums and other characteristics were not incorporated, because this was beyond the scope of the current study. The designed complementary health insurances have an ordinal relation to one another, so contract 1 < contract 2 < contract 3 < contract 4 < contract 5; this means that the benefit package of the fifth complementary health insurance provides more coverage than the fourth, the fourth more than the third, and so on. To ensure that the designed complementary health insurances were as realistic as possible, existing complementary health insurances of Dutch health insurers were used for input and inspiration. For an overview of the designed complementary health insurances, please refer to appendix G.

To determine a hypothetical level of complementary health insurance coverage, individuals were asked to indicate per type of medical service if they wanted complementary health insurance coverage, and if so, at which level. To reduce the (potential) problem of content issues, a brief overview of the benefits already covered by the Zvw was provided per type of medical service; these descriptions were drafted as neutral as possible to limit framing effects (Tversky & Kahneman, 1981). The choices of individuals were determined per type of medical service. Therefore, eight variables were defined. As mentioned before, the scales to measure these variables were all ordinally scaled, and differed between the types of medical services in number of options and the options itself. In addition, the option "no complementary health insurance" was included for those individuals who did not want complementary health insurance coverage for a type of medical service. For a schematic overview of the framework, please refer to appendix C. By counting the number of complementary health insurances the individual had selected from the framework, a hypothetical level of complementary health insurance coverage was determined. The variable was measured by counts, which were treated as labels. The counts could range from 0 to 8 complementary health insurances; the more complementary health insurances individuals had selected from the framework, the higher their hypothetical level of complementary health insurance coverage. For some examples how the number of complementary health insurance individuals had selected from the framework was determined, please refer to appendix C. The number of complementary health insurances only provided a general insight in the level of complementary health insurance coverage of individuals. Therefore, the responses per type of medical service were used to gain additional insights.

For a schematic overview of all dependent variables, please refer to appendix C.

3.2.2 Independent Variables

Gender

The individuals' gender was determined by asking individuals to report their sex. The variable was measured by a binominal scale consisting of the options "male" and "female".

Age

The age of individuals was determined by asking individuals to report their respective age. The variable was measured by a ratio scale in number of years.

Income

For income, two variables were defined: one to determine the individuals' gross monetary income in Euros per month and the other to determine the gross monetary income in Euros per month of the individuals' partner to test the significance of cross-income effects when choosing a level of health insurance coverage; a screener question was used to determine if individuals had a partner. Both variables were measured by a six-point ordinal scale consisting of the options "less than €1,000", "€1,000 to €2,000", "€2,000 to €3,000", "€3,000 to €4,000", "€4,000 to €5,000" and "more than €5,000"; the option "I would rather not say" was also available.

Parenthood Status

The individuals' parenthood status was determined by asking individuals whether they had underaged children or not. The variable was measured by a binominal scale consisting of the options "yes" and "no". These categories were renamed afterwards into "with underaged children" and "without underaged children", respectively.

Health Status

The health status of the individual was determined using the self-assessed health status scale of the "CBS basic questionnaire", a questionnaire used by CBS in many of their studies to collect personal information about individuals that participate in those studies.[12] For the correct usage of the scale, two steps had to be undertaken. First, individuals were asked to assess their health status on a five-point interval scale consisting of the options "very bad", "bad", "neither bad nor good", "good" and "very good". Hereafter, the responses were recoded and clustered into the categories "healthy" and "unhealthy". The options "good" and "very good" together formed the category "healthy", and all remaining options the category "unhealthy".

[12] For the CBS basic questionnaire, please refer to CBS (http://www.cbs.nl/).

Health History

Regarding health history, two variables were defined: one to determine the personal health history of the individual and the other to determine their family health history. Both scales measuring these variables were developed by the researcher himself. It was decided to do this rather than opting for an existing scale, because none of the existing scales were appropriate given the objective of the current study. In general, the existing scales consisted of too many questions, were more focused on the individuals' medical consumption or bad habits rather than experienced health problems and/or required medical knowledge or medical assistance.

The individual' personal health history was measured with a list consisting of twenty non-chronic health problems for consideration, each followed by a seven-point rating scale ranging from "not severe" (1) to "very severe" (7). Example items were: "bladder infection" and "influenza". For each non-chronic health problem individuals had at that moment or over the last five years, and for which they had been treated by a medical practitioner, they were asked to describe the perceived severity, taking into account the impact the particular non-chronic health problem had on their daily lives. For non-chronic health problems that were irrelevant, individuals could select the option "not applicable". By summing the item scores of all experienced non-chronic health problems, an overall score between 0 and 140 was derived. The higher the overall score, the greater the perceived severity of the personal health history over the last five years was.

There were a couple of reasons why the scale to measure the individuals' personal health history was constructed this way. Firstly, the list consisted of non-chronic health problems only, because it was of importance that the health problems were random events. Otherwise it would not have been possible to test the significance of the "availability bias" and "gamblers fallacy" when choosing a level of health insurance coverage. Non-chronic health problems are defined as reversible health problems with prospect of full recovery (Hoeymans & Schellevis, 2008). Secondly, it was decided to follow each non-chronic health problem by a seven-point rating scale to assign some weight to each experienced non-chronic health problem. It was believed this was necessary, because it was expected that the perceived severity of each experienced health problem would not be the same and, thus, should not count equally. The fact that emotions might play a role when individuals describe the perceived severity of non-chronic health problems they have experienced over the last five years and for which they have been treated by a medical practitioner was not considered as problematic, because the individuals' choice to choose a particular level of health insurance coverage was also based on their own assessment. Thirdly, the condition that individuals were only allowed to describe the perceived severity of the non-chronic health problems for which they have been treated by a medical practitioner was included to discourage them from ticking all suggested non-chronic health problems.

The non-chronic health problems on the list for consideration were derived from several sources. Starting point of the list was an overview of health problems examined in the Public Health Status Forecast or "Volksgezondheid Toekomst Verkenning" (VTV), an ongoing national research project coordinated by the Netherlands National Institute for Public Health and the Environment or "Rijksinstituut voor Volksgezondheid en Milieu" (RIVM) to describe the health status of the Dutch

population.[13] The overview of RIVM consisted of about fifty health problems that were considered as most important in the Netherlands (Gijsen *et al.*, 2010). From the overview of RIVM, the health problems with the greatest contribution to the overall morbidity in the Dutch population were selected. It was decided to select the health problems based on their "incidence" rather than their "prevalence", because these rates are (more) suitable to measure short-term health problems, which non-chronic health problems, generally, are (Gommer & Poos, 2010).[14] However, before a selection was made, first the health problems of the overview of RIVM were clustered in order to create (more) homogenous groups of health problems (e.g., all types of cancer grouped as "cancer"). Hereafter, all health problems that were non-chronic by nature and have an incidence higher than ten thousand cases annually were selected. In total, twelve health problems were chosen from the overview of RIVM.

A major health problem on the overview of RIVM was "injuries"; the health problem was not split into specific cases, but was considered as one category. Since most injuries are non-chronic by nature, it was decided to specify the category into specific items. To determine the most common injuries in the Netherlands, the injury-registration database of Consumer Safety Institute or "Stichting Consument en Veligheid" (SCV) was consulted.[15] In the database, injuries were sorted by type of accident (e.g., occupational injuries) and by part of the body. In order to create (more) homogenous groups of injuries, all available data were clustered (e.g., all types of fractures grouped as "fractures"). Hereafter, the seven most common types of injuries in the Netherlands were selected.

To verify the validity of the non-chronic health problems, two general practitioners were asked to assess the preliminary list of nineteen items. Both general practitioners confirmed that the chosen items were non-chronic health problems, but advised to rename some of them in order to increase the recognizability. One of the general practitioners suggested to include an additional non-chronic health problem; this suggestion was adopted. Therefore, the final list consisted of twenty non-chronic health problems for consideration.

To determine the individuals' family health history, a similar format as used to determine the personal health history of the individual was used. Once again, a list consisting of several health problems for consideration was used and individuals were again asked to describe the perceived severity of those on a seven-point rating scale ranging from "not severe" (1) to "very severe" (7). This time, however, all suggested health problems were genetic by nature and individuals were asked to describe the perceived severity of the health problems of their relatives. A screener question was used to exclude individuals who were suffering from the suggested genetic health problems themselves.

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[13] For the overview of health problems, please refer to VTV 2010 (http://www.nationaalkompas.nl/).

[14] In the medical science, the occurrence of health problems is measured in terms of incidence and prevalence. The incidence of a health problem refers to the number of new cases over a given period, while the prevalence is the number of existing cases over a given period or at a point in time (Bonita, Beaglehole & Kjellström, 2006).

[15] For the injury-registration database of SCV, please refer to SCV (http://www.veiligheid.nl/).

To determine which genetic health problems and which relatives had to be selected for the scale, input from the life insurance market was used. The individuals' family health history plays a more dominant role in the life insurance market, in contrast to the market of complementary health insurances. When applying for life insurance, individuals are required to provide information about their family health history. However, life insurers were restricted to questions about the presence of cardiovascular diseases, high blood pressure, diabetes, and disorders of psychological nature by parents and siblings. It was decided to adopt these genetic health problems and relatives for the scale as well. Therefore, the scale consisted of four items. An overall score ranging from 1 to 28 was derived when all item scores of the experienced genetic health problems were summed. The higher the overall score, the greater the perceived severity of the family health history.

Risk Attitude towards Health

To determine the individuals' risk attitude towards health, the health-risk attitude scale (HRAS) developed by Van Osch and Stiggelbout (2007) was adopted. The scale consists of thirteen items on a seven-point interval scale ranging from "totally disagree" (1) to "totally agree" (7), of which seven items (1, 3, 4, 6, 8, 9 and 10) were reverse-scored. An example item was: "My health means everything to me". Following the approach of Van Osch and Stiggelbout (2007), the items scores were summed to provide an overall score ranging from 13 to 91. The higher the overall score, the more risk seeking towards health individuals were.

Informational Influence

The individuals' susceptibility to informational influence was determined using one of the sub-scales developed by Bearden *et al*. (1989). The scale consists of four items, each followed by a seven-point interval scale ranging from "totally disagree" (1) to "totally agree" (7). None of the items were reverse-scored. An example item was: "If I have little experience with a product, I often ask my friends about the product". By summing all item scores, an overall score was provided ranged from 4 to 28. The higher the overall score, the more susceptible to informational influence the individual was.

For a schematic overview of all independent variables, please refer to appendix C.

3.3 Data Analyses

3.3.1 Data Screening

The raw data set consisted of 228 individuals in total, of which approximately 15 percent (n = 34) abandoned the questionnaire prior its completion. Before the data set was screened to examine the quality of the data, first these individuals were excluded using listwise deletion. Hereafter, the raw data set of all remaining individuals (n = 194) was screened for data entry errors, missing values, outliers, normality, multicollinearity and internal consistency reliability.

Data Entry Errors

To determine the accuracy of the data set, frequencies were run for all variables to check for data entry errors. As most questions in the questionnaire had a multiple choice format, each variable contained only legitimate numerical codes or values. An open question was only used for the variable "age". After checking the responses, it was found that all values for the variable "age" were legitimate (i.e., no individuals younger than 18 years of age participated). In addition, the values also seemed reasonable.

Missing Values

The data set was screened for missing values using frequencies. Except for those preceded by a screener question, all questions in the questionnaire were labeled as "must-answer". As a result, missing values were limited to only three variables in the data set. The first variable suffering missing values was "income individual". The missing values were caused by individuals who refused to indicate their level of income by filling in the option "I rather not say" (n = 22). It was decided to replace the missing values rather than deleting the individuals listwise or pairwise, because otherwise too much data would be excluded (listwise deletion) or data analysis would have to be performed with different data sets (pairwise deletion). The most logical solution was to replace the missing values by the mode. However, since most individuals reported their income was less than €1,000 (n = 39), it was believed this might bias the results. Therefore, the variable "income individual" was transformed into a ratio scaled variable by replacing the options of the original scale by mean values. These mean values were computed using the upper and lower bounds of the options. For example, the option "less than €1,000" was replaced by the mean value "€500" since the lower bound of the option was €0 and the upper bound €1,000. After the transformation of the variable, the missing values were replaced by the variable mean.

The second variable of which some values were missing was "income partner". The reason of the missing values was that most individuals in the data set did not have a partner (n = 69), while those who had would rather not say what the level of income of their partner was (n = 21). Because of the large volume of missing values, the variable "income partner" was deleted from the data set. Therefore, it was no longer possible to determine the significance of cross-income effects for choosing a level of health insurance coverage.

The third variable with missing values was "family health history". The missing values were caused by individuals suffering from cardiovascular diseases, high blood pressure, diabetes and/or disorders of psychological nature themselves (n = 36). The individuals were identified using a screener question, and were excluded from answering the questions about their family health history. Otherwise, it would not have been possible to test if an effect of the variable "family health history" on the individuals' level of health insurance coverage was the result of how individuals perceived the severity of the genetic health problems their relatives had, or whether it was based on their personal experiences with the suggested genetic health problems. Though the number of missing values was relatively large, it was decided to keep the variable "family health history" in the data set, because it was believed that the variable was of importance due its unique character

in the current study. The missing values were replaced by the variable mean rather than opting for pairwise or listwise deletion.

Outliers

By means of frequencies and box plots, the data was checked for outliers; the frequencies helped to determine whether the binary scaled variables had splits of 90/10 or worse, while the box plots were used for the ratio scaled variables (Tabachnick & Fidell, 2001). The data set consisted of two variables suffering outliers. For the variables "personal health history" and "family health history", some outliers were found in the higher portions of both distributions. Since it was believed that there was no reason to assume that there was a constructional error in the formulation of the corresponding scales, all scores were kept in the data set.

Normality

The normality of the data was tested in two ways. Shapiro-Wilk tests were conducted for a numerical check; this test of normality was run rather than the Kolmogorov-Smirnov test as the Shapiro-Wilk test is more appropriate for small and moderate sample sizes (Yazici & Yolacan, 2007). In addition, histograms and normal Q-Q plots were used for a visual inspection. The normality of the data was checked in order to determine which types of statistical analyses were appropriate to analyze the data.

First, a series of Shapiro-Wilk tests were performed to check the normality of the variables "age", "income individual", "personal health history", "family health history", "risk attitude towards health" and "informational influence"; the variables "gender", "parenthood status" and "health status" were excluded from analysis, because nominal scaled variables were, by definition, non-normally distributed (Field, 2005). The results of the Shapiro-Wilk tests for the variables "age", $W(194) = .935$, $p < .0001$, "income individual", $W(194) = .917$, $p < .0001$, "personal health history", $W(194) = .910$, $p < .0001$, and "family health history", $W(194) = .805$, $p < .0001$, were significant, which showed that the distribution of these variables were non-normal. For the variables "risk attitude towards health", $W(194) = .992$, $p = .409$, and "informational influence", $W(194) = .986$, $p = .058$, the results of the Shapiro-Wilk tests were non-significant, indicating that these variables were normally distributed (Field, 2005).

To make a more informed decision about the normality of the data, histograms and normal Q-Q plots were checked as well. The histograms of the four variables that were non-normally distributed according to the first series of Shapiro-Wilk tests confirmed that their distributions deviated from normal. For the variables "income individual", "personal health history" and "family health history", the histograms revealed a positively skewed distribution, while the histogram of the variable "age" suggested a bimodal distribution. It was believed that the latter was caused by the fact that most individuals were recruited through the researchers' personal network. The normal Q-Q plots of the four variables also confirmed that the distributions were non-normal, because the point patterns of the observed values were all curved (Field, 2005).

The graphs of the variable "risk attitude towards health" indicated that the distribution of the variable was normal: the histogram showed that the distribution was fairly symmetric and only a few observations at the upper end of the point pattern did not fall on the fitted line of the normal Q-Q plot. For the variable "informational influence", normality of the data was less evident, because the histogram had several peaks. However, the normal Q-Q plot visualized that most observed values did fall on the fitted line (Field, 2005).

To determine whether the variable "risk attitude towards health" was also normally distributed within groups or not, additional Shapiro-Wilk tests were conducted; the grouping variables in these analyses were the variables "gender", "parenthood status" and "health status". The results of the series of additional Shapiro-Wilk tests showed that the variable "risk attitude towards health" was normally distributed for each experimental condition of each grouping variable (male: $W[93] = .986$, $p = .453$, female: $W[101] = .991$, $p = .704$; with underaged children: $W[44] = .985$, $p = .837$, without underaged children: $W[150] = .992$, $p = .618$; healthy: $W[158] = .992$, $p = .579$, unhealthy: $W[36] = .984$, $p = .858$). The associated histograms and normal Q-Q plots confirmed these results, because the distributions were fairly bell-shaped and the point patterns of the observed values only slightly deviated from the fitted line (Field, 2005).

For an overview of the tests of normality, please refer to appendix D.

Multicollinearity

To detect multicollinearity, a correlation matrix among all variables of the socio-demographic factors was created and checked. As measure of association, Spearman's correlation coefficient (r_s) was used, because a couple of variables were non-normally distributed. There were no signs of multicollinearity in the correlation matrix, because none of the correlations was greater than .8 (Field, 2005). Therefore, all variables of the socio-demographic factors were appropriate to use in multivariate analyses.

For an overview of the test of multicollinearity, please refer to appendix E.

Internal Consistency Reliability

The variables "risk attitude towards health" and "informational influence" were both measured using multiple-item scales. Therefore, the internal consistency reliability of both scales was tested using Cronbach's Alpha. For the thirteen items that measured the individuals' risk attitude towards health, the value of Cronbach's Alpha was .782, against the reported value of .840 from the original study, indicating good internal consistency reliability (Field, 2005). The internal consistency reliability of the scale could be improved by removing item 5, which was consistent with the findings of Van Osch and Stiggelbout (2007). Moreover, a higher value of Cronbach's Alpha could be obtained when deleting item 13. However, since the scale was adopted from a published source, all thirteen items of the original scale were used.

The value of Cronbach's Alpha for the four items measuring the individuals' susceptibility to informational influence was .853, against the reported value of .830 from the original study. This value indicated good internal consistency reliability of the four items (Field, 2005). The internal consistency reliability of the scale could not be increased by deleting any item.

For an overview of the test of internal consistency reliability, please refer to appendix F.

Other Actions

Besides checking the quality of the data, a few other actions with regard to the data set were undertaken. First, it was decided to delete the variable "maternity care", because it was believed that maternity care, in hindsight, was not appropriate to include in the framework because it was assumed that this type of medical service was only relevant for a small part of the target population (young females) and, thus, may bias the results. For all other types of medical services, this problem was not expected. By deleting maternity care as type of medical service, the maximum number of complementary health insurances individuals could select from the framework decreased from 8 to 7.

Second, nine binary scaled variables were created for descriptive purposes only. First, a variable was created to indicate whether individuals had an additional deductible or not. Second, a variable was defined to check if individuals had complementary health insurance; the variable was labeled as "yes" when individuals had selected at least one complementary health insurance from the framework. Finally, for each type of medical service, a variable was created to determine whether individuals had opted for complementary health insurance or not.

3.3.2 Statistical Analyses

The data was analyzed using SPSS for Windows, version 21.0. First, descriptive statistics were performed to characterize the study population, but also to provide more in-depth insights. The descriptive statistics included frequencies, standard measures of central tendency (mean, median and mode) and standard measures of dispersion (standard deviation, interquartile range, minimum and maximum). Pearson's chi-square tests, independent samples *t*-tests and Mann-Whitney *U* tests were performed to determine significant associations between the socio-demographic factors and having an additional deductible, between the socio-demographic factors and having complementary health insurance (overall as well as per type of medical service) and between having an additional deductible and having complementary health insurance. For these bivariate analyses, effect sizes were calculated as well.

Pearson's chi-square tests were conducted to determine whether the socio-demographic factors gender, parenthood status and health status were each significantly related to having an additional deductible as well as to having complementary health insurance (overall and per type of medical service). Moreover, a Pearson's chi-square test was conducted to determine if individuals with an additional deductible were also significantly more likely to have complementary health insurance. Pearson's chi-square tests were appropriate, because all these variables were nominal scaled. The effect sizes were calculated using Cramer's *V* (φ_c); when relevant, odds ratios were computed

for focused comparison. The Pearson's chi-square test assumed that the expected cell counts of the contingency table should be greater than 5. When this assumption was violated, the Fisher's exact test was performed (Field, 2005).

Independent samples *t*-tests were conducted to determine whether the mean values of the socio-demographic factors risk attitude towards health and susceptibility to informational influence significantly differed between individuals with and without an additional deductible and between individuals with and without complementary health insurance (overall and per type of medical service). The independent samples *t*-tests were used, because both dependent variables were nominal scaled with two experimental conditions, while both independent variables were ratio scaled and normally distributed; the latter was important, because the independent samples *t*-test was based on the normal distribution. The effect sizes (*r*) were calculated by hand using the *t*-values and degrees of freedom of the independent samples *t*-tests (Field, 2005).

Mann-Whitney *U* tests were performed to test for significant differences in mean rankings of the socio-demographic factors age, income, personal health history and family health history between individuals with and without an additional deductible as well as between individuals with and without complementary health insurance (overall and per type of medical service). The Mann-Whitney *U* test is the non-parametric alternative of the independent samples *t*-test and was used since the socio-demographic factors age, income, personal health history and family health history were all non-normally distributed. The effect sizes (*r*) were computed by hand using the *z*-scores of the Mann-Whitney *U* test (Field, 2005).

The effect of socio-demographic factors on the individuals' level of health insurance coverage as well as their risk attitude towards health was determined using regression analysis. In the current study, three types of regression analyses were used: ordinal logistic regression analysis, Poisson loglinear regression analysis and ordinary least squares regression analysis.

Ordinal logistic regression analyses were used to determine the effect of the socio-demographic factors gender, age, income, parenthood status, health status, personal health history, family health history and risk attitude towards health on the individuals' level of additional deductible as well as their level of complementary health insurance coverage per type of medical service. Ordinal logistic regression analysis was used, because this type of regression analysis is appropriate to analyze ordinal scaled dependent variables. The ordinal logistic regression model has more than one intercept (also known as thresholds). An assumption of ordinal logistic regression analysis is the parallel line assumption, which means that the effect of any independent variable is consistent across the different thresholds (Strand, Cadwallader & First, n.d.). In practice, the parallel line assumption is often violated. When the parallel line assumption was violated, a generalized ordinal logistic regression analysis was performed, which relaxes the parallel lines assumption (Brown, n.d.)

To answer the hypothesis about the effect of the socio-demographic factors gender (H1a), age (H3a), income (H5a), parenthood status (H7a), health status (H9a), personal health history (H11a) and family health history (H13a) on the level of additional deductible as well as the effect of the socio-demographic factors on the level of complementary health insurance coverage per type of medical service, the following regression model was used:[16]

$$\text{logit}(Y \leq i) = a_i + \beta_1 \text{Gender} + \beta_2 \text{Age} + \beta_3 \text{Income individual} + \beta_4 \text{Parenthood status} + \beta_5 \text{Health status} + \beta_6 \text{Personal health history} + \beta_7 \text{Family health history} \quad (1)$$

In which Y is the dependent variable, a_i the intercept for level i and β the regression coefficient of the particular socio-demographic factor (Bender & Grouven, 1997). For answering the hypotheses about the effect of the socio-demographic factor risk attitude towards health (H15a) on the level of additional deductible as well as to determine the effect of risk attitude towards health on the level of complementary health insurance coverage per type of medical service, regression model (1) was extended:

$$\text{logit}(Y \leq i) = a_i + \beta_1 \text{Gender} + \beta_2 \text{Age} + \beta_3 \text{Income individual} + \beta_4 \text{Parenthood status} + \beta_5 \text{Health status} + \beta_6 \text{Personal health history} + \beta_7 \text{Family health history} + \beta_8 \text{Risk attitude towards health} \quad (2)$$

Poisson loglinear regression analysis was used to determine the effect of the socio-demographic factors gender, age, income, parenthood status, health status, personal health history, family health history and risk attitude towards health on the number of complementary health insurances. Poisson loglinear regression analysis is a type of regression analysis which is appropriate for analyzing count data, like the number of complementary health insurances.

To answer the hypothesis about the effect of the socio-demographic factors gender (H1b), age (H3b), income (H5b), parenthood status (H7b), health status (H9b), personal health history (H11b) and family health history (H13b) on the number of complementary health insurances, the following regression model was used:[17]

$$\log(\mu) = a + \beta_1 \text{Gender} + \beta_2 \text{Age} + \beta_3 \text{Income individual} + \beta_4 \text{Parenthood status} + \beta_5 \text{Health status} + \beta_6 \text{Personal health history} + \beta_7 \text{Family health history} \quad (3)$$

In which μ is the expected value of the number of complementary health insurances, a the intercept and β the regression coefficient of the particular socio-demographic factor. To test the hypotheses about the effect of the socio-demographic factor risk attitude towards health (H15b) on the number of complementary health insurances, the individuals' risk attitude towards health was also included as independent variable:

[16] Equations (1) and (2) were constructed using Bender and Grouven (1997).
[17] Equations (3) and (4) were constructed using Anderson (n.d.).

$$\log(\mu) = \alpha + \beta_1 \text{Gender} + \beta_2 \text{Age} + \beta_3 \text{Income individual} + \beta_4 \text{Parenthood status} + \beta_5 \text{Health status} + \beta_6 \text{Personal health history} + \beta_7 \text{Family health history} + \beta_8 \text{Risk attitude towards health} \quad (4)$$

An ordinary least squares regression analysis was conducted to answer the hypotheses about the effect of the socio-demographic factors gender (H2), age (H4), income individual (H6), parenthood status (H8), health status (H10), personal health history (H12) and family health history (H14) on the individuals' risk attitude towards health. Ordinary least squares regression was appropriate, because the dependent variable was ratio-scaled. To test the hypothesis, the following regression model was used:

$$Y = \beta_0 + \beta_1 \text{Gender} + \beta_2 \text{Age}_i + \beta_3 \text{Income individual} + \beta_4 \text{Parenthood status} + \beta_5 \text{Health status} + \beta_6 \text{Personal health history} + \beta_7 \text{Family health history} \quad (5)$$

In which Y is the outcome for risk attitude towards health, β_0 the intercept and β_n the regression coefficient of the particular socio-demographic factor.

Finally, besides determining the direct effect of the socio-demographic factor risk attitude towards health, regression model (2) and (4) were also used to determine the mediating effect of the variable. Mediation was determined using the approach of Baron and Kenny (1986). However, there was a problem in using the approach. As mentioned before, ordinary least squares regression analysis was conducted to determine the effect of the socio-demographic factors gender, age, income, parenthood status, health status, personal health history and family health history on the particular socio-demographic factor. However, for the other steps of the mediation analyses, ordinal logistic regression analysis or Poisson loglinear regression analysis was used. As a result, the obtained coefficients were not comparable, because they ended up being in different scales (Herr, n.d.). A method for converting coefficients was offered by Herr (n.d.). However, due to the complexity of this solution, it was decided only checking the significance of a coefficient when testing for mediation.

For all statistical tests, the level of significance was set at $p < 0.05$.

4 Results

4.1 Descriptive Statistics

4.1.1 Sample Characteristics

The overall sample consisted of 194 individuals, of which 52 percent (*n* = 101) was female. The median age of the individuals was 45 years (*IQR* = 28.25 years), with the youngest individual being 18 years old and the oldest 78 years. The median gross income of the individuals in the overall sample was about €2,462 per month (*IQR* = €2,000.00). Furthermore, nearly 23 percent (*n* = 44) had underaged children and over eighty percent (*n* = 158) indicated their health status was "healthy". The median scores for the personal health history and family health history were 12.00 (*IQR* = 13.25) and 4.91 (*IQR* = 6.25), respectively. Finally, the individuals in the overall sample were, on average, slightly risk averse towards health (*M* = 43.03, *SD* = 9.97) and responded, on average, either neutrally or with moderate disagreement to those questions that determined their susceptibility to informational influence (*M* = 14.91, *SD* = 4.94).

The overall sample was biased in several ways. Firstly, females were slightly overrepresented in the overall sample, because only 50.5 percent of the Dutch population is female (CBS, 2012b). Secondly, the overall sample was biased in age, because the median age was higher than the national median of 41.10 years (CBS, 2012c). Finally, it was found that the median income of the overall sample was higher compared to the Dutch population, which was about €2,000 per month (CBS, 2012d). The percentage of individuals in the overall sample with underaged children and that of individuals reporting their health status was "healthy" were quite similar to the Dutch population (CBS, 2012e; CBS, 2012f). The results for personal health history and family health history were not comparable with national data, as both scales were created by the researcher himself. To the researchers' best knowledge, no national data was available with regard to the individuals' risk attitude towards health and susceptibility to informational influence. Since the overall sample was not representative for the Dutch population, it was not possible to generalize the results to all individuals of the Netherlands.

4.1.2 Bivariate Analyses between Socio-demographic Factors and Having an Additional Deductible

All individuals in the overall sample had basic health insurance (*n* = 194). Of these individuals, about 22 percent (*n* = 43) had opted for an additional deductible on top of their mandatory deductible. The most popular level of additional deductible among individuals with an additional deductible was €200 per year (*n* = 17), while the least popular level was €400 per year (*n* = 2); twelve individuals had opted for the legal maximum level of additional deductible of €500 per year. The percentage of individuals in the overall sample with an additional deductible as well as the distribution of individuals over the different levels of additional deductible both differed largely from national data (see Figure 2.1).

To determine whether the socio-demographic factors gender, age, income individual, parenthood status, health status, personal health history, family health history, risk attitude towards health and susceptibility to informational influence were each significantly related to having an additional deductible, Pearson's chi-square tests, Mann-Whitney *U* tests and independent samples *t*-tests were conducted. The results of the bivariate analyses revealed there were no significant differences in socio-demographics between individuals in the overall sample with an additional deductible and individuals without an additional deductible.

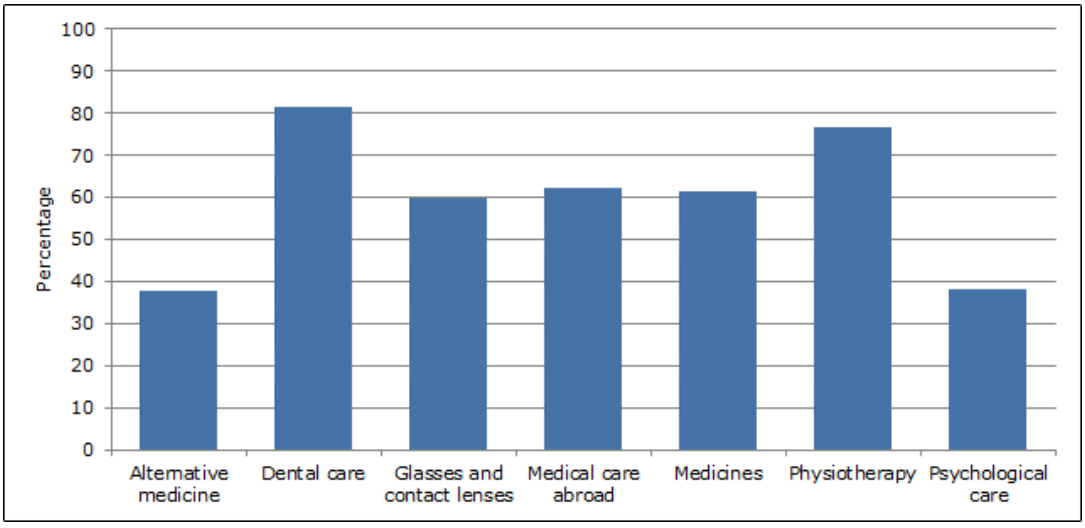
For all descriptive statistics of individuals with and without an additional deductible, the results of the bivariate analyses and the frequency distribution of the level of additional deductible in the current study, please refer to appendix G.

4.1.3 Bivariate Analyses between Socio-demographic Factors and Having Complementary Health Insurance

Of the 194 individuals in the overall sample, 180 individuals (93 percent) had complementary health insurance. About 5 percent (*n* = 9) had selected only one complementary health insurance from the framework, while 11 percent (*n* = 22) had selected complementary health insurance for all seven types of medical services. The mode response was five complementary health insurances (*n* = 47).

Figure 4.1 visualized the percentage of individuals having complementary health insurance by type of medical service. The results showed that the most popular type of medical service for which individuals had selected complementary health insurance was dental care (*n* = 158), followed by physiotherapy (*n* = 149), medical care abroad (*n* = 120), medicines (*n* = 119), glasses and contacts lenses (*n* = 116), psychological care (*n* = 74) and alternative medicine (*n* = 73). These different percentages suggested that the type of medical service seems to matter when individuals selecting complementary health insurance.

Figure 4.1: Percentage of Individuals in the Overall Sample Having Complementary Health Insurance by Type of Medical Service



Gender

In the overall sample, 95 percent (n = 96) of the females and 90 percent (n = 84) of the males had selected at least one complementary health insurance from the framework. The most popular type of medical service for which males had selected complementary health insurance was dental care; complementary health insurance for this type of medical service was almost three times more often selected than for alternative medicine, the least popular type of medical service among males. Physiotherapy was the most popular type of medical service for which females had selected complementary health insurance, while psychological care was least popular.

To determine whether gender was significantly related to having complementary health insurance, a series of Pearson's chi-square tests were conducted. The results of the Pearson's chi-square test for the overall sample indicated that females were not significantly more likely to have complementary health insurance than males, χ^2 (1, n = 194) = 1.62, p = .204, φ_c = .09. Per type of medical service, a significant relationship was found between gender and having complementary health insurance for alternative medicine, χ^2 (1, n = 194) = 8.79, p = .003, φ_c = .21, as well as between gender and having complementary health insurance for physiotherapy, χ^2 (1, n = 194) = 8.23, p = .004, φ_c = .21. In particular, females were 2.5 times more likely to have complementary health insurance for alternative medicine than males, while for physiotherapy the odds ratio was 2.7 times. For both types of medical services, the effect size indicated a moderate association (Rea & Parker, 2012).

Age

Whether individuals with complementary health insurance significantly differed in age from individuals without complementary health insurance was determined by conducting a series of Mann-Whitney U tests. For the overall sample, the results of the Mann-Whitney U test showed that individuals who had selected at least one complementary health insurance from the framework (*Mdn* = 45.00 years, *IQR* = 28.00 years) were not significantly younger or older than individuals without complementary health insurance (*Mdn* = 43.50 years, *IQR* = 30.25 years), U = 1,226.00, p = .869, r = -.01. The results of the Mann-Whitney U tests per type of medical service showed there was a significant difference in age between individuals with and without complementary health insurance for glasses and contact lenses, U = 3,223.00, p = .001, r = -.24, as well as between individuals with and without complementary health insurance for physiotherapy, U = 2,341.50, p = .002, r = -.22. For both types of medical services, individuals with complementary health insurance were older than individuals without complementary health insurance. The effect size for glasses and contact lenses and physiotherapy both represented a small sized effect (Field, 2005).

Income

A series of Mann-Whitney *U* tests were conducted to determine whether individuals with and without complementary health insurance significantly differed in level of income. The results of the Mann-Whitney *U* test for the overall sample showed that individuals who had selected at least one complementary health insurance from the framework (*Mdn* = €2,500.00, *IQR* = €2,000.00) did not significantly differ in level of income from individuals without complementary health insurance *(Mdn* = €1,500.00, *IQR* = €1,000.00), *U* = 1,009.00, *p* = .867, *r* = -.09. Per type of medical service, a significant difference in level of income was found between individuals with and without complementary health insurance for glasses and contact lenses, *U* = 3,626.50, *p* = .018, *r* = -.17, as well as between individuals with and without complementary health insurance for physiotherapy, *U* = 2,510.00, *p* = .010, *r* = -.19. For both types of medical services, individuals with complementary health insurance had higher levels of income than individuals without complementary health insurance. The effect size for glasses and contact lenses and physiotherapy both indicated a small sized effect (Field, 2005).

Parenthood Status

With regard to parenthood status, 98 percent (n = 43) of the individuals in the overall sample with underaged children and 91 percent (*n* = 137) of those without had selected at least one complementary health insurance from the framework. For both groups, the most popular type of medical service for which they had selected complementary health insurance was dental care; the least popular type of medical service among individuals with underaged children was alternative medicine, while for individuals without underaged children it was psychological care.

The significance of the relationship between parenthood status and having complementary health insurance for the overall sample was tested using Fisher's exact test since the assumption of expected cell counts of the Pearson's chi-square test was broken and clustering of responses not possible due to the 2 × 2 format of the contingency table. The results of the Fisher's exact test for the overall sample showed there was no significant relationship between the parenthood status of the individual and having complementary health insurance, *p* = .197.

Per type of medical service, a series of Pearson's chi-square tests were conducted to determine whether parenthood status was significantly related to having complementary health insurance. For three types of medical services, a significant relationship between the parenthood status of the individual and having complementary health insurance was found: medical care abroad, χ^2 (1, *n* = 194) = 4.17, *p* = .041, φ_c = .15, medicines, χ^2 (1, *n* = 194) = 7.96, *p* = .005, φ_c = .20, and physiotherapy, χ^2 (1, *n* = 194) = 4.47, *p* = .034, φ_c = .15. In particular, individuals with underaged children were 2.2 times more likely to have complementary health insurance for medical care abroad than individuals without underaged children; the odds ratios for medicines and physiotherapy were 3.1 times and 2.8 times, respectively. For medical care abroad and physiotherapy, the effect size both indicated a weak association, while the effect size for medicines represented a moderate association (Rea & Parker, 2012).

Health Status

For health status, 92 percent (n = 146) of the individuals in the overall sample reporting their health status was "healthy" had selected at least one complementary health insurance from the framework; for individuals perceiving themselves as "unhealthy" this percentage was 94 percent (n = 34). For individuals indicating their health status was "healthy", the most popular types of medical services to select complementary health insurance for were dental care and physiotherapy, while the least popular type of medical service among these individuals was alternative medicine. The most popular type of medical service among individuals perceiving themselves as "unhealthy" was dental care, while alternative medicine and psychological care were least popular.

To determine whether health status and having complementary health insurance were significantly related, a Fisher's exact test was necessary since the assumption of expected cell counts of the Pearson's chi-square test was violated and clustering of responses not possible because the data formed a 2 × 2 contingency table. The results of the Fisher's exact test for the overall sample showed there was no significant relationship between both variables, p = .747.

A series of Pearson's chi-square tests were run to determine the significance of the relationship between health status and having complementary health insurance per type of medical service. The results of the Pearson's chi-square tests revealed there was a significant relationship between health status and having complementary health insurance for alternative medicine, χ^2 (1, n = 194) = 4.32, p = .038, φ_c = .15, as well as between health status and having complementary health insurance for glasses and contact lenses, χ^2 (1, n = 194) = 4.25, p = .039, φ_c = .15. In particular, individuals classifying their health status was "unhealthy" were 2.2 times more likely to have complementary health insurance for alternative medicine than individuals indicating their health status was "healthy", while for glasses and contact lenses the odds ratio was 2.3 times. For both types of medical services, the effect size represented a weak association (Rea & Parker, 2012).

Personal Health History

The existence of significant difference in personal health history between individuals with and without complementary health insurance was determined by conducting a series of Mann-Whitney U tests. The results of the Mann-Whitney U test for the overall sample indicated there was no significant difference in personal health history between individuals who had selected at least one complementary health insurance from the framework (Mdn = 12.00, IQR = 12.75) and individuals without complementary health insurance (Mdn = 9.00, IQR = 14.75), U = 1,190.50, p = .731, r = -.02. Per type of medical service, the results of the Mann-Whitney U tests showed a significant difference in personal health history between individuals with and without complementary health insurance for alternative medicine, U = 3,413.00, p = .008, r = -.19. In particular, individuals with complementary health insurance for alternative medicine perceived their personal health history as more severe than individuals without complementary health insurance for alternative medicine. The effect size represented a small sized effect (Field, 2005).

Family Health History

A series of Mann-Whitney *U* tests were run to determine if individuals with complementary health insurance significantly differed in family health history from individuals without complementary health insurance. For the overall sample, the results of the Mann-Whitney *U* test indicated that there was a significant difference in family health history between individuals who had selected at least one complementary health insurance from the framework (*Mdn* = 4.91, *IQR* = 7.00) and individuals without complementary health insurance (*Mdn* = 0.00, *IQR* = 4.91), *U* = 819.00, *p* = .024, *r* = -.16. The effect size represented a small sized effect. The results of the Mann-Whitney *U* tests per type of medical service revealed a significant difference in family health history between individuals with and without complementary health insurance for physiotherapy, *U* = 3,556.00, *p* = .009, *r* = -.19, as well as between individuals with and without complementary health insurance for psychological care, *U* = 3,511.00, *p* = .011, *r* = -.18. For both types of medical services, individuals with complementary health insurance perceived their family health history as more severe than individuals without complementary health insurance. The effect size for physiotherapy and psychological care both represented a small sized effect (Field, 2005).

Risk Attitude towards Health

To determine whether individuals with and without complementary health insurance significantly differed in risk attitude towards health, a series of independent samples *t*-tests were performed. The results of the independent samples *t*-test for the overall sample revealed there was no significant differences between individuals who had selected at least one complementary health insurance from the framework (*M* = 43.10, *SD* = 10.03) and individuals without complementary health insurance, (*M* = 42.07, *SD* = 9.43) in risk attitude towards health, *t*(192) = .37, *p* = .711, *r* = .03. Per type of medical service, the results of the independent samples *t*-test indicated a significant difference in risk attitude towards health between individuals with and without complementary health insurance for alternative medicine, *t*(192) = -1.99, *p* = .048, *r* = .14, as well as between individuals with and without complementary health insurance for physiotherapy, *t*(192) = -2.97, *p* = .003, *r* = .21. For both types of medical services, it was found that individuals with complementary health insurance were more risk averse towards health than individuals without complementary health insurance. The effect size for alternative medicine and physiotherapy both represented a small sized effect (Field, 2005).

Informational Influence

Whether individuals with complementary health insurance differed significantly from individuals without complementary health insurance in susceptibility to information influence was determined by conducted a series of independent samples *t*-tests. The results of the independent samples *t*-test for the overall sample indicated that individuals who had selected at least one complementary health insurance from the framework (*M* = 15.07, *SD* = 4.98) were not significantly more or less susceptible to informational influence than individuals without complementary health insurance (*M* = 12.79, *SD* = 4.10), *t*(192) = 1.68, *p* = .096, *r* = .12. Per type of medical service, no significant differences in susceptibility to informational influence were found.

For all descriptive statistics of individuals with and without complementary health insurance (overall as well as per type of medical service), the results of the bivariate analyses (overall as well as per type of medical service) and the frequency distribution of the number of complementary health insurances as well as the level of complementary health insurance coverage per type of medical service, please refer to appendix G.

4.1.4 Bivariate Analyses between Having an Additional Deductible and Having Complementary Health Insurance

Interesting to determine was if individuals with an additional deductible were also significantly more likely to have complementary health insurance. This relationship was tested using Fisher's exact test since the assumption of expected cell counts of Pearson's chi-square test was broken and clustering of responses not possible due to the 2 × 2 format of the contingency table. The results of the Fisher's exact test indicated there was no significant relationship between having an additional deductible and having complementary health insurance, $p = .199$.

4.2 Regression Analyses per Type of Medical Service

4.2.1 Regression Analyses for Level of Complementary Health Insurance Coverage for Alternative Medicine

Direct Effects

The results of regression model (1) for the level of complementary health insurance coverage for alternative medicine indicated that gender and personal health history both had a significant effect on the level of complementary health insurance coverage for alternative medicine.

The coefficient for the variable "gender" revealed there was a significant positive relationship between being female and the level of complementary health insurance coverage for alternative medicine. In particular, when the individual was a female and all other independent variables were held constant, the ordered log-odds of being in a higher level of complementary health insurance coverage for alternative medicine increased by 0.860 units, Wald(1, $n = 194$) = 5.97, $p = .015$, $OR = 2.363$. This finding supported that females were more likely to have a higher level of complementary health insurance coverage for alternative medicine than males.

The coefficient for the variable "personal health history" indicated there was a significant positive relationship between the personal health history of the individual and the level of complementary health insurance coverage for alternative medicine. In particular, when the personal health history of the individual increased by one unit and all other independent variables were held constant, the ordered log-odds of being in a higher level of complementary health insurance coverage for alternative medicine increased by 0.030 units, Wald(1, $n = 194$) = 4.14, $p = .042$, $OR = 1.030$. This result revealed that individuals reporting higher levels of perceived severity for their personal health history were more likely to have a higher level of complementary health insurance coverage for alternative medicine than individuals reporting lower levels of perceived severity, suggesting the significance of the availability bias.

The effect of age, Wald(1, *n* = 194) = 3.52, *p* = .061, *OR* = 1.020, income, Wald(1, *n* = 194) = 0.08, *p* = .775, *OR* = 1.00003, parenthood status, Wald(1, *n* = 194) = 2.68, *p* = .102, *OR* = 1.774, health status, Wald(1, *n* = 194) = 0.31, *p* = .577, *OR* = 1.239, and family health history, Wald(1, *n* = 194) = 0.16, *p* = .685, *OR* = 1.010, on the level of complementary health insurance coverage for alternative medicine was non-significant.

Mediator Effects

The results of regression model (2) for the level of complementary health insurance coverage for alternative medicine showed that risk attitude towards health had a non-significant effect on the level of complementary health insurance coverage for alternative medicine, Wald(1, *n* = 194) = 0.40, *p* = .525, *OR* = 0.989. As the relationship between both variables was non-significant, one of the conditions of mediation was violated and, therefore, no mediator analysis was conducted (Baron & Kenny, 1986).

For an overview of the regression results for the level of complementary health insurance coverage for alternative medicine, please refer to appendix H.

4.2.2 Regression Analyses for Level of Complementary Health Insurance Coverage for Dental Care

Direct Effects

The results of regression model (1) for the level of complementary health insurance coverage for dental care indicated that parenthood status had a significant effect on the level of complementary health insurance coverage for dental care.

The coefficient for the variable "parenthood status" showed there was a significant positive relationship between having underaged children and the level of complementary health insurance coverage for dental care. In particular, when the individual had underaged children and all other independent variables were held constant, the ordered log-odds of being in a higher level of complementary health insurance coverage for dental care increased by 0.733 units, Wald(1, *n* = 194) = 5.60, *p* = .018, *OR* = 2.081. This result revealed that individuals with underaged children were more likely to have a higher level of complementary health insurance coverage for dental care than individuals without underaged children.

The effect of gender, Wald(1, *n* = 194) = 0.09, *p* = .771, *OR* = 1.090, age, Wald(1, *n* = 194) = 3.78, *p* = .053, *OR* = 1.018, income, Wald(1, *n* = 194) = 0.38, *p* = .540, *OR* = 1.00006, health status, Wald(1, *n* = 194) = 0.05, *p* = .826, *OR* = 0.928, personal health history, Wald(1, *n* = 194) = 0.58, *p* = .445, *OR* = 1.010, and family health history, Wald(1, *n* = 194) = 0.20, *p* = .659, *OR* = 0.990, on the level of complementary health insurance coverage for dental care was non-significant.

Mediator Effects

The results of regression model (2) for the level of complementary health insurance coverage for dental care revealed that risk attitude towards health had a non-significant effect on the level of complementary health insurance coverage for dental care, Wald(1, n = 194) = 1.56, p = .212, OR = 1.018. As the relationship between both variables was non-significant, one of the conditions of mediation was breached and, therefore, no mediator analysis was performed (Baron & Kenny, 1986).

For an overview of the regression results for the level of complementary health insurance coverage for dental care, please refer to appendix I.

4.2.3 Regression Analyses for Level of Complementary Health Insurance Coverage for Glasses and Contact Lenses

Direct Effects

The results of regression model (1) for the level of complementary health insurance coverage for glasses and contact lenses showed that age had a significant effect on the level of complementary health insurance coverage for glasses and contact lenses.

The coefficient for the variable "age" indicated there was a significant positive relationship between the age of the individual and the level of complementary health insurance coverage for glasses and contact lenses. In particular, when the age of the individual increased by one year and all other independent variables were held constant, the ordered log-odds of being in a higher level of complementary health insurance coverage for glasses and contact lenses increased by 0.031 units, Wald(1, n = 194) = 10.31, p = .001, OR = 1.032. This finding supported that older individuals were more likely to have a higher level of complementary health insurance coverage for glasses and contact lenses compared to younger individuals.

The effect of gender, Wald(1, n = 194) = 0.60, p = .438, OR = 1.276, income, Wald(1, n = 194) = 036, p = .551, OR = 1.00006, parenthood status, Wald(1, n = 194) = 1.60, p = .206, OR = 1.507, health status, Wald(1, n = 194) = 0.03, p = .858, OR = 0.939, personal health history, Wald(1, n = 194) = 0.34, p = .559, OR = 0.992, and family health history, Wald(1, n = 194) = 1.96, p = .162, OR = 1.035, on the level of complementary health insurance coverage for glasses and contact lenses was non-significant.

Mediator Effects

The results of regression model (2) for the level of complementary health insurance coverage for glasses and contact lenses demonstrated that risk attitude towards health had a non-significant effect on the level of complementary health insurance coverage for glasses and contact lenses, Wald(1, n = 194) = 2.95, p = .086, OR = 1.025. As the relationship between both variables was non-significant, one of the conditions of mediation was breached and, therefore, no mediator analysis was conducted (Baron & Kenny, 1986).

For an overview of the regression results for the level of complementary health insurance coverage for glasses and contact lenses, please refer to appendix J.

4.2.4 Regression Analyses for Level of Complementary Health Insurance Coverage for Medical Care Abroad

Direct Effects

The results of regression model (1) for the level of complementary health insurance coverage for medical care abroad showed that the effect of gender, Wald(1, n = 194) = 1.50, p = .221, OR = 1.471, age, Wald(1, n = 194) = 0.01, p = .927, OR = 0.999, income, Wald(1, n = 194) = 3.65, p = .056, OR = 1.0002, parenthood status, Wald(1, n = 194) = 0.26, p = .608, OR = 1.175, health status, Wald(1, n = 194) = 0.20, p = .651, OR = 1.181, personal health history, Wald(1, n = 194) = 0.01, p = .914, OR = 1.001, and family health history, Wald(1, n = 194) = 0.55, p = .459, OR = 0.983, on the level of complementary health insurance coverage for medical care abroad was non-significant.

Mediator Effects

The results of regression model (2) for the level of complementary health insurance coverage for medical care abroad indicated that that risk attitude towards health had a significant effect on the level of complementary health insurance coverage for medical care abroad. In particular, when the risk attitude towards health of the individual increased by one unit and all other independent variables were held constant, the ordered log-odds of being in a higher level of complementary health insurance coverage for medical care abroad increased by 0.037 units, Wald(1, n = 194) = 5.98, p = .014, OR = 1.037. This finding supported that individuals being more risk seeking towards health were more likely to have a high level of complementary health insurance coverage for medical care than individuals being more risk averse towards health.

Though the relationship between risk attitude towards health and the level of complementary health insurance coverage for medical care abroad was significant, no mediator analysis was run since none of the direct effects of the socio-demographic factors on the level of complementary health insurance coverage for medical care abroad was significant. This latter was a violation of one of the conditions of mediation (Baron & Kenny, 1986).

For an overview of the regression results for the level of complementary health insurance coverage for medical care abroad, please refer to appendix K.

4.2.5 Regression Analyses for Level of Complementary Health Insurance Coverage for Medicines

Direct Effects

The results of regression model (1) for the level of complementary health insurance coverage for medicines indicated that parenthood status had a significant effect on the level of complementary health insurance coverage for medicines.

The coefficient for the variable "parenthood status" demonstrated there was a significant positive relationship between having underaged children and the level of complementary health insurance coverage for medicines. In particular, when the individual had underaged children and all other independent variables were held constant, the ordered log-odds of being in a higher level of complementary health insurance coverage for medicines increased by 0.787 units, Wald(1, n = 194) = 6.29, p = .012, OR = 2.197. The result showed that individuals with underaged children were more likely to have a higher level of complementary health insurance coverage for medicines compared to individuals without underaged children.

The effect of gender, Wald(1, n = 194) = 1.67, p = .196, OR = 1.478, age, Wald(1, n = 194) = 0.08, p = .777, OR = 1.003, income, Wald(1, n = 194) = 1.74, p = .188, OR = 1.0001, health status, Wald(1, n = 194) = 0.42, p = .519, OR = 1.264, personal health history, Wald(1, n = 194) = 0.59, p = .442, OR = 1.010, and family health history, Wald(1, n = 194) = 1.34, p = .247, OR = 1.027, on the level of complementary health insurance coverage for medicines was non-significant.

Mediator Effects

The results of regression model (2) for the level of complementary health insurance coverage for medicines revealed that that risk attitude towards health had had a non-significant effect on the level of complementary health insurance coverage for medicines, Wald(1, n = 194) = 0.78, p = .379, OR = 0.987. As the relationship between both variables was non-significant, one of the conditions of mediation was breached and, therefore, no mediator analysis was conducted (Baron & Kenny, 1986).

For an overview of the regression results for the level of complementary health insurance coverage for medicines, please refer to appendix L.

4.2.6 Regression Analyses for Level of Complementary Health Insurance Coverage for Physiotherapy

Direct Effects

The results of regression model (1) for the level of complementary health insurance coverage for physiotherapy revealed that gender and age both had a significant effect on the level of complementary health insurance coverage for physiotherapy.

The coefficient for the variable "gender" indicated there was a significant positive relationship between being female and the level of complementary health insurance coverage for physiotherapy. In particular, when the individual was a female and all other independent variables were held constant, the ordered log-odds of being in a higher level of complementary health insurance coverage for physiotherapy increased by 0.760 units, Wald(1, n = 194) = 6.47, p = .011, OR = 2.138. This result supported that females were more likely to have a higher level of complementary health insurance coverage for physiotherapy than males.

The coefficient for the variable "age" demonstrated there was a significant positive relationship between the age of the individual and the level of complementary health insurance coverage for physiotherapy. In particular, when the age of the individual increased by one year and all other independent variables were held constant, the ordered log-odds of being in a higher level of complementary health insurance coverage for physiotherapy increased by 0.026 units, Wald(1, n = 194) = 7.62, p = .006, OR = 1.027. This finding showed that older individuals were more likely to have a higher level of complementary health insurance coverage for physiotherapy than younger individuals.

The effect of income, Wald(1, n = 194) = 1.48, p = .224, OR = 1.0001, parenthood status, Wald(1, n = 194) = 1.17, p = .279, OR = 1.399, health status, Wald(1, n = 194) = 0.04, p = .850, OR = 1.069, personal health history, Wald(1, n = 194) = 2.57, p = .109, OR = 1.022, and family health history, Wald(1, n = 194) = 0.38, p = .537, OR = 1.014, on the level of complementary health insurance coverage for physiotherapy was non-significant.

Mediator Effects

The results of regression model (2) for the level of complementary health insurance coverage for physiotherapy indicated that risk attitude towards health had had a non-significant effect on the level of complementary health insurance coverage physiotherapy, Wald(1, n = 194) = 0.91, p = .341, OR = 0.986. As the relationship between both variables was non-significant, one of the conditions of mediation was violated and, therefore, no mediator analysis was run (Baron & Kenny, 1986).

For an overview of the regression results for the level of complementary health insurance coverage for physiotherapy, please refer to appendix M.

4.2.7 Regression Analyses for Level of Complementary Health Insurance Coverage for Psychological Care

Direct Effects

The results of regression model (1) for the level of complementary health insurance coverage for psychological care showed that level of income and family health history both had a significant effect on the level of complementary health insurance coverage for psychological care.

The coefficient for the variable "income individual" demonstrated there was a significant positive relationship between the level of income of the individual and the level of complementary health insurance coverage for psychological care. In particular, when the level of income of the individual increased by one Euro per month and all other independent variables were held constant, the ordered log-odds of being in a higher level of complementary health insurance coverage for psychological care increased by 0.0002 units, Wald(1, n = 194) = 4.83, p = .028, OR = 1.0002. This result revealed that individuals with higher levels of income were more likely to have higher levels of complementary health insurance coverage for psychological care than individuals with lower levels of income.

The coefficient for the variable "family health history" indicated there was a significant positive relationship between the family health history of the individual and the level of complementary health insurance coverage for psychological care. In particular, when the family health history of the individual increased by one unit and all other independent variables were held constant, the ordered log-odds of being in a higher level of complementary health insurance coverage for psychological care increased by 0.058 units, Wald(1, n = 194) = 5.32, p = .021, OR = 1.060. This finding showed that individuals reporting higher levels of perceived severity for their family health history were more likely to have a higher level of complementary health insurance coverage for psychological care than individuals reporting lower levels of perceived severity, suggesting the significance of the availability bias.

The effect of gender, Wald(1, n = 194) = 0.33, p = .565, OR = 1.215, age, Wald(1, n = 194) = 0.32, p = .571, OR = 0.994, parenthood status, Wald(1, n = 194) = 1.01, p = .314, OR = 1.415, health status, Wald(1, n = 194) = 0.96, p = .328, OR = 1.455, and personal health history, Wald(1, n = 194) = 0.64, p = .425, OR = 1.012, on the level of complementary health insurance coverage for psychological care was non-significant.

Mediator Effects

The results of regression model (2) for the level of complementary health insurance coverage for psychological care revealed that risk attitude towards health had a non-significant effect on the level of complementary health insurance coverage for psychological care, Wald(1, *n* = 194) = 1.88, *p* = .171, *OR* = 1.023. As the relationship between both variables was non-significant, one of the conditions of mediation was broken and, therefore, no mediator analysis was performed (Baron & Kenny, 1986).

For an overview of the regression results for the level of complementary health insurance coverage for psychological care, please refer to appendix N.

4.3 Regression Analyses for Level of Additional Deductible

In Table 4.1, an overview of the regression results for the level of additional deductible is presented.

Direct Effects

The results of regression model (1) for the level of additional deductible revealed that the effect of gender, Wald(1, *n* = 194) = 0.001, *p* = .971, *OR* = 1.014, age, Wald(1, *n* = 194) = 0.10, *p* = .749, *OR* = 1.004, income, Wald(1, *n* = 194) = 0.32, *p* = .575, *OR* = 1.00008, parenthood status, Wald(1, *n* = 194) = 0.09, *p* = .766, *OR* = 1.141, health status, Wald(1, *n* = 194) = 1.57, *p* = .210, *OR* = 2.090, personal health history, Wald(1, *n* = 194) = 1.82, *p* = .178, *OR* = 1.029, and family health history, Wald(1, *n* = 194) = 2.39, *p* = .122, *OR* = 1.060, on the level of additional deductible was non-significant. These results did not confirm any relationship between these socio-demographic factors and the level of additional deductible. Therefore, hypotheses H1a, H3a, H5a, H7a, H9a, H11a and H13a were rejected, respectively.

Mediator Effects

The results of regression model (2) for the level of additional deductible showed that risk attitude towards health had a non-significant effect on the level of additional deductible, Wald(1, *n* = 194) = 0.57, *p* = .452, *OR* = 1.014. This result did not support the idea that individuals who were more risk seeking towards health were significantly more likely to have a higher level of additional deductible than individuals who were more risk averse towards health. Therefore, hypothesis H15a was rejected and no mediator analysis was performed, because one of the conditions of mediation analyses was violated (Baron & Kenny, 1986).

For an overview of the original output from SPSS, please refer to appendix O.

Table 4.1: Results of Regression Analyses ([Generalized] Ordinal Logistic Regression) for Level of Additional Deductible

Variables	Level of additional deductible			
	(1)		(2)	
Gender = female	0.014	(0.394)	0.121	(0.419)
Age	0.004	(0.013)	0.005	(0.013)
Income individual	8.386E-5	(1.495E-4)	1.047E-4	(1.522E-4)
Parenthood status = with underaged children	0.132	(0.442)	0.156	(0.444)
Health status = unhealthy	0.737	(0.588)	0.735	(0.589)
Personal health history	0.029	(0.021)	0.026	(0.022)
Family health history	0.058	(0.038)	0.057	(0.038)
Risk attitude towards health			0.014	(0.019)
Nagelkerke pseudo *R*-square	.063		.066	
Model chi-square	10.111		10.678	

Notes: reported coefficients were log-odds estimates, with standard errors in parenthesis; N = 194; * $p \leq .05$, ** $p \leq .01$

4.4 Regression Analyses for Number of Complementary Health Insurances

An overview of the regression results for the number of complementary health insurances is outlined in Table 4.2.

Direct Effects

The results of regression model (3) for the number of complementary health insurances indicated that gender and parenthood status both had a significant effect on the number of complementary health insurances selected from the framework.

The coefficient for "gender" demonstrated there was a significant positive relationship between being female and the number of complementary health insurances selected from the framework. In particular, when the individual was a female and all other independent variables were held constant, the log-odds of the number of complementary health insurances increased by 0.219 units, Wald(1, n = 194) = 7.21, p = .007, OR = 1.245. This result indicated that females were significantly likely to have more complementary health insurances than males. Therefore, hypothesis H1b was accepted.

The coefficient for "parenthood status" revealed there was a significant positive relationship between having underaged children and the number of complementary health insurances selected from the framework. In particular, when the individual had underaged children and all other independent variables were held constant, the log-odds of the number of complementary health insurances increased by 0.218 units, Wald(1, n = 194) = 7.15, p = .007, OR = 1.244. This finding confirmed that individuals with underaged children were significantly likely to have more complementary health insurances compared to individuals without underaged children. Therefore, hypothesis H7b was accepted.

The effect of age, Wald(1, n = 194) = 2.15, p = .143, OR = 1.004, income, Wald(1, n = 194) = 2.98, p = .085, OR = 1.00005, health status, Wald(1, n = 194) = 1.55, p = .214, OR = 1.121, personal health history, Wald(1, n = 194) = 0.63, p = .427, OR = 1.003, and family health history, Wald(1, n = 194) = 3.12, p = .077, OR = 1.011, on the number of complementary health insurances selected from the framework was non-significant. These results did not support any relationship between these socio-demographic factors and the number of complementary health insurances selected from the framework. Therefore, hypotheses H3b, H5b, H9b, H11b and H13b were rejected, respectively.

Mediator Effects

The results of regression model (4) for the number of complementary health insurances showed that risk attitude towards health had a non-significant effect on the number of complementary health insurances selected from the framework, Wald(1, n = 194) = 0.11, p = .737, OR = 1.001. This result did not support the idea that individuals who were more risk averse towards health were significantly likely to have more complementary health insurances than individuals who were more risk seeking towards health. Therefore, hypothesis H15b was rejected and no mediator analysis was run, because one of the conditions of mediation analyses was violated (Baron & Kenny, 1986).

For an overview of the original output from SPSS, please refer to appendix P.

Table 4.2: Results of Regression Analyses (Poisson Loglinear Regression) for Number of Complementary Health Insurances

Variables	Number of complementary health insurances			
	(3)		(4)	
Gender = female	0.219 **	(0.082)	0.229 **	(0.086)
Age	0.004	(0.003)	0.004	(0.003)
Income individual	5.175E-5	(3.002E-5)	5.350E-5	(3.047E-5)
Parenthood status = with underaged children	0.218 **	(0.082)	0.221 **	(0.082)
Health status = unhealthy	0.114	(0.092)	-0.115	(0.092)
Personal health history	0.003	(0.004)	0.003	(0.004)
Family health history	0.011	(0.006)	0.011	(0.006)
Risk attitude towards health			0.001	(0.004)
Nagelkerke pseudo *R*-square	.145		.145	
Model chi-square	29.895 **		30.008 **	

Notes: reported coefficients were log-odds estimates, with standard errors in parenthesis; N = 194; * $p \leq .05$, ** $p \leq .01$

4.5 Regression Analyses for Risk Attitude towards Health

An overview of the results of the ordinary least squares regression (regression model [5]) for risk attitude towards health was presented in Table 4.3. The regression model explained about 15 percent of the variance in the dependent variable (R^2 = .148) and was significant, $F(7, 187)$ = 4.62, $p < .0001$. The results of regression model (5) for risk attitude towards health showed that gender, income and personal health history had a significant effect on the risk attitude towards health.

The coefficient for the variable "gender" demonstrated there was a significant negative relationship between being female and the risk attitude towards health. In particular, when the individual was a female and all other independent variables were held constant, the level of risk attitude towards health of the individual decreased by 7.545 units, $t(186) = -4.92$, $p < .0001$. This result indicated that females were significantly more risk averse towards health than males. Therefore, hypothesis H2 was accepted.

The coefficient for the variable "income individual" revealed there was a significant negative relationship between the level of income of the individual and the risk attitude towards health. In particular, when the level of income of the individual increased by one Euro per month and all other independent variables were held constant, the level of risk attitude towards health of the individual decreased by 0.001 units, $t(186) = -2.53$, $p = .012$. This finding showed that individuals with higher levels of income were significantly more risk averse towards health compared to individuals with lower levels of income. This was the opposite of what was hypothesized. Therefore, hypothesis H6 was rejected.

The coefficient for the variable "personal health history" showed there was a significant positive relationship between the personal health history of the individual and the risk attitude towards health. In particular, when the personal health history of the individual increased by one unit and all other independent variables were held constant, the level of risk attitude towards health of the individual increased by 0.162 units, $t(186) = 2.32$, $p = .021$. This result confirmed that both variables were significantly associated. Therefore, hypothesis H12 was accepted.

The effect of age, $t(186) = -0.98$, $p = .330$, parenthood status, $t(186) = -1.21$, $p = .229$, health status, $t(186) = -0.32$, $p = .753$, and family health history, $t(186) = -0.48$, $p = .635$, on the risk attitude towards health was non-significant. These results did not confirm any relationship between these socio-demographic factors and the risk attitude towards health. Therefore, hypotheses H4, H8, H10 and H14 were rejected, respectively.

Table 4.3: Regression Results (Ordinary Least Squares Regression) for Risk Attitude towards Health

Variables	Risk attitude towards health	
	(5)	
Gender (= female)	-7.545 **	(1.534)
Age	-0.048	(0.049)
Income individual	-0.001 *	(0.001)
Parenthood status (= with underaged children)	-1.994	(1.653)
Health status (= unhealthy)	-0.582	(1.842)
Personal health history	0.162 *	(0.070)
Family health history	-0.058	(0.122)
R-square	.148	
F-ratio	4.624 **	

Notes: reported coefficients were unstandardized estimates with standard errors in parentheses; N = 194; * $p \leq .05$, ** $p \leq .01$

The assumptions of regression model (5) for the risk attitude towards health were checked as well. The normality of the dependent variable was already checked, but the histogram and normal P-P plot for risk attitude towards health showed that residuals also were normally distributed. The assumption of multicollinearity was already investigated and approved in chapter three, paragraph 3.3.1. The assumptions of homoscedasticity and linearity and were inspected using residual and partial plots; none of the plots indicated any signs of violation of both aspects. The assumption of independent errors was almost certainty been met, because the value of the Durbin-Watson test was slightly below 2. As none of the assumptions were violated, the model appears to be accurate for the overall sample (Field, 2005).

5 Discussion and Conclusion

5.1 Discussion

Level of Additional Deductible

The results of the current study showed that none of the socio-demographic factors gender, age, income, parenthood status, health status, personal health history, family health history and risk attitude towards health had a significant direct effect on the individuals' level of additional deductible. Consequently, Hypotheses H1a, H3a, H5a, H7a, H9a, H11a, H13a and H15a, respectively, were rejected. This means that, according to this dataset, these socio-demographic factors do not influence whether individuals have an additional deductible, and at which level. However, these findings should be interpreted with caution. A plausible argument why no significant relationships were found in the current study was the lack of variance in the dependent variable. However, the dichotomous approach when conducting descriptive statistics also did not show any effect of these socio-demographic factors on having an additional deductible. In these bivariate analyses, the individuals' susceptibility to informational influence had a non-significant effect as well.

Number of Complementary Health Insurances

In the current study, the socio-demographic factors gender and parenthood status both had a significant effect on the number of complementary health insurances individuals had selected from the framework. For the socio-demographic factors age, income, health status, personal health history, family health history and risk attitude towards health no significant relationship between these socio-demographic factors and the number of complementary health insurances was found. However, before discussing the results, for all socio-demographic factors it must be stated that the usage of the number of complementary health insurances as dependent variable was a plausible reason why these results should be interpreted with caution. In hindsight, it was believed that the number of complementary health insurances was not an appropriate method for several reasons (see chapter five, paragraph 5.2). The results per type of medical service were considered to be more valuable. Therefore, the significant results of the data analyses per type of medical service were discussed as well.

The socio-demographic factor gender had a significant effect of the number of complementary health insurances individuals had selected from the framework. In particular, females were likely to have more complementary health insurances than males. This result supported the proposed hypothesis (H1b) and confirmed the results of Cameron *et al.* (1988), Sapelli and Vial (2003) and several others. Two plausible arguments that could explain this result were gender differences in medical consumption and risk attitude. Firstly, for most types of medical services selected for the framework, females have higher levels of medical consumption (CBS, 2012g). Secondly, females were found to be more risk averse than males, in general as well as within different contexts (Dohmen *et al.*, 2005, Dohmen *et al.*, 2011).

The effect of age on the number of complementary health insurances individuals had selected from the framework was non-significant. This result did not support the proposed hypothesis (H3b). A plausible argument could be that the effect of age on the number of complementary health insurances was not linear, but more complicated by varying during the lifecycle of individuals (Van de Ven & Van Praag, 1982). Another argument was the lack of variance in age, because the socio-demographic factor was bimodal distributed with a first peak arising at age 20 to 30 years and a second peak at age 50 to 60 years. It was believed the bimodal distribution was mainly caused by the method of recruiting individuals for the current study.

Income had a non-significant effect on the number of complementary health insurance individuals had selected from the framework, therefore, not providing support for the proposed hypothesis (H5b). A first argument that might explain this finding was that individuals with lower levels of income may receive health care allowance or "zorgtoeslag" from the Dutch government to enable them to purchase basic health insurance, which decreases income differences and increases access to complementary health insurance for individuals with lower levels of income (Van Gameren, 2010). A second argument was none or only limited positive income elasticity of demand for complementary health insurances, because complementary health insurances were not perceived by individuals as luxury goods, but as basic necessity. Thirdly, it was possible that the effect of income was not linear, but that at a certain level of income the demand for complementary health insurance decreases as individuals with higher levels of income can bear financial risks more easily by getting a lower level of complementary health insurance coverage (Van Ophem & Berkhout, 2009).

The effect of parenthood status on the number of complementary health insurances individuals had selected from the framework was significant. In particular, individuals with underaged children were likely to have more complementary health insurances than individuals without underaged children. This finding was as expected and, therefore, supported the proposed hypothesis (H5b). A first argument was a difference in risk attitude between individuals having underaged children and those without. This difference was found in several studies, including Warner and Cramer (1995), Dohmen *et al.* (2005) and Bonin *et al.* (2009). Another argument could be that individuals with underage children take the medical consumption of their underaged children into account when choosing a level of complementary health insurance coverage. This, in order to avoid out-of-pocket cost for types of medical services that were neither or partially covered by the AWBZ or Zvw, like orthodontics.

The socio-demographic factor health status had a non-significant effect on the number of complementary health insurances individuals had selected from the framework. This result did not provide support for the proposed hypothesis (H9b). A possible explanation could be that individuals reporting their health status as "healthy" perceived complementary health insurances as a basic necessity.

Personal health history had a non-significant effect on the number of complementary health insurance individuals had selected from the framework. This result did not support the proposed hypothesis (H11b). An argument that might explain this result is related to the non-chronic health problems that were selected for the scale. Most of these health problems could be annoying, but are relatively mild and do not need expensive treatment to cure. In the current study, individuals have reported them, but it is possible that the past experienced non-chronic health problems do not play a role when choosing complementary health insurance.

The socio-demographic factor family health history had a non-significant effect on the number of complementary health insurances individuals had selected from the framework. This was not in line with the proposed hypothesis (H13b). A first argument is that individuals do not see a relationship between their health and that of their relatives and, therefore, had no reason to take the health of their relatives into account when choosing a level of complementary health insurance coverage. Another explanation could be that individuals did not make the same estimation when rating risk to themselves or to their family. They are more optimistic for themselves and believe that others had a greater possibility of suffering a particular risk (Sjöberg, 2000).

Risk attitude towards health had a non-significant effect on the number of complementary health insurances individuals had selected from the framework. This result did not support the proposed hypothesis (H15b). There were two reasons that might explain why the effect of risk attitude towards health was non-significant. Firstly, the scale used to measure the individuals' risk attitude towards health only measured the risk attitude towards health of the participating individual. Individuals could be risk averse towards health, but they were also, more or less, responsible for the level of complementary health insurance coverage of their underaged children. This might bias the results. Secondly, the presence of a spouse could be important. Irrespective of risk attitude towards health, whether or not opting for complementary health insurance by an individual might have effect on the (financial) wellbeing of the spouse in times of trouble.

The socio-demographic factor susceptibility to informational influence was only included for explorative purposes and was only tested in bivariate analyses. The results indicated there was no significant relationship between the individuals' susceptibility to informational influence and having at least one complementary health insurance selected from the framework.

Level of Complementary Health Insurance Coverage per Type of Medical Service

The results of the data analyses per type of medical service provided different insights in the effect of the socio-demographic factors on the level of complementary health insurance coverage. However, these results should be interpreted with caution, because the overall sample was not representative for the Dutch population and, thus, not generalizable. The type of medical service seems to matter for individuals when choosing complementary health insurance. In the current study, the most popular type of medical service for which individuals wanted complementary health insurance was dental care, followed by physiotherapy, medical care abroad, medicines, glasses and contacts lenses, psychological care and alternative medicine. As mentioned above, the effect of the

socio-demographic factors on the level of complementary health insurance coverage differed between the types of medical services.

Gender was found to have a significant effect on the level of complementary health insurance coverage for alternative medicine as well as the level of complementary health insurance coverage for physiotherapy. For both types of medical services, females were more likely to have a higher level of complementary health insurance coverage than males. For alternative medicine, a possible explanation could be that females are more positive towards alternative medicine than males (Booi & Jacobs, 2010). A plausible explanation for physiotherapy could be gender differences in musculoskeletal pain, especially for the neck, shoulders and higher back. Females have higher exposure than males to risk factors for musculoskeletal pain and are more vulnerable to developing musculoskeletal pain than males (Picavet, 2008).

The socio-demographic factor age had a significant effect on the level of complementary health insurance coverage for glasses and contacts lenses as well as the level of complementary health insurance coverage for physiotherapy. For both types of medical services, older individuals were more likely to have a higher level of complementary health insurance coverage than younger individuals. It seems plausible that when age increases, eyes as well as bones and joints deteriorate and, thus, demand for health care increases.

Level of income was significant for psychological care. In particular, individuals with higher levels of income were more likely to have a higher level of complementary health insurance coverage for psychological care than individuals with lower levels of income. A plausible explanation was that individuals with higher levels of income have a greater receptivity to psychological care and also perceiving lower barriers to accessing psychological care than individuals with lower levels of income (Leaf *et al.*, 1987).

The socio-demographic factor parenthood status was significant for dental care and medicines. For both types of medical services, individuals with underaged children were more likely to have a higher level of complementary health insurance coverage. A plausible explanation for dental care was that underaged children commonly make use of orthodontics and this, relatively expensive, type of medical service was neither covered by the AWBZ nor the Zvw. Therefore, when they wanted their underaged children covered for orthodontics, individuals had to purchase complementary health insurance providing coverage for dental care. For medicines, a possible explanation could be presence of health problems among their underaged children which can be treated by medicines that are not or only partly covered by the AWBZ or Zvw, for example ADHD or related issues. The proportion of underaged children in the Netherlands diagnosed for ADHD or related issues had rapidly increased over the last years (Steentjes, Hjelmar & Kruijt, 2011). As medication is not or only partly covered by the AWBZ or Zvw, while medicines for these types of health problems are often relatively expensive, individuals might be willing to opt for complementary health insurance providing coverage for medicines.

The socio-demographic factor personal health history had a significant effect on the level of complementary health insurance coverage for alternative medicine. In particular, individuals reporting higher levels of perceived severity for their personal health history were more likely to have a higher level of complementary health insurance coverage for alternative medicine. A possible explanation could be that individuals who are using alternative medicine, often use alternative medicine for relatively mild, but annoying, or recurrent health problems (Van de Burgt, Van Melchelen-Gevers & Te Lintel Hekkert, 2006). Several items from the scale used in the current study fits in this profile. Moreover, it could be that individuals perceiving their personal health history as more severe are more willing to use alternative medicine, especially when conventional types of medical services did not (adequately) help in the past.

Family health history was significant for psychological care. Individuals reporting higher levels of perceived severity for their family health history were more likely to have a higher level of complementary health insurance coverage for psychological care than individuals reporting lower levels of perceived severity. This seems plausible, because psychological health problems, an actual item in the used scale, are partly genetic (Meijer & Schoenmaker, 2008).

For only one type of medical service the risk attitude towards health had a significant effect on the level of complementary health insurance coverage: medical care abroad. In particular, more risk seeking individuals were significantly more likely to have higher levels of complementary health insurance coverage for medical care abroad. A possible explanation could be that individuals being more risk seeking towards health also have more vacations to far and adventurous locations.

Risk Attitude towards Health

The results of the current study indicated that gender, income and personal health history had a significant effect on the risk attitude towards health. For the socio-demographic factors age, health status, parenthood status and family health history no significant relationship between these socio-demographic factors and the risk attitude towards health were found. However, these results should be interpreted with caution, because the overall sample was not representative for the Netherlands and, thus, results were not generalizable.

The socio-demographic factor gender had a significant effect on the risk attitude towards health. In particular, females were less willing to take risky decisions towards health than males, supporting the proposed hypothesis (H2). This result also confirmed the findings of different other studies, including Dohmen *et al*. (2005) and Dohmen *et al.* (2011).

The effect of age on the risk attitude towards health was non-significant. Therefore, the proposed hypothesis (H4) was rejected. This result was surprising, because a great variety of studies found that younger individuals are more willing to take risks compared to older individuals, including the health context (Dohmen *et al*., 2005; Dohmen *et al.,* 2011). A plausible explanation why no significant result was found could be the, earlier mentioned, lack of variance in age in the overall sample.

The level of income had a significant effect on the risk attitude towards health: individuals with higher levels of income were more risk averse towards health compared to individuals with lower levels of income. This was the opposite of what was expected beforehand and, therefore, offers no support for the proposed hypothesis (H6). An explanation why individuals with higher levels of income were more risk averse towards health could be that they have greater knowledge about health risks, which decreases risk taking with respect to health (Kenkel, 1991).

The socio-demographic factor parenthood status had a non-significant effect on the risk attitude towards health. Therefore, the proposed hypothesis (H8) was not supported. A plausible explanation could be that the scale used to measure the individuals' risk attitude towards health only measured the risk attitude towards health of the participating individual. There were no items in the scale related to underaged children.

Health status had a non-significant effect on the risk attitude towards health. This was not in line with the proposed hypothesis (H10). A possible argument for this result could be the lack of variance in health status. As mentioned in chapter three, paragraph 3.2.2, health status was measured using a two-step approach. First, individuals were asked to assess their health status and second, responses were grouped into the categories "healthy" and "unhealthy". It was found that over 80 percent of the individuals in the "unhealthy" group initially reported their health status was "neither bad nor good". The "unhealthy" groups was, thus, not as unhealthy as the name suggests.

The effect of personal health history on the risk attitude towards health was significant. In particular, individuals reporting higher levels of perceived severity for their personal health history were more risk seeking towards health. This result supported the proposed hypothesis (H12). However, the result was a sort of "chicken or the egg problem": do individuals really become more risk seeking towards health, the greater the perceived severity for their personal health history or do individuals have higher levels of perceived severity for their personal health history, because they take more risks in the health domain, for example by participating in sports with an increased risk of injuries? Answering this question might be interesting for future research.

Finally, family health history had a non-significant effect on the risk attitude towards health. This result did not provide support for the proposed hypothesis (H14). To explain the results, the same arguments as proposed for hypothesis H13b seem valid. First, individuals do not see a relationship between their health and that of their relatives and, therefore, had no reason to take the health of their relatives into account in risk taking towards health. Second, individuals did not make the same estimation when rating risk to themselves or to their family, because they are more optimistic for themselves and believe that others had a greater possibility of suffering a particular risk (Sjöberg, 2000).

5.2 Limitations and Future Research

The current study was limited in some ways. Firstly, the usage of the number of complementary health insurance as dependent variable was, in hindsight, an important limitation of the current study, because it did not take into account which complementary health insurances individuals had selected from the framework for a particular type of medical service. Individuals could have selected the same number of complementary health insurances from the framework, but some individual could have selected only those complementary health insurances which provided the most comprehensive coverage, while others might have selected complementary health insurances covering only a restricted set of medical services. Moreover, though the number of complementary health insurances was initially based on the eight types of medical services that were perceived by individuals as most important to be covered for when choosing complementary health insurance and, later on, on the seven most popular types of medical services, the researcher admits that the selection of types of medical services have great impact on the results. A different set of types of medical services might result into different findings. To summarize, the usage of the number of complementary health insurances as dependent variable was, in hindsight, perceived too generic. Therefore, it would have been better to focus on the level of complementary health insurance coverage for each individual type of medical service only in the current study. For future research, it is recommended to use a dataset with actual health insurance data of individuals instead of hypothetical choices.

Two other limitations of the current study were related to the framework. Firstly, though the framework made it possible to determine a hypothetical level of complementary health insurance coverage of individuals a disadvantage of the framework was that, due to practical and technical reasons, it was not possible to incorporate acceptance rules into the framework. Therefore, the possibility of individuals being rejected for complementary health insurance could not be taken into account in the current study. Secondly, the framework might causes framing effects. To reduce the (potential) problem of content issues, a brief overview of the benefits already covered by the Zvw was provided per type of medical service. Though these descriptions were drafted as neutral as possible, this might resulted into framing effects (Tversky & Kahneman, 1981). Both problems related to the framework can be solved in future research by using a dataset with actual health insurance data of individuals.

Another two limitations in the current study were related to two included socio-demographic factors. In the current study, the socio-demographic factor risk attitude towards health only had a significant effect on the individuals' level of complementary health insurance coverage for medical care abroad. This was noteworthy, because risk attitude is commonly perceived as important factor in decision making under risk, including insurance. Perhaps, choosing a level of health insurance coverage is more an example of decision making under risk in a financial context than a health context. For future research, therefore, it is advised to use the individuals' general risk attitude when testing the significance of risk attitude on the level of health insurance coverage or another context, like the financial context.

The socio-demographic factor susceptibility to informational influence was in the current study included for explorative purposes only. The variable was not included in the conceptual model, because no (reasonable) argument could be given to explain a direct effect on the individuals' level of health insurance coverage. The variable was included in bivariate analyses. The results of these bivariate analyses did not provided any significant results. However, it was not possible to interpret these results. In hindsight, some questions had to be included in the questionnaire about the decision making process itself and which role the advices of friends and relatives have played in this decision making process.

Also with respect to the data analyses, the current study was limited. In the current study, the socio-demographic factor risk attitude towards health was included as a mediator variable. As the individuals' risk attitude towards health was ratio scaled, an ordinary least squares regression analysis was conducted to determine the effect of the socio-demographic factors gender, age, income, parenthood status, health status, personal health history and family health history on the particular socio-demographic factor. However, for the other steps of the mediation analyses, ordinal logistic regression analysis or Poisson loglinear regression analysis was used. As a result, the obtained coefficients were not comparable, because they ended up being in different scales (Herr, n.d.). A method for converting coefficients was offered by Herr (n.d.). However, due to the complexity of this solution, it was decided only checking the significance of a coefficient to test mediation. Though none of the mediation analysis in the current study were fully completed, mostly because of a lack of statistical significance of the socio-demographic factor risk attitude towards health on the level of health insurance coverage, for future research it is advised to convert the coefficients of the ordinary least squares regression analysis to make them comparable with the log-odds coefficients.

The final limitations of the current study could be grouped as sample biases. First of all, the overall sample was not representative for the Dutch population. Secondly, the sample size seemed to be too small because some variables suffering lack of variance. Both factors limit the reliability and generalizability of the results of the current study. For future research, a greater sample size which is a better reflection for the Dutch population is advised.

Finally, a few suggestions for future research can be made. First, it might be interesting to test in future research the effect of other socio-demographic factors on the individuals' level of health insurance coverage, for example religious affiliation and ethnicity. Secondly, it might be interesting to determine the significance between the moral hazard effect and the level of health insurance coverage. Finally, some results of the current study that were difficult to explain could be studied in future research, like the effect of personal health history on the individuals' risk attitude towards health.

5.3 Conclusions

The research objective of the current study was to determine the effect of the socio-demographic factors gender, age, income, parenthood status, health status, health history, risk attitude towards health and susceptibility to informational influence on the individuals' level health insurance coverage, within the context of the Dutch health insurance system in 2011. The levels of health insurance coverage under study were the level of additional deductible and the level of complementary health insurance coverage. The individuals' level of additional deductible was based on actual choices, while their level of complementary health insurance coverage was determined using a framework of complementary heath insurances. By counting the number of complementary health insurances the individual had selected from the framework, a hypothetical level of complementary health insurance coverage was obtained.

Answering the research question has to be done with caution as the sample of the current study was not representative for the Dutch population. No significant effect of the socio-demographic factors on the level of additional deductible was found. For the level of complementary health insurance coverage, two socio-demographic factors had significantly effect on the number of complementary health insurances individuals had selected from the framework. Firstly, gender had a significant effect. In particular, females were significantly likely to have more complementary health insurances than males. Secondly, parenthood status had a significant effect. In particular, individuals with underaged children were likely to have more complementary health insurances than individuals without underaged children.

Besides their effect on the number of complementary health insurances individuals had selected from the framework, also the effect of the socio-demographic factors gender, age, income, parenthood status, health status, personal health history, family health history and risk attitude towards health on the level of complementary health insurance coverage for seven types of medical services was determined in the current study. The results of the data analyses per type of medical service indicated that the effect of the socio-demographic factors differed between the types of medical services.

Finally, the socio-demographic factor risk attitude towards health was included in the current study as mediator variable. Though no mediation effects could be identified, it was found that three socio-demographic factors had a significant effect on the risk attitude towards health. Firstly, gender had a significant effect. In particular, females were more risk averse towards health than males. Secondly, income was significant. Individuals with higher levels of income were more risk averse towards health compared to individuals with lower levels of income. Thirdly, personal health history had a significant effect. In particular, individuals reporting higher levels of perceived severity for their personal health history were more risk seeking towards health than individuals reporting lower levels of perceived severity for their personal health history.

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Appendix A: Dutch System of Health Insurance for Essential Curative Care Before and After the Introduction of the Zvw in 2006

Table A.1: Key Characteristics of the Dutch System of Health Insurance for Essential Curative Care Before and After the Introduction of the Zvw in 2006

	Before 2006		Since 2006
	Public health insurance (ZFW)	Private health insurance	Private public health insurance (Zvw)
Enrollees	Non-government employees, pensioners and social security beneficiaries with an annual income less than a certain threshold	Non-government employees and pensioners with an annual income higher than a certain threshold, government employees and self-employed individuals	All individuals who legally resides or works in the Netherlands
Participation	Mandatory	Voluntary	Mandatory
Contribution	Income-dependent contribution (85 percent) and community-rated nominal premium (15 percent)	Risk-rated nominal premium (100 percent)	Income-dependent contribution (50 percent) and community-rated nominal premium (50 percent)
Risk selection	Not allowed	Allowed	Not allowed
Benefit package	Government-determined	Individual	Government-determined
Type of benefits	Benefits in kind	Benefits in cash	Benefits in kind and benefits in cash
Additional deductibles	No	Yes	Yes
Collective health insurance	No	Yes	Yes

Source: Greß, Manouguian & Wasem (2007); Schäfer *et al.* (2010)

Appendix B: Questionnaire

I Welkom

Geachte heer of mevrouw,

Een ziektekostenverzekering is een verzekering voor de kosten van medische zorg. Welke kosten worden vergoed en hoe hoog deze vergoeding zal zijn, is afhankelijk van de dekking van een verzekering. In Nederland is het verplicht tenminste een basisverzekering te hebben afgesloten welke de kosten van noodzakelijke medische zorg vergoedt, zoals de huisarts. Daarnaast kan men zich vrijwillig extra verzekeren voor allerlei overige medische kosten door het afsluiten van één of meerdere aanvullende verzekeringen.

De keuze voor een bepaalde dekking van medische kosten is sterk afhankelijk van de persoonlijke omstandigheden van de persoon die de verzekering afsluit. Welke invloed persoonlijke factoren hebben, is echter niet bekend. Ter afronding van mijn studie Economie aan de Erasmus Universiteit Rotterdam doe ik daarom onderzoek naar consumenten en hun ziektekostenverzekering. Uw hulp kan ik daarbij goed gebruiken!

Graag zou ik u een aantal vragen willen stellen met betrekking tot het onderwerp. Het onderzoek zal ongeveer 15 minuten duren en is volledig anoniem. De antwoorden betreffen uw persoonlijke mening, er zijn dus geen goede of foute antwoorden mogelijk. Ik hoop dat u wilt deelnemen aan het onderzoek.

Met vriendelijke groet,
Marco van Ree

II Uitleg vragenlijst

Geachte heer of mevrouw,

Dank voor uw besluit deel te nemen aan het onderzoek met betrekking tot consumenten en hun ziektekostenverzekering, uw medewerking wordt zeer gewaardeerd. Het onderzoek zal bestaan uit vier korte onderdelen, te weten:

- *Uw huidige ziektekostenverzekering* - Graag zou ik willen weten hoe u op dit moment bent verzekerd voor medische kosten. Wat is bijvoorbeeld de hoogte van uw eigen risico of heeft u aanvullende verzekeringen afgesloten?

- *Een aanvullende verzekering op maat* - Stel dat u zelf de inhoud van uw aanvullende verzekering mag samenstellen. Hoe zou uw persoonlijke aanvullende verzekering er dan uitzien?

- *Uw gezondheid* - Een ziektekostenverzekering is een verzekering met betrekking tot uw gezondheid. Ik zou u daarom graag een aantal vragen willen stellen over dit onderwerp.

- *Persoonlijke achtergrond* - Tot slot zou ik u graag nog een aantal vragen willen stellen met betrekking tot uw persoonlijke achtergrond.

De vragenlijst bestaat uit 27 vragen die u in 10 tot 15 minuten kunt beantwoorden. Klik steeds op de knop "Volgende" om door te gaan naar het volgende gedeelte van de vragenlijst. Wanneer u klaar bent met de vragenlijst, klikt u op de knop "Klaar" om deze te verzenden. Het is belangrijk dat u de gehele vragenlijst afmaakt.

Ter herinnering: de antwoorden die geeft betreffen uw persoonlijke mening, er zijn dus geen goede of foute antwoorden mogelijk. Uw antwoorden zullen vertrouwelijk worden behandeld en volledig anoniem worden verwerkt.

Alvast hartelijk dank voor uw medewerking en veel succes!

III Vragenlijst

Uw huidige ziektekostenverzekering

Er volgt nu een aantal vragen met betrekking tot uw huidige ziektekostenverzekering. Vul steeds het antwoord in dat het beste uw persoonlijke mening verwoordt.

1) In Nederland dient iedereen zichzelf te verzekeren voor de kosten van medische zorg. U bent verplicht minimaal een basisverzekering te hebben afgesloten. Hebt u op dit moment een basisverzekering?
   - O Ja
   - O Nee

2) Een basisverzekering kent een verplicht eigen risico van €170 per persoon per jaar. Naast dit verplicht eigen risico kan u ook een vrijwillig eigen risico afsluiten tot maximaal €500. Wat is de hoogte van uw vrijwillig eigen risico?
   - O Ik heb geen vrijwillig eigen risico
   - O €100
   - O €200
   - O €300
   - O €400
   - O €500

3) Een basisverzekering vergoedt niet alles. U kunt zich echter vrijwillig extra verzekeren voor overige medische kosten door het afsluiten van één of meerdere aanvullende verzekeringen. Hebt u op dit moment één of meerdere aanvullende verzekeringen?
   - O Ja, ik heb één aanvullende verzekering (ga verder naar vraag 4)
   - O Ja, ik heb meerdere aanvullende verzekeringen (ga verder naar vraag 4)
   - O Nee (ga verder naar vraag 6)

4) Welke medische kosten door een aanvullende verzekering worden vergoed en hoe hoog deze vergoeding zal zijn, is afhankelijk van de dekking van de verzekering. Weet u globaal wat de dekking van uw huidige aanvullende verzekering is?
   - O Ja (ga verder naar vraag 5)
   - O Nee (ga verder naar vraag 6)

5) Hoe zou u de dekking van uw huidige aanvullende verzekering(en) willen omschrijven?

Laagste aanvullende dekking (1)	1	2	3	4	5	Hoogste aanvullende dekking (5)

6) Hieronder staan een aantal stellingen. Lees iedere stelling door en kruis per stelling het antwoord aan dat het beste uw mening ten opzichte van de stelling verwoordt.

	Helemaal mee oneens (1)						Helemaal mee eens (7)
Om er zeker van te zijn dat ik het juiste product of merk koop, kijk ik vaak naar wat andere mensen kopen en gebruiken.	1	2	3	4	5	6	7
Wanneer ik weinig ervaring heb met een product, doe ik vaak navraag bij mijn vrienden over het product.	1	2	3	4	5	6	7
Bij de keuze van een product raadpleeg ik vaak andere mensen om mij te helpen het beste beschikbare alternatief te kiezen.	1	2	3	4	5	6	7
Ik win vaak informatie in bij vrienden of familie over een product, voordat ik het product koop.	1	2	3	4	5	6	7

Een aanvullende verzekering op maat

Een aanvullende verzekering is een verzekering voor de kosten van medische zorg die niet door de basisverzekering worden vergoed. In tegenstelling tot een basisverzekering, is een aanvullende verzekering niet verplicht; wanneer u geen behoefte heeft aan extra dekking van medische kosten, hoeft u geen aanvullende verzekering af te sluiten.

De inhoud van een aanvullende verzekering is vaak als totaalpakket vastgesteld. Hierdoor bent u standaard verzekerd voor bepaalde vormen van medische zorg waar u wellicht geen behoefte aan hebt. Hierna volgen een aantal vormen van medische zorg. Stel dat u per vorm van medische zorg mag bepalen of u hiervoor wel of geen aanvullende verzekering wil. Voor welke vormen van medische zorg zou u zich graag aanvullend willen verzekeren op basis van uw persoonlijke omstandigheden zoals gezondheid, inkomen en kinderen, en voor welke vormen niet? Vul steeds het antwoord in dat het beste uw persoonlijke mening verwoordt.

Opmerking: om u te helpen, staat bij iedere vorm van medische zorg beschreven wat er in ieder geval door een basisverzekering wordt vergoedt.

Alternatieve geneeswijzen

De basisverzekering kent geen dekking voor alternatieve geneeswijzen zoals acupunctuur, chiropractie, homeopathie en alternatieve geneesmiddelen welke zijn verstrekt door een huisarts of andere medisch behandelaar.

7) Wilt u een aanvullende verzekering voor alternatieve geneeswijzen?

- O Geen aanvullende verzekering
- O Vergoeding tot €250 per jaar
- O Vergoeding tot €500 per jaar
- O Vergoeding tot €750 per jaar
- O Vergoeding tot €1.000 per jaar
- O Vergoeding tot €1.500 per jaar

Brillen en contactlenzen

De basisverzekering kent geen dekking voor brillen en contactlenzen.

8) Wilt u een aanvullende verzekering voor brillen en contactlenzen?

- O Geen aanvullende verzekering
- O Vergoeding tot €50 per twee jaar
- O Vergoeding tot €100 per twee jaar
- O Vergoeding tot €150 per twee jaar
- O Vergoeding tot €200 per twee jaar
- O Vergoeding tot €250 per twee jaar

Medische zorg in het buitenland

De basisverzekering kent een beperkte dekking voor medische zorg in het buitenland. Men heeft recht op een volledige vergoeding van medisch noodzakelijke kosten, maximaal tot het bedrag dat de behandeling in Nederland gekost zou hebben.

9) Wilt u een aanvullende verzekering voor medische zorg in het buitenland?

- O Geen aanvullende verzekering
- O Volledige vergoeding medische zorg in Europa
- O Volledige vergoeding medische zorg wereldwijd

Fysiotherapie

De basisverzekering kent een beperkte dekking voor fysiotherapie. Personen tot 18 jaar hebben recht op een volledige vergoeding van fysiotherapie wanneer zij worden behandeld voor een chronische aandoening; in geval van een niet-chronische aandoening bedraagt de vergoeding maximaal 18 behandelingen per jaar. Personen vanaf 18 jaar hebben recht op een volledige vergoeding van fysiotherapie wanneer zij worden behandeld voor een chronische aandoening (vanaf de dertiende behandeling) of lijden aan urine incontinentie (maximaal 9 behandelingen per jaar).

10) Wilt u een aanvullende verzekering voor fysiotherapie?

- O Geen aanvullende verzekering
- O Volledige vergoeding 9 behandelingen per jaar
- O Volledige vergoeding 12 behandelingen per jaar
- O Volledige vergoeding 18 behandelingen per jaar
- O Volledige vergoeding 27 behandelingen per jaar
- O Volledige vergoeding van alle behandelingen

Geneesmiddelen

De basisverzekering kent een beperkte dekking voor geneesmiddelen. Men heeft recht op een volledige vergoeding van een geneesmiddel wanneer deze is geregistreerd in het geneesmiddelen vergoedingssysteem en wordt voorgeschreven door een huisarts of andere medisch behandelaar. Voor sommige van deze geneesmiddelen geldt een eigen bijdrage; de hoogte van deze verschilt per geneesmiddel.

11) Wilt u een aanvullende verzekering voor geneesmiddelen?

- O Geen aanvullende verzekering
- O Vergoeding eigen bijdrage tot €125 per jaar
- O Vergoeding eigen bijdrage tot €250 per jaar
- O Volledige vergoeding eigen bijdrage
- O Volledige vergoeding eigen bijdrage + vergoeding overige geneesmiddelen tot €1.000 per jaar
- O Volledige vergoeding eigen bijdrage + volledige vergoeding overige geneesmiddelen

Kraamzorg

De basisverzekering kent een beperkte dekking voor kraamzorg. Men heeft recht op maximaal 10 dagen kraamhulp (vanaf de dag van bevallen), waarbij u wel een wettelijke bijdrage dient te betalen. Deze is €3,90 per uur wanneer u thuis kraamhulp krijgt en €15,50 per moeder/kind per dag wanneer u in een ziekenhuis verblijft.

12) Wilt u een aanvullende verzekering voor kraamzorg?

- O Geen aanvullende verzekering
- O Kraampakket
- O Kraampakket + vergoeding eigen bijdrage tot €125 per jaar
- O Kraampakket + volledige vergoeding eigen bijdrage
- O Kraampakket + volledige vergoeding eigen bijdrage + 6 uur extra kraamzorg (nazorg)
- O Kraampakket + volledige vergoeding eigen bijdrage + 12 uur extra kraamzorg (nazorg)

Psychologische zorg

De basisverzekering kent een beperkte dekking voor psychologische zorg. Men heeft recht op een volledige vergoeding van psychologische zorg van maximaal 8 behandelingen per jaar met een eigen bijdrage van €10 per behandeling.

13) Wilt u een aanvullende verzekering voor psychologische zorg?

- O Geen aanvullende verzekering
- O Volledige vergoeding eigen bijdrage
- O Volledige vergoeding eigen bijdrage + vergoeding extra behandelingen tot €250 per jaar
- O Volledige vergoeding eigen bijdrage + vergoeding extra behandelingen tot €500 per jaar
- O Volledige vergoeding eigen bijdrage + vergoeding extra behandelingen tot €750 per jaar
- O Volledige vergoeding eigen bijdrage + vergoeding extra behandelingen tot €1.000 per jaar

Tandheelkundige zorg

De basisverzekering kent een beperkte dekking voor tandheelkundige zorg. Personen tot 18 jaar hebben recht op een volledige vergoeding van tandheelkundige zorg, met uitzondering van het plaatsen van kronen, bruggen en implantaten en orthodontie. Personen vanaf 18 jaar hebben recht op een volledige vergoeding van tandheelkundige zorg wanneer de behandeling ter voorkoming is van zeer ernstige groeistoornissen.

14) Wilt u een aanvullende verzekering voor tandheelkundige zorg?

- O Geen aanvullende verzekering
- O Vergoeding tot €250 per jaar
- O Vergoeding tot €500 per jaar
- O Vergoeding tot €750 per jaar
- O Vergoeding tot €1.000 per jaar
- O Vergoeding tot €1.250 per jaar

Uw gezondheid

Een ziektekostenverzekering is een verzekering waarbij uw gezondheid een belangrijke rol speelt. Hieronder volgen een aantal vragen met betreffende dit onderwerp. Vul steeds het antwoord in dat het beste uw persoonlijke mening verwoordt.

15) Hoe is over het algemeen uw gezondheidstoestand?

- O Zeer slecht
- O Slecht
- O Gaat wel
- O Goed
- O Zeer goed

16) Hieronder staan een aantal stellingen. Lees iedere stelling door en kruis per stelling het antwoord aan dat het beste uw mening ten opzichte van de stelling verwoordt.

	Helemaal mee oneens (1)						Helemaal mee eens (7)
Ik denk dat ik goed voor mijn lichaam zorg.	1	2	3	4	5	6	7
Ik heb geen zin om bij alles wat ik doe rekening te houden met de gevolgen voor mijn gezondheid.	1	2	3	4	5	6	7
Het is belangrijk voor me mijn leven zo in te richten dat ik ook later nog een goede gezondheid geniet.	1	2	3	4	5	6	7
Als het op mijn gezondheid aankomt, zie ik mijzelf als een risicomijder.	1	2	3	4	5	6	7
Onzekerheid over de gevolgen van een medische ingreep hoort in het algemeen erbij.	1	2	3	4	5	6	7
Mijn gezondheid betekent alles voor me.	1	2	3	4	5	6	7
Als ik kijk naar mijn verleden, dan vind ik dat ik over het algemeen best risico heb genomen met mijn gezondheid.	1	2	3	4	5	6	7
Als de arts mij geen zekerheid kan geven over de mogelijke gevolgen van een medische ingreep, dan onderga ik die liever niet.	1	2	3	4	5	6	7
Veiligheid staat voorop, waar het mijn gezondheid betreft.	1	2	3	4	5	6	7

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Voor een goede gezondheid nu en later ben ik bereid veel dingen te laten.	1	2	3	4	5	6	7
Men zegt dat ik met mijn gewoontes risico's neem met mijn gezondheid.	1	2	3	4	5	6	7
Ik neem het niet zo nauw met mijn gezondheid.	1	2	3	4	5	6	7
Over het algemeen schat ik in dat ik weinig moeite heb met het ondergaan van een risicovolle operatie.	1	2	3	4	5	6	7

17) Hieronder staat een selectie van ziekten en aandoeningen die een mens kan treffen. Geef voor iedere ziekte en aandoening waaraan u lijdt (of de afgelopen 5 jaar hebt geleden) en waarvoor u onder behandeling van een arts of andere medisch behandelaar staat (of hebt gestaan) aan hoe u de ernst van de ziekte of aandoening zou willen omschrijven wanneer u kijkt naar de klachten en de invloed die de ziekte of aandoening heeft (of had) op uw dagelijks leven.

Opmerking: wanneer u een bepaalde ziekte of aandoening de afgelopen 5 jaar meerdere keren heeft meegemaakt, de vraag invullen voor uw meest recent beleefde ervaring.

	Niet ernstig (1)						Zeer ernstig (7)	
Aambeien	1	2	3	4	5	6	7	NVT
Blaasontsteking	1	2	3	4	5	6	7	NVT
Botbreuk	1	2	3	4	5	6	7	NVT
Enkel-/kniebandletsel	1	2	3	4	5	6	7	NVT
Gebitsklachten	1	2	3	4	5	6	7	NVT
Geslachtsziekte/SOA	1	2	3	4	5	6	7	NVT
Gewricht uit de kom	1	2	3	4	5	6	7	NVT
Griep	1	2	3	4	5	6	7	NVT
Hersenschudding	1	2	3	4	5	6	7	NVT
Infectie aan de maag/darmen	1	2	3	4	5	6	7	NVT
Kanker	1	2	3	4	5	6	7	NVT
Keelontsteking	1	2	3	4	5	6	7	NVT
Longontsteking	1	2	3	4	5	6	7	NVT
Nekklachten	1	2	3	4	5	6	7	NVT
Nierbekkenontsteking	1	2	3	4	5	6	7	NVT

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Oogklachten	1	2	3	4	5	6	7	NVT
Oorklachten	1	2	3	4	5	6	7	NVT
Open wond	1	2	3	4	5	6	7	NVT
Rugklachten	1	2	3	4	5	6	7	NVT
Verkoudheid	1	2	3	4	5	6	7	NVT

18) Lijdt u (of hebt u geleden) aan hart- en vaatziekten, hoge bloeddruk, suikerziekte en/of aandoeningen van psychische aard, waarvoor u onder behandeling van een arts of andere medisch behandelaar staat (of hebt gestaan)?

O Ja (ga verder naar vraag 21)

O Nee (ga verder naar vraag 19)

19) Naast uw eigen gezondheid, zou ik u ook graag iets willen vragen over de gezondheid van uw familieleden (vader, moeder, broers en/of zussen). Zijn er familieleden die lijden (of hebben geleden) aan hart- en vaatziekten, hoge bloeddruk, suikerziekte en/of aandoeningen van psychische aard, waarvoor zij onder behandeling van een arts of andere medisch behandelaar staan (of hebben gestaan)?

O Ja (ga verder naar vraag 20)

O Nee (ga verder naar vraag 21)

20) Hoe zou u de ernst van de door uw familieleden ervaren hart- en vaatziekten, hoge bloeddruk, suikerziekte en/of aandoeningen van psychische aard willen omschrijven, wanneer u kijkt naar de klachten en de invloed die de ziekte of aandoening heeft (of had) op het dagelijks leven van het familielid.

Opmerking: wanneer u meerdere familieleden hebt die lijden (of hebben geleden) aan hart- en vaatziekten, hoge bloeddruk, suikerziekte en/of aandoeningen van psychische aard, dan vult u bij de betreffende ziekte of aandoening de ernst in van het familielid van wie u de ziekte of aandoening als meest ernstig zou omschrijven.

	Niet ernstig (1)						Zeer ernstig (7)	
Hart- en vaatziekten	1	2	3	4	5	6	7	NVT
Hoge bloeddruk	1	2	3	4	5	6	7	NVT
Suikerziekte	1	2	3	4	5	6	7	NVT
Aandoeningen van psychische aard	1	2	3	4	5	6	7	NVT

Persoonlijke achtergrond

Er volgt nu een aantal vragen met betrekking tot uw persoonlijke achtergrond. Dit is het laatste onderdeel van de vragenlijst.

21) Wat is uw geslacht?

- O Man
- O Vrouw

22) Wat is uw leeftijd?

☐ jaar

23) Wat is uw hoogst afgeronde schoolopleiding?

- O Geen
- O Lagere school/basisschool
- O VMBO/MAVO/VBO/LBO/(M)ULO
- O HAVO/VWO/MMS/HBS
- O MBO
- O HBO
- O WO

24) Hebt u kinderen jonger dan 18 jaar oud?

- O Ja
- O Nee

25) Wat is uw maandelijkse bruto inkomen als individu?

- O Minder dan €1.000
- O €1.000 tot €2.000
- O €2.000 tot €3.000
- O €3.000 tot €4.000
- O €4.000 tot €5.000
- O Meer dan €5.000
- O Wil ik liever niet zeggen

26) Hebt u een partner met wie u een huishouden vormt?

- O Ja (ga verder naar vraag 27)
- O Nee (druk op "Klaar" om de vragenlijst te verzenden)

27) Wat is het maandelijkse bruto inkomen van uw partner?

- O Minder dan €1.000
- O €1.000 tot €2.000
- O €2.000 tot €3.000
- O €3.000 tot €4.000
- O €4.000 tot €5.000
- O Meer dan €5.000
- O Wil ik liever niet zeggen

Hartelijk dank voor uw medewerking! Uw antwoorden zullen vertrouwelijk worden behandeld en volledig anoniem worden verwerkt.

Met vriendelijke groet,
Marco van Ree

EINDE VRAGENLIJST

Appendix C: Data Measurement

Table C.1: Dependent Variables of the Current Study

Variable	Description	Source
Having basic health insurance	Dummy whether the individual had basic health insurance (1) or not (0)	None
Additional deductible	Level of additional deductible of the individual	None
Alternative medicine	Level of complementary health insurance coverage for alternative medicine of the individual	None
Dental care	Level of complementary health insurance coverage for dental care of the individual	None
Glasses and contact lenses	Level of complementary health insurance coverage for glasses and contact lenses of the individual	None
Medical care abroad	Level of complementary health insurance coverage for medical care abroad of the individual	None
Medicines	Level of complementary health insurance coverage for medicines of the individual	None
Physiotherapy	Level of complementary health insurance coverage for physiotherapy of the individual	None
Psychological care	Level of complementary health insurance coverage for psychological care of the individual	None
Number of complementary health insurances	Number of complementary health insurances the individual had selected from the framework	None
Having complementary heath insurance	Dummy whether the individual had complementary health insurance (1) or not (0)	None
Having additional deductible	Dummy whether the individual had an additional deductible (1) or not (0)	None
Having alternative medicine	Dummy whether the individual had complementary health insurance for alternative medicine (1) or not (0)	None
Having dental care	Dummy whether the individual had complementary health insurance for dental care (1) or not (0)	None
Having glasses and contact lenses	Dummy whether the individual had complementary health insurance for glasses and contact lenses (1) or not (0)	None

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Having medical care abroad	Dummy whether the individual had complementary health insurance for medical care abroad (1) or not (0)	None
Having medicines	Dummy whether the individual had complementary health insurance for medicines (1) or not (0)	None
Having physiotherapy	Dummy whether the individual had complementary health insurance for physiotherapy (1) or not (0)	None
Having psychological care	Dummy whether the individual had complementary health insurance psychological care (1) or not (0)	None

Table C.2: Independent Variables of the Current Study

Variable	Description	Source
Gender	Dummy whether the individual was male (1) or female (0)	None
Age	Respective age of the individual in number of years	None
Income individual	Gross monetary income of the individual in Euros per month	None
Income partner	Gross monetary income of the partner of the individual in Euros per month	None
Health status	Dummy whether the self-assessed health status of the individual was healthy (1) or unhealthy (0)	CBS
Parenthood status	Dummy whether the individual had underaged children (1) or not (0)	None
Personal health history	Perceived severity of the non-chronic health problems the individual currently have or had have, and for which they are or have been treated by a medical practitioner, over the last five years	None
Family health history	Perceived severity of the genetic health problems the relatives of the individuals currently have	None
Risk attitude towards health	Tendency of the individual to take risky decisions in a health context	Van Osch and Stiggelbout (2007)
Informational influence	Tendency of the individual to learn about products and services by observing others and/or seeking information from others	Baerden and Etzel (1982)
Female	Dummy whether the individual was female (1) or not (0)	None
Unhealthy	Dummy whether the individual was unhealthy (1) or not (0)	None
With underaged children	Dummy whether the individual had underaged children (1) or not (0)	None

Table C.3: Schematic Overview of the Framework

Alternative medicine		Dental care		Glasses and contact lenses		Maternity care	
O	Contract 5	O	Contract 5	O	Contract 5	O	Contract 5
O	Contract 4	O	Contract 4	O	Contract 4	O	Contract 4
O	Contract 3	O	Contract 3	O	Contract 3	O	Contract 3
O	Contract 2	O	Contract 2	O	Contract 2	O	Contract 2
O	Contract 1	O	Contract 1	O	Contract 1	O	Contract 1
O	No complementary health insurance	O	No complementary health insurance	O	No complementary health insurance	O	No complementary health insurance
Medical care abroad		**Medicines**		**Physiotherapy**		**Psychological care**	
O	Contract 2	O	Contract 5	O	Contract 5	O	Contract 5
O	Contract 1	O	Contract 4	O	Contract 4	O	Contract 4
O	No complementary health insurance	O	Contract 3	O	Contract 3	O	Contract 3
		O	Contract 2	O	Contract 2	O	Contract 2
		O	Contract 1	O	Contract 1	O	Contract 1
		O	No complementary health insurance	O	No complementary health insurance	O	No complementary health insurance

Table C.4: Example of Determining the Number of Complementary Health Insurances

Type of medical service	Respondent 1[a]	Respondent 2[a]	Respondent 3[a]
Alternative medicine	No complementary health insurance	Contract 4	No complementary health insurance
Dental care	Contract 3	Contract 2	Contract 5
Glasses and contact lenses	Contract 5	No complementary health insurance	No complementary health insurance
Maternity care	No complementary health insurance	Contract 3	No complementary health insurance
Medical care abroad	Contract 1	Contract 2	Contract 2
Medicines	Contract 4	Contract 1	Contract 4
Physiotherapy	Contract 2	No complementary health insurance	Contract 3
Psychological care	No complementary health insurance	Contract 3	No complementary health insurance
Number of complementary health insurances	5	6	4

a. Fictive data.

Appendix D: Test of Normality

Table D.1: Results of Test of Normality (Shapiro-Wilk Test) for Age, Income Individual, Personal Health History, Family Health History and Risk Attitude Towards Health

Tests of Normality			
	Shapiro-Wilk		
	Statistic	df	Sig.
Age	.935	194	.000
Income individual	.917	194	.000
Personal health history	.910	194	.000
Family health history	.805	194	.000
Risk attitude towards health	.992	194	.409
Informational influence	.986	194	.058

Table D.2: Results of Test of Normality (Shapiro-Wilk Test) for Risk Attitude Towards Health, Within Gender

Tests of Normality				
		Shapiro–Wilk		
	Gender	Statistic	df	Sig.
Risk attitude towards health	Male	.986	93	.453
	Female	.991	101	.704

Table D.3: Results of Test of Normality (Shapiro-Wilk Test) for Risk Attitude Towards Health, Within Parenthood Status

Tests of Normality				
		Shapiro–Wilk		
	Parenthood status	Statistic	df	Sig.
Risk attitude towards health	Without underaged children	.992	150	.618
	With underaged children	.985	44	.837

Table D.4: Results of Test of Normality (Shapiro-Wilk Test) for Risk Attitude Towards Health, Within Health Status

Tests of normality				
		Shapiro–Wilk		
	Health status	Statistic	df	Sig.
Risk attitude towards health	Unhealthy	.984	36	.858
	Healthy	.992	158	.579

Figure D.1: Histogram and Normal Q-Q Plot for Age

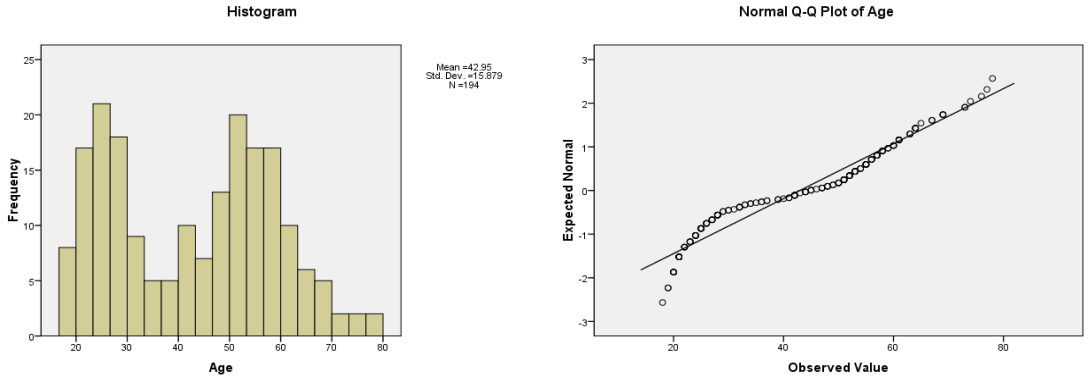


Figure D.2: Histogram and Normal Q-Q Plot for Income Individual

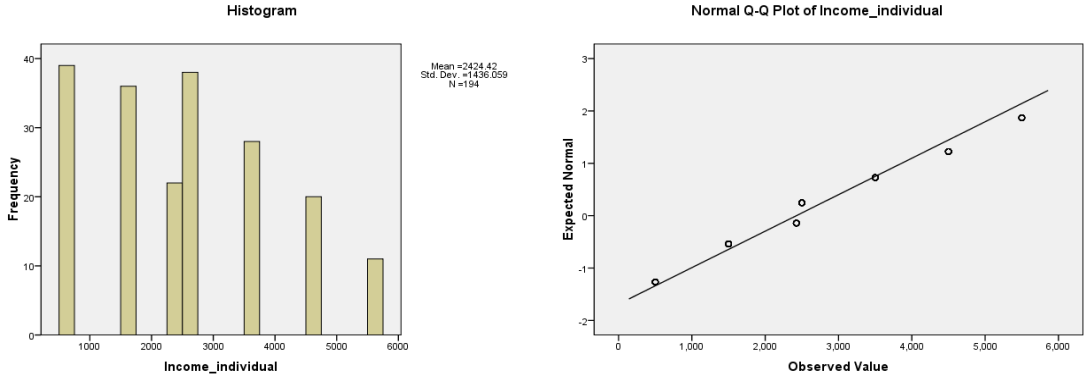


Figure D.3: Histogram and Normal Q-Q Plot for Personal Health History

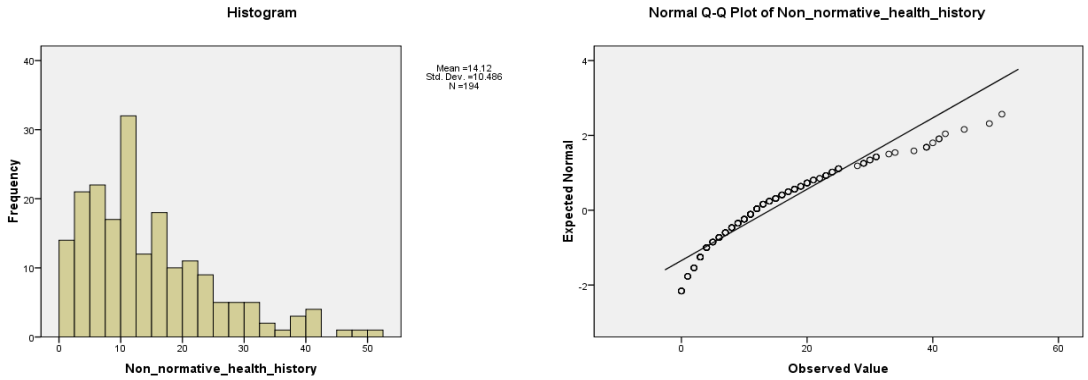


Figure D.4: Histogram and Normal Q-Q Plot for Family Health History

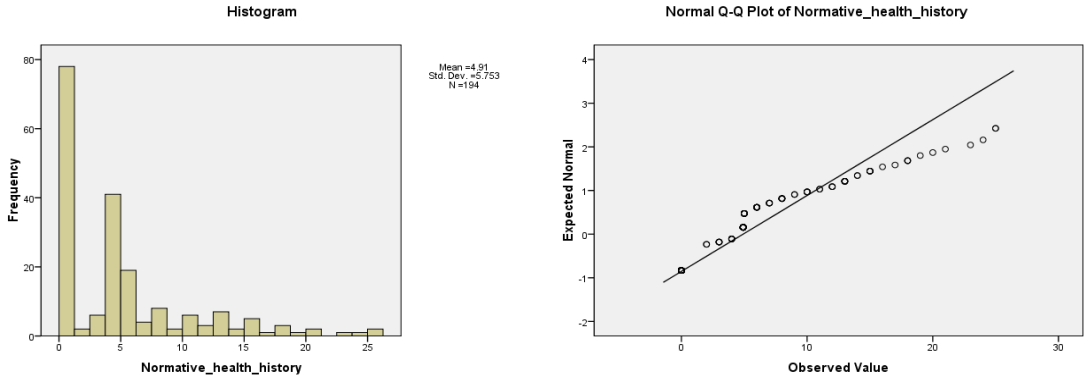


Figure D.5: Histogram and Normal Q-Q Plot for Risk Attitude Towards Health

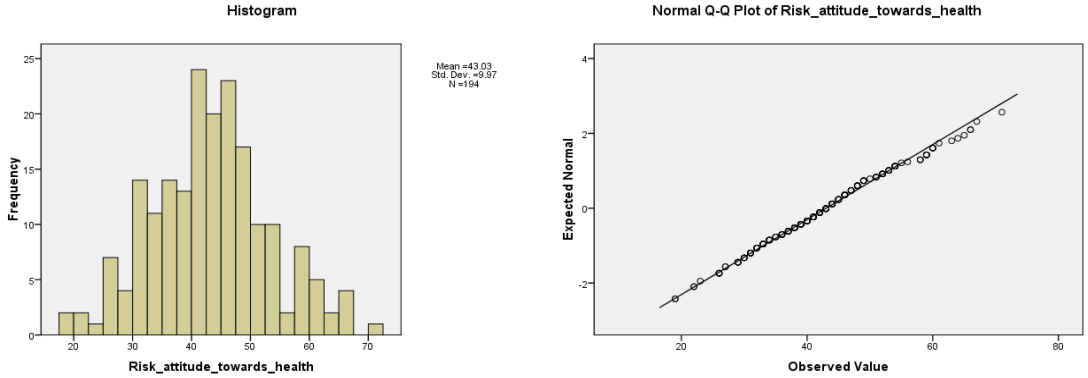


Figure D.6: Histogram and Normal Q-Q Plot for Informational Influence

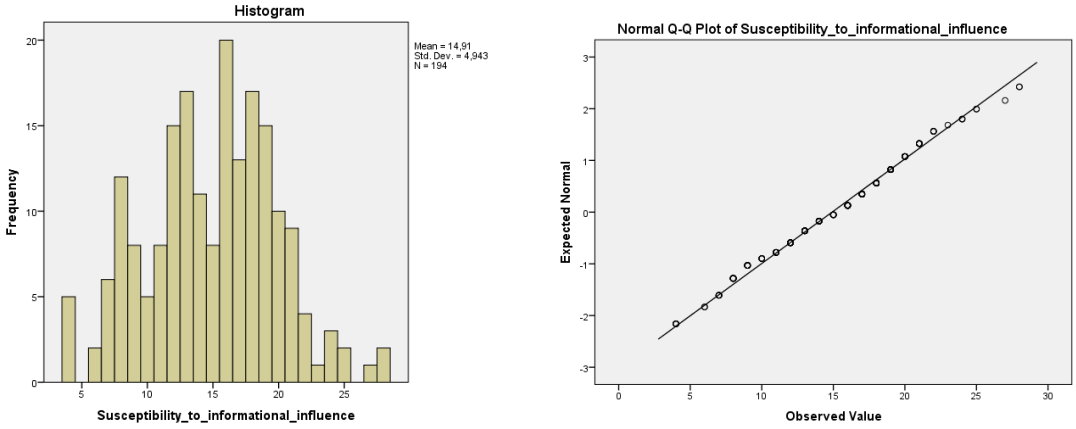


Figure D.7: Histogram and Normal Q-Q Plot for Risk Attitude Towards Health, Within Gender

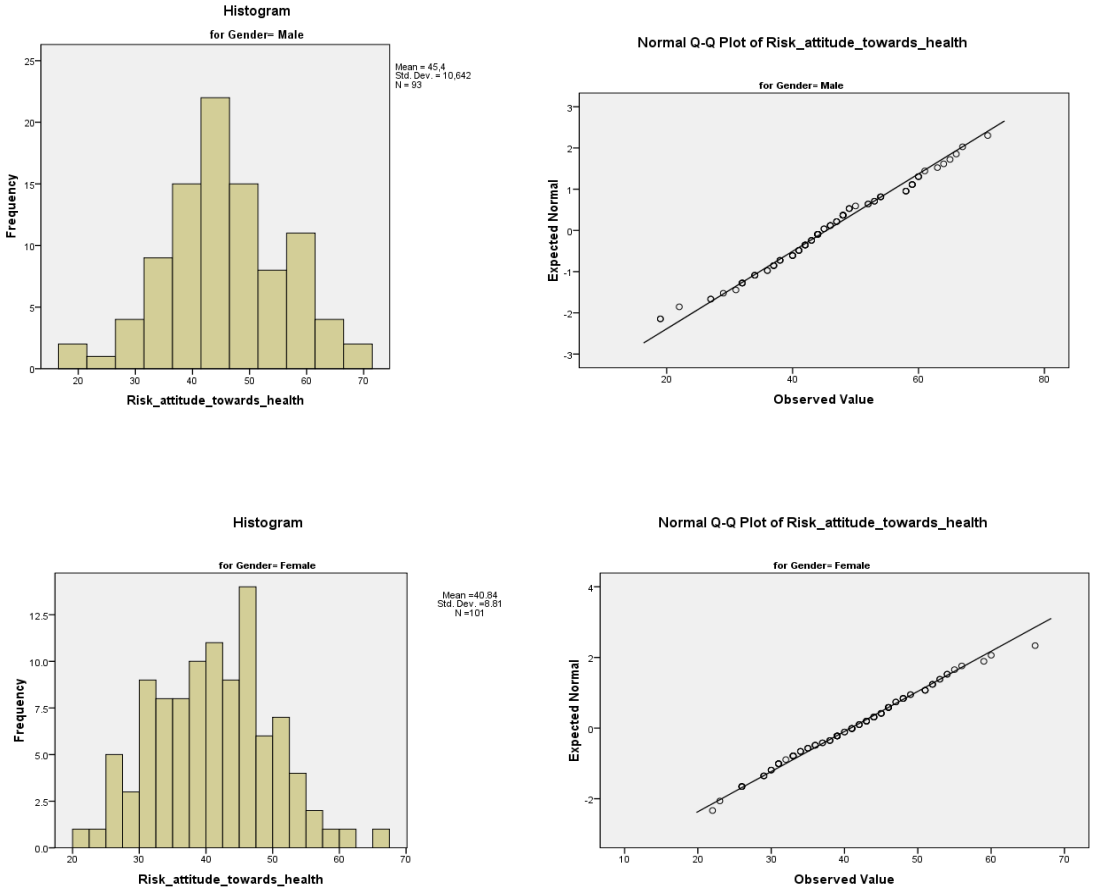
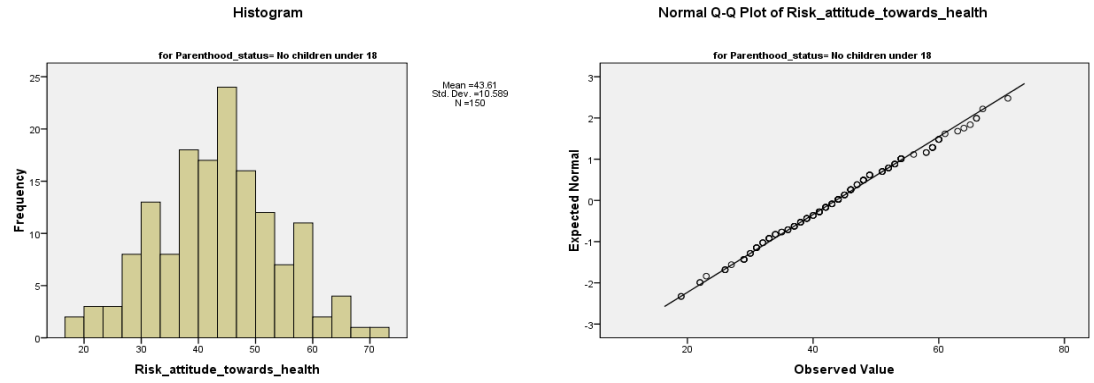


Figure D.8: Histogram and Normal Q-Q Plot for Risk Attitude Towards Health, Within Parenthood Status



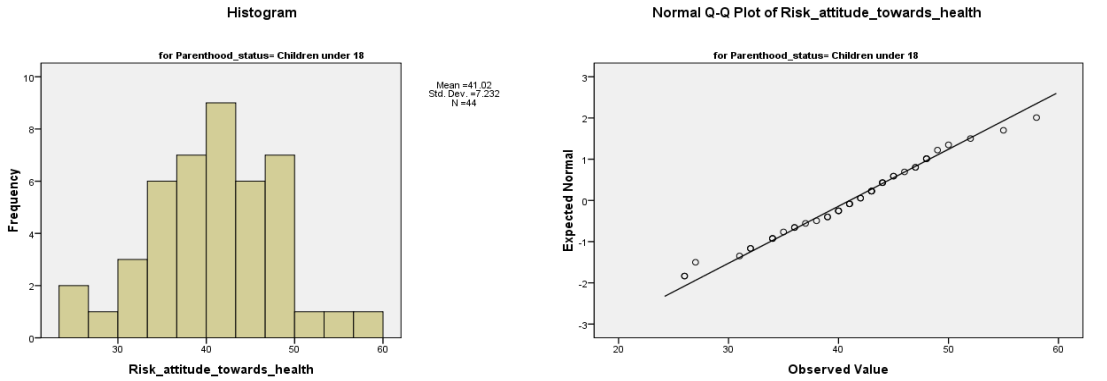
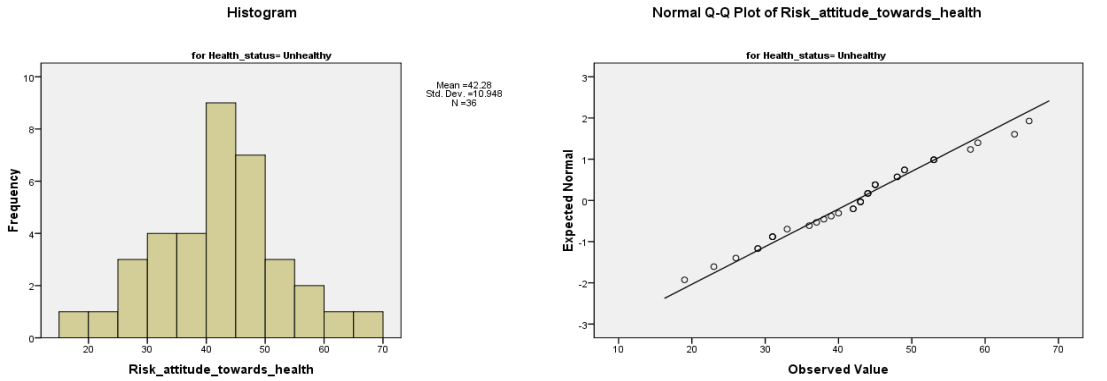
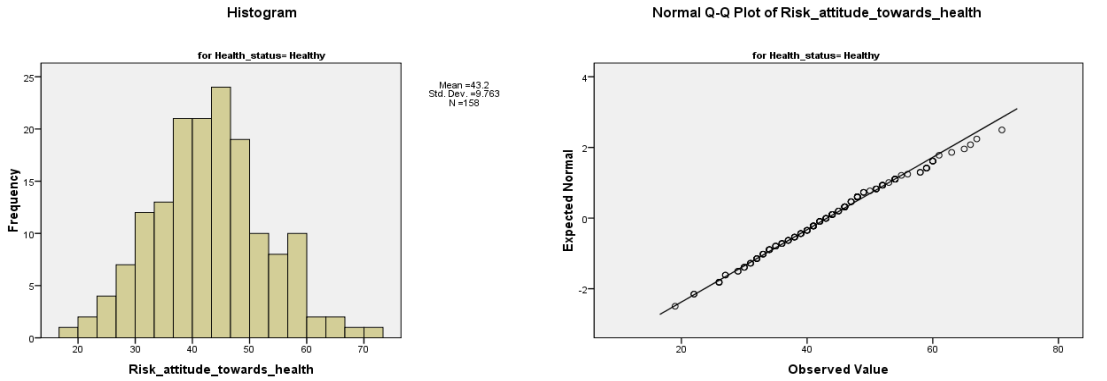


Figure D.9: Histogram and Normal Q-Q Plot for Risk Attitude Towards Health, Within Health Status





Appendix E: Test of Multicollinearity

Table E.1: Results of Test of Multicollinearity (Spearman's correlation coefficient) for Socio-demographic Factors

Correlations										
			1	2	3	4	5	6	7	8	9
1	Gender (1 = male, 0 = female)	Correlation Coefficient Sig. (2-tailed) N	1.000 . 194								
2	Age	Correlation Coefficient Sig. (2-tailed) N	.234** .001 194	1.000 . 194							
3	Income individual	Correlation Coefficient Sig. (2-tailed) N	.405** .000 194	.456** .000 194	1.000 . 194						
4	Parenthood status (1 = with underaged children, 0 = without underaged children)	Correlation Coefficient Sig. (2-tailed) N	.096 .182 194	.059 .417 194	.177* .013 194	1.000 . 194					
5	Health status (1 = healthy, 0 = unhealthy)	Correlation Coefficient Sig. (2-tailed) N	.113 .117 194	-.208** .004 194	.017 .816 194	.100 .164 194	1.000 . 194				

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			1	2	3	4	5	6	7	8	9
6	Personal health history	Correlation Coefficient	-.252**	-.057	-.158*	-.121	-.163*	1.000			
		Sig. (2-tailed)	.000	.432	.027	.094	.023	.			
		N	194	194	194	194	194	194			
7	Family health history	Correlation Coefficient	-.120	.091	-.025	.041	-.071	.189**	1.000		
		Sig. (2-tailed)	.095	.207	.731	.572	.325	.008	.		
		N	194	194	194	194	194	194	194		
8	Risk attitude towards health	Correlation Coefficient	.225**	-.082	-.117	-.109	.030	.112	.006	1.000	
		Sig. (2-tailed)	.002	.255	.106	.129	.679	.119	.934	.	
		N	194	194	194	194	194	194	194	194	
9	Informational influence	Correlation Coefficient	-.130	-.307**	-.240**	-.083	-.052	.102	.106	-.026	1.000
		Sig. (2-tailed)	.070	.000	.001	.251	.473	.156	.143	.720	.
		N	194	194	194	194	194	194	194	194	194

**. Correlation is significant at the $p < .01$ level (2-tailed).

*. Correlation is significant at the $p < .05$ level (2-tailed).

Appendix F: Test of Internal Consistency Reliability

Table F.1: Results of Test of Internal Consistency Reliability (Cronbach's Alpha) for Risk Attitude Towards Health

Reliability Statistics	
Cronbach's Alpha	N of Items
.782	13

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Item 1	40.49	89.857	.354	.773
Item 2	38.90	82.963	.444	.764
Item 3	40.45	87.036	.536	.760
Item 4	39.23	84.922	.461	.763
Item 5	38.66	93.364	.108	.799
Item 6	40.03	84.859	.512	.759
Item 7	39.62	86.165	.365	.773
Item 8	39.47	87.639	.341	.774
Item 9	40.16	87.068	.473	.763
Item 10	39.49	81.536	.631	.747
Item 11	40.13	80.780	.552	.753
Item 12	40.57	84.164	.489	.760
Item 13	39.11	90.740	.196	.790

Table F.2: Results of Test of Internal Consistency Reliability (Cronbach's Alpha) for Informational Influence

Reliability Statistics	
Cronbach's Alpha	N of Items
.853	4

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Item 1	11.88	15.643	.605	.849
Item 2	10.61	14.622	.674	.821
Item 3	11.00	13.585	.759	.785
Item 4	11.23	13.827	.741	.793

Appendix G: Descriptive Statistics

Table G.1: Descriptive Statistics for the Overall Sample

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	194	.52	1	.[b]	0	.[b]	.[a]	.[b]	1
Age	194	42.95	55	15.879	18	27.00	45.00	55.25	78
Income individual	194	2,424.42	500	1,436.059	500	1,500.00	2,462.21	3,500.00	5,500
Parenthood status	194	.23	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	194	.81	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	194	14.12	3[c]	10.486	0	6.00	12.00	19.25	51
Family health history	194	4.91	0	5.753	0	.00	4.91	6.25	25
Risk attitude towards health	194	43.03	44[c]	9.970	19	36.00	43.00	48.00	71
Informational influence	194	14.91	16	4.943	4	12.00	15.50	18.00	28

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

c. Multiple modes exist. The smallest value is shown

Table G.2: Descriptive Statistics for Individuals With an Additional Deductible

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	43	.51	1	.[b]	0	.[b]	.[a]	.[b]	1
Age	43	40.16	25[c]	15.136	18	25.00	39.00	55.00	64
Income individual	43	2,278.39	1,500	1,405.163	500	1,500.00	2,424.41	3,500.00	5,500
Parenthood status	43	.21	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	43	.91	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	43	11.79	11[c]	8.774	0	5.00	11.00	15.00	39
Family health history	43	3.37	0	4.416	0	.00	.00	5.00	15
Risk attitude towards health	43	41.91	48	10.035	22	35.00	43.00	48.00	63
Informational influence	43	15.30	14	5.365	7	11.00	16.00	19.00	28

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

c. Multiple modes exist. The smallest value is shown

Table G.3 Descriptive Statistics for Individuals Without an Additional Deductible

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	151	.52	1	.[b]	0	.[b]	.[a]	.[b]	1
Age	151	43.74	21[c]	16.044	19	27.00	46.00	56.00	78
Income individual	151	2,466.00	2,500	1,446.631	500	1,500.00	2,500.00	3,500.00	5,500
Parenthood status	151	.23	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	151	.79	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	151	14.78	3	10.860	0	7.00	12.00	20.00	51
Family health history	151	5.35	0	6.020	0	.00	4.91	8.00	25
Risk attitude towards health	151	43.34	44	9.962	19	37.00	43.00	48.00	71
Informational influence	151	14.79	13[c]	4.830	4	12.00	15.00	18.00	28

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

c. Multiple modes exist. The smallest value is shown

Table G.4: Descriptive Statistics for Individuals With Complementary Health Insurance

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	180	.53	1	.[b]	0	.[b]	.[a]	.[b]	1
Age	180	42.89	55	15.798	19	27.00	45.00	55.00	78
Income individual	180	2,458.27	500	1,456.637	500	1,500.00	2,500.00	3,500.00	5,500
Parenthood status	180	.24	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	180	.81	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	180	14.19	3	10.570	0	6.25	12.00	19.00	51
Family health history	180	5.17	0	5.864	0	.00	4.91	7.00	25
Risk attitude towards health	180	43.10	44	10.032	19	36.25	43.00	48.00	71
Informational influence	180	15.07	16	4.975	4	12.00	16.00	19.00	28

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

Table G.5: Descriptive Statistics for Individuals Without Complementary Health Insurance

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	14	.36	0	.[b]	0	.[b]	.[a]	.[b]	1
Age	14	43.71	28[c]	17.504	18	27.75	43.50	58.00	76
Income individual	14	1,989.20	1,500	1,086.937	500	1,500.00	1,500.00	2,500.00	4,500
Parenthood status	14	.07	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	14	.86	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	14	13.21	8	9.649	2	5.75	9.00	20.50	33
Family health history	14	1.63	0	2.321	0	.00	.00	4.91	5
Risk attitude towards health	14	42.07	29[c]	9.434	27	32.75	44.00	48.25	59
Informational influence	14	12.79	7[c]	4.098	7	8.75	12.50	16.25	20

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

c. Multiple modes exist. The smallest value is shown

Table G.6: Descriptive Statistics for Individuals With Complementary Health Insurance for Alternative Medicine

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	73	.66	1	.[b]	0	.[b]	.[a]	.[b]	1
Age	73	45.55	57	15.207	19	30.50	48.00	57.00	78
Income individual	73	2,367.39	500	1,373.195	500	1,500.00	2,424.41	3,500.00	6
Parenthood status	73	.26	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	73	.74	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	73	16.81	11[c]	11.638	1	8.00	15.00	23.00	51
Family health history	73	5.54	0	6.374	0	.00	4.91	7.50	25
Risk attitude towards health	73	41.21	46	8.874	22	34.50	43.00	47.50	60
Informational influence	73	15.15	16	5.343	4	11.50	16.00	18.00	28

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

c. Multiple modes exist. The smallest value is shown

Table G.7: Descriptive Statistics for Individuals Without Complementary Health Insurance for Alternative Medicine

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	121	.44	0	.[b]	0	.[b]	.[a]	.[b]	1
Age	121	41.38	55	16.130	18	25.50	42.00	55.00	76
Income individual	121	2,458.82	2,500	1,477.242	500	1,500.00	2,500.00	3,500.00	6
Parenthood status	121	.21	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	121	.86	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	121	12.50	12	9.409	0	6.00	11.00	17.00	41
Family health history	121	4.53	0	5.334	0	.00	4.00	6.00	25
Risk attitude towards health	121	44.12	44[c]	10.459	19	37.00	44.00	50.50	71
Informational influence	121	14.76	19	4.703	4	12.00	15.00	18.50	28

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

c. Multiple modes exist. The smallest value is shown

Table G.8: Descriptive Statistics for Individuals With Complementary Health Insurance for Dental Care

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	158	.53	1	.[b]	0	.[b]	.[a]	.[b]	1
Age	158	43.07	55	15.635	19	27.75	45.00	55.00	78
Income individual	158	2,433.95	500	1,463.830	500	1,500.00	2,424.41	3,500.00	6
Parenthood status	158	.25	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	158	.81	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	158	14.16	3	10.729	0	6.00	12.00	20.00	51
Family health history	158	5.26	0	5.971	0	.00	4.91	8.00	25
Risk attitude towards health	158	43.08	44	10.166	19	36.00	43.00	48.00	71
Informational influence	158	15.17	16	5.102	4	12.00	16.00	19.00	28

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

Table G.9: Descriptive Statistics for Individuals Without Complementary Health Insurance for Dental Care

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	36	.50	0[c]	.[b]	0	.[b]	.[a]	.[b]	1
Age	36	42.42	27	17.132	18	27.00	43.50	57.00	76
Income individual	36	2,382.59	500[c]	1,325.798	500	1,500.00	2,500.00	3,500.00	5
Parenthood status	36	.11	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	36	.83	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	36	13.94	8	9.484	0	8.00	12.00	17.75	49
Family health history	36	3.40	0	4.437	0	.00	3.00	4.98	21
Risk attitude towards health	36	42.81	42	9.189	23	35.50	43.00	48.75	60
Informational influence	36	13.75	13[c]	4.038	6	11.00	13.50	17.00	21

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

c. Multiple modes exist. The smallest value is shown

Table G.10: Descriptive Statistics for Individuals With Complementary Health Insurance for Glasses and Contact Lenses

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	116	.53	1	.[b]	0	.[b]	.[a]	.[b]	1
Age	116	46.30	55	15.682	19	30.25	51.00	57.00	78
Income individual	116	2,579.04	2,500	1,387.328	500	1,500.00	2,500.00	3,500.00	6
Parenthood status	116	.26	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	116	.77	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	116	13.92	9	10.664	0	6.00	12.00	19.00	51
Family health history	116	5.26	0	5.642	0	.00	4.91	8.00	24
Risk attitude towards health	116	43.04	48	10.221	19	37.00	44.00	48.00	71
Informational influence	116	15.03	18	5.015	4	12.00	15.50	18.00	28

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

Table G.11: Descriptive Statistics for Individuals Without Complementary Health Insurance for Glasses and Contact Lenses

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	78	.51	1	.[b]	0	.[b]	.[a]	.[b]	1
Age	78	37.96	25	14.918	18	25.00	32.50	52.00	76
Income individual	78	2,194.47	500	1,484.909	500	500.00	1,962.21	3,500.00	6
Parenthood status	78	.18	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	78	.88	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	78	14.41	3[c]	10.277	0	7.00	12.00	21.25	45
Family health history	78	4.39	0	5.910	0	.00	3.00	5.00	25
Risk attitude towards health	78	43.00	42[c]	9.651	22	35.75	42.50	49.50	67
Informational influence	78	14.72	16	4.861	4	11.00	15.50	19.00	25

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

c. Multiple modes exist. The smallest value is shown

Table G.12: Descriptive Statistics for Individuals With Complementary Health Insurance for Medical Care Abroad

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	120	.55	1	.[b]	0	.[b]	.[a]	.[b]	1
Age	120	43.32	52[c]	15.885	19	28.00	44.50	56.00	78
Income individual	120	2,502.03	2,500	1,469.741	500	1,500.00	2,500.00	3,500.00	6
Parenthood status	120	.28	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	120	.81	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	120	14.46	4[c]	10.924	0	6.00	12.00	21.00	51
Family health history	120	5.09	0	5.927	0	.00	4.91	7.00	25
Risk attitude towards health	120	43.77	46	10.212	19	37.25	44.00	49.00	71
Informational influence	120	14.99	16	5.108	4	12.00	16.00	18.75	28

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

c. Multiple modes exist. The smallest value is shown

Table G.13: Descriptive Statistics for Individuals Without Complementary Health Insurance for Medical Care Abroad

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	74	.47	0	.[b]	0	.[b]	.[a]	.[b]	1
Age	74	42.34	61	15.958	18	25.75	46.00	55.00	76
Income individual	74	2,298.55	1,500	1,380.220	500	1,500.00	2,424.41	2,750.00	6
Parenthood status	74	.15	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	74	.82	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	74	13.57	3[c]	9.783	0	7.00	12.00	17.00	42
Family health history	74	4.62	0	5.485	0	.00	4.91	6.00	25
Risk attitude towards health	74	41.82	48	9.510	19	34.00	42.50	48.00	61
Informational influence	74	14.77	12[c]	4.695	4	12.00	15.00	18.00	28

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

c. Multiple modes exist. The smallest value is shown

Table G.14: Descriptive Statistics for Individuals With Complementary Health Insurance for Medicines

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	119	.55	1	.[b]	0	.[b]	.[a]	.[b]	1
Age	119	43.45	55	14.800	19	29.00	45.00	55.00	77
Income individual	119	2,482.70	1,500	1,405.330	500	1,500.00	2,500.00	3,500.00	6
Parenthood status	119	.29	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	119	.79	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	119	15.03	3	11.313	0	7.00	12.00	21.00	51
Family health history	119	5.43	0	6.418	0	.00	4.91	8.00	25
Risk attitude towards health	119	42.04	44	10.096	19	36.00	42.00	48.00	67
Informational influence	119	15.21	16	5.158	4	12.00	16.00	19.00	28

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

Table G.15: Descriptive Statistics for Individuals Without Complementary Health Insurance for Medicines

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	75	.47	0	.[b]	0	.[b]	.[a]	.[b]	1
Age	75	42.16	24[c]	17.530	18	25.00	42.00	57.00	78
Income individual	75	2,331.94	500	1,488.366	500	1,500.00	2,424.41	3,500.00	6
Parenthood status	75	.12	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	75	.85	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	75	12.67	12	8.901	0	6.00	11.00	17.00	41
Family health history	75	4.09	0	4.415	0	.00	4.91	5.00	19
Risk attitude towards health	75	44.59	46	9.627	26	37.00	46.00	51.00	71
Informational influence	75	14.43	14[c]	4.574	4	11.00	14.00	18.00	24

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

c. Multiple modes exist. The smallest value is shown

Table G.16: Descriptive Statistics for Individuals With Complementary Health Insurance for Physiotherapy

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	149	.58	1	.[b]	0	.[b]	.[a]	.[b]	1
Age	149	44.85	55	15.599	19	29.00	48.00	57.00	78
Income individual	149	2,558.49	2,500	1,427.499	500	1,500.00	2,500.00	3,500.00	6
Parenthood status	149	.26	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	149	.80	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	149	14.84	11	10.879	0	7.00	12.00	20.00	51
Family health history	149	5.57	0	6.113	0	.00	4.91	8.00	25
Risk attitude towards health	149	41.88	44	9.720	19	35.00	43.00	48.00	71
Informational influence	149	15.03	16	5.088	4	12.00	16.00	19.00	28

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

Table G.17: Descriptive Statistics for Individuals Without Complementary Health Insurance for Physiotherapy

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	45	.33	0	.[b]	0	.[b]	.[a]	.[b]	1
Age	45	36.67	25	15.328	18	24.00	28.00	51.50	76
Income individual	45	1,980.49	500	1,388.946	500	500.00	1,500.00	2,500.00	6
Parenthood status	45	.11	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	45	.87	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	45	11.73	10	8.755	0	4.50	10.00	17.00	39
Family health history	45	2.72	0	3.614	0	.00	.00	5.00	15
Risk attitude towards health	45	46.82	42	9.953	27	40.50	46.00	54.00	66
Informational influence	45	14.49	16	4.460	7	11.00	15.00	18.00	24

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

Table G.18: Descriptive Statistics for Individuals With Complementary Health Insurance for Psychological Care

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	74	.55	1	.[b]	0	.[b]	.[a]	.[b]	1
Age	74	44.22	32	14.034	21	31.75	48.00	56.00	77
Income individual	74	2,638.43	3,500	1,469.503	500	1,500.00	2,500.00	3,500.00	6
Parenthood status	74	.27	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	74	.74	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	74	15.39	16	11.175	0	7.00	13.50	20.25	51
Family health history	74	6.60	0	7.019	0	.00	4.91	9.25	25
Risk attitude towards health	74	43.24	46	8.915	26	37.00	43.00	48.00	71
Informational influence	74	15.05	16	5.157	4	12.00	16.00	19.00	28

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

Table G.19: Descriptive Statistics for Individuals Without Complementary Health Insurance for Psychological Care

Descriptive statistics									
	N	Mean	Mode	SD	Minimum	Q_1	Median	Q_3	Maximum
Gender	120	.50	0[c]	.[b]	0	.[b]	.[a]	.[b]	1
Age	120	42.17	24[c]	16.926	18	25.00	42.00	55.00	78
Income individual	120	2,292.44	2,500	1,404.970	500	1,500.00	2,424.41	3,250.00	6
Parenthood status	120	.20	0	.[b]	0	.[b]	.[a]	.[b]	1
Health status	120	.86	1	.[b]	0	.[b]	.[a]	.[b]	1
Personal health history	120	13.33	3	10.005	0	6.00	11.00	18.00	49
Family health history	120	3.87	0	4.536	0	.00	3.00	5.00	18
Risk attitude towards health	120	42.89	42[c]	10.603	19	36.00	43.00	49.00	66
Informational influence	120	14.82	12[c]	4.826	4	12.00	15.00	18.00	28

a. Measure of central tendency not appropriate to use

b. Measure of dispersion not appropriate to use

c. Multiple modes exist. The smallest value is shown

Table G.20: Frequency Distribution for Level of Additional Deductible

Additional deductible			
	Frequency	Percent	Cumulative percent
I do not have an additional deductible	151	77.8	77.8
€100	9	4.6	82.5
€200	17	8.8	91.2
€300	3	1.5	92.8
€400	2	1.0	93.8
€500	12	6.2	100.0
Total	194	100.0	

Table G.21: Frequency Distribution for Level of Complementary Health Insurance Coverage for Alternative Medicine

Alternative medicine			
	Frequency	Percent	Cumulative percent
No complementary health insurance coverage	121	62.4	62.4
Contract 1: Reimbursement up to €250 per year	38	19.6	82.0
Contract 2: Reimbursement up to €500 per year	17	8.8	90.7
Contract 3: Reimbursement up to €750 per year	10	5.2	95.9
Contract 4: Reimbursement up to €1,000 per year	5	2.6	98.5
Contract 5: Reimbursement up to €1,500 per year	3	1.5	100.0
Total	194	100.0	

Table G.22: Frequency Distribution for Level of Complementary Health Insurance Coverage for Dental Care

Dental care			
	Frequency	Percent	Cumulative percent
No complementary health insurance coverage	36	18.6	18.6
Contract 1: Reimbursement up to €250 per year	51	26.3	44.8
Contract 2: Reimbursement up to €500 per year	39	20.1	64.9
Contract 3: Reimbursement up to €750 per year	21	10.8	75.8
Contract 4: Reimbursement up to €1,000 per year	20	10.3	86.1
Contract 5: Reimbursement up to €1,250 per year	27	13.9	100.0
Total	194	100.0	

Table G.23: Frequency Distribution for Level of Complementary Health Insurance Coverage for Glasses and Contact Lenses

Glasses and contact lenses			
	Frequency	Percent	Cumulative percent
No complementary health insurance coverage	78	40.2	40.2
Contract 1: Reimbursement up to €50 per two years	5	2.6	42.8
Contract 2: Reimbursement up to €100 per two years	10	5.2	47.9
Contract 3: Reimbursement up to €150 per two years	26	13.4	61.3
Contract 4: Reimbursement up to €200 per two years	16	8.2	69.6
Contract 5: Reimbursement up to €250 per two years	59	30.4	100.0
Total	194	100.0	

Table G.24: Frequency Distribution for Level of Complementary Health Insurance Coverage for Medical Care Abroad

Medical care abroad			
	Frequency	Percent	Cumulative percent
No complementary health insurance coverage	74	38.1	38.1
Contract 1: Full reimbursement in Europe	62	32.0	70.1
Contract 2: Full reimbursement worldwide	58	29.9	100.0
Total	194	100.0	

Table G.25: Frequency Distribution for Level of Complementary Health Insurance Coverage for Medicines

Medicines			
	Frequency	Percent	Cumulative percent
No complementary health insurance coverage	75	38.7	38.7
Contract 1: Reimbursement of co-payments up to €125 per year	45	23.2	61.9
Contract 2: Reimbursement of co-payments up to €250 per year	20	10.3	72.2
Contract 3: Full reimbursement of co-payments	24	12.4	84.5
Contract 4: Full reimbursement of co-payments and reimbursement of all non-registered medicines up to €1,000 per year	7	3.6	88.1
Contract 5: Full reimbursement of co-payments and of all non-registered medicines	23	11.9	100.0
Total	194	100.0	

Table G.26: Frequency Distribution for Level of Complementary Health Insurance Coverage for Physiotherapy

Physiotherapy			
	Frequency	Percent	Cumulative percent
No complementary health insurance coverage	45	23.2	23.2
Contract 1: Reimbursement up to 9 treatments per year	38	19.6	42.8
Contract 2: Reimbursement up to 12 treatments per year	41	21.1	63.9
Contract 3: Reimbursement up to 18 treatments per year	24	12.4	76.3
Contract 4: Reimbursement up to 27 treatments per year	3	1.5	77.8
Contract 5: Reimbursement of all treatments	43	22.2	100.0
Total	194	100.0	

Table G.27: Frequency Distribution for Level of Complementary Health Insurance Coverage for Psychological Care

Psychological care			
	Frequency	Percent	Cumulative percent
No complementary health insurance coverage	120	61.9	61.9
Contract 1: Full reimbursement of co-payments	28	14.4	76.3
Contract 2: Full reimbursement of co-payments and reimbursement for extra treatments up to €250	17	8.8	85.1
Contract 3: Full reimbursement of co-payments and reimbursement for extra treatments up to €500	14	7.2	92.3
Contract 4: Full reimbursement of co-payments and reimbursement for extra treatments up to €750	4	2.1	94.3
Contract 5: Full reimbursement of co-payments and reimbursement for extra treatments up to €1,000	11	5.7	100.0
Total	194	100.0	

Table G.28: Frequency Distribution for Number of Complementary Health Insurances

Number of Complementary Health Insurances			
	Frequency	Percent	Cumulative percent
0 complementary health insurances	14	7.2	7.2
1 complementary health insurances	9	4.6	11.9
2 complementary health insurances	17	8.8	20.6
3 complementary health insurances	27	13.9	34.5
4 complementary health insurances	26	13.4	47.9
5 complementary health insurances	47	24.2	72.2
6 complementary health insurances	32	16.5	88.7
7 complementary health insurances	22	11.3	100.0
Total	194	100.0	

Table G.29: Results of Bivariate Analyses (Pearson's Chi-square Test, Mann-Whitney *U* Test, Independent Samples *t*-Test) Between the Socio-demographic Factors and Having an Additional Deductible

Socio-demographic factor	Having an additional deductible						
	χ^2	φ_c	Fish	*U*	*r*	*t*(192)	*r*
Gender	0.02	.01					
Age				2,866.50	-.08		
Income individual				2,933.00	-.07		
Parenthood status	0.10	.02					
Health status	3.13	.13					
Personal health history				2,742.50	-.13		
Family health history				2,670.50	-.11		
Risk attitude towards health						-0.83	.06
Informational influence						0.59	.04

Notes: N = 194; * $p \leq .05$, ** $p \leq .01$

Table G.30: Results of Bivariate Analyses (Pearson's Chi-square Test, Mann-Whitney *U* Test, Independent Samples *t*-Test) Between the Socio-demographic Factors and Having Complementary Health Insurance

Socio-demographic factor	Having complementary health insurance						
	χ^2	φ_c	Fish	*U*	*r*	*t*(192)	*r*
Gender	1.62	.09					
Age				1,226.00	-.01		
Income individual				1,009.00	-.09		
Parenthood status			.197				
Health status			.747				
Personal health history				1,190.50	-.02		
Family health history				670.50 *	-.16		
Risk attitude towards health						0.37	.03
Informational influence						1.68	.12

Notes: N = 194; * $p \leq .05$, ** $p \leq .01$

Table G.31: Results of Bivariate Analyses (Pearson's Chi-square Test) Between Gender and Having Complementary Health Insurance by Type of Medical Service

Having complementary health insurance	Gender	
	χ^2	φ_c
Alternative medicine	8.79 **	.21
Dental care	0.08	.02
Glasses and contacts lenses	0.03	.01
Medical care abroad	1.09	.08
Medicines	1.43	.09
Physiotherapy	8.23 **	.21
Psychological care	0.54	.05

Notes: N = 194; * $p \leq .05$, ** $p \leq .01$

Table G.32: Results of Bivariate Analyses (Mann-Whitney *U* Test) Between Age and Having Complementary Health Insurance, by Type of Medical Service

Having complementary health insurance	Age	
	U	*r*
Alternative medicine	3,745.50	-.13
Dental care	2,783.00	-.01
Glasses and contacts lenses	3,223.00 **	-.24
Medical care abroad	4,253.00	-.04
Medicines	4,214.00	-.05
Physiotherapy	2,341.50 **	-.22
Psychological care	4,034.50	-.08

Notes: N = 194; * $p \leq .05$, ** $p \leq .01$

Table G.33: Results of Bivariate Analyses (Mann-Whitney *U* Test) Between Income Individual and Having Complementary Health Insurance by Type of Medical Service

Having complementary health insurance	Income individual	
	U	*r*
Alternative medicine	4,320.50	-.02
Dental care	2,822.50	-.01
Glasses and contacts lenses	3,626.50 **	-.17
Medical care abroad	3,999.00	-.08
Medicines	4,169.00	-.06
Physiotherapy	2,510.00 **	-.19
Psychological care	3,867.00	-.11

Notes: N = 194; * $p \leq .05$, ** $p \leq .01$

Table G.34: Results of Bivariate Analyses (Pearson's Chi-square Test) Between Parenthood Status and Having Complementary Health Insurance by Type of Medical Service

Having complementary health insurance	Parenthood status	
	χ^2	φ_c
Alternative medicine	0.75	.06
Dental care	3.37	.13
Glasses and contacts lenses	1.67	.09
Medical care abroad	4.17 *	.15
Medicines	7.95 **	.20
Physiotherapy	4.47 *	.15
Psychological care	1.29	.08

Notes: N = 194; * $p \leq .05$, ** $p \leq .01$

Table G.35: Results of Bivariate Analyses (Pearson's Chi-square Test) Between Health Status and Having Complementary Health Insurance by Type of Medical Service

Having complementary health insurance	Health Status	
	χ^2	φ_c
Alternative medicine	4.32 *	.15
Dental care	0.10	.02
Glasses and contacts lenses	4.25 *	.15
Medical care abroad	0.08	.02
Medicines	1.22	.08
Physiotherapy	1.06	.07
Psychological care	4.01	.14

Notes: N = 194; * $p \leq .05$, ** $p \leq .01$

Table G.36: Results of Bivariate Analyses (Mann-Whitney *U* Test) Between Personal Health History and Having Complementary Health Insurance by Type of Medical Service

Having complementary health insurance	Personal health history	
	U	*r*
Alternative medicine	3,413.00 **	-.19
Dental care	2,764.50	-.02
Glasses and contacts lenses	4,343.00	-.03
Medical care abroad	4,301.50	-.03
Medicines	4,026.00	-.08
Physiotherapy	2,807.00	-.12
Psychological care	3,914.00	-.10

Notes: N = 194; * $p \leq .05$, ** $p \leq .01$

Table G.37: Results of Bivariate Analyses (Mann-Whitney *U* Test) Between Family Health History and Having Complementary Health Insurance by Type of Medical Service

Having complementary health insurance	Family health history	
	U	*r*
Alternative medicine	4,021.50	-.08
Dental care	2,400.50	-.11
Glasses and contacts lenses	4,051.00	-.09
Medical care abroad	4,303.00	-.03
Medicines	4,110.00	-.07
Physiotherapy	2,521.00 **	-.19
Psychological care	3,511.00 *	-.18

Notes: N = 194; * $p \leq .05$, ** $p \leq .01$

Table G.38: Results of Bivariate Analyses (Independent Samples *t*-Test) Between Risk Attitude Towards Health and Having Complementary Health Insurance by Type of Medical Service

Having complementary health insurance	Risk attitude towards health	
	t(192)	*r*
Alternative medicine	-1.99 *	.14
Dental care	0.15	.01
Glasses and contacts lenses	0.03	2.00E-03
Medical care abroad	1.32	.09
Medicines	-1.74	.12
Physiotherapy	-2.97 **	.21
Psychological care	0.24	.02

Notes: N = 194; * $p \leq .05$, ** $p \leq .01$

Table G.39: Results of Bivariate Analyses (Independent Samples *t*-Test) Between Informational Influence and Having Complementary Health Insurance by Type of Medical Service

Having complementary health insurance	Informational influence	
	t(192)	*r*
Alternative medicine	0.53	.04
Dental care	1.56	.11
Glasses and contacts lenses	0.44	.03
Medical care abroad	0.30	.02
Medicines	1.08	.07
Physiotherapy	0.68	.05
Psychological care	0.32	.02

Notes: N = 194; * $p \leq .05$, ** $p \leq .01$

Appendix H: Regression Results for Level of Complementary Health Insurance Coverage for Alternative Medicine

Table H.1: Results of Regression Analysis (Ordinal Logistic Regression) for Level of Complementary Health Insurance Coverage for Alternative Medicine (Regression Model [1])

Parameter Estimates						
	B	SE	Wald	df	Sig.	Exp(B)
[Alternative medicine = 0]	2.610	.631	17.104	1	.000	.
[Alternative medicine = 1]	3.737	.662	31.905	1	.000	.
[Alternative medicine = 2]	4.559	.693	43.341	1	.000	.
[Alternative medicine = 3]	5.437	.748	52.875	1	.000	.
[Alternative medicine = 4]	6.447	.879	53.769	1	.000	.
[Gender = female]	.860	.352	5.965	1	.015	2.363
[Gender = male]	0[a]	.	.	.	.	1.000
Age	.020	.011	3.515	1	.061	1.020
Income individual	3.635E-5	1.273E-4	.082	1	.775	1.000
[Parenthood status = children < 18]	.573	.350	2.680	1	.102	1.774
[Parenthood status = no children < 18]	0[a]	.	.	.	.	1.000
[Health status = unhealthy]	.214	.383	.311	1	.577	1.239
[Health status = healthy]	0[a]	.	.	.	.	1.000
Personal health history	.030	.015	4.138	1	.042	1.030
Family health history	.010	.026	.164	1	.685	1.010

Link function: Logit.

a. This parameter is set to zero because it is redundant.

Test of Parallel Lines				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	419.605			
General	400.955	18.651	28	.909

Model fitting information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	441.824			
Final	419.605	22.219	7	.002

Pseudo R-Square	
Cox and Snell	.108
Nagelkerke	.121
McFadden	.050

Table H.2: Results of Regression Analysis (Ordinal Logistic Regression) for Level of Complementary Health Insurance Coverage for Alternative Medicine (Regression Model [2])

Parameter Estimates						
	B	SE	Wald	df	Sig.	Exp(B)
[Alternative medicine = 0]	2.093	1.034	4.096	1	.043	.
[Alternative medicine = 1]	3.222	1.050	9.411	1	.002	.
[Alternative medicine = 2]	4.041	1.069	14.292	1	.000	.
[Alternative medicine = 3]	4.917	1.105	19.799	1	.000	.
[Alternative medicine = 4]	5.925	1.198	24.477	1	.000	.
[Gender = female]	.793	.369	4.621	1	.032	2.210
[Gender = male]	0[a]	.	.	.	.	1.000
Age	.020	.011	3.342	1	.068	1.020
Income individual	2.415E-5	1.288E-4	.035	1	.851	1.000
[Parenthood status = children < 18]	.557	.352	2.511	1	.113	1.745
[Parenthood status = no children < 18]	0[a]	.	.	.	.	1.000
[Health status = unhealthy]	.208	.384	.293	1	.588	1.231
[Health status = healthy]	0[a]	.	.	.	.	1.000
Personal health history	.032	.015	4.462	1	.035	1.033
Family health history	.009	.026	.119	1	.730	1.009
Risk attitude towards health	-.011	.017	.403	1	.525	.989

Link function: Logit.

a. This parameter is set to zero because it is redundant.

Test of Parallel Lines				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	419.191			
General	389.090	30.101	32	.563

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	441.824			
Final	419.191	22.633	8	.004

Pseudo R-Square	
Cox and Snell	.110
Nagelkerke	.123
McFadden	.051

Appendix I: Regression Results for Level of Complementary Health Insurance Coverage for Dental Care

Table I.1: Results of Regression Analysis ([Generalized] Ordinal Logistic Regression) for Level of Complementary Health Insurance Coverage for Dental Care (Regression Model [1])

Parameter Estimates						
	B	SE	Wald	df	Sig.	Exp(B)
[Dental care = 0]	-.335	.491	.467	1	.495	.
[Dental care = 1]	1.008	.492	4.188	1	.041	.
[Dental care = 2]	1.887	.506	13.930	1	.000	.
[Dental care = 3]	2.423	.517	22.014	1	.000	.
[Dental care = 4]	3.125	.536	34.022	1	.000	.
[Gender = female]	.086	.296	.085	1	.771	1.090
[Gender = male]	0[a]	.	.	.	.	1.000
Age	.018	.009	3.758	1	.053	1.018
Income individual	6.726E-5	1.097E-4	.376	1	.540	1.000
[Parenthood status = children < 18]	.733	.310	5.600	1	.018	2.081
[Parenthood status = no children < 18]	0[a]	.	.	.	.	1.000
[Health status = unhealthy]	-.075	.342	.048	1	.826	.928
[Health status = healthy]	0[a]	.	.	.	.	1.000
Personal health history	.010	.013	.582	1	.445	1.010
Family health history	-.010	.022	.195	1	.659	.990
(Scale)	1[b]					

Link function: Logit.

a. This parameter is set to zero because it is redundant.

b. Fixed at the displayed value.

Omnibus Test[a]		
Likelihood Ratio Chi-Square	df	Sig.
13.999	7	.051

a. Compares fitted model against thresholds-only model

Pseudo R-Square	
Cox and Snell	.070
Nagelkerke	.072
McFadden	.021

Table I.2: Results of Regression Analysis ([Generalized] Ordinal Logistic Regression) for Level of Complementary Health Insurance Coverage for Dental Care (Regression Model [2])

Parameter Estimates						
	B	SE	Wald	df	Sig.	Exp(B)
[Dental care = 0]	.598	.862	.481	1	.488	.
[Dental care = 1]	1.943	.870	4.985	1	.026	.
[Dental care = 2]	2.825	.883	10.242	1	.001	.
[Dental care = 3]	3.364	.891	14.250	1	.000	.
[Dental care = 4]	4.073	.905	20.264	1	.000	.
[Gender = female]	.241	.321	.565	1	.452	1.273
[Gender = male]	0[a]	.	.	.	.	1.000
Age	.019	.009	4.132	1	.042	1.019
Income individual	1.011E-4	1.128E-4	.804	1	.370	1.000
[Parenthood status = children < 18]	.765	.311	6.032	1	.014	2.149
[Parenthood status = no children < 18]	0[a]	.	.	.	.	1.000
[Health status = unhealthy]	-.075	.341	.049	1	.825	.928
[Health status = healthy]	0[a]	.	.	.	.	1.000
Personal health history	.008	.014	.311	1	.577	1.008
Family health history	-.008	.023	.121	1	.728	.992
Risk attitude towards health	.018	.014	1.558	1	.212	1.018
(Scale)	1[b]					

Link function: Logit.

a. This parameter is set to zero because it is redundant.

b. Fixed at the displayed value.

Omnibus Test[a]		
Likelihood Ratio Chi-Square	df	Sig.
15.568	8	.049

a. Compares fitted model against thresholds-only model

Pseudo R-Square	
Cox and Snell	.077
Nagelkerke	.080
McFadden	.023

Appendix J: Regression Results for Level of Complementary Health Insurance Coverage for Glasses and Contact Lenses

Table J.1: Results of Regression Analysis ([Generalized] Ordinal Logistic Regression) for Level of Complementary Health Insurance Coverage for Glasses and Contact Lenses (Regression Model [1])

Parameter Estimates						
	B	SE	Wald	df	Sig.	Exp(B)
[Glasses and contact lenses = 0]	1.341	.521	6.630	1	.010	.
[Glasses and contact lenses = 1]	1.458	.523	7.780	1	.005	.
[Glasses and contact lenses = 2]	1.686	.526	10.270	1	.001	.
[Glasses and contact lenses = 3]	2.280	.538	17.983	1	.000	.
[Glasses and contact lenses = 4]	2.678	.546	24.038	1	.000	.
[Gender = female]	.244	.314	.601	1	.438	1.276
[Gender = male]	0[a]	.	.	.	.	1.000
Age	.031	.010	10.307	1	.001	1.032
Income individual	6.931E-5	1.162E-4	.356	1	.551	1.000
[Parenthood status = children < 18]	.410	.324	1.601	1	.206	1.507
[Parenthood status = no children < 18]	0[a]	.	.	.	.	1.000
[Health status = unhealthy]	-.063	.350	.032	1	.858	.939
[Health status = healthy]	0[a]	.	.	.	.	1.000
Personal health history	-.008	.014	.342	1	.559	.992
Family health history	.035	.025	1.958	1	.162	1.035
(Scale)	1[b]					

Link function: Logit.

a. This parameter is set to zero because it is redundant.

b. Fixed at the displayed value.

Omnibus Test[a]		
Likelihood Ratio Chi-Square	df	Sig.
21.238	7	.003

a. Compares fitted model against thresholds-only model

Pseudo R-Square	
Cox and Snell	.104
Nagelkerke	.110
McFadden	.038

Table J.2: Results of Regression Analysis (Ordinal Logistic Regression) for Level of Complementary Health Insurance Coverage for Glasses and Contact Lenses (Regression Model [2])

Parameter Estimates						
	B	SE	Wald	df	Sig.	Exp(B)
[Glasses and contact lenses = 0]	2.577	.926	7.743	1	.005	.
[Glasses and contact lenses = 1]	2.694	.928	8.428	1	.004	.
[Glasses and contact lenses = 2]	2.924	.931	9.855	1	.002	.
[Glasses and contact lenses = 3]	3.527	.942	14.013	1	.000	.
[Glasses and contact lenses = 4]	3.931	.950	17.130	1	.000	.
[Gender = female]	.435	.328	1.762	1	.184	1.545
[Gender = male]	0[a]	.	.	.	.	1.000
Age	.032	.010	10.335	1	.001	1.033
Income individual	1.056E-4	1.156E-4	.833	1	.361	1.000
[Parenthood status = children < 18]	.445	.326	1.866	1	.172	1.560
[Parenthood status = no children < 18]	0[a]	.	.	.	.	1.000
[Health status = unhealthy]	-.013	.361	.001	1	.971	.987
[Health status = healthy]	0[a]	.	.	.	.	1.000
Personal health history	-.014	.014	.955	1	.328	.986
Family health history	.038	.024	2.404	1	.121	1.039
Risk attitude towards health	.025	.015	2.947	1	.086	1.025

Link function: Logit.

a. This parameter is set to zero because it is redundant.

Test of Parallel Lines				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	538.589			
General	497.216	41.373	32	.124

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	562.843			
Final	538.589	24.254	8	.002

Pseudo R-Square	
Cox and Snell	.118
Nagelkerke	.124
McFadden	.043

Appendix K: Regression Results for Level of Complementary Health Insurance Coverage for Medical Care Abroad

Table K.1: Results of Regression Analysis ([Generalized] Ordinal Logistic Regression) for Level of Complementary Health Insurance Coverage for Medical Care Abroad (Regression Model [1])

Parameter Estimates						
	B	SE	Wald	df	Sig.	Exp(B)
[Medical care abroad = 0]	.213	.509	.175	1	.675	.
[Medical care abroad = 1]	1.580	.522	9.147	1	.002	.
[Gender = female]	.386	.316	1.500	1	.221	1.471
[Gender = male]	0[a]	.	.	.	.	1.000
Age	-.001	.010	.008	1	.927	.999
Income individual	2.236E-4	1.170E-4	3.651	1	.056	1.000
[Parenthood status = children < 18]	.161	.313	.263	1	.608	1.175
[Parenthood status = no children < 18]	0[a]	.	.	.	.	1.000
[Health status = unhealthy]	.166	.367	.204	1	.651	1.181
[Health status = healthy]	0[a]	.	.	.	.	1.000
Personal health history	.001	.014	.012	1	.914	1.001
Family health history	-.017	.023	.548	1	.459	.983
(Scale)	1[b]					

Link function: Logit.

a. This parameter is set to zero because it is redundant.

b. Fixed at the displayed value.

Omnibus Test[a]		
Likelihood Ratio Chi-Square	df	Sig.
5.403	7	.611

a. Compares fitted model against thresholds-only model

Pseudo R-Square	
Cox and Snell	.027
Nagelkerke	.031
McFadden	.013

Table K.2: Results of Regression Analysis ([Generalized] Ordinal Logistic Regression) for Level of Complementary Health Insurance Coverage for Medical Care Abroad (Regression Model [2])

Parameter Estimates						
	B	SE	Wald	df	Sig.	Exp(B)
[Medical care abroad = 0]	2.080	.923	5.081	1	.024	.
[Medical care abroad = 1]	3.480	.945	13.548	1	.000	.
[Gender = female]	.679	.340	3.987	1	.046	1.972
[Gender = male]	0[a]	.	.	.	.	1.000
Age	2.791E-4	.010	.001	1	.977	1.000
Income individual	2.872E-4	1.204E-4	5.688	1	.017	1.000
[Parenthood status = children < 18]	.260	.318	.672	1	.412	1.297
[Parenthood status = no children < 18]	0[a]	.	.	.	.	1.000
[Health status = unhealthy]	.203	.370	.302	1	.583	1.225
[Health status = healthy]	0[a]	.	.	.	.	1.000
Personal health history	-.005	.014	.138	1	.710	.995
Family health history	-.015	.024	.417	1	.519	.985
Risk attitude towards health	.037	.015	5.976	1	.014	1.037
(Scale)	1[b]					

Link function: Logit.

a. This parameter is set to zero because it is redundant.

b. Fixed at the displayed value.

Omnibus Test[a]		
Likelihood Ratio Chi-Square	df	Sig.
11.536	8	.173

a. Compares fitted model against thresholds-only model

Pseudo R-Square	
Cox and Snell	.058
Nagelkerke	.065
McFadden	.027

Appendix L: Regression Results for Level of Complementary Health Insurance Coverage for Medicines

Table L.1: Results of Regression Analysis ([Generalized] Ordinal Logistic Regression) for Level of Complementary Health Insurance Coverage for Medicines (Regression Model [1])

Parameter Estimates						
	B	SE	Wald	df	Sig.	Exp(B)
[Medicines = 0]	.700	.507	1.903	1	.168	.
[Medicines = 1]	1.703	.520	10.733	1	.001	.
[Medicines = 2]	2.190	.529	17.156	1	.000	.
[Medicines = 3]	2.957	.548	29.145	1	.000	.
[Medicines = 4]	3.273	.558	34.350	1	.000	.
[Gender = female]	.391	.303	1.669	1	.196	1.478
[Gender = male]	0[a]	.	.	.	.	1.000
Age	.003	.010	.080	1	.777	1.003
Income individual	1.490E-4	1.131E-4	1.735	1	.188	1.000
[Parenthood status = children < 18]	.787	.314	6.294	1	.012	2.197
[Parenthood status = no children < 18]	0[a]	.	.	.	.	1.000
[Health status = unhealthy]	.234	.364	.415	1	.519	1.264
[Health status = healthy]	0[a]	.	.	.	.	1.000
Personal health history	.010	.013	.592	1	.442	1.010
Family health history	.027	.023	1.342	1	.247	1.027
(Scale)	1[b]					

Link function: Logit.

a. This parameter is set to zero because it is redundant.

b. Fixed at the displayed value.

Omnibus Test[a]		
Likelihood Ratio Chi-Square	df	Sig.
14.274	7	.047

a. Compares fitted model against thresholds-only model

Pseudo R-Square	
Cox and Snell	.071
Nagelkerke	.074
McFadden	.023

Table L.2: Results of Regression Analysis (Ordinal Logistic Regression) for Level of Complementary Health Insurance Coverage for Medicines (Regression Model [2])

Parameter Estimates						
	B	SE	Wald	df	Sig.	Exp(B)
[Medicines = 0]	.050	.884	.003	1	.955	.
[Medicines = 1]	1.059	.887	1.424	1	.233	.
[Medicines = 2]	1.548	.891	3.018	1	.082	.
[Medicines = 3]	2.315	.900	6.614	1	.010	.
[Medicines = 4]	2.631	.906	8.425	1	.004	.
[Gender = female]	.298	.318	.878	1	.349	1.347
[Gender = male]	0[a]	.	.	.	.	1.000
Age	.002	.010	.046	1	.830	1.002
Income individual	1.321E-4	1.132E-4	1.362	1	.243	1.000
[Parenthood status = children < 18]	.767	.319	5.786	1	.016	2.153
[Parenthood status = no children < 18]	0[a]	.	.	.	.	1.000
[Health status = unhealthy]	.213	.354	.363	1	.547	1.237
[Health status = healthy]	0[a]	.	.	.	.	1.000
Personal health history	.012	.014	.810	1	.368	1.012
Family health history	.025	.024	1.146	1	.284	1.025
Risk attitude towards health	-.013	.014	.775	1	.379	.987

Link function: Logit.

a. This parameter is set to zero because it is redundant.

Test of Parallel Lines				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	594.824			
General	552.114	42.710	32	.098

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	609.855			
Final	594.824	15.030	8	.059

Pseudo R-Square	
Cox and Snell	.075
Nagelkerke	.078
McFadden	.025

Appendix M: Regression Results for Level of Complementary Health Insurance Coverage for Physiotherapy

Table M.1: Results of Regression Analysis ([Generalized] Ordinal Logistic Regression) for Level of Complementary Health Insurance Coverage for Physiotherapy (Regression Model [1])

Parameter Estimates						
	B	SE	Wald	df	Sig.	Exp(B)
[Physiotherapy = 0]	1.050	.500	4.404	1	.036	.
[Physiotherapy = 1]	2.069	.515	16.162	1	.000	.
[Physiotherapy = 2]	2.996	.537	31.142	1	.000	.
[Physiotherapy = 3]	3.616	.554	42.654	1	.000	.
[Physiotherapy = 4]	3.706	.556	44.385	1	.000	.
[Gender = female]	.760	.299	6.470	1	.011	2.138
[Gender = male]	0[a]	.	.	.	.	1.000
Age	.026	.010	7.623	1	.006	1.027
Income individual	1.358E-4	1.117E-4	1.478	1	.224	1.000
[Parenthood status = children < 18]	.336	.311	1.171	1	.279	1.399
[Parenthood status = no children < 18]	0[a]	.	.	.	.	1.000
[Health status = unhealthy]	.067	.353	.036	1	.850	1.069
[Health status = healthy]	0[a]	.	.	.	.	1.000
Personal health history	.022	.014	2.571	1	.109	1.022
Family health history	.014	.023	.381	1	.537	1.014
(Scale)	1[b]					

Link function: Logit.

a. This parameter is set to zero because it is redundant.

b. Fixed at the displayed value.

Omnibus Test[a]		
Likelihood Ratio Chi-Square	df	Sig.
23.841	7	.001

a. Compares fitted model against thresholds-only model

Pseudo R-Square	
Cox and Snell	.116
Nagelkerke	.120
McFadden	.037

Table M.2: Results of Regression Analysis ([Generalized] Ordinal Logistic Regression) for Level of Complementary Health Insurance Coverage for Physiotherapy (Regression Model [2])

Parameter Estimates						
	B	SE	Wald	df	Sig.	Exp(B)
[Physiotherapy = 0]	.364	.868	.175	1	.675	.
[Physiotherapy = 1]	1.386	.873	2.523	1	.112	.
[Physiotherapy = 2]	2.314	.883	6.876	1	.009	.
[Physiotherapy = 3]	2.937	.891	10.862	1	.001	.
[Physiotherapy = 4]	3.027	.893	11.502	1	.001	.
[Gender = female]	.647	.321	4.069	1	.044	1.910
[Gender = male]	0[a]	.	.	.	.	1.000
Age	.026	.010	7.680	1	.006	1.027
Income individual	1.143E-4	1.144E-4	.998	1	.318	1.000
[Parenthood status = children < 18]	.313	.312	1.003	1	.316	1.368
[Parenthood status = no children < 18]	0[a]	.	.	.	.	1.000
[Health status = unhealthy]	.045	.354	.016	1	.899	1.046
[Health status = healthy]	0[a]	.	.	.	.	1.000
Personal health history	.024	.014	2.995	1	.084	1.024
Family health history	.013	.023	.317	1	.574	1.013
Risk attitude towards health	-.014	.014	.908	1	.341	.986
(Scale)	1[b]					

Link function: Logit.

a. This parameter is set to zero because it is redundant.

b. Fixed at the displayed value.

Omnibus Test[a]		
Likelihood Ratio Chi-Square	df	Sig.
24.749	8	.002

a. Compares fitted model against thresholds-only model

Pseudo R-Square	
Cox and Snell	.120
Nagelkerke	.124
McFadden	.039

Appendix N: Regression Results for Level of Complementary Health Insurance Coverage for Psychological Care

Table N.1: Results of Regression Analysis (Ordinal Logistic Regression) for Level of Complementary Health Insurance Coverage for Psychological Care (Regression Model [1])

Parameter Estimates						
	B	SE	Wald	df	Sig.	Exp(B)
[Psychological care = 0]	1.636	.586	7.801	1	.005	.
[Psychological care = 1]	2.374	.599	15.695	1	.000	.
[Psychological care = 2]	2.965	.615	23.274	1	.000	.
[Psychological care = 3]	3.716	.644	33.281	1	.000	.
[Psychological care = 4]	4.054	.664	37.297	1	.000	.
[Gender = female]	.195	.339	.332	1	.565	1.215
[Gender = male]	0[a]	.	.	.	.	1.000
Age	-.006	.011	.320	1	.571	.994
Income individual	2.775E-4	1.263E-4	4.828	1	.028	1.000
[Parenthood status = children < 18]	.347	.345	1.012	1	.314	1.415
[Parenthood status = no children < 18]	0[a]	.	.	.	.	1.000
[Health status = unhealthy]	.375	.384	.956	1	.328	1.455
[Health status = healthy]	0[a]	.	.	.	.	1.000
Personal health history	.012	.015	.636	1	.425	1.012
Family health history	.058	.025	5.324	1	.021	1.060

Link function: Logit.

a. This parameter is set to zero because it is redundant.

Test of Parallel Lines				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	458.668			
General	439.350	19.317	28	.888

Model Fitting Information				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	474.261			
Final	458.668	15.593	7	.029

Pseudo R-Square	
Cox and Snell	.077
Nagelkerke	.085
McFadden	.033

Table N.2: Results of Regression Analysis ([Generalized] Ordinal Logistic Regression) for Level of Complementary Health Insurance Coverage for Psychological Care (Regression Model [2])

Parameter Estimates						
	B	SE	Wald	df	Sig.	Exp(B)
[Psychological care = 0]	2.784	1.029	7.315	1	.007	.
[Psychological care = 1]	3.527	1.041	11.474	1	.001	.
[Psychological care = 2]	4.123	1.053	15.337	1	.000	.
[Psychological care = 3]	4.879	1.072	20.697	1	.000	.
[Psychological care = 4]	5.218	1.085	23.127	1	.000	.
[Gender = female]	.375	.367	1.046	1	.306	1.455
[Gender = male]	0[a]	.	.	.	.	1.000
Age	-.006	.011	.268	1	.605	.994
Income individual	3.106E-4	1.289E-4	5.806	1	.016	1.000
[Parenthood status = children < 18]	.392	.347	1.279	1	.258	1.480
[Parenthood status = no children < 18]	0[a]	.	.	.	.	1.000
[Health status = unhealthy]	.408	.379	1.161	1	.281	1.504
[Health status = healthy]	0[a]	.	.	.	.	1.000
Personal health history	.008	.015	.311	1	.577	1.008
Family health history	.062	.024	6.429	1	.011	1.064
Risk attitude towards health	.022	.016	1.875	1	.171	1.023
(Scale)	1[b]					

Link function: Logit.

a. This parameter is set to zero because it is redundant.

b. Fixed at the displayed value.

Omnibus Test[a]		
Likelihood Ratio Chi-Square	df	Sig.
17.488	8	.025

a. Compares fitted model against thresholds-only model

Pseudo R-Square	
Cox and Snell	.086
Nagelkerke	.094
McFadden	.037

Appendix O: Regression Results for Level of Additional Deductible

Table O.1: Results of Regression Analysis ([Generalized] Ordinal Logistic Regression) for Level of Additional Deductible (Regression Model [1])

Parameter Estimates						
	B	SE	Wald	df	Sig.	Exp(B)
[Additional deductible = 0]	-1.626	.677	5.766	1	.016	.
[Additional deductible = 1]	-1.457	.669	4.743	1	.029	.
[Additional deductible = 2]	-1.242	.659	3.550	1	.060	.
[Additional deductible = 3]	-.424	.643	.434	1	.510	.
[Additional deductible = 4]	-.116	.644	.033	1	.857	.
[Gender = female]	.014	.394	.001	1	.971	1.014
[Gender = male]	0[a]	.	.	.	.	1.000
Age	.004	.013	.102	1	.749	1.004
Income individual	8.386E-5	1.495E-4	.315	1	.575	1.000
[Parenthood status = children < 18]	.132	.442	.089	1	.766	1.141
[Parenthood status = no children < 18]	0[a]	.	.	.	.	1.000
[Health status = unhealthy]	.737	.588	1.569	1	.210	2.090
[Health status = healthy]	0[a]	.	.	.	.	1.000
Personal health history	.029	.021	1.815	1	.178	1.029
Family health history	.058	.038	2.389	1	.122	1.060
(Scale)	1[b]					

Link function: Logit.

a. This parameter is set to zero because it is redundant.

b. Fixed at the displayed value.

Omnibus Test[a]		
Likelihood Ratio Chi-Square	df	Sig.
10.111	7	.182

a. Compares fitted model against thresholds-only model

Pseudo R-Square	
Cox and Snell	.051
Nagelkerke	.063
McFadden	.031

Table O.2: Results of Regression Analysis ([Generalized] Ordinal Logistic Regression) for Level of Additional Deductible (Regression Model [2])

Parameter Estimates						
	B	SE	Wald	df	Sig.	Exp(B)
[Additional deductible = 0]	-.909	1.166	.608	1	.436	.
[Additional deductible = 1]	-.740	1.161	.407	1	.524	.
[Additional deductible = 2]	-.526	1.155	.207	1	.649	.
[Additional deductible = 3]	.294	1.147	.066	1	.798	.
[Additional deductible = 4]	.603	1.150	.275	1	.600	.
[Gender = female]	.121	.419	.084	1	.772	1.129
[Gender = male]	0[a]	.	.	.	.	1.000
Age	.005	.013	.151	1	.697	1.005
Income individual	1.047E-4	1.522E-4	.473	1	.492	1.000
[Parenthood status = children < 18]	.156	.444	.124	1	.725	1.169
[Parenthood status = no children < 18]	0[a]	.	.	.	.	1.000
[Health status = unhealthy]	.735	.589	1.556	1	.212	2.085
[Health status = healthy]	0[a]	.	.	.	.	1.000
Personal health history	.026	.022	1.488	1	.223	1.027
Family health history	.057	.038	2.310	1	.129	1.059
Risk attitude towards health	.014	.019	.565	1	.452	1.014
(Scale)	1[b]					

Link function: Logit.

a. This parameter is set to zero because it is redundant.

b. Fixed at the displayed value.

Omnibus Test[a]		
Likelihood Ratio Chi-Square	df	Sig.
10.678	8	.221

a. Compares fitted model against thresholds-only model

Pseudo R-Square	
Cox and Snell	.054
Nagelkerke	.066
McFadden	.033

Appendix P: Regression Results for Number of Complementary Health Insurances

Table P.1: Results of Regression Analysis (Poisson Loglinear Regression) for Number of Complementary Health Insurances (Regression Model [3])

Parameter Estimates[a]						
	B	SE	Wald	df	Sig.	Exp(B)
(Intercept)	.843	.143	34.788	1	.000	.
[Gender = female]	.219	.082	7.205	1	.007	1.245
[Gender = male]	0[b]	.	.	.	.	1.000
Age	.004	.003	2.149	1	.143	1.004
Income individual	5.175E-5	3.002E-5	2.972	1	.085	1.000
[Parenthood status = children < 18]	.218	.082	7.151	1	.007	1.244
[Parenthood status = no children < 18]	0[b]	.	.	.	.	1.000
[Health status = unhealthy]	.114	.092	1.546	1	.214	1.121
[Health status = healthy]	0[b]	.	.	.	.	1.000
Personal health history	.003	.004	.632	1	.427	1.003
Family health history	.011	.006	3.123	1	.077	1.011
(Scale)	1[c]					

a. Dependent variable: Number of complementary health insurances

b. This parameter is set to zero because it is redundant.

c. Fixed at the displayed value.

Omnibus Test[a]		
Likelihood Ratio Chi-Square	df	Sig.
29.895	7	.000

a. Compares fitted model against thresholds-only model

Pseudo R-Square	
Cox and Snell	-
Nagelkerke	.145
McFadden	-

Table P.2: Results of Regression Analysis (Poisson Loglinear Regression) for Number of Complementary Health Insurances (Regression Model [4])

Parameter Estimates[a]						
	B	SE	Wald	df	Sig.	Exp(B)
(Intercept)	.777	.244	10.160	1	.001	.
[Gender = female]	.229	.086	7.011	1	.008	1.257
[Gender = male]	0[b]	.	.	.	.	1.000
Age	.004	.003	2.195	1	.138	1.004
Income individual	5.350E-5	3.047E-5	3.082	1	.079	1.000
[Parenthood status = children < 18]	.221	.082	7.258	1	.007	1.247
[Parenthood status = no children < 18]	0[b]	.	.	.	.	1.000
[Health status = unhealthy]	.115	.092	1.573	1	.210	1.122
[Health status = healthy]	0[b]	.	.	.	.	1.000
Personal health history	.003	.004	.513	1	.474	1.003
Family health history	.011	.006	3.193	1	.074	1.011
Risk attitude towards health	.001	.004	.113	1	.737	1.001
(Scale)	1[c]					

a. Dependent Variable: Number of complementary health insurances

b. This parameter is set to zero because it is redundant.

c. Fixed at the displayed value.

Omnibus Test[a]		
Likelihood Ratio Chi-Square	df	Sig.
30.008	8	.000

a. Compares fitted model against thresholds-only model

Pseudo R-Square	
Cox and Snell	-
Nagelkerke	.145
McFadden	-

Appendix Q: Regression Results for Risk Attitude Towards Health

Table Q.1: Results of Regression Analysis (Ordinary Least Squares Regression) for Risk Attitude Towards Health (Regression Model [5])

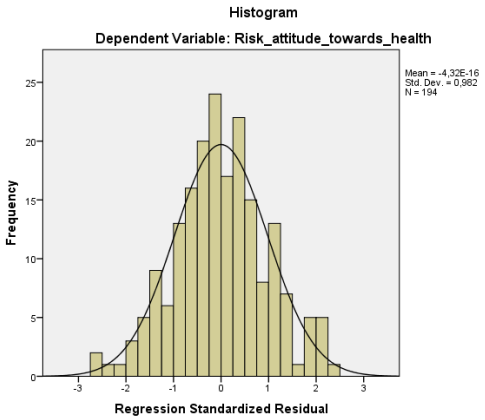
Parameter Estimates[a]					
	B	SE	Beta	t	Sig.
(Constant)	51.068	2.548		20.045	.000
Gender = female	-7.545	1.534	-.379	-4.919	.000
Age	-.048	.049	-.076	-.977	.330
Income individual	-.001	.001	-.208	-2.526	.012
Parenthood status = children < 18	-1.994	1.653	-.084	-1.207	.229
Health status = unhealthy	-.582	1.842	-.023	-.316	.753
Personal health history	.162	.070	.171	2.322	.021
Family health history	-.058	.122	-.034	-.475	.635

a. Dependent Variable: Risk attitude towards health

Model Summary					
Model	R	R-Square	Adjusted R-Square	Std. Error of the Estimate	Durbin-Watson
1	.385	.148	.116	9.373	1.979

ANOVA					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2,843.881	7	406.269	4.624	.000
Residual	16,340.990	186	87.855		
Total	19,184.871	193			

Figure Q.1: Histogram and Normal P-P Plot for Risk Attitude Towards Health



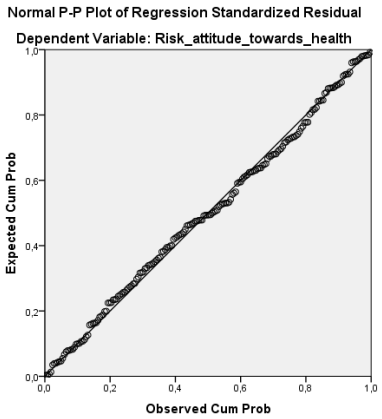


Figure Q.2: Scatterplot for Risk Attitude Towards Health

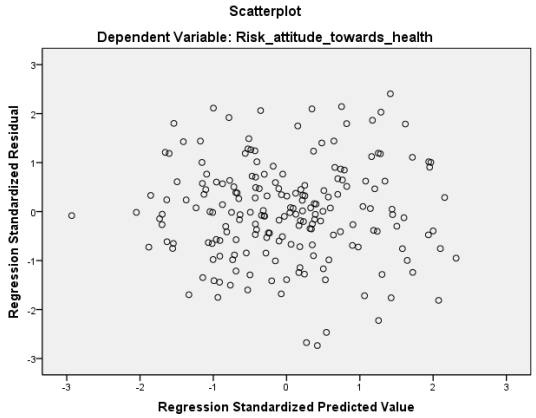


Figure Q.3: Partial Regression Plot for Gender

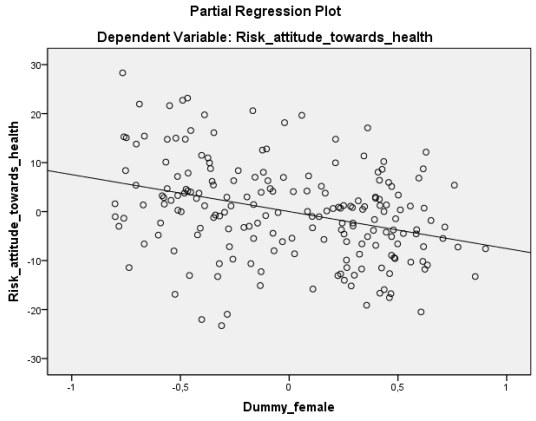


Figure Q.4: Partial Regression Plot for Age

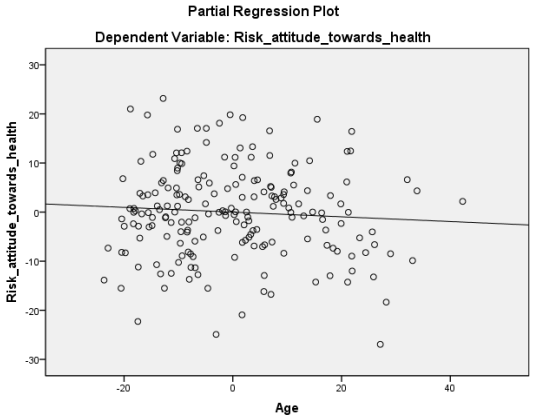


Figure Q.5: Partial Regression Plot for Income Individual

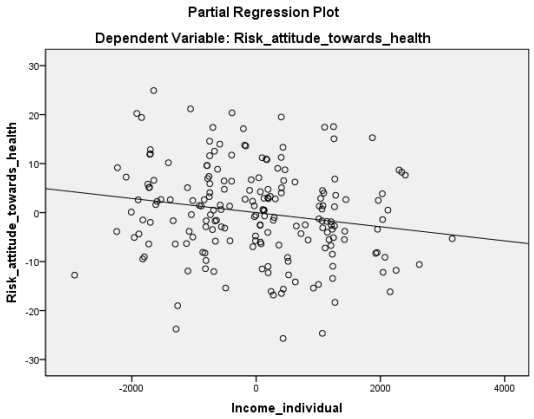


Figure Q.6: Partial Regression Plot for Parenthood Status

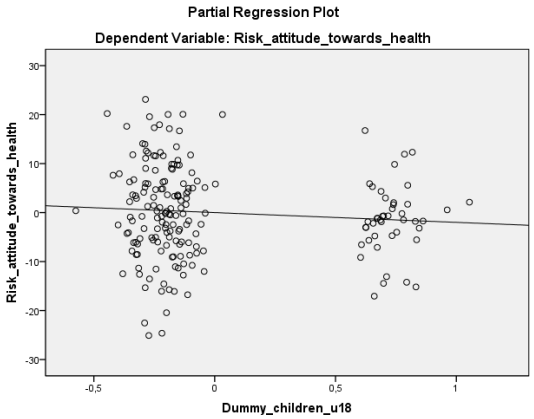


Figure Q.7: Partial Regression Plot for Health Status

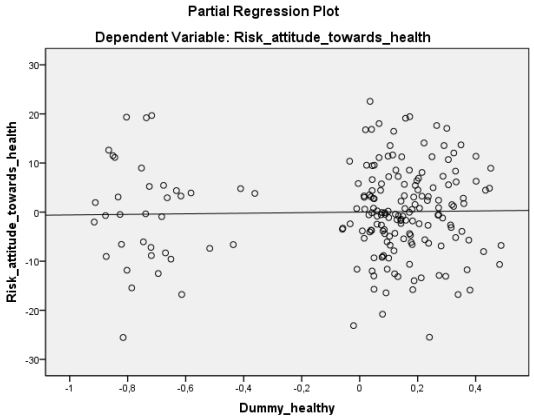


Figure Q.8: Partial Regression Plot for Personal Health History

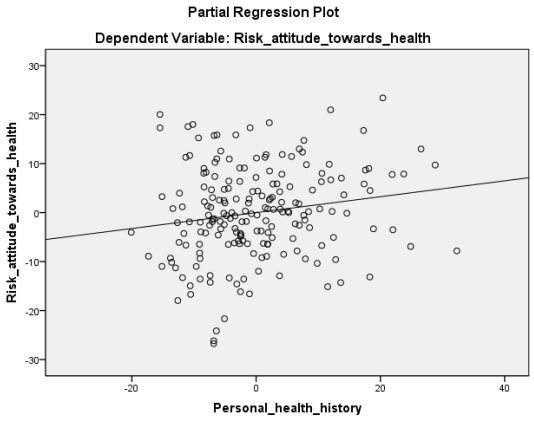


Figure Q.9: Partial Regression Plot for Family Health History